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Technical Report Overview

Report: Annual Water Treatment Performance Report 2022 (March 31, 2023)

Overview: This report is prepared by Teck and presents the 2022 results and of the WLC AWTF, EVO SRF Phase 2, and FRO-S AWTF required under 107517. This report summarizes the performance, compliance, and the selenium and nitrate removal rates for each facility.

For More Information

If you have questions regarding this report, please:

- Phone toll-free to 1.855.806.6854
- Email **feedbackteckcoal@teck.com**

Future studies will be made available at **teck.com/elkvalley.**

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March 31, 2023

Subject: Annual Water Treatment Performance Report - 2022

Please find enclosed the Annual Water Treatment Performance Report for 2022. This document satisfies the annual reporting requirements in Section 4A10 in Appendix 4 of Permit 107517.

As per Section 4A10 in Appendix 4 of Permit 107517 this report contains the following elements:

i) A summary of facility performance compared to the key performance metrics listed in the Operations Plan;
ii) Influent Sources and flow rates, including alternate sources;
iii) Selenium and nitrate load removal;
iv) Quantities of reagents used and residuals generated;
v) Details on continuous improvement initiatives;
vi) A description of any incidents including process upsets, spills (quantity and quality, including analytical results), issues with and bypasses of the Authorized Works, including recirculation events and contingency discharges;
vii) Quantity and quality of effluent (e.g., non-hazardous waste liquids) discharged to the Turnbull South Pit Tailings Storage Facility;
viii) A summary of all non-compliances with the requirements of Appendix 4, submitted in Annual Status Form
ix) A map of monitoring locations with EMS and permittee descriptors;
x) A summary and evaluation of key operational and receiving environment monitoring data associated with the selenium and nitrate treatment facilities and all analytical results from the monitoring plans in Appendix 4 for the reporting year. Data must be suitably tabulated (i.e., excel spreadsheets), with appropriate graphs and comparison of results to limits, Approved and Working Water Quality Guidelines, Site Performance Objectives, or other criteria and benchmarks as specified by the director;
xi) If Site Performance Objectives in Appendix 4 are exceeded the permittee must provide an interpretation of significance, and the status of corrective action and/or ongoing investigations;
xii) All acute toxicity test-specific reports from the laboratory and an interpreted summary and discussion of results, including recommendations and all subsequent actions;
xiii) All acute toxicity test lab reports must include data and/or observations for hardness, alkalinity, pH, temperature, and formation of precipitate either in the vessel or the organism;
xiv) A summary of all QA/QC issues during the year.

Sincerely,

Jocelyn Traverse
Acting Senior Lead Environment, Water Treatment

Eric Gietz
Senior Lead Environment, Water Treatment

Enclosed: Annual Water Treatment Performance Report - 2022

Annual Water Treatment Performance Report 2022

March 31, 2023

Teck

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Appendices

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Appendix B – Water Treatment Facility Bypass Summary
Appendix C – Permit 107517 Monitoring Data
Appendix D – Acute Toxicity Test Results
Appendix E – QA/QC Program

List of Acronyms

AMP	Adaptive Management Plan
AOP	Advanced Oxidation Process
AWTF	Active Water Treatment Facility
BC	British Columbia
BCWQG	British Columbia Water Quality Guidelines
BOD	Biological oxygen demand
CAP	Compliance action plan
CMm	Coal Mountain Mine
D	Dissolved
DGIR	Dangerous Goods Incident Report
EMBC	Emergency Management BC
EMLI	Ministry of Energy, Mines and Low Carbon Innovation
EMS	Environmental Management System
ENV	Ministry of Environment and Climate Change Strategy
EPH	Extractable petroleum hydrocarbons
EVO	Elkview Operations
EVO SRF	Elkview Operations Saturated Rock Fill
EVWQP	Elk Valley Water Quality Plan
EWT	Early warning triggers
FRO	Fording River Operations
FRO-S AWTF	Fording River South Active Water Treatment Facility
GHO	Greenhills Operations
KCWD	Kilmarnock Clean Water Diversion
KPI	Key Performance Indicator
LAEMP	Local Aquatic Effects Monitoring Plan
LCO	Line Creek Operations

NMP	Nitrate Management Plan
NST	No sample taken
NTU	Nephelometric turbidity unit
Q	Quarter (for example, Q1, Q3, Q3, Q4)
QA/QC	Quality assurance / quality control
RPD	Relative percent difference
SPO	Site performance objective
SRF	Saturated Rock Fill
T	Total
TDS	Total dissolved solids
TSS	Total suspended solids
WLC AWTF	West Line Creek Active Water Treatment Facility

West Line Creek Active Water Treatment Facility

Executive Summary

In 2022 the WLC AWTF achieved similar performance results as 2021 with respect to selenium and nitrate load removal volumes and throughput. The WLC AWTF removed a total of 595 kg of selenium in 2022, averaging 1.63 kg removed per day (as compared to 536 kg of selenium removed in 2021, averaging 1.47 kg removed per day). The WLC AWTF removed a total of 35,015 kg of nitrate in 2022, averaging 96 kg removed per day (compared to 35,469 kg of nitrate removed in 2021, averaging 98 kg removed per day). The average throughput of the WLC AWTF was 6762 m3/day (as compared to 6759 m^3/day in 2021) and treated a total volume of 2,467,986 m3 (as compared to 2,466,747 m^3 in 2021). While improving throughput and maintaining similar load removal, effluent quality remained within all limits for the year.

Teck continues efforts to improve the performance of the WLC AWTF. In 2021, Teck improved on maximizing facility throughout and availability by minimizing and optimizing scheduled downtime events related to regular maintenance. The WLC AWTF tied the record high average availability set in 2021 of approximately 95% again in 2022, and tied the record high monthly availability in December 2022 of approximately 99.6%. The WLC AWTF also achieved a record high annual average daily throughput of 6762 m3/day and a monthly average daily throughput in December 2022 achieving a monthly average of 7557 m3/day. Teck also progressed treatment optimization projects such as the high nitrate test, which was completed in 2022, for the purpose of evaluating the WLC AWTF's nitrate removal capacity upper limit. The WLC AWTF is also working through the permitting process to complete a nickel test to determine the WLC AWTF's capacity to remove nickel through the current treatment process.

The Annual Status Form is included in Appendix A of this report.

Facility Performance

This section summarizes the facility performance in 2022. The March 11, 2021 amendment to Permit 107517 requires Teck to develop key performance metrics for the EVO SRF and FRO-S AWTF. Key performance metrics are not currently defined in WLC AWTF Operations Plan. Teck developed performance metrics for the FRO-S AWTF and submitted these to the director on March 22, 2022, 30 days prior to the end of the 120-day commissioning period, as required under section 4D2.2 of Permit 107517. Due to the timing of this submission, and differences between the facilities Teck will continue to develop these metrics for the WLC AWTF. For the purposes of this report the performance metrics included in this report include selenium and nitrate load removal and facility throughput.

Selenium and Nitrate Load Removal

This section provides a summary of the WLC AWTF selenium and nitrate load removal in 2022.

Load removal is a function of influent concentrations, effluent concentrations, and facility throughput. A decrease in load removal can occur due to any combination of lower influent concentrations, increased effluent concentrations and/or reduced throughput .

Nitrate Removal

The WLC AWTF daily average, daily maximum and total nitrate removal results for 2022 are summarized below in Table 1 and displayed in Figure 1. The daily maximum nitrate load removal of 160.9 kg on March 2022 is a record high daily load removal for the facility.

Table 1. West Line Creek Active Water Treatment Facility Nitrate Removal

	Nitrate Load Removal
Daily Average	96 kg/day
Daily Maximum	161 kg/day
Total	35,015 kg

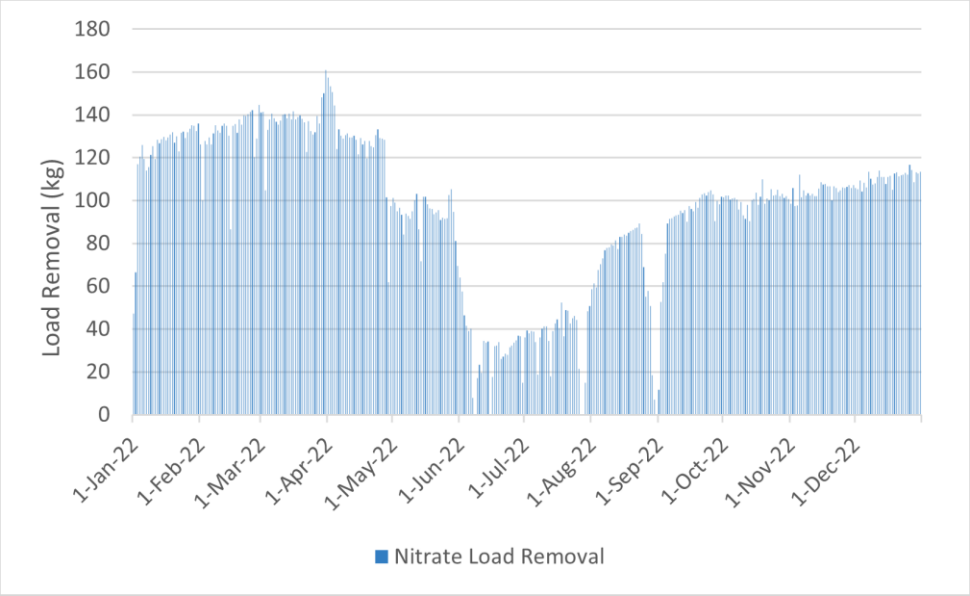


Figure 1. WLC AWTF Nitrate Load Removal

The average, minimum, and maximum blended influent concentrations during the 2022 operational phase were 14 mg/L, 4.2 mg/L, 22 mg/L, respectively. The influent and effluent nitrate concentrations are shown below in Figure 2.

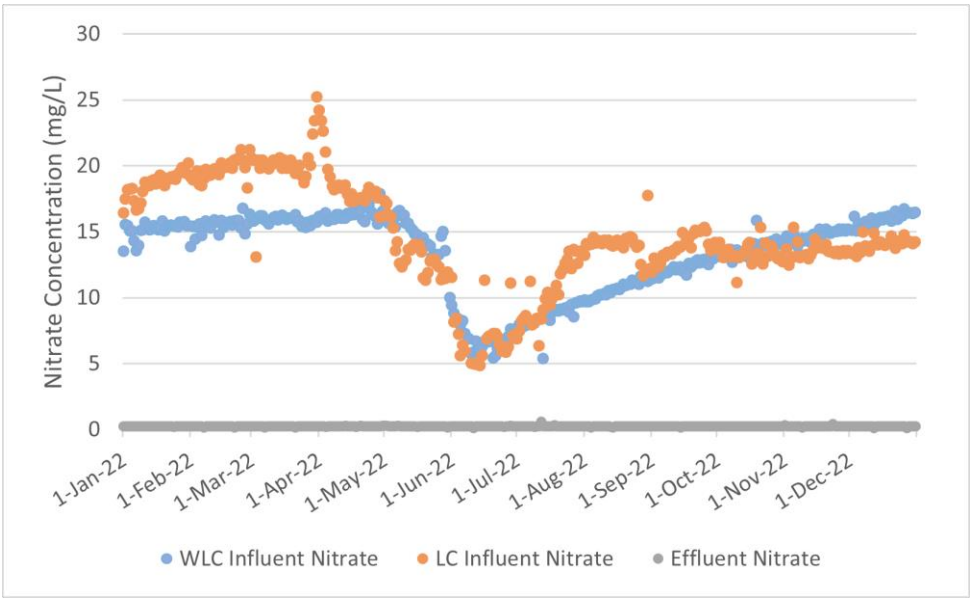


Figure 2. WLC AWTF Influent and Effluent Nitrate Concentrations

The historical influent nitrate concentrations for the facility are shown below in Figure 3. Since WLC AWTF began operating nitrate concentrations in the influent source have been trending down. If this trend continues it is expected that the lower influent nitrate concentrations may result in lower nitrate removal over time.

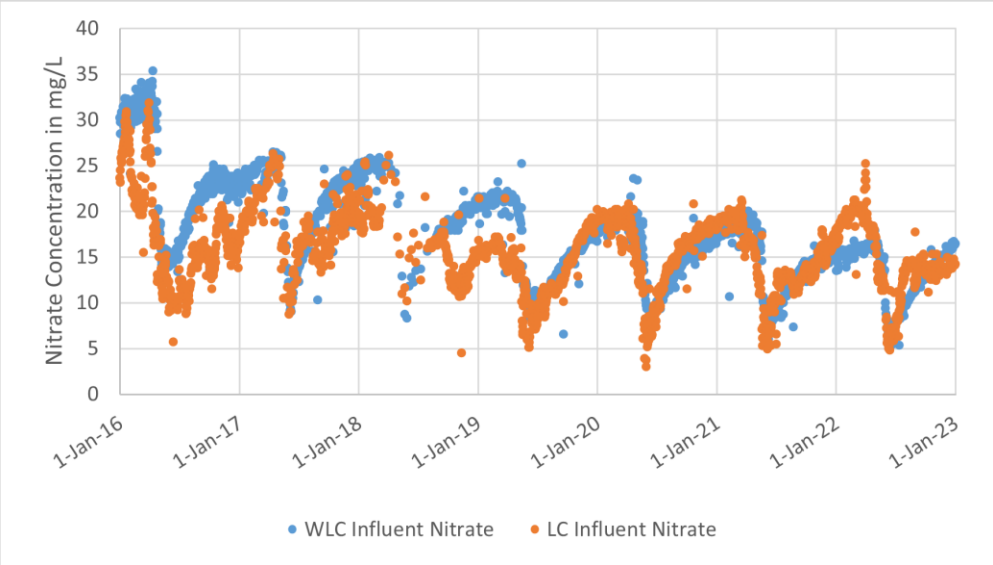


Figure 3. Seasonal WLC AWTF Nitrate Influent Concentrations

Selenium Removal

The WLC AWTF daily average, daily maximum and total selenium removal for 2022 are summarized below in Table 2 and displayed in Figure 4.

Table 2. West Line Creek Active Water Treatment Facility Selenium Removal

	Selenium Load Removal
Daily Average	1.63 kg/day
Daily Maximum	2.65 kg/day
Total	595 kg

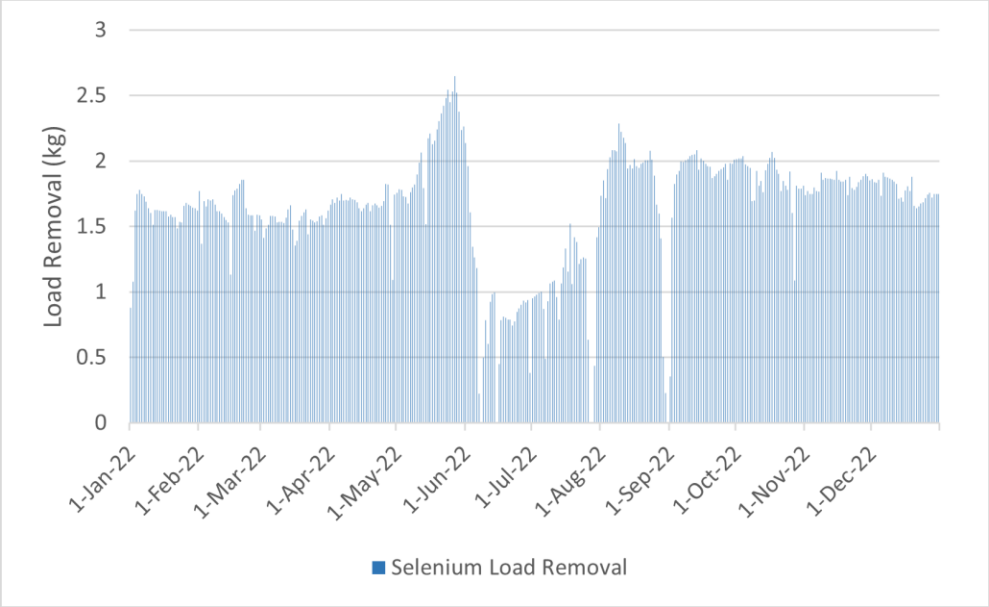


Figure 4. WLC AWTF 2022 Selenium Load Removal

The average, minimum, and maximum blended influent concentrations during the 2022 operational phase were 253 µg/L, 158 µg/L, 379 µg/L. Blended influent total selenium concentrations are interpolated values based on total selenium concentrations from West Line Creek and Line Creek. The influent and effluent selenium concentrations are shown below in Figure 5.

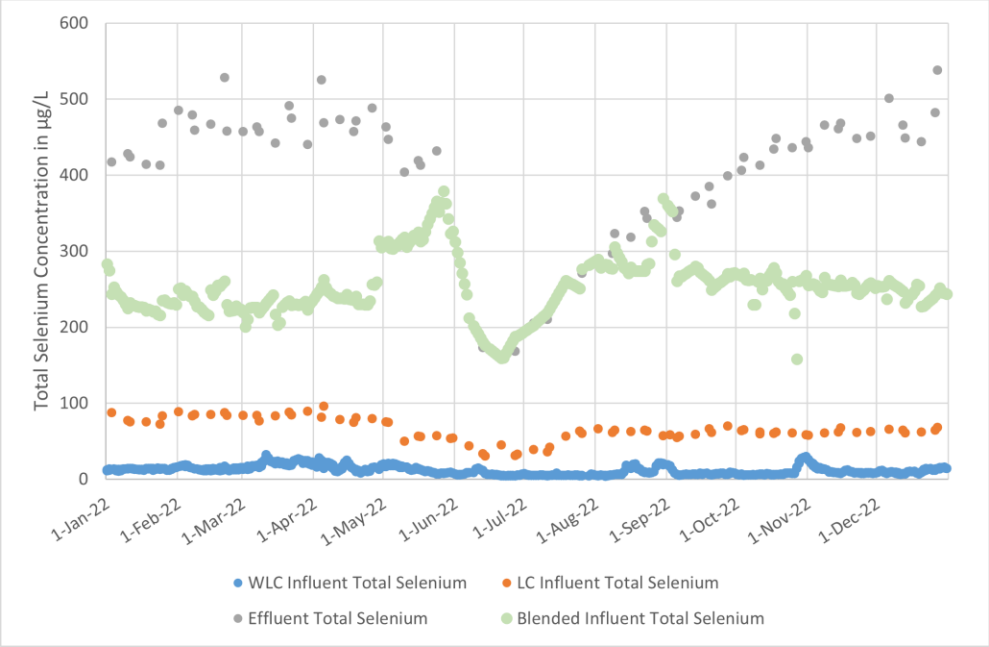


Figure 5. WLC AWTF Influent and Effluent Selenium Concentrations

The historical influent selenium concentrations for the facility are shown below in Figure 6. Since WLC AWTF began operating selenium concentrations in the WLC influent source have been trending down. If this trend continues it is expected that the lower influent selenium concentrations may result in lower selenium removal over time.

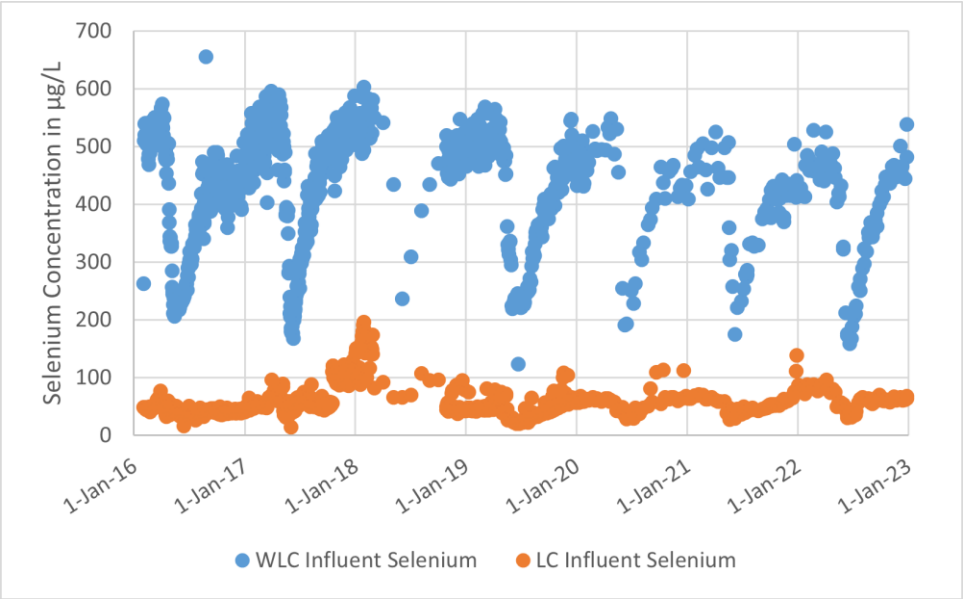


Figure 6. Seasonal WLC AWTF Influent Selenium Concentrations

Influent Sources and Flow Rates

The WLC AWTF treated WLC and LC in 2022. The WLC AWTF prioritizes WLC as the influent source for treatment because the selenium and nitrate concentrations are typically higher in WLC than in LC. During times of the year when WLC flows are lower than the design throughput of the facility, LC will be treated at rates that the target design throughput allows. The WLC AWTF achieved a record high annual average daily throughput of 6762 m3/day and a record high monthly average daily throughput in December 2022 achieving a monthly average of 7557 m^3/day.

The average daily WLC influent flow rate, average daily LC influent flow rate, average WLC AWTF total daily throughput and total volume of treated water during 2022 are summarized below in Table 3 and displayed in Figure 7 below.

Table 3. WLC AWTF 2022 Influent Sources and Flow Rates

Influent Source	Average Daily Throughput	Total Volume Treated
West Line Creek	3972 m^3/day	1,449,757 m^3
Line Creek	2790 m^3/day	1,018,229 m^3
Total Combined Influent	6762 m^3/day	2,467,986 m^3

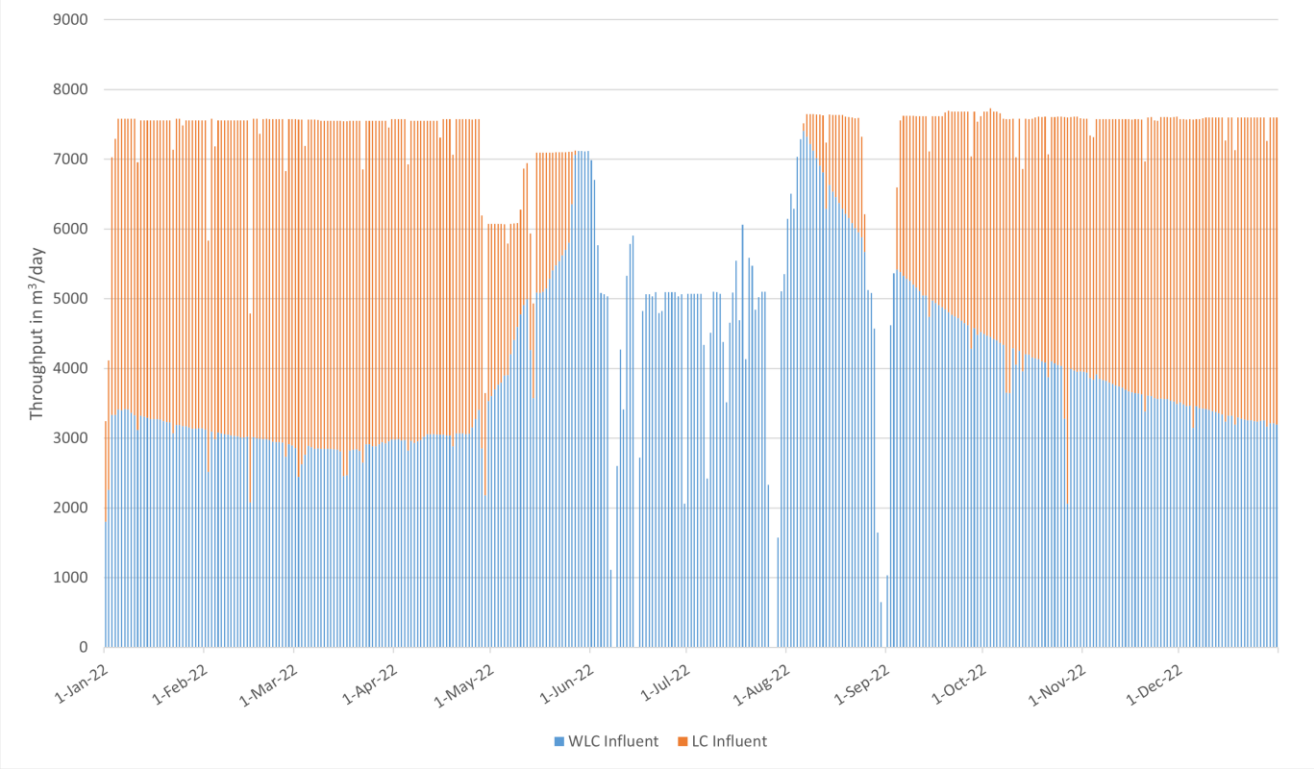


Figure 7. WLC AWTF 2022 Throughput

The design throughput of the facility is 7500 m^3/day. During 2022 the facility operated with an average throughput of 6762 m^3/day. Facility throughput was limited from late April to mid July due to mechanical issues with the gravity thickener that limited the amount of solids that were able to be handled. The majority of shutdown events were related to scheduled maintenance or minor shutdowns related to power, instrumentation faults and minor equipment failures. The three scheduled maintenance shutdowns are detailed below.

Facility throughput has previously been affected by the requirement to maintain minimum flows in the WLC AWTF fish bypass under Water License C133280. During low flows in previous years the facility throughput was reduced in order to maintain the required flows in the fish bypass, flows remained high enough throughout 2022 to maintain design throughput of the AWTF and the required minimum flows in the WLC AWTF fish bypass.

June 7 – June 9, July 26 – July 29, and August 30 – September 1 2022 – WLC AWTF Scheduled Annual Maintenance

The WLC AWTF scheduled three extended shutdowns (longer than 24 hours) for annual maintenance on June 7, 2022, July 26, and August 30 2022. The shutdowns were scheduled at these times to minimize impacts to the receiving environment due to higher flows and lower instream concentrations. Boiler maintenance and BSC tank inspections were completed during the June 7, 2022 shutdown and Teck completed annual ozone generator maintenance events during the July 26, 2022 shutdown. An additional shutdown was needed on August 30, 2022 to make repairs to the ozone generator.

Quantities of Reagents Used and Residuals Generated

The table below summarizes the quantity of reagents used in 2022.

Table 4. WLC AWTF 2022 Reagent Use

Reagent	Total Volume or Mass
Methanol	218,733 L
Acetic Acid	117,266 L
Ferric Chloride	404,765 L
Drewfloc 2205	5,345 L
Clearfloc CE5050	539 L
Ammonium Chloride	3,397 L
Phosphoric Acid	7,708 L
Micronutrient	168 L
Hydrogen Peroxide	42,795 L
Sodium Sulphite	369,903 L
Liquid Oxygen	342,362 nm^3
Liquid Nitrogen	3,945 nm^3
Antiscalant	9,763 L
Sodium Nitrate	98,480 kg
Micro Sand	32,660 kg
Diatomaceous earth	22,125 kg
Citric Acid	102 kg

On November 26, 2021, shipping of residuals for offsite disposal commenced and the landfill ceased receiving waste from the WLC AWTF. This change was made to improve the sustainability of Teck's tank-based treatment facilities, as well as to reduce risk around the long term management and closure of the landfill.

The volumes outlined below are the calculated loose material deposited in the landfill in 2022 where indicated. The only material deposited in the landfill in 2022 was 200 m^3 of plant material from the gravity thickener as the gravity thickener needed to be cleaned out for maintenance purposes. A survey of the landfill, conducted July 6, 2022 indicates the compacted volume of material since the 2021 survey (December 9, 2021) is 142 m^3.

Table 5. WLC AWTF 2022 Residual Volumes

Month	Waste Volume (m^3)	Waste Composition
Jan-22	0	
Feb-22	0	
Mar-22	0	
Apr-22	0	
May-22	0	

Month	Waste Volume (m^3)	Waste Composition
Jun-22	0	
Jul-22	200	Gravity Thickener Material
Aug-22	0	
Sep-22	0	
Oct-22	0	
Nov-22	0	
Dec-22	0	-
Total	**200**	-

Continuous Improvement Initiatives

FBR pH Optimization

A hydrochloric acid dosing system was operated at WLC AWTF to evaluate pH adjustment for influent water entering FBR-1. Process data collected during the dosing system operation will inform the effectiveness of pH adjustment on treatment as Teck has identified the importance of pH adjustment on bioreactor optimization. Initial data collected showed potential minor improvements in FBR performance. Additional work may be performed to better understand how or if pH adjustment can be used to optimize bioreactor performance.

High Nitrate Test

In early 2022 Teck continued the “high nitrate test” which was started in late 2021. This test involved supplementing FBR1 with additional sodium nitrate to evaluate the bioreactor’s nitrate removal capacity. The intention of this testing is to prepare the WLC AWTF for receiving influent water from the Mine Service Area West (MSAW) backfilled pit which has higher nitrate concentrations than source water from West Line Creek or Line Creek. Given that the WLC AWTF is operating at or close to design throughput, identifying high concentration influent sources is an avenue towards improving load removal (and thus lower downstream concentrations in the receiving environment). The total nitrate load achieved for the test was 225 kg/day, composed of approximately 140 kg of nitrate from the creeks, and 85 kg of supplemental nitrate. Results from the test support the assumption that the WLC AWTF is capable of removing additional nitrate load beyond what is currently available in the influent streams.

Reportable Spills and Incidents

This section summarizes process upsets, spills, issues with and bypasses of the Authorized Works, including recirculation events. Recirculation and downtime events included are greater than 24 hours in duration, consistent with the Bypass Clauses 4C3.5 and 4D2.3 for the EVO SRF and FRO-S AWTF respectively in the March 11, 2021 Permit 107517 authorization.

Reportable Spills

There were no reportable spills at the WLC AWTF in 2022.

Incidents Resulting in Bypasses of Authorized Works for Greater Than 24 Hours

Recirculation and downtime events greater than 24 hours in duration are described in the Influent Sources and Flow Rates section of this report.

Discharges to the Turnbull South Pit Tailings Storage Facility

There were no discharges of any WLC AWTF effluent to the Turnbull South Pit Tailings Storage Facility in 2022.

Non-compliances

There was one non-compliance at the WLC AWTF in 2022 at the WLC AWTF compliance point WLC_BFWB_OUT_SP21 (E291569).

Permit 107517 Non-compliance – Total Selenium Monthly Average Permit Limit Exceedance at WLC_BFWB_OUT_SP21 (E291569)

Appendix 4B of Permit 107517 (December 1, 2021) states that characteristic of the effluent at the WLC Buffer Pond Outfall must not exceed the monthly average limit on 20 µg/L for total selenium. The routine water samples collected through the month of March exceeded the monthly average permit limit of 20 µg/L with a calculated average of 21 µg/L for total selenium.

Teck's investigation through the month of March indicated two process upsets at the facility which resulted in biological changes in the fluidized bed reactor (FBR) which is responsible for selenium removal within the facility. The first upset occurred when the air operated diaphragm (AOD) pump, which is used to manage the amount of biology in FBR1, was replaced on March 6th. Teck believes that changes to the AOD pump disrupted the biology in FBR1, resulting in insufficient reduction in total selenium. Teck implemented operational changes to recover the biological population in FBR1 which were successful in reducing effluent selenium concentrations by the end of March.

Teck continued to watch incoming selenium data and adjusted methanol dosing and AOD cleaning times accordingly. Selenium results continued to trend down and the monthly average for April was below the permit limit. Teck has applied to remove the WLC AWTF effluent limits for selenium and nitrate to prevent Teck from having to reduce facility load removal to meet effluent compliance limits and potentially creating a non-compliance at the downstream LCO compliance point (LC_LCDSSLCC). Maximizing load removal in the facility will achieve the lowest concentrations in the downstream receiving environment (whereas reducing throughput to achieve an effluent limit may not).

Map

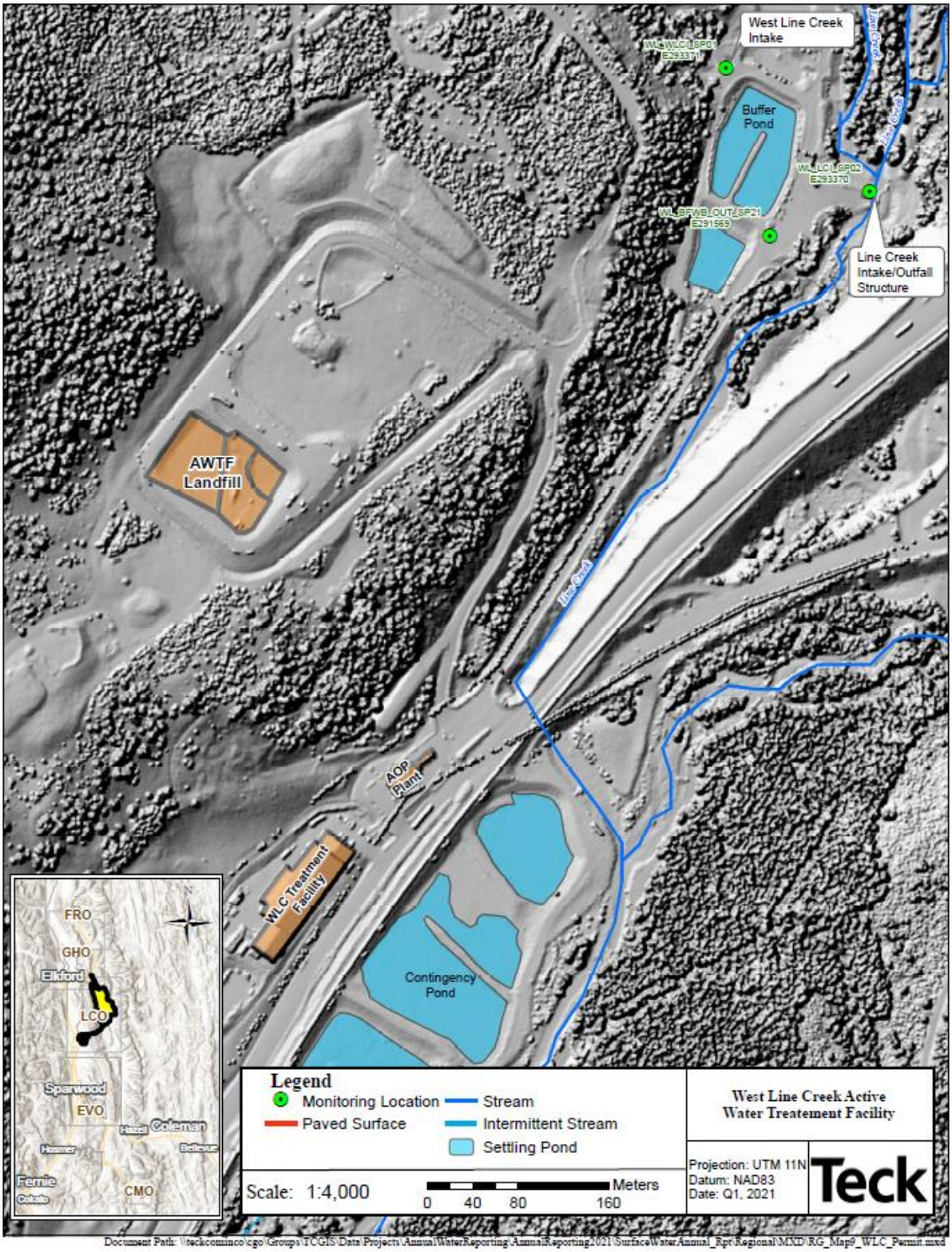


Figure 8. Map of the WLC AWTF and Associated Influent, Effluent and Receiving Environment Locations

Operational and Receiving Environment Monitoring Data

This section provides a summary and evaluation of key operational and receiving environment monitoring data associated with the WLC AWTF. Data related to the WLC AWTF effluent (E291569) permit limits and selenium and nitrate data for the downstream compliance point LC_LCDSSLCC (E297110) are included below.

Operational Data

Appendix 4B, Section 4B1.2 of Permit 107517 requires the WLC AWTF effluent (E291569) to meet the following discharge limits:

Table 6. WLC AWTF Effluent (E291569) 107517 Permit Limits

Parameter	Units	Criteria	Limit
Ammonia	mg/L	Maximum	1.0
Biological Oxygen Demand	mg/L	Maximum	25
pH Range	-	Range	6.5 - 8.5
Nitrate	mg/L	Maximum	3.0
T - Phosphorus	mg/L	Maximum	0.3
T - Selenium	µg/L	Monthly Average	20
Total Suspended Solids	mg/L	Maximum	10.0
Antiscalant [1]	mg/L	2 minute weighted	25

1. The antiscalant 2-minute time-weighted limit was increased from 10 mg/L to 25 mg/L based on the November 19, 2021 Permit 107517 amendment .

There was one Permit Limit exceedance in 2022 where the monthly average limit for total selenium of 20 µg/L was exceeded in the WLC effluent (E291569) with a result of 21 µg/L. The following graphs display the WLC AWTF effluent (E291569) compared to the limits from Appendix 4B, Section 4B1.2 of Permit 107517 for 2022. Monthly averages are calculated by averaging daily averages. All monitoring data required in Table 4B3 of Permit 107517 for 2022 can be found in Appendix C of this report.

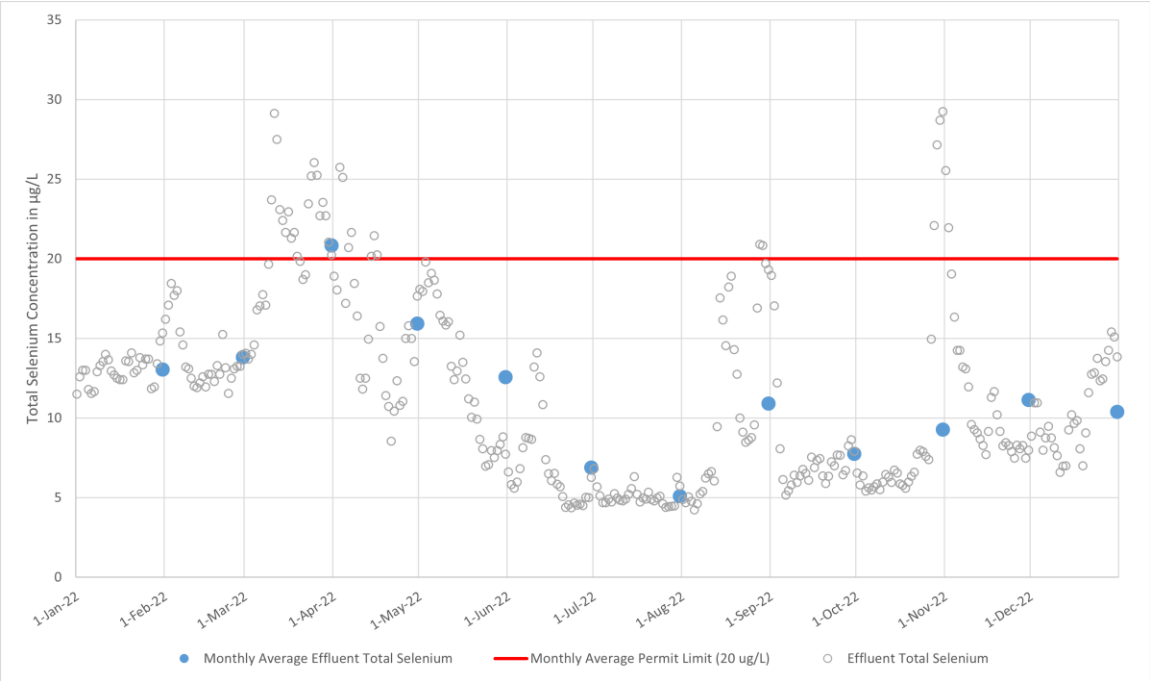


Figure 9. WLC AWTF Effluent (E291569) Total Selenium Compared to the 107517 Monthly Average Permit Limit

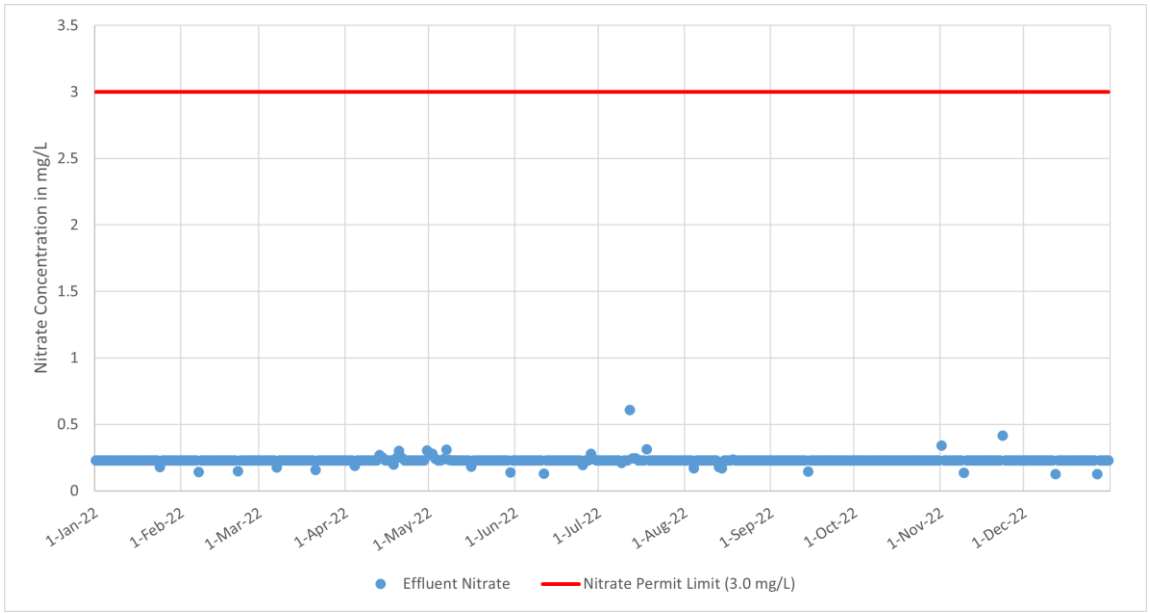


Figure 10. WLC AWTF Effluent Total (E291569) Nitrate Compared to the 107517 Permit Limit

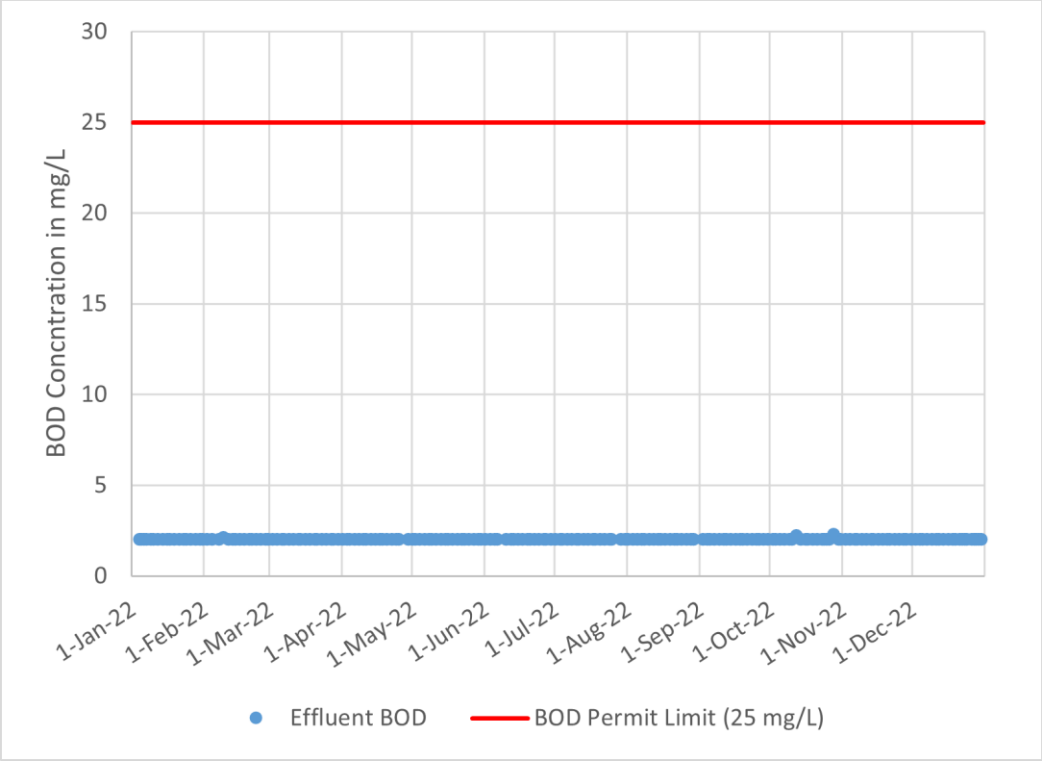


Figure 11. WLC AWTF Effluent (E291569) BOD Compared to the 107517 Permit Limit

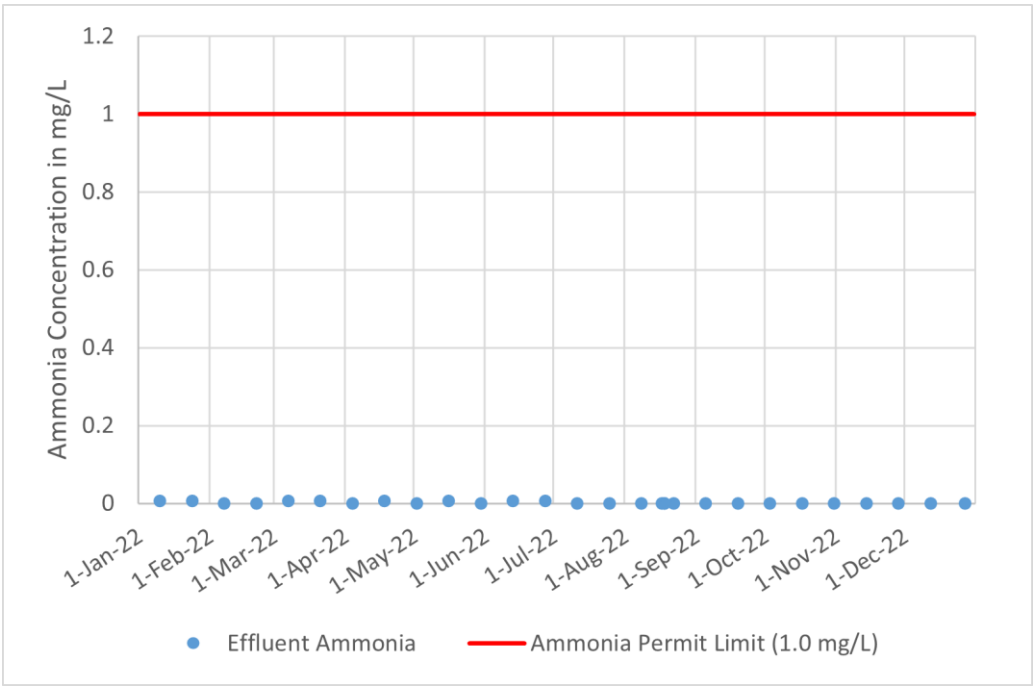


Figure 12. WLC AWTF Effluent (E291569) Ammonia Compared to the 107517 Permit Limit

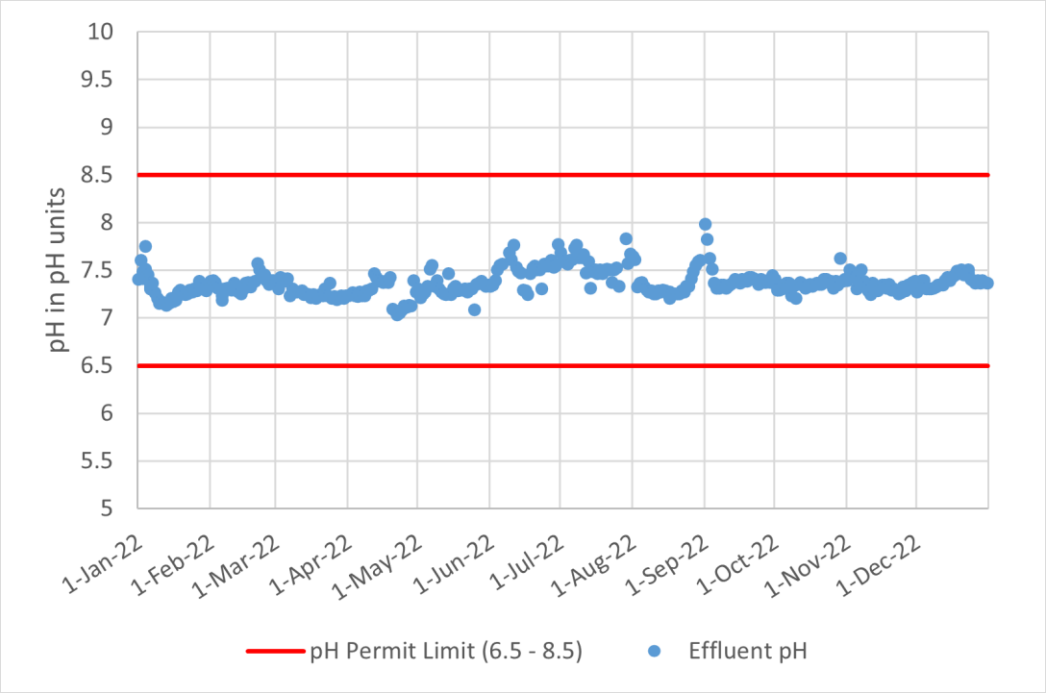


Figure 13. WLC AWTF Effluent (E291569) pH Compared to the 107517 Permit Limit

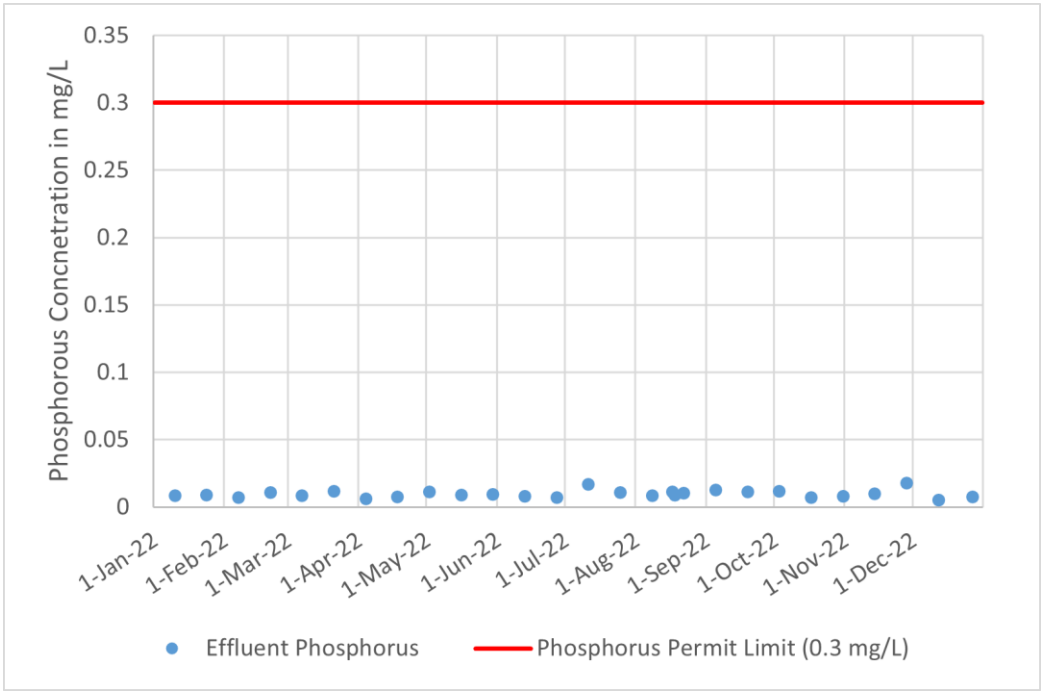


Figure 14. WLC AWTF Effluent (E291569) Phosphorous Compared to the 107517 Permit Limit

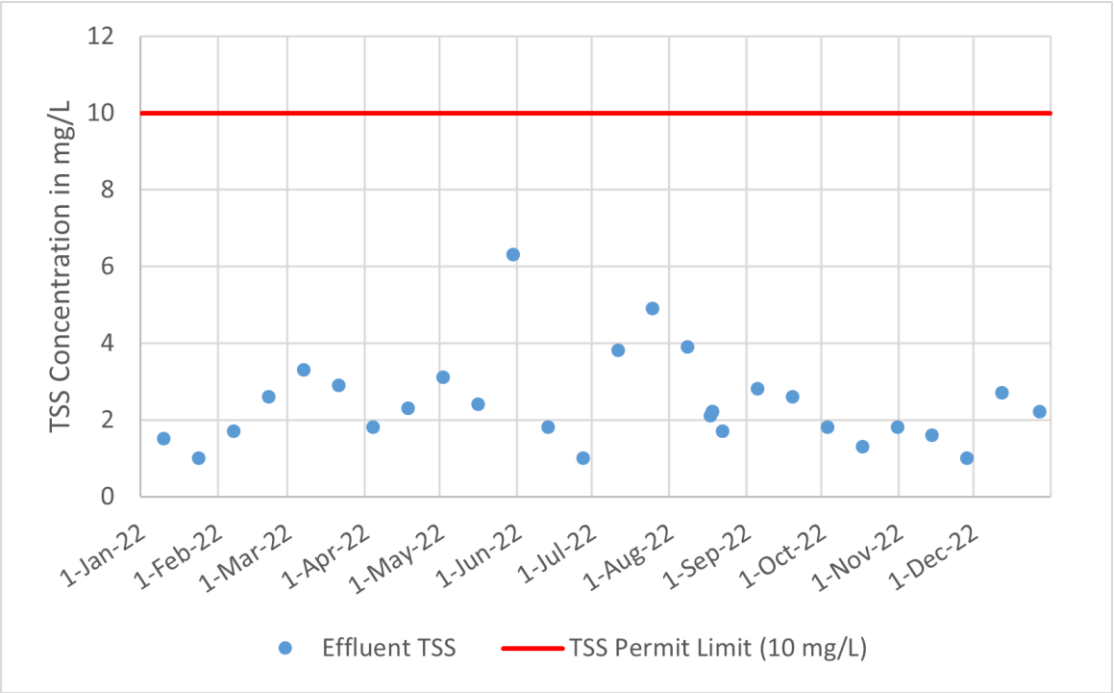


Figure 15. WLC AWTF Effluent (E291569) TSS Compared to the 107517 Permit Limit

The AOP continued to effectively oxidize the more bioavailable selenium species to selenate. The average concentration of non-selenate in the WLC AWTF effluent (E291569) was 1.1 µg/L in 2022. An evaluation of the concentrations of selenium in the aquatic biota (periphyton, invertebrates, and fish) downstream of the treatment facility can be found in the 2022 LCO LAEMP Report.

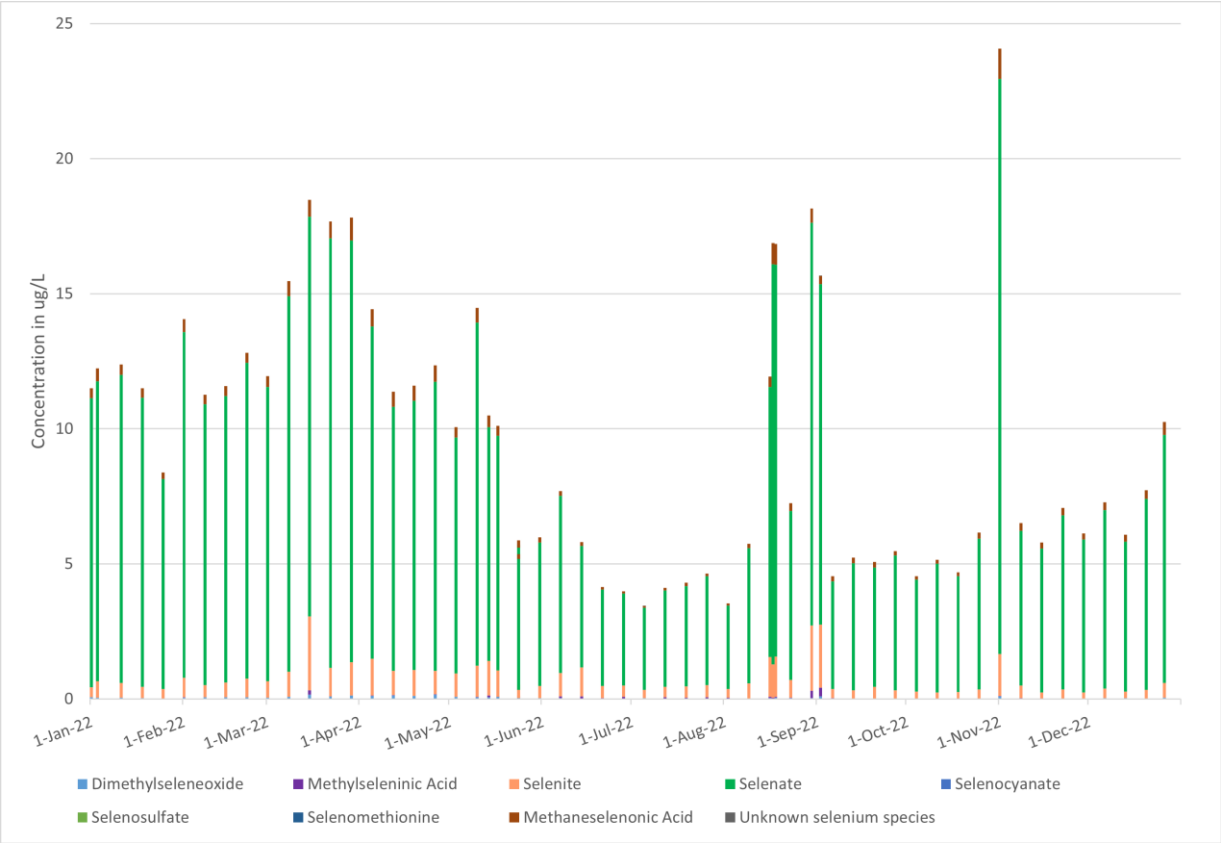


Figure 16. WLC AWTF Effluent (E291569) Selenium Speciation

Receiving Environment Data

The Line Creek compliance point (LC_LCDSSLCC; E297110), downstream of the treatment facility, is required to meet the monthly average and daily maximum limits for nitrate and selenium.

Table 7. Line Creek Compliance Point LCDSSLCC (E297110) 107517 Nitrate and Selenium Permit Limits

Parameter	Units	Criteria	Limit
Total Selenium	µg/L	Daily Maximum	58
Total Selenium	µg/L	Monthly Average	50
Nitrate	mg/L	Daily Maximum	9.0
Nitrate	mg/L	Monthly Average	7.0

There were several non-compliances for nitrate at LCDSSLCC and three non-compliances for selenium in 2022. The WLC AWTF (with the advanced oxidation process) has been operating since the end of 2018, and while the facility is successful in removing nitrate and operated at design throughput during months with higher influent concentrations in 2022, the influent nitrate concentrations are not high enough for the facility to remove enough nitrate load to maintain compliance with the nitrate compliance limit at LC_LCDSSLCC during all periods of the year.

The following graphs display LCDSSLCC (E297110) compared to the nitrate and selenium limits for 2022.

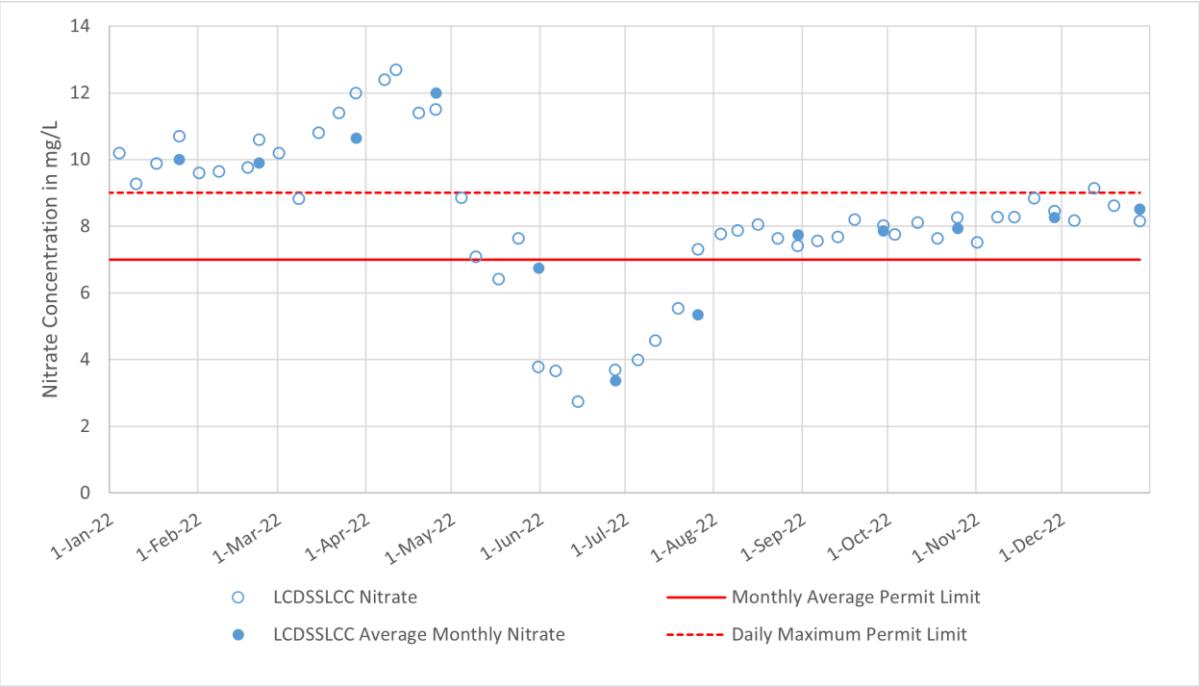


Figure 17. LCDSSLCC (E297110) Nitrate Compared to 107517 Permit Limits

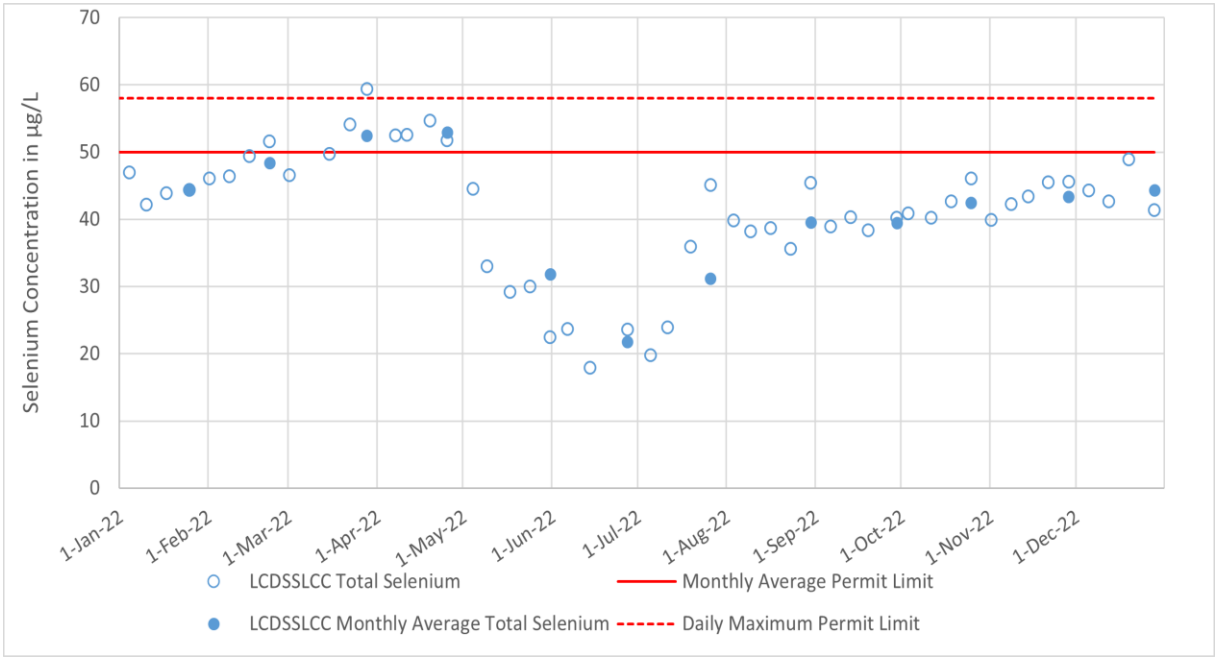


Figure 18. LCDSSLCC (E297110) Total Selenium Compared to 107517 Permit Limits

As part of the nitrate and selenium treatment, the WLC AWTF adds ferric chloride to the process. The ferric chloride acts as a coagulant in the solid liquid separation phase of the treatment. Ferric chloride addition increases chloride concentrations downstream of the facility. The graph below shows the chloride concentrations at LCDSSLCC compared to the BCWQG Approved Maximum (600 mg/L) and the BCWQG Approved Average (150 mg/L). As shown below, the chloride concentrations remain below the Approved Maximum and Average BCWQG.

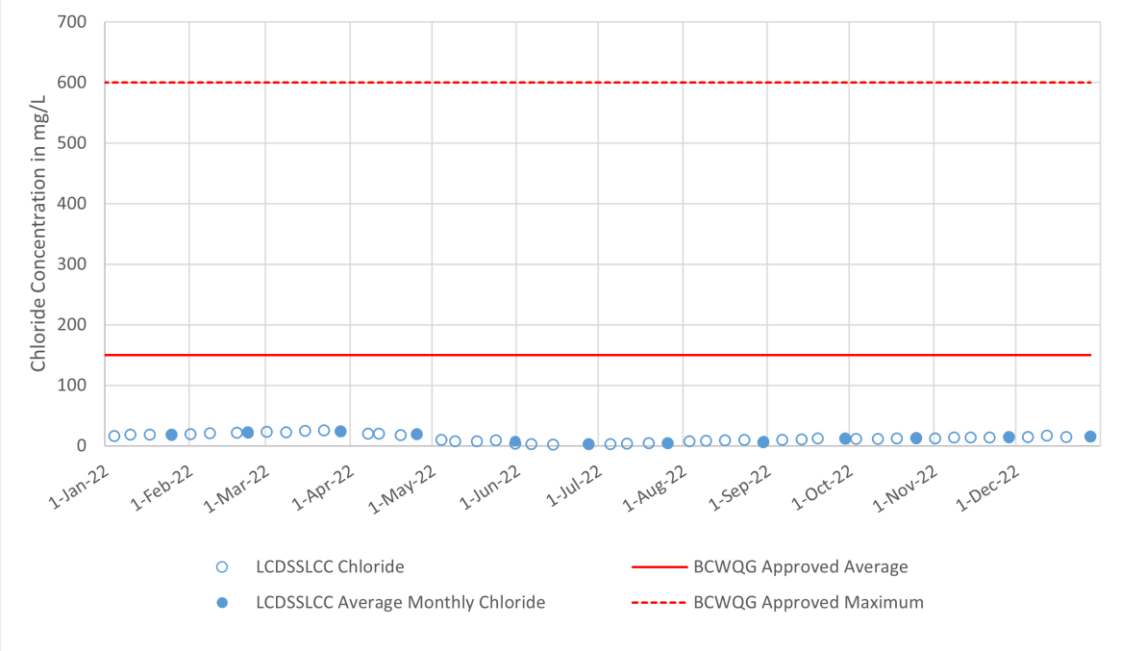


Figure 19. LCDSSLCC (E297110) Chloride Compared to Approved Maximum and Average BCWQG

Site Performance Objectives

The following site performance objective (SPO) for the WLC AWTF for total phosphorus, defined in Section 4B2 of Permit 107517, is established for the Line Creek immediately downstream of the confluence with South Line Creek location. The site reference number where the SPO applies is E297110 (LC_LCDSSLCC).

Parameter	Objective	Method/Notes
Total Phosphorus	≤ 20 µg/L	Growing season average calculated from measurements collected every two weeks between June 15 and September 30 annually.

A growing season average for all total phosphorus samples collected was calculated for samples taken at a minimum every two weeks from June 15 to September 30, 2022. A total of 15 samples were used to calculate the average total phosphorus value of 3.0 µg/L (relative to the SPO of 20 µg/L). The total phosphorus sample results are summarized below.

Table 8. Line Creek Compliance Point LCDSSLCC (E297110) Total Phosphorus Concentrations between June 15 and September 30, 2022

EMS ID	Location Code	Date	Total Phosphorus µg/L
E297110	LC_LCDSSLCC	6/14/2022	5.4
E297110	LC_LCDSSLCC	6/22/2022	2.1
E297110	LC_LCDSSLCC	6/27/2022	5.7
E297110	LC_LCDSSLCC	7/5/20202	3.3
E297110	LC_LCDSSLCC	7/11/2022	2.8
E297110	LC_LCDSSLCC	7/19/2022	4.3
E297110	LC_LCDSSLCC	8/3/2022	< 2.0
E297110	LC_LCDSSLCC	8/9/2022	2.8
E297110	LC_LCDSSLCC	8/16/2022	3.1
E297110	LC_LCDSSLCC	8/23/2022	2.2
E297110	LC_LCDSSLCC	8/30/2022	3.4

EMS ID	Location Code	Date	Total Phosphorus µg/L
E297110	LC_LCDSSLCC	9/6/2022	< 2.0
E297110	LC_LCDSSLCC	9/13/2022	< 2.0
E297110	LC_LCDSSLCC	9/19/2022	< 2.0
E297110	LC_LCDSSLCC	9/29/2022	< 2.0
2022 Annual Growing Season Average			3.0

Note – as per ENV Technical Guidance 4: Annual Reporting Under the Environmental Management Act, 0.5 of the method detection limit was used for non-detect values in the calculation of the annual growing season average.

The total phosphorous SPO for the WLC AWTF was not exceeded in 2022.

Acute Toxicity

As per Section 6.2 of Permit 107517, effluent is not acutely toxic if it does not cause greater than 50% mortality in 48-hour *Daphnia magna* and 96-hour Rainbow Trout 100% (single concentration) acute lethality toxicity tests.

Acute toxicity tests were conducted as required by Section 8.1 and 4B3 of Permit 107517. The acute toxicity tests conducted on the WLC AWTF effluent (E291569) in 2022 were:

- 26 96-hour Rainbow Trout 100% (single concentration) acute lethality toxicity tests.
- 26 48-hour *Daphnia magna* 100% (single concentration) acute lethality toxicity tests.

There were no acute toxicity failures in WLC AWTF effluent (E291569) in 2022. The results of acute toxicity testing are available in Appendix D. A summary of the acute toxicity testing is provided below.

Daphnia magna Test Results

In 2022, 26 *Daphnia magna* 100% (single concentration) acute lethality toxicity tests were conducted on samples collected from WLC AWTF effluent. Three test results exhibited 3% mortality.

Rainbow Trout Test Results

In 2022, 26 Rainbow Trout 100% (single concentration) acute lethality toxicity tests were conducted on samples collected from WLC AWTF effluent. One test result exhibited 10% mortality.

QA/QC Summary

Teck has established a quality assurance/quality control (QA/QC) program to promote the collection of high quality environmental data. Teck has developed protocols and procedures to collect representative samples and to minimize the potential for deterioration and contamination of samples before laboratory analysis.

Despite the considerable level of effort and management system tools employed to achieve high-quality data, there were instances in 2022 where data quality issues occurred.

The results of the QA/QC program are summarized below. A detailed explanation and tabulated results of the QA/QC program are included in Appendix E of this report.

QA/QC Results

Data quality issues encountered in 2022 were related to relative percent difference (RPD) failures, blank detect results, and hold-time exceedances. Teck continues to monitor QA/QC results to identify any potential issues with laboratory precision or sample contamination. Due to the relative infrequency of blank sample detections and RPD failures, Teck's dataset is considered to be of high quality and meets the intent of the monitoring program.

RPD Results

The precision of laboratory results was evaluated using field duplicate samples. RPD calculations as described in Appendix E were performed on the 96 field duplicate samples collected in 2022. Of the 1,336 parameters evaluated for RPD, 65 (or 5%) were categorized as Pass-1, 6 (or 0.4%) were categorized as Pass-2, and 9 (or 0.7%) did not meet the criteria.

Blank Detect Results

In 2022, 107 blank samples were collected to determine if contamination was occurring during bottle storage, sample collection, sample handling, and sample analysis. Of the 1,600 parameters analyzed in these samples, 30 were above detection limits (1.9%).

Hold Time Exceedances

Parameter hold-times were exceeded on 8 of 15,013 analyses completed in 2022 (0.05%).

The hold-time exceedances in 2022 were for selenium, nitrate, turbidity, and biochemical oxygen demand.

Teck continues to address the causes of hold-time exceedances by working with the laboratories to improve the timely reporting of issues such as equipment malfunctions, sample volumes, shipping delays, and laboratory resources. Timely reporting of these issues to Teck often provides field samplers enough time to resample to meet permit requirements.

Equipment Calibration

Equipment calibrations for the WLC AWTF are summarized below.

Table 9. WLC AWTF Equipment Calibration

Equipment	Model	Calibration Frequency	Last Calibrated
Field Meter #1	YSI Handheld Multiparameter Instrument #1 (Pro Plus – Barometer, Temperature, pH, DO, Spec. Cond., ORP)	Monthly calibration; daily verification	1-Dec-2022
Field Meter #2	YSI Handheld Multiparameter Instrument #2 (Pro Quatro – Barometer, Temperature, pH, DO, Spec. Cond., ORP)	Monthly calibration; daily verification. Only used if Field Meter #1 is out of service	1-Dec-2022
Field Meter #3	Hach TU5200 #1 (Turbidity)	Daily verification; annual calibration by manufacturer	4-Oct-2022
Field Meter #4	Hach TU5200 #2 (Turbidity)	Daily verification; annual calibration by manufacturer. Meter was not used for any compliance samples.	25-Nov-2021

Elkview Operations Saturated Rockfill Phase 2

Executive Summary

In 2022 the EVO SRF P2 achieved improved performance results when compared to 2021 selenium and nitrate load removal volumes and throughput. The EVO SRF P2 removed a total of 672 kg of selenium in 2022, averaging 1.84 kg removed per day (as compared to 548 kg of selenium removed in 2021, averaging 1.71 kg removed per day). The EVO SRF P2 removed a total of 89,292 kg of nitrate in 2022, averaging 245 kg removed per day (compared to 55,574 kg of nitrate removed in 2021, averaging 174 kg removed per day). The average throughput of the EVO SRF P2 was 11,419 m^3/day (as compared to 12,604 m^3/day in 2021) and treated a total volume of 4,167,993 m^3 (as compared to 4,033,353 m^3 in 2021). This decrease in daily throughput can be attributed to extended downtime of Erickson Creek Treatment to conduct maintenance work on the Erickson Creek pipeline and investigate benthic invertebrate results in Erickson Creek. As part of EVO Local Aquatic Effects Monitoring Program (LAEMP), routine monitoring efforts conducted in September 2021 showed selenium concentrations in benthic invertebrate tissue (BIT) to have increased above the level 1 benchmark for growth, reproduction, and survival of benthic invertebrates at RG_ERCKDT (Erickson Creek immediately (~60m) downstream of the EVO SRF outfall). After receiving the results, Teck conducted confirmatory sampling in Erickson and Michel Creek in December 2021 and March 2022. The elevated BIT selenium results from September 2021 to March 2022 were not expected, which as per Teck's Adaptive Management Plan, triggered a response framework that included increased monitoring, engagement with Qualified Professionals, and identification of potential contributing factors. Treatment of Erickson Creek water through the EVO SRF was also suspended on April 9, 2022, as part of Teck's response. Since that time, Teck has been working with the Qualified Professions to investigate the cause of elevated selenium concentrations in BIT and explore mitigation alternatives. Based on the data and assessment thus far, a suspected cause and possible mitigations have been identified. Further study, specifically restarting treatment of Erickson Creek with discharge of treated effluent back to Erickson Creek, was needed to confirm the mechanism of enhanced selenium bioaccumulation in BIT and effectiveness of potential mitigations. Teck submitted a trigger response plan to support the restart of Erickson Creek treatment and completed the restart on October 4, 2022 with ongoing operation under the trigger response plan since then with ongoing engagement with regulators and KNC. Results of the casual investigation and mitigations are not provided within this report and will be communicated as part of the ongoing engagement with regulators and KNC.

Teck continues efforts to improve the performance of the EVO SRF P2. In 2022, Teck improved on total facility throughout and Natal availability by minimizing and optimizing scheduled downtime events related to regular maintenance. The EVO SRF P2 achieved a new high for average Natal availability in 2022 of approximately 98%, and achieved a record high monthly combined influent availability in December 2022 of approximately 99.1%. The EVO SRF P2 also achieved a record high annual average throughput of 4,167,993 m^3/day and a monthly average daily throughput in January 2022 achieving a monthly average of 16,529 m^3/day. The EVO SRF P2 also achieved record high daily load removal for nitrate removing 359 kg of nitrate on November 16, 2022. Teck is also progressing the Sulphide Treatment Tank Pilot and Containerized Nickle Treatment Pilot at the EVO SRF P2 to test operating strategies to evaluate optimization, provide operating experience and identify any unintended consequences that may need to be mitigated.

The Annual Status Form is included in Appendix A of this report.

Facility Performance

This section summarizes the facility performance in 2022 and provides a comparison to the key performance metrics for the facility.

Teck developed and tracked key performance metrics for the EVO SRF P2 in compliance with Section 4C3.2 of Permit 107517. Teck submitted these key performance metrics on July 14, 2021 in the EVO SRF P2 Operations Manual. These include but are not limited to removal of nitrate and selenium load. The performance metrics currently tracked and presented in this report include:

- Nitrate and Selenium load removal;
- Facility throughput and availability;
- Selenium concentration at effluent outlet (F2_BPO, E321812);
- Nitrate concentration at effluent outlet (F2_BPO, E321812);and
- Nickel concentration at effluent outlet (F2_BPO, E321812).

These performance metrics align with the Elk Valley Water Quality Plan (EVWQP) goals and environmental management objectives. Any proposed changes to the metrics will be communicated to the director at least 15 days prior to being implemented.

Selenium and Nitrate Load Removal

This section provides a summary of the EVO SRF P2 selenium and nitrate load removal in 2022.

Selenium Removal

The EVO SRF P2 removed a total of 672 kg of selenium (averaging 1.84 kg removed a day while the facility was in forward flow) in 2022.

Table 10. EVO SRF Estimated Selenium Removal

	Selenium Load Removal
Daily Average	1.84 kg/day
Daily Maximum	3.11 kg/day
Total	672 kg

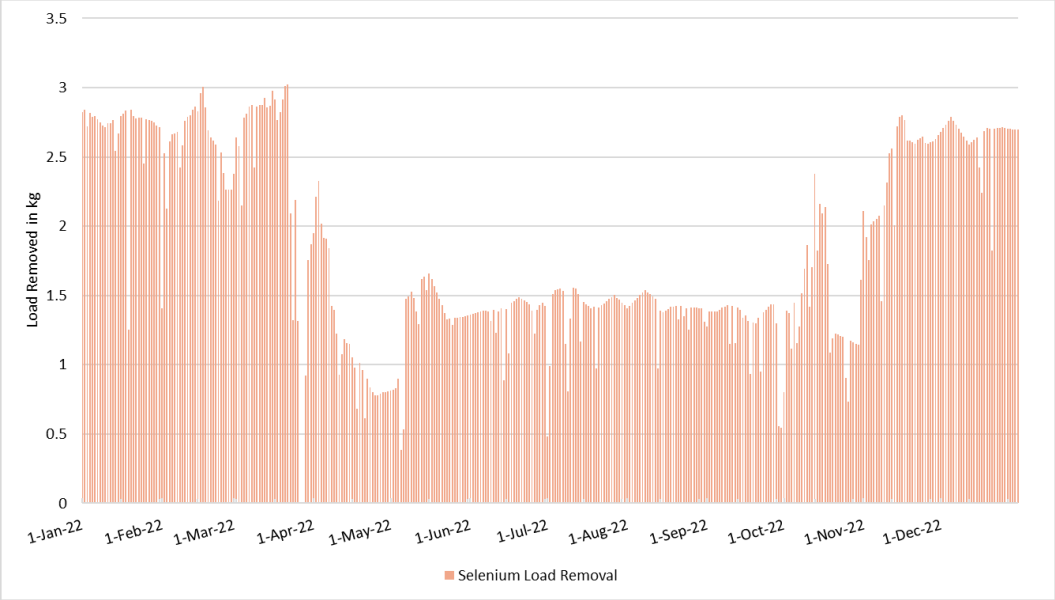


Figure 20. EVO SRF P2 2022 Selenium Load Removal

Nitrate Removal

The EVO SRF P2 removed a total of 89,292 kg of nitrate (averaging 245 kg removed a day while the facility was in forward flow) in 2022.

Table 11. EVO SRF P2 Estimated Nitrate Removal

	Nitrate Load Removal
Daily Average	245 kg/day
Daily Maximum	359 kg/day
Total	89,292 kg

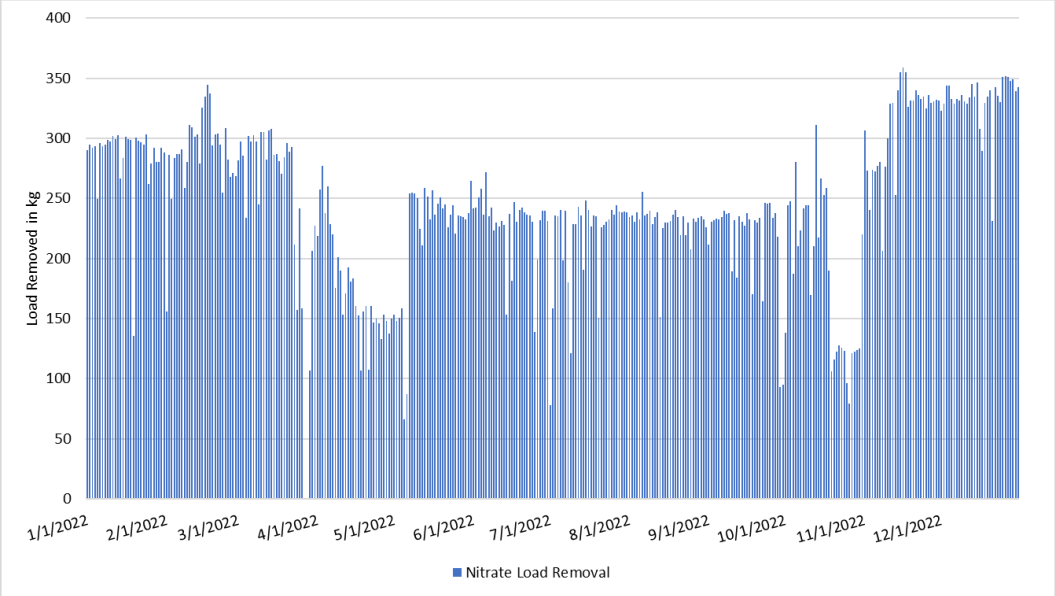


Figure 21. EVO SRF P2 2022 Nitrate Load Removal

Influent Sources and Flow Rates

This section provides a summary of the EVO SRF P2 influent sources and flow rates. The combination of the influent sources and the corresponding flow rates contribute to determine the facility throughput. The EVO SRF P2 remained in forward flow utilizing both influent sources in the first quarter of 2022. Teck treated influent from Erickson Creek until April 9, 2022 before suspending the treatment of Erickson Creek to investigate potential obstructions in the effluent pipeline limiting flow. As communicated on May 17, 2022, Teck extended the downtime on the Erickson pipeline to investigate benthic invertebrate (BIT) results in Erickson Creek. During this time the EVO SRF P2 continued to treat only Natal Pit influent until Erickson Creek was brought back online as an influent source on October 4, 2022. Natal Pit influent was not available for treatment between October 18, 2022 and October 30, 2022. During this time mechanical issues resulted in Natal Pit water only being available for dust suppression at the Elkview mine site. The SRF remained in forward flow for the majority of 2022 except for short shutdown periods for facility maintenance, and mine power outages. This resulted in the overall annual availability of the facility to be 95.4% for 2022.

Table 12. EVO SRF 2022 Influent Sources and Flow Rates

Influent Source	Average Daily Throughput	Total Volume Treated
Erickson Creek	5044 m^3/day	1,841,021 m^3
Natal	6375 m^3/day	2,323,972 m^3
Total Combined Influent	11,419 m^3/day	4,167,993 m^3

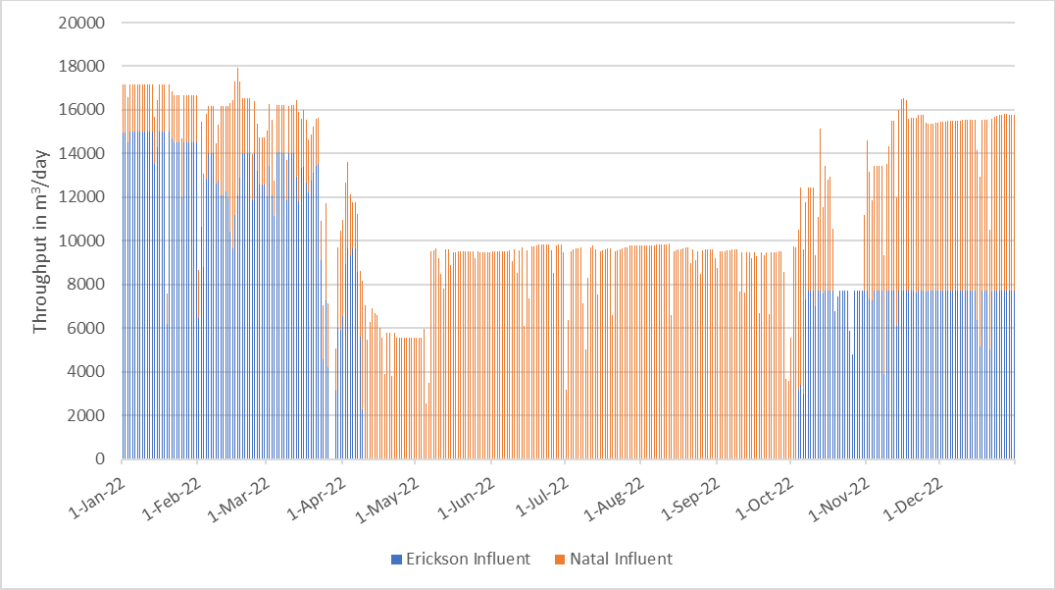


Figure 22. EVO SRF P2 2022 Influent Flowrates

During forward flow operation of the EVO SRF P2, water is sourced from Erickson Creek and Natal Pit and effluent that meets discharge requirements is discharged via outfalls to Erickson Creek and/or the Bodie Rock Drain which both eventually discharge to Michel Creek. The EVO SRF P2 is designed to approximately match influent and effluent flow rates in Erickson Creek. The graph above displays the Erickson Creek and Natal influent in 2022.

Selenium Concentration in Effluent

Effluent total selenium concentrations ranged from 0.77 µg/L to 9.42 µg/L through 2022. The average effluent concentration was 3.49 µg/L in 2022. This shows a decrease from 2021 effluent total selenium concentrations which ranged from 0.98 µg/L to 16.8 µg/L with an average effluent concentration was 8.16 µg/L.

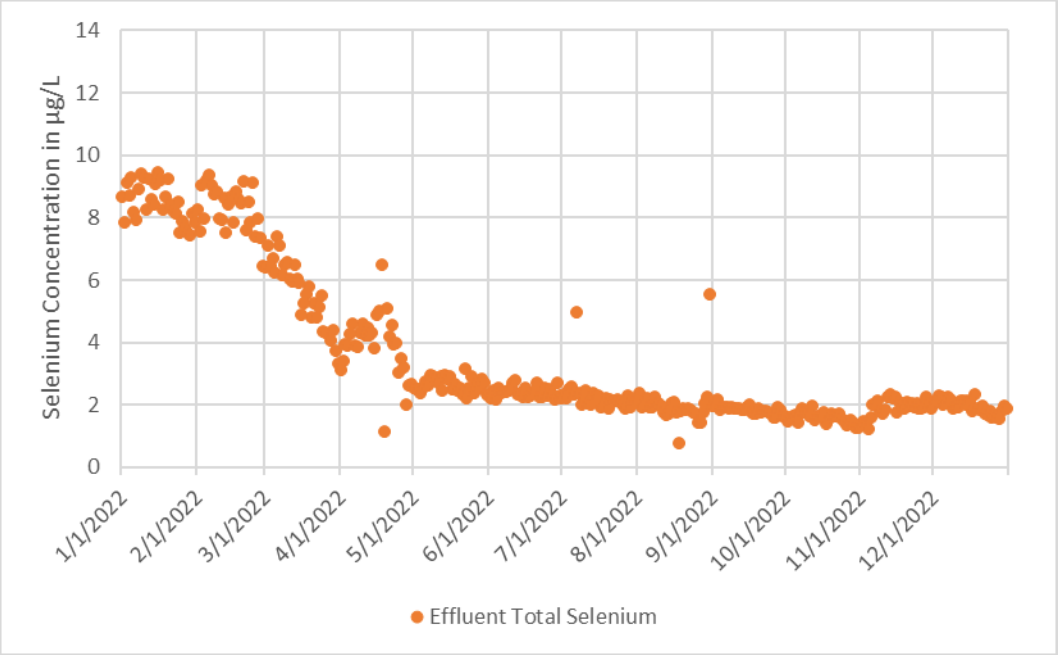


Figure 23. EVO SRF P2 2022 F2_BPO (E321812) Effluent Selenium Concentrations

Nitrate Concentration in Effluent

Effluent nitrate concentrations ranged from 0.065 mg/L to 1.96 mg/L through 2022. The average effluent concentration was 0.34 mg/L in 2022, showing a decrease when compared to the average effluent concentration of 0.72 mg/L in 2021.

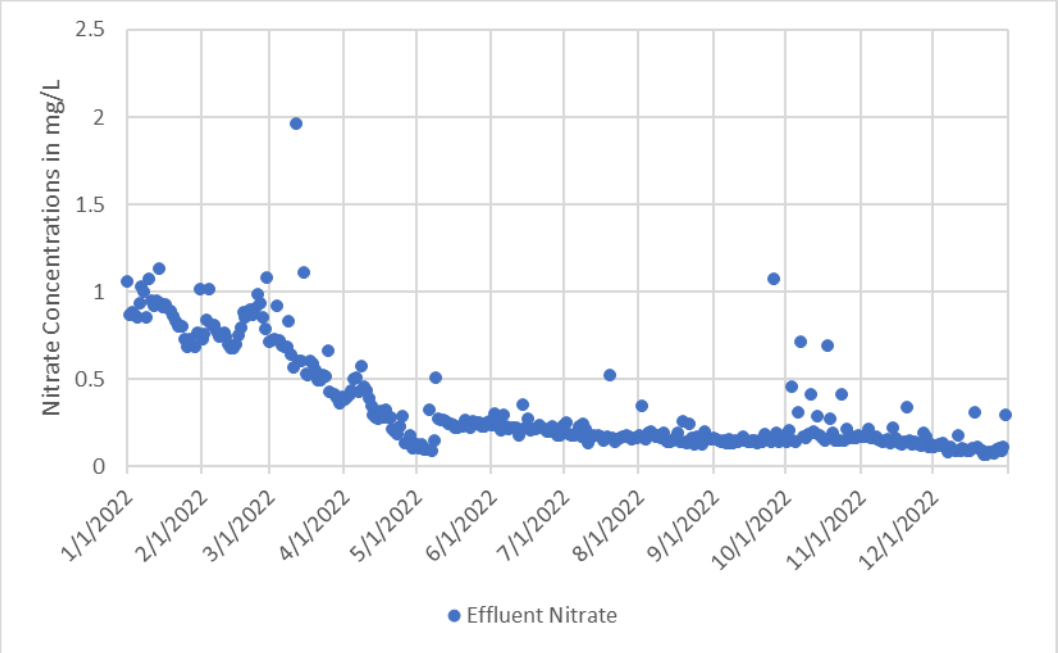


Figure 24. EVO SRF P2 2022 F2_BPO (E321812) Effluent Nitrate Concentrations

Nickel Concentration in Effluent

As of the end of 2022 effluent total nickel concentrations were 61.7 µg/L as a 13 week rolling average. This is above the initial trigger value of 36 µg/L as a 13 week rolling average set out at the start of operations on August 14, 2021 as outlined in Section 5.2.2.1 of the December 1, 2021 Amendment of permit 107517. The trigger only applies when the EVO SRF is discharging effluent into Erickson Creek and therefore is not shown from April 9, 2022 to October 4, 2022.

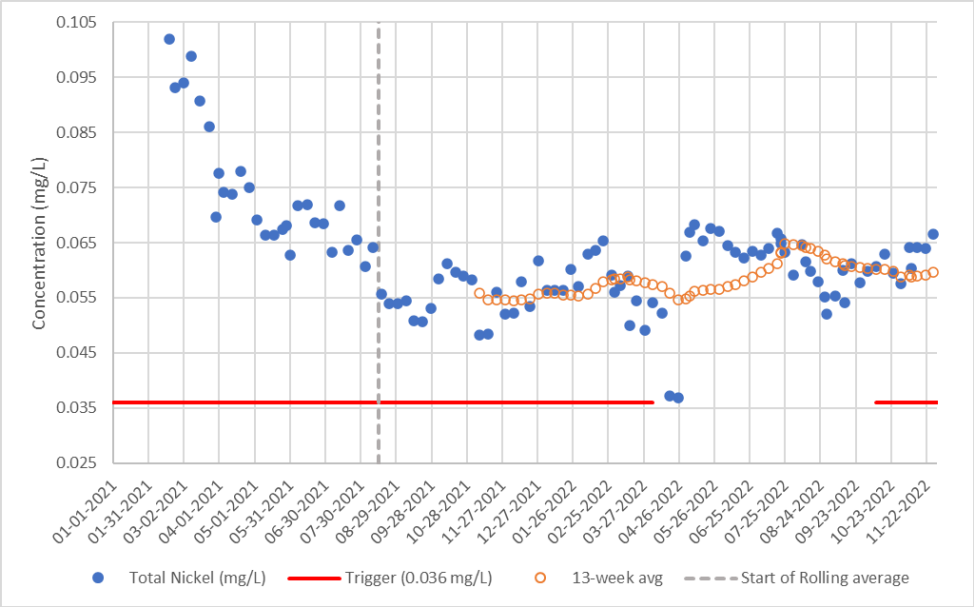


Figure 25. F2_BPO (E321812) Effluent Nickel concentrations since the start of commissioning

Teck submitted the EVO SRF P2 Nickel Trigger Response Plan - Qualified Professional Assessment on January 31, 2022 to meet the requirements outlined in EVO SRF P2 Nickel Trigger Response Plan as presented in Section 3.3 – Management Actions of the July 14, 2021 EVO SRF P2 Nickel Trigger Response Plan (submitted as per Section 5.2.2.1 of the December 1, 2021 amendment to Permit 107517). The inclusion of the proposed additional triggers from the EVO SRF QP Assessment will be completed as a future update to the EVO SRF TRP following the finalization of the consultation on the EVO SRF QP assessment. Following additional discussions on an April 14, 2022 meeting between ENV and KNC, Teck updated the EVO SRF TRP with the current management actions being implemented as communicated previously by Teck and incorporated ENV's additional feedback received April 20, 2022 via email. The updated EVO SRF TRP was submitted on June 2, 2022 with an administrative update being submitted on June 16, 2022 to match the June 2, 2022 Permit 107517, Section 5.2.2.1 letter amendment.

The objective of the assessment was to provide an evaluation of potential aquatic health effects in relation to SRF operational scenarios, both to assess the initial trigger value identified in Environmental Management Act Permit 107517 and to support recommendations for additional trigger values for nickel to inform management options for the EVO SRF P2. An evaluation was also provided of expected compliance with site performance objectives and compliance limits under each SRF operational scenario. Scenarios that maximize removal of nitrate and selenium also have the greatest potential to increase nickel concentrations in Erickson Creek. Conversely, scenarios that minimize nickel concentrations in Erickson Creek have a correspondingly decreased effectiveness at reducing concentrations and loadings of nitrate and selenium, which may lead to non-compliances at the downstream compliance point and Order Stations. Evaluating this balance requires simultaneous consideration of how nitrate, selenium, and nickel all may change under different operational scenarios. Teck is continuing to work with ENV and KNC on a path forward on the information presented in the QP assessment and nickel management at the EVO SRF P2.

Quantities of Reagents Used and Residuals Generated

The EVO SRF does not produce residuals that require disposal. The table below summarizes the quantity of reagents used in 2022 for the EVO SRF P2. No Sodium Chloride or Bromide were dosed at the facility in 2022.

Table 13. EVO SRF P2 2022 Reagent Quantities

Reagent	Total Volume or Mass
Methanol	419,153 L
Phosphoric Acid	1,669 L
Sodium Nitrate	15,434 kg
Antiscalant	19,031 L

Continuous Improvement Initiatives

Teck implemented an on-site Sulphide Treatment Tank Pilot project at the EVO SRF P2 facility in Q4 of 2022. The pilot continues to investigate the efficiency of tank-based agitation and aeration of water from an off-specification well to convert the sulphide from the dissolved phase to a gas phase. Teck is utilizing the Sulphide Treatment Tank Pilot to better understand reaction mechanisms and rates, and potential environmental and health and safety risks from the process. If the Sulphide Treatment Tank Pilot proves successful, further updates will be provided.

Reportable Spills and Incidents

This section summarizes process upsets, spills, issues with and bypasses of the Authorized Works, including recirculation events. Recirculation and downtime events included are greater than 24 hours in duration, consistent with Clause 4C3.5 for the EVO SRF P2 in the December 1, 2021 Permit 107517 amendment.

Reportable Spills

There was one reportable spill at the EVO SRF P2 in 2022.

Table 14. EVO SRF P2 2022 Reportable Spills

Date of Discovery	Date of Reporting	Substance	Watercourse Affected	DGIR#
September 4, 2022	September 20, 2022	Treated Effluent – Water	Erickson Creek EVO Bodie/Gate System	222409

September 4, 2022 – Sulphide Exceedance

On September 20, 2022 Teck received external laboratory results for a water sample collected on September 4, 2022 at F2_BPO (E321812) with a sulphide result of 0.0267 mg/L, exceeding the limit of 0.01 mg/L as outlined in Permit 107517 Appendix 4C Section 4C1.2. This event was reported to Emergency Management British Columbia (EMBC) on September 20, 2020, under DGIR# 222409. More information on this incident is presented in the non-compliances section of this report.

Incidents resulting in bypasses of Authorized Works

There were a total of 43 downtime events at the EVO SRF P2 in 2022, resulting in a total of 4492 hours in bypass of Authorized Works as defined in Permit 107517 Section 4C1.4. Three of these downtime events were greater than 24 hours in duration. Downtime for the Erickson Creek pipeline maintenance and benthic invertebrate investigation accounted for 4278 of the 4492 hours. Permit 107517 Section 4C3.5 requires Teck to complete enhanced monitoring at EV_EC1 (0200097) and EV_MC2 (E300091) when the duration of a bypass exceeds 24 hours. The table displaying all bypass of Authorized Works at the EVO SRF P2 in 2022 and any routine monitoring is presented in Appendix B.

March 26, 2022 – Unscheduled Downtime due to unexpected power interruption on the Elkview Operations transmission lines.

The EVO SRF was shut down on March 26, 2022, at approximately 3:45 PM due to an unexpected power interruption on the Elkview Operations transmission lines. Teck completed the enhanced monitoring at EV_EC1 (0200097) and EV_MC2 (E300091) as required under Section 4C3.5 while Elkview Operations continued to rectify the power interruption. Teck return the facility to forward flow once the power was restored at 3:30 PM on March 28, 2022.

Investigation and Corrective Actions:

No investigation or corrective actions were implemented in response to this event.

Future Preventative Actions

No future preventative actions were identified in response to this event.

April 9, 2022 – Erickson Creek treatment down for maintenance

EVO SRF Erickson treatment was temporarily taken offline on April 9, 2022, to investigate potential obstructions in the effluent pipeline limiting flow. The investigation did not find any physical obstructions, but Teck further investigated the possibility that airlocks in horizontal sections of pipe may be the cause of the flow restrictions. To test this theory, air release valves were installed in potential airlocked lengths of pipe to remove trapped air. This pipeline work was completed on May 16, 2022, however, Teck decided to temporarily extend downtime on the Erickson pipeline to continue to investigate benthic invertebrate results.

Investigation and Corrective Actions:

Teck completed the enhanced monitoring at EV_EC1 (0200097) and EV_MC2 (E300091) as required under Section 4C3.5 while Erickson treatment remained off.

Future Preventative Actions

Teck is continuing to investigate possible causes for flow limitations in the Erickson Creek effluent pipeline.

April 9, 2022 – Erickson Creek treatment down for further investigation of benthic invertebrate results

As part of EVO Local Aquatic Effects Monitoring Program (LAEMP), routine monitoring efforts conducted in September 2021 showed selenium concentrations in benthic invertebrate tissue (BIT) to have increased above the level 1 benchmark for growth, reproduction, and survival of benthic invertebrates at RG_ERCKDT (Erickson Creek immediately (~60m) downstream of the EVO SRF outfall).

Investigation and Corrective Actions:

After receiving the results, Teck conducted confirmatory sampling in Erickson and Michel Creek in December 2021 and March 2022. The elevated BIT selenium results from September 2021 to March 2022 were not expected, which as per Teck's Adaptive Management Plan, triggered a response framework that included increased monitoring, engagement with Qualified Professionals, and identification of potential contributing factors. Treatment of Erickson Creek water through the EVO SRF was also suspended on April 9, 2022, as part of Teck's response. Since that time, Teck has been working with the Qualified Professions to investigate the cause of elevated selenium concentrations in BIT and explore mitigation alternatives. Based on the data and assessment thus far, a suspected cause and possible mitigations have been identified.

Future Preventative Actions

Further study, specifically restarting treatment of Erickson Creek with discharge of treated effluent back to Erickson Creek, was needed to confirm the mechanism of enhanced selenium bioaccumulation in BIT and effectiveness of potential mitigations. Teck submitted a trigger response plan to support the restart of Erickson Creek treatment and completed the restart on October 4, 2022 with ongoing operation under the trigger response plan since then with ongoing engagement with regulators and KNC. Results of the casual investigation and mitigations are not provided within this report and will be communicated as part of the ongoing engagement with regulators and KNC

October 5, 2022 – Erickson Creek effluent line control valve maintenance

During the Erickson Creek restart on October 4, 2022, it was identified that a control valve on the effluent line required maintenance. Treatment of Erickson Creek was shutdown to perform this maintenance on October 5, 2022, at approximately 10:30 a.m. and the shutdown extended beyond 24 hours. Following the completion of the maintenance on October 6, 2022, Erickson Creek treatment transitioned to forward flow at approximately 2 p.m. Natal Pit continued to be treated during the Erickson Creek treatment downtime, with effluent being discharged to the Bodie Rock Drain.

Teck completed the enhanced monitoring at EV_EC1 (0200097) and EV_MC2 (E300091) as required under Section 4C3.5 while Erickson Creek treatment was shutdown.

Investigation and Corrective Actions:

No investigation or corrective actions were implemented in response to this event.

Future Preventative Actions

No future preventative actions were identified in response to this event.

Discharges to the Turnbull South Pit Tailings Storage Facility

The EVO SRF P2 is not authorized to discharge to the Turnbull South Pit Tailings storage Facility, as such there were no discharges of EVO SRF P2 effluent to the facility.

Non-compliances

There were two non-compliances at the EVO SRF P2 in 2021.

June 16, 2022 to July 6, 2022 – F2_NWPI missed TKN/TOC analysis

On July 28th, 2022, during final data QA/QC review, prior to submission of the Permit 107517 Q2 2022 Quarterly Report, Teck noted that four (4) TKN and two (2) TOC sample results were missing from the Teck

monitoring data database for E321791, not meeting the requirements of Table 4C4 of 107517. Permit 107517 Appendix 4 Table 4C4 states that the permittee must obtain representative water quality samples at Natal Pit Intake collected from F2_NWPI (E321791) and have the samples analyzed for Nutrients and Conventional Parameters on a weekly frequency during freshet. Under the Nutrient analysis, as defined under Permit 107517 Table 27, Total Kjeldahl nitrogen (TKN) must be analyzed. Similarly, under the Conventional Parameters analysis, total organic carbon (TOC) is required.

Teck conducted an investigation into the missing water quality data and determined that the samples were collected, shipped, and requested to be analyzed by Teck. The third-party laboratory did not run the requested analysis to meet the conditions outlines in Appendix 4C4 of 107517 and Teck QA/QC process did not identify this event in a timely fashion. Upon discovery of the missing data the applicable samples were beyond their hold times and/or disposed of, preventing subsequent analysis. Teck followed-up on this non-compliance by reviewing the internal data QA/QC process and working with the third party laboratory to help better identify missed analyses in the future.

Teck reported this non-compliance to ENV, EMLI, and the KNC on July 28, 2022. No additional monitoring was required with this non-compliance

F2_BPO (E321812) Effluent Retention Pond Outlet Total Sulphide Exceedance

Permit Condition and Non-Compliance

Teck received results for a water sample collected on September 4, 2022 at F2_BPO (E321812) with a sulphide result of 0.0267 mg/L, exceeding the limit of 0.01 mg/L as outlined in Permit 107517 Appendix 4C Section 4C1.2.

Routine samples collected on September 4, 2022 at F2_BPO (E321812) were analyzed at the EVO SRF P2 laboratory for sulphide and were below the detection limit of 0.005 mg/L. Prior to and following the September 4 result, internal and external sulphide results for the Effluent Retention Pond were below detection. Teck collected a routine acute toxicity sample at F2_BPO (E321812) on September 5, 2022. This toxicity sample passed for both 96 hour Rainbow Trout or 48 hour Daphnia magna testing (0% mortality in both test).

In-house and third party laboratory sulphide monitoring conducted at the EVO SRF P2 effluent retention pond surrounding the September 4, 2022 did not display elevated total sulphide results. Teck conducted an internal investigation for this non-compliance but could not definitively outline the probable cause. The sulphide result received from the September 4, 2022, sample collected at the F2_BPO (E321812), was higher than all other sulphide results from within the EVO SRF facility during the time in question and no clear source of the elevated sulphide result could be identified. As the September 4th result was approximately an order of magnitude higher than results before or after this sample and the internal laboratory results collected during this time were below the detection limit of 0.005 mg/L for the Effluent Retention Pond Outlet, Teck requested a rushed reanalysis on the September 4, 2022, F2_BPO (E321812) sample to confirm the results. Teck received these results which have confirmed the initial sample result, and that the labelling on the bottle in question appears to be correct.

All routine monitoring conducted at the EVO SRF P2 effluent retention pond surrounding the September 4, 2022, sample were conducted in compliance with Permit 107517 Appendix 4C4 and in accordance with the sampling plan. Teck continues to conduct daily sulphide monitoring from the effluent retention pond locations at EVO SRF internal laboratory, send daily sulphide samples for external analysis, and operate the facility based on the EVO SRF Alarm Table.

Teck reported this non-compliance to ENV, EMLI, and the KNC on September 22, 2022. This event was reported to Emergency Management BC (EMBC) on the evening of September 22, 2022. The assigned DGIR number was 222409.

Map

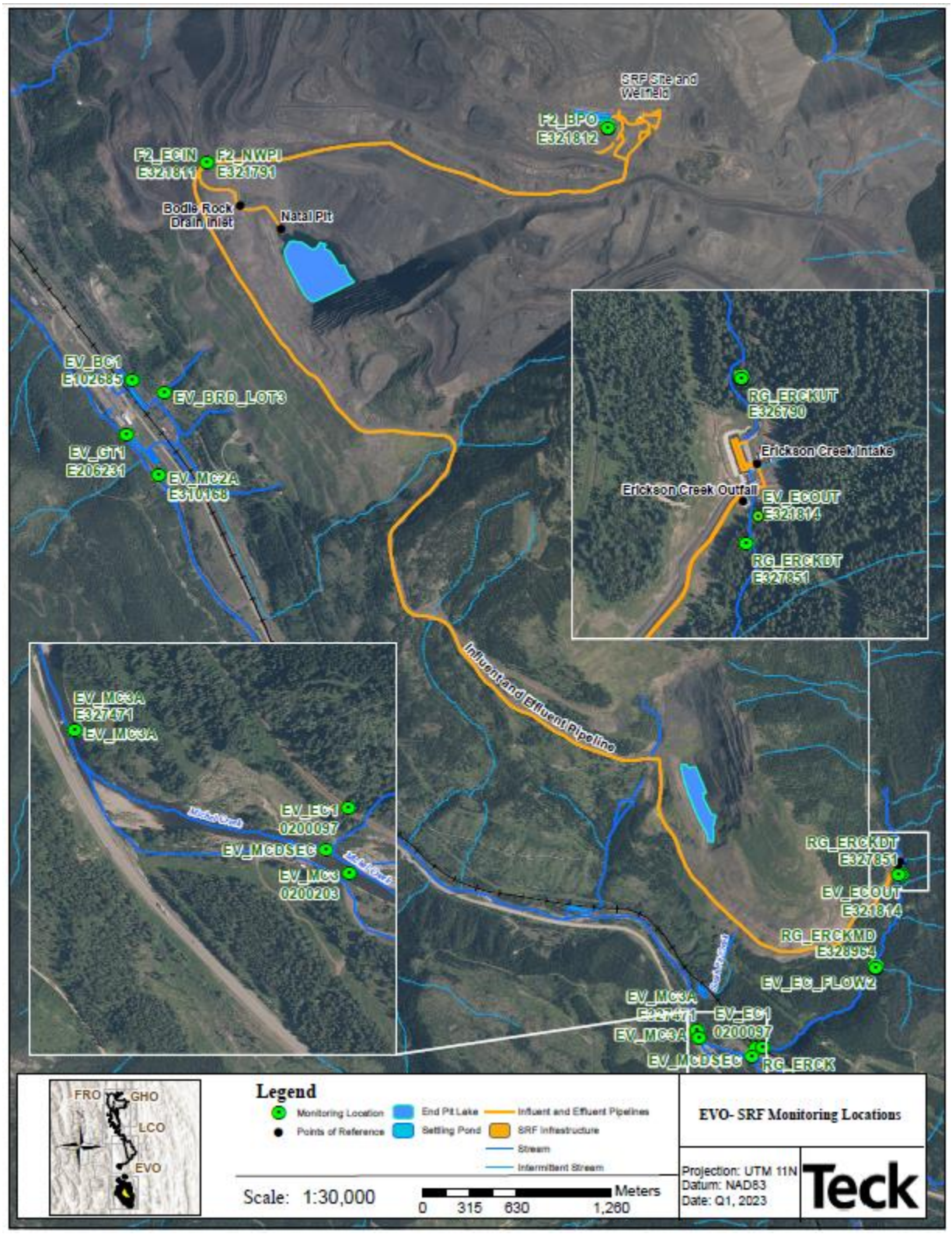


Figure 26. EVO SRF P2 Map and Associated Influent, Effluent and Receiving Environment Locations

Operational and Receiving Environment Monitoring Data

This section provides a summary and evaluation of key operational and receiving environment monitoring data associated with the EVO SRF P2. Data related to the EVO SRF P2 effluent (E321812) permit limits and selenium and nitrate data for the downstream compliance point EV_MC2 (E300091) are included below.

Operational Data

As per Appendix 4, Section 4C1.2 of Permit 107517 the EVO SRF P2 effluent (E321812) during normal operations is required to not be acutely toxic and characteristics of the discharge must not exceed the limits presented in the table below.

Table 15. EVO SRF P2 Effluent (E321812) 107517 Permit Limits

Parameter	Units	Criteria	Limit
Ammonia	mg/L	Maximum	1.2
Biological Oxygen Demand	mg/L	Maximum	25
pH Range	-	Maximum	6.5 – 9.0
Nitrite	mg/L	Maximum	0.4
T - Phosphorus	mg/L	Monthly Average	0.10
Sulphide	mg/L	Monthly Average	0.01
Dissolved Oxygen	mg/L	Minimum	5.0
Antiscalant[1]	mg/L	2 minute Weighted Average	25

1. The antiscalant 2-minute time-weighted limit was increased from 10 mg/L to 25 mg/L based on the November 19, 2021 Permit 107517 amendment .

There was one Permit Limit exceedance in 2022 when a water sample collected on September 4, 2022 at F2_BPO (E321812) had a sulphide result of 0.0267 mg/L, exceeding the limit of 0.01 mg/L. The following graphs displays the EVO SRF P2 effluent (E321812) compared to the limits outlined in Permit 107517 Appendix 4C Section 4C1.2 for 2022. Monthly averages are calculated by averaging daily averages. All monitoring data required in Table 4C4 of Permit 107517 for 2022 can be found in Appendix C of this report.

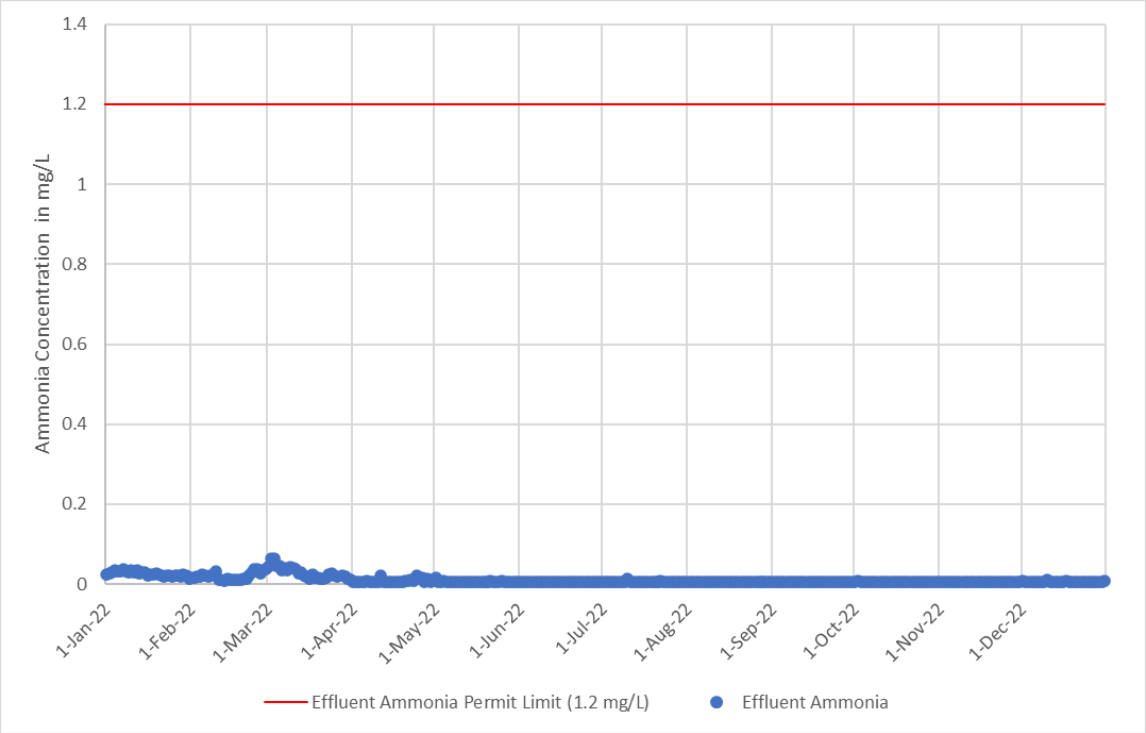


Figure 27. EVO SRF P2 F2_BPO (E321812) Effluent Ammonia Concentrations

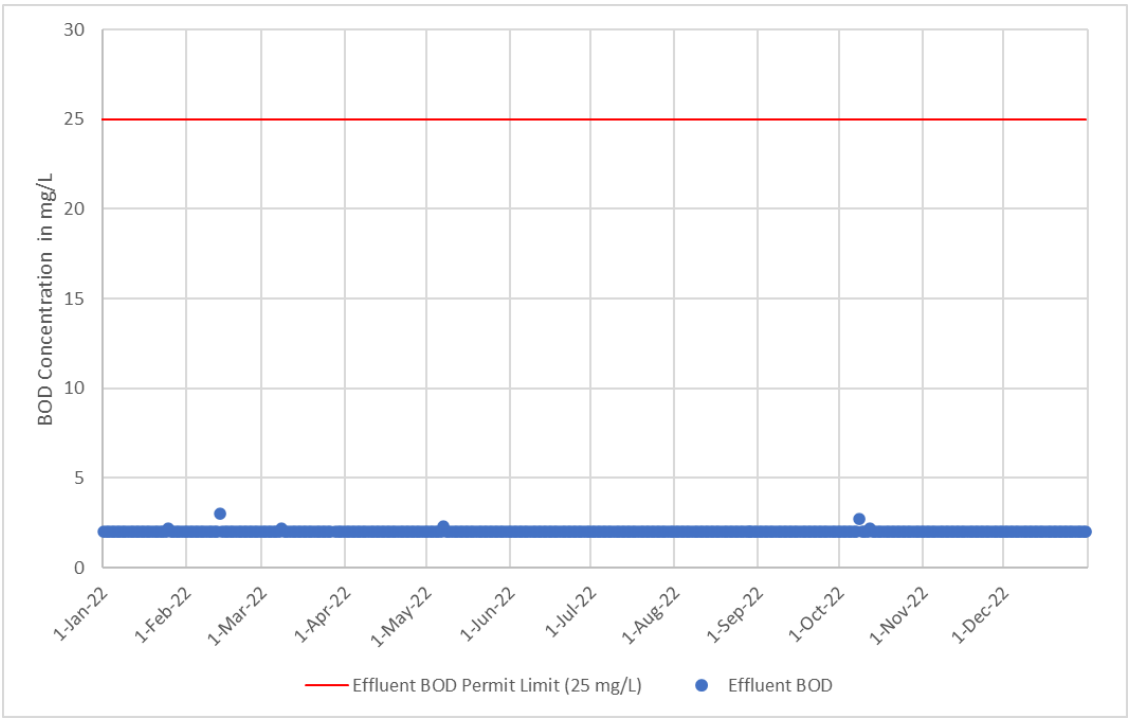


Figure 28. EVO SRF P2 F2_BPO (E321812) Effluent BOD Concentrations

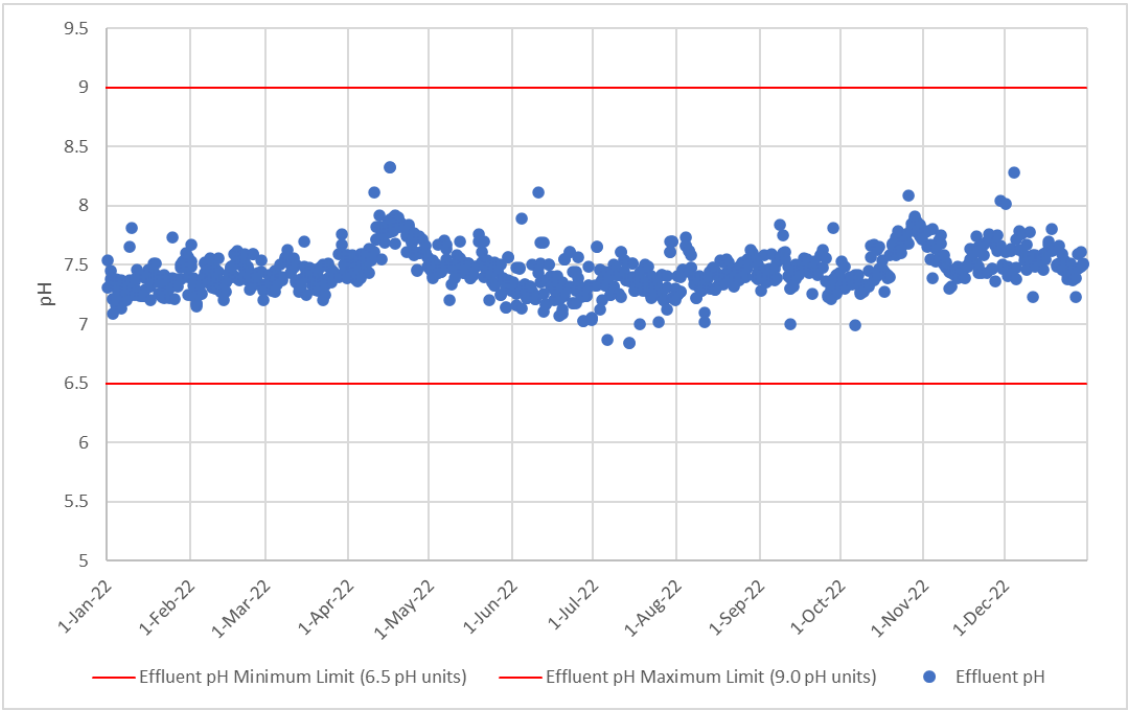


Figure 29. EVO SRF P2 F2_BPO (E321812) Effluent pH Concentrations

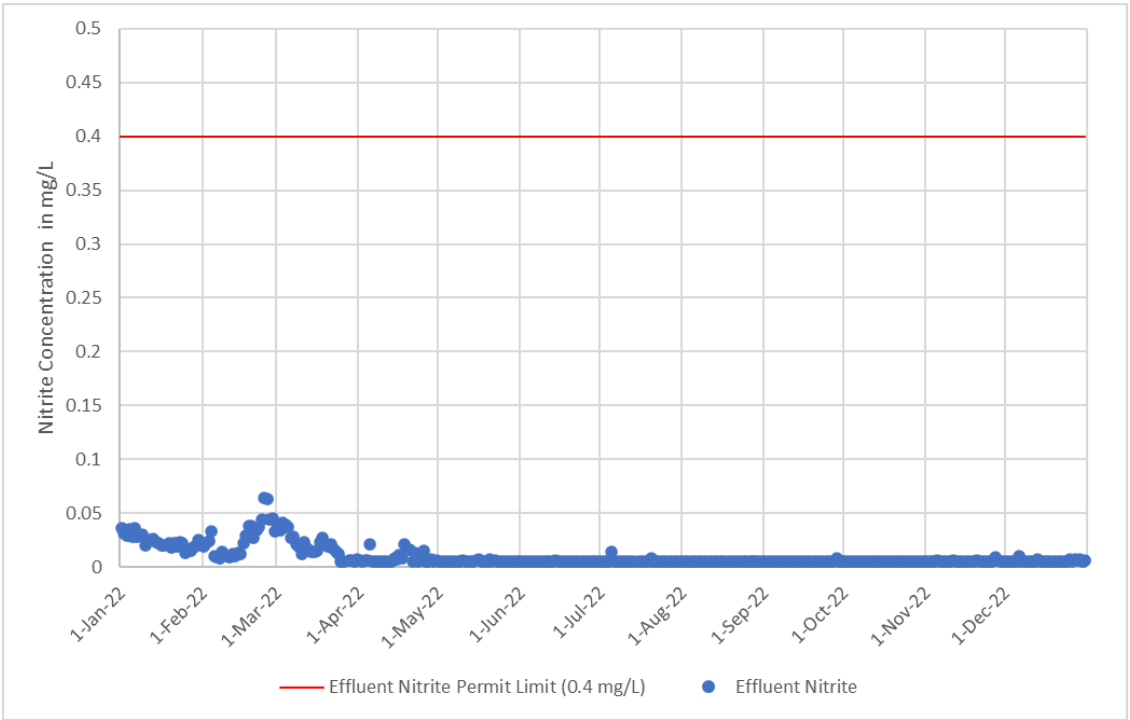


Figure 30. EVO SRF P2 F2_BPO (E321812) Effluent Nitrite Concentrations

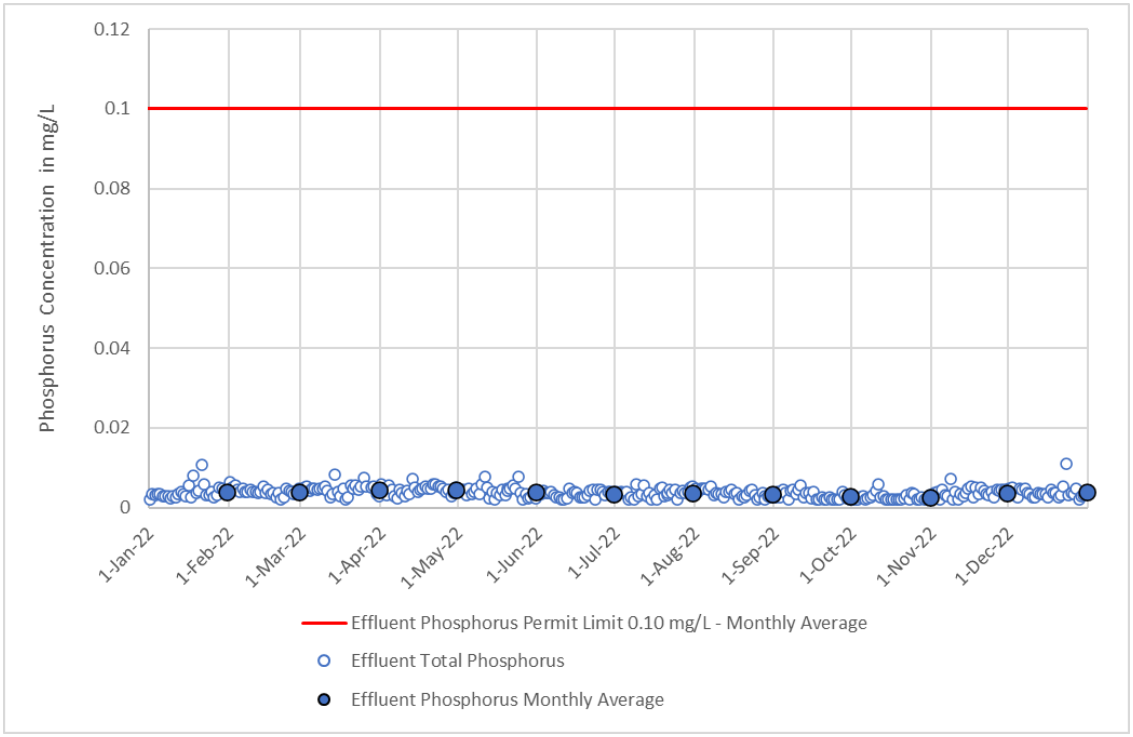


Figure 31. EVO SRF P2 F2_BPO (E321812) Effluent T-Phosphorus Concentrations

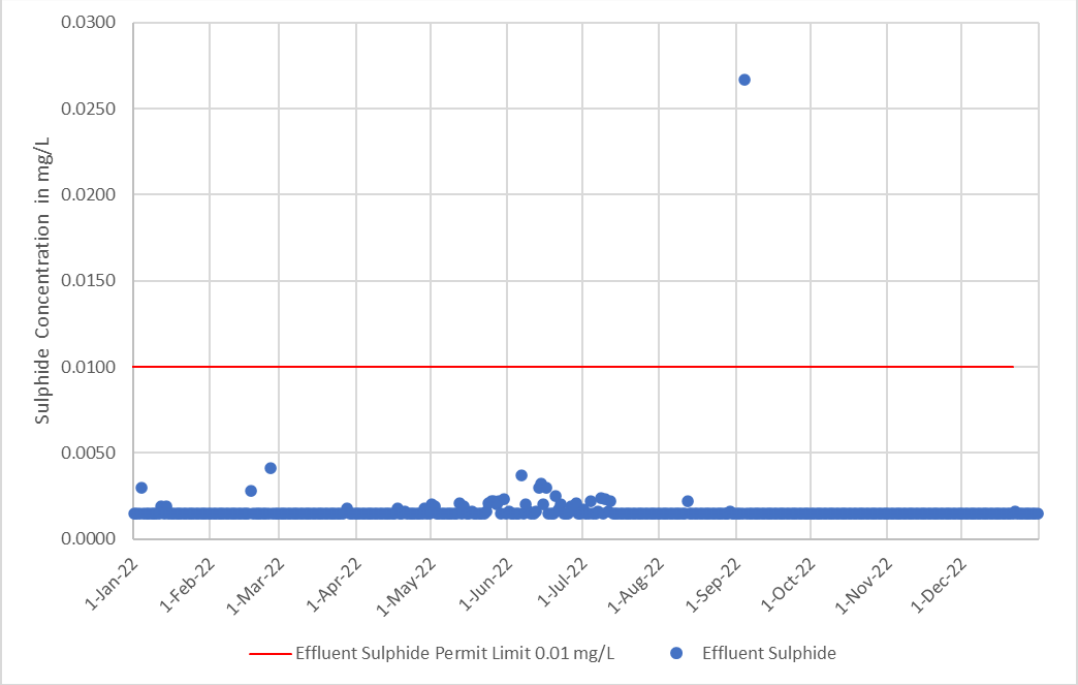


Figure 32. EVO SRF P2 F2_BPO (E321812) Effluent Sulphide Concentrations

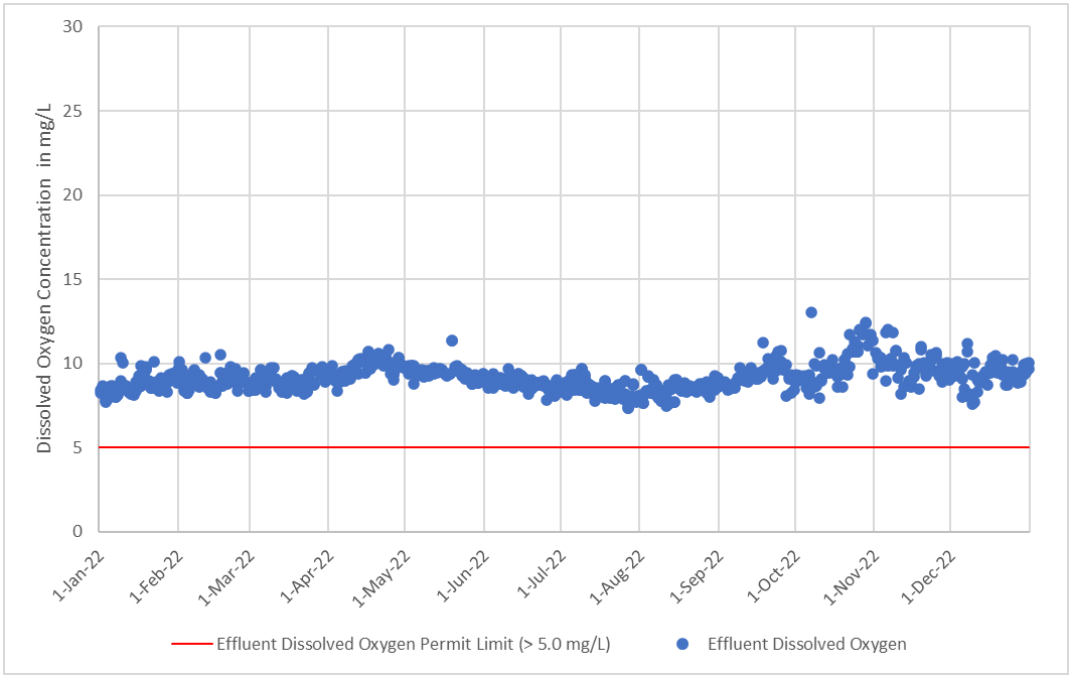


Figure 33. EVO SRF P2 F2_BPO (E321812) Effluent Dissolved Oxygen Concentrations

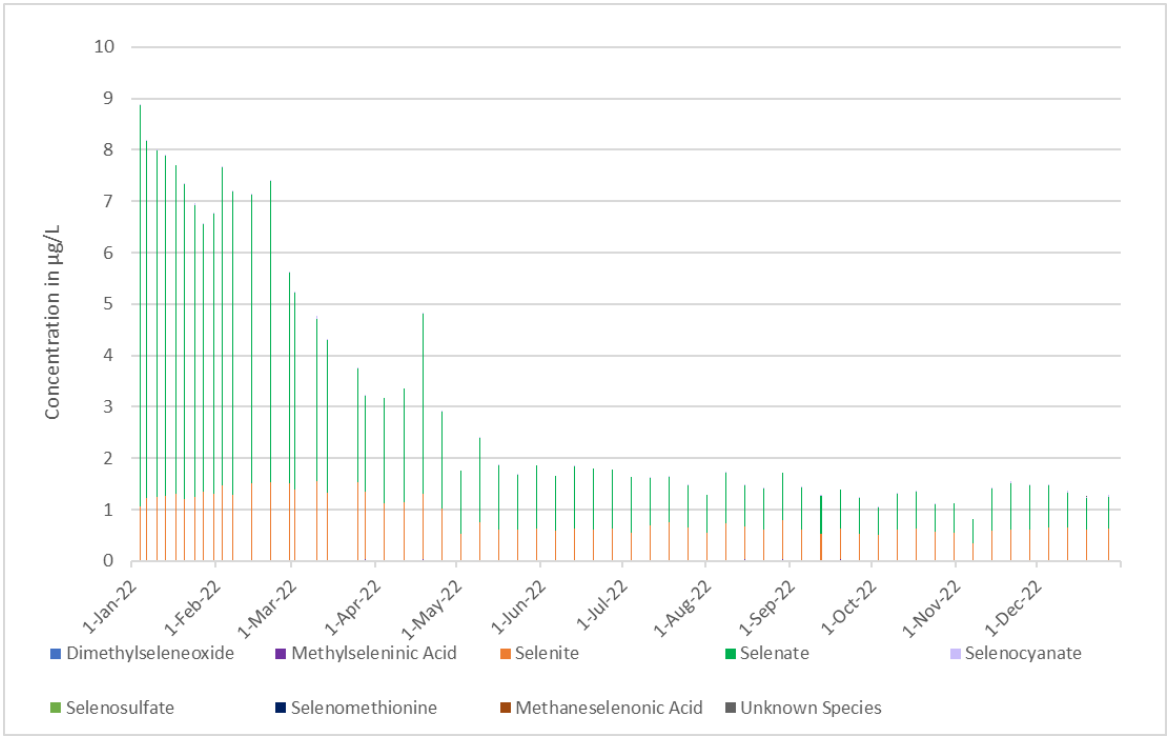


Figure 34. EVO SRF P2 F2_BPO (E321812) Effluent Selenium Speciation

Selenium Speciation follows a similar observable reduction to selenium effluent concentrations at F2_BPO (E321812).

Receiving Environment Data

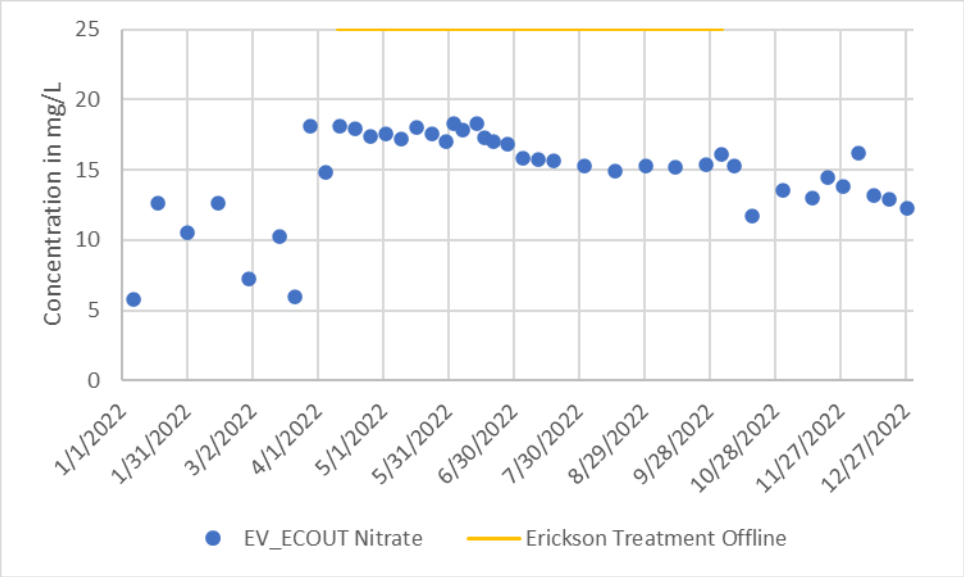
Water quality is monitored downstream of the EVO SRF P2 at multiple locations including EV_ECOUT (E321814), EV_EC1 (0200097) and EV_MC2 (E300091). The Elkview Compliance point EV_MC2 is required to meet the following limits for nitrate and selenium. EV_MC2 remained below the Permit Limits in 2022.

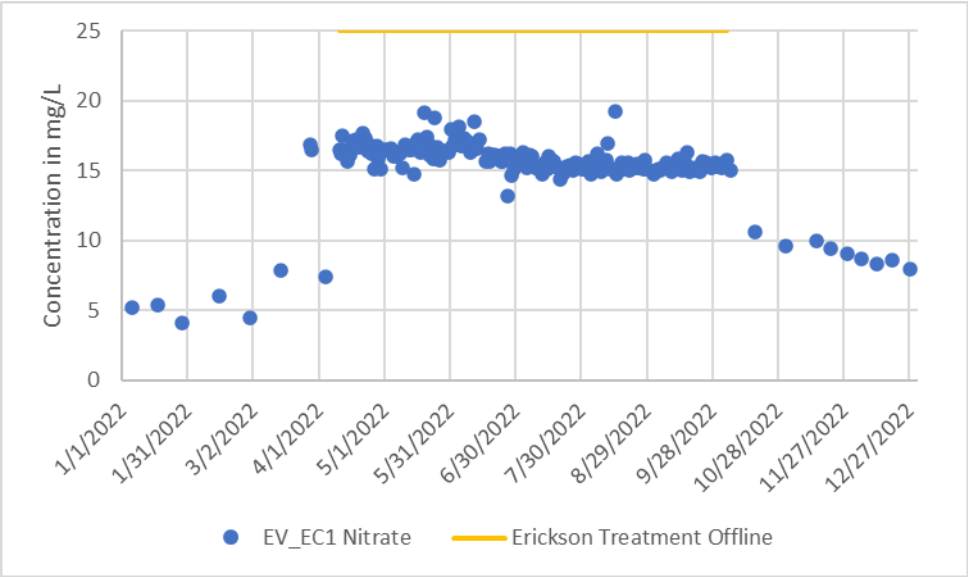
Table 15. Elkview Compliance Point EV_MC2 (E300091) 107517 Permit Limits

Parameter	Units	Criteria	Limit
Total Selenium	µg/L	Monthly Average	20
Nitrate	mg/L	Monthly Average	6

The graphs below show the nitrate and selenium concentrations in 2022 in the receiving environment at Erickson and Michel Creek downstream of the treatment facility. All monitoring data required in Table 4C4 of Permit 107517 for 2022 can be found in Appendix C.

A comparison of the receiving environment data against Approved and Working BC Water Quality Guidelines is included in the Permit 107517 Surface Water Quality Monitoring 2022 Annual Report.





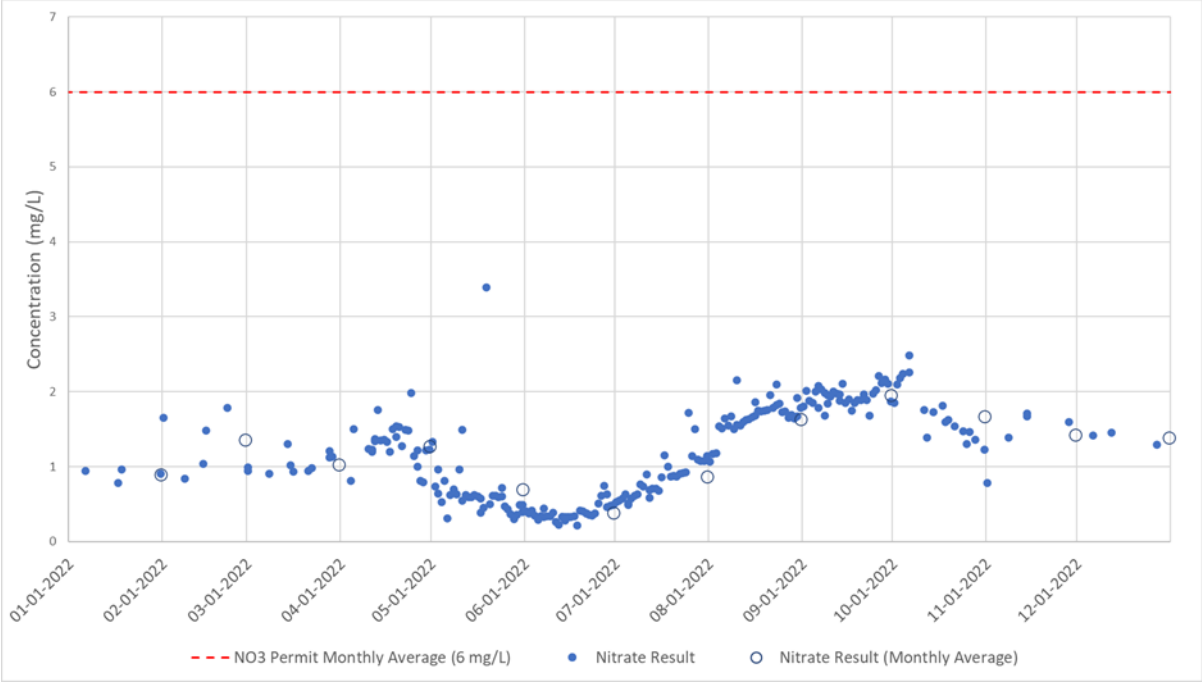
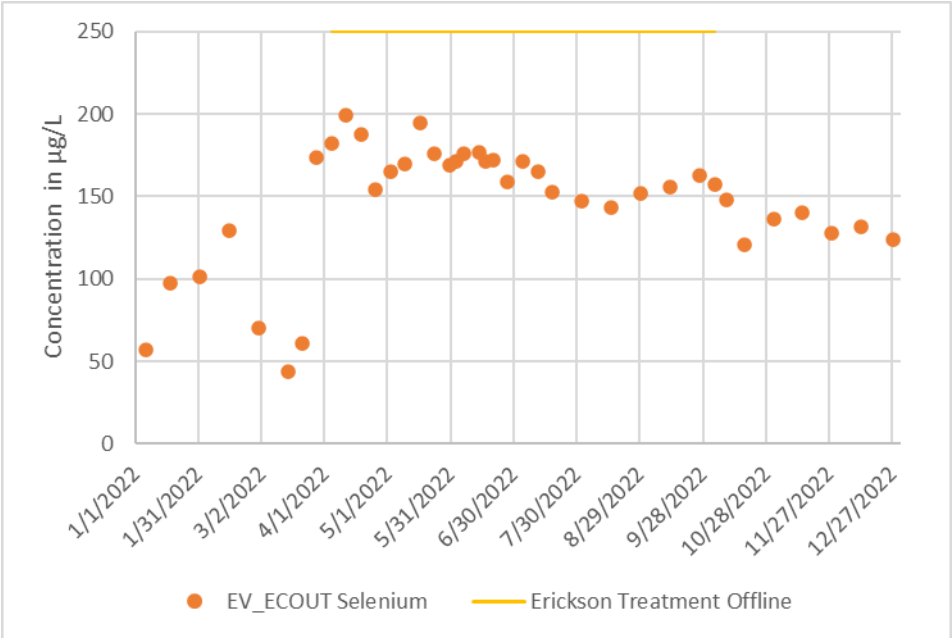
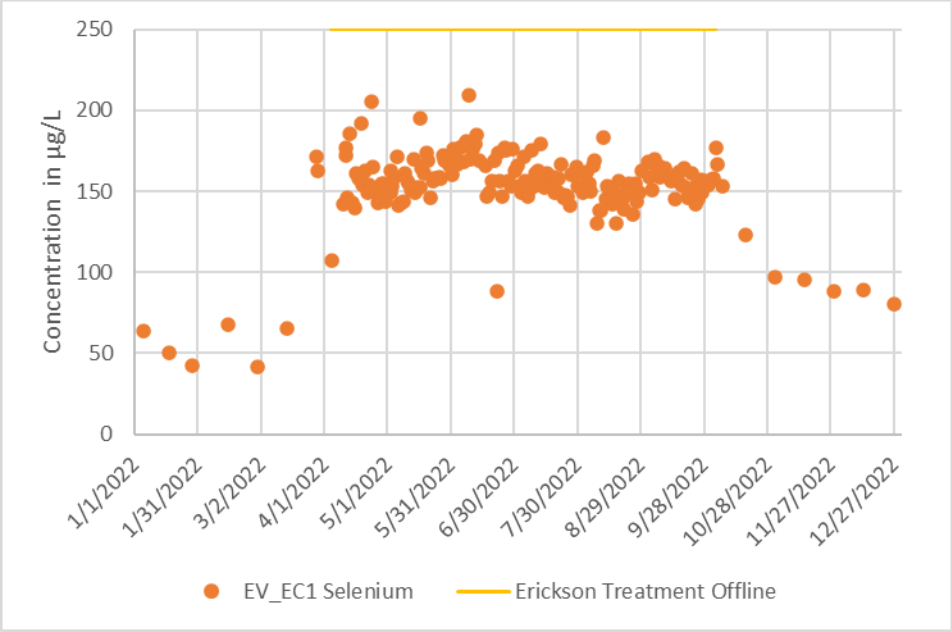


Figure 35. 2022 Nitrate Concentrations Downstream at EV_ECOUT, EV_EC1 and EV_MC2


250
200
150
100
50
0
Concentration in µg/L
1/1/2022
1/31/2022
3/2/2022
4/1/2022
5/1/2022
5/31/2022
6/30/2022
7/30/2022
8/29/2022
9/28/2022
10/28/2022
11/27/2022
12/27/2022
EV_ECOUT Selenium
Erickson Treatment Offline


250
200
150
100
50
0
Concentration in µg/L
1/1/2022
1/31/2022
3/2/2022
4/1/2022
5/1/2022
5/31/2022
6/30/2022
7/30/2022
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12/27/2022
EV_EC1 Selenium
Erickson Treatment Offline

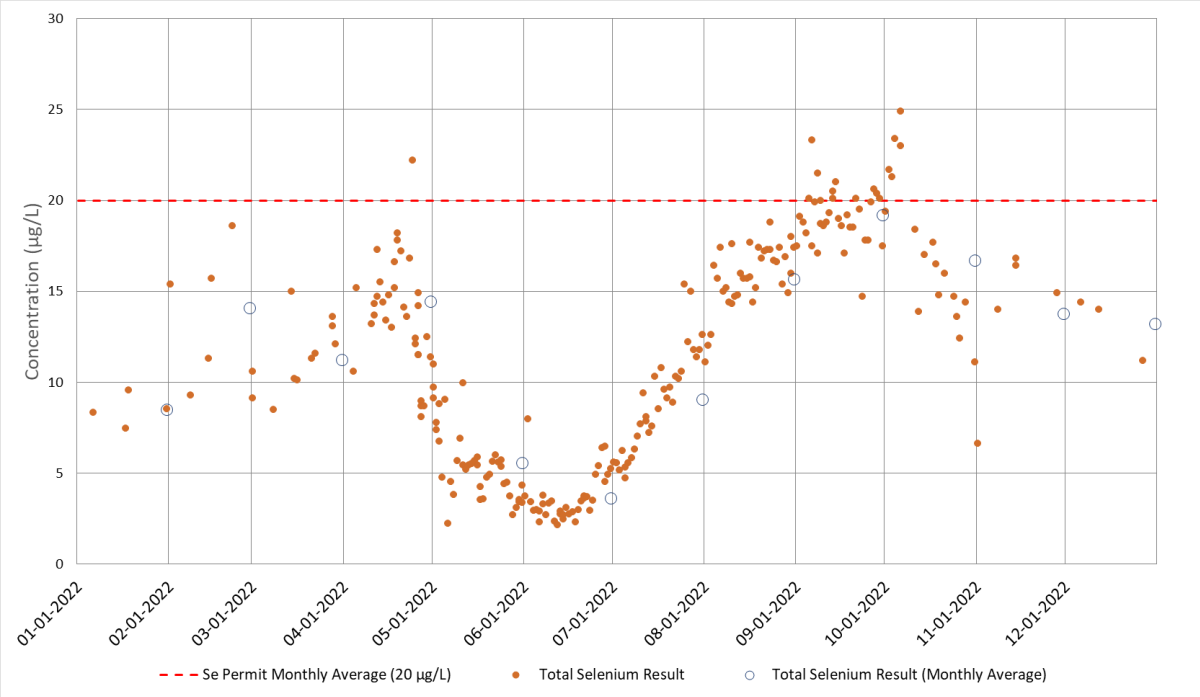

Figure 36. 2022 Total Selenium Concentrations Downstream at EV_ECOUT, EV_EC1 and EV_MC2

Site Performance Objectives

Water temperature measured at Erickson Creek at mouth (EV_EC1; 0200097) was managed to be equivalent to or below the maximum daily temperature limits presented in Section 4C2.1 of Permit 107517 in 2022. The temperature data for EV_EC1 (0200097) can be found in Appendix C.

Acute Toxicity

As per Section 6.2 of Permit 107517, effluent is not acutely toxic if it does not cause greater than 50% mortality in 48-hour Daphnia magna and 96-hour Rainbow Trout 100% (single concentration) acute lethality toxicity tests.

Acute toxicity tests were conducted as required by Section 8.1 and 4C4 of Permit 107517. The acute toxicity tests conducted on the EVO SRF effluent and receiving environment in 2022 were:

- 162 96-hour Rainbow Trout 100% (single concentration) acute lethality toxicity tests.
- 162 48-hour Daphnia magna 100% (single concentration) acute lethality toxicity tests.

There were one acute toxicity failures at the EVO SRF P2 in 2022. This test was collected at EV_EC1 (0200097) on June 6, 2022 during a time when the EVO SRF was not discharging into Erickson Creek. Information on this is included in the Permit 107517 Surface Water Quality Monitoring 2022 Annual Report The results of all acute toxicity testing are available in Appendix D. A summary of the acute toxicity testing is provided below.

Daphnia magna Test Results

In 2022, 162 *Daphnia magna* single concentration (100%) acute toxicity test were conducted on facility effluent and at receiving environment monitoring locations. Thirteen test results exhibited greater than 0% mortality but less than 20%: three test exhibited 13% mortality (F2_BPO, EV_EC1), three results (EV_ECOUT) exhibited 7% mortality, and 7 test exhibited 3% mortality (F2_BPO, EV_ECOUT, EV_EC1).

Rainbow Trout Test Results

In 2022, 162 Rainbow Trout single concentration (100%) acute toxicity test were conducted on samples collected from permitted water sampling sites– eight test results exhibited greater than 0% mortality but less than 50%: two test exhibited 20% mortality (F2_BPO, EV_ECOUT) and six results (EV_EC1, EV_ECOUT, F2_BPO) exhibited 10% mortality.

Discharge Management – Erickson Creek

Section 4C3.3 of Permit 107517 required Teck develop and submit a Discharge Management Plan (DMP) for Erickson Creek, specifying in-stream flow and rate of water level change criteria. Teck submitted this plan on July 14, 2021. The streamflow and rates of water level change outlined in the plan were established to follow the Federal Department of Fisheries and Oceans Canada (DFO) guidance on allowable rates of change in streamflow and water level to avoid adverse effects to fish habitat at stranding sensitive monitoring sites (SSMSs) in Erickson Creek. Teck designed and implemented engineering logic controls, alarm setpoints, and interlocks within the facility's control logic to minimize changes in the streamflow between upstream and downstream of the Erickson Creek intake/outfall structure. The continuous flow data from the hydrometric monitoring station at EV_EC1 (0200097) has real-time alarms on the rate of water level change and minimum instream flows within Erickson Creek. There were no instances requiring response actions and follow up activity to the rate of water level change exceedance at EV_EC1 in 2022. The recommended protective rate of water level change measured at EV_EC1 are -3.8cm/hr during the fry-present period and -7.7 cm/hr during the fry-not present period as stated in the Erickson Creek DMP. These levels were determined through monitoring in Erickson Creek and were correlated to a -2.5 cm/hr and -5.0 cm/hr at the SSMS identified in Erickson Creek.

QA/QC Summary

Teck has established a quality assurance/quality control (QA/QC) program to promote the collection of high quality environmental data. Teck has developed protocols and procedures to collect representative samples and to minimize the potential for deterioration and contamination of samples before laboratory analysis.

Despite the considerable level of effort and management system tools employed to achieve high-quality data, there were instances in 2022 where data quality issues occurred.

The results of the QA/QC program are summarized below. A detailed explanation and tabulated results of the QA/QC program are included in Appendix E of this report.

QA/QC Results

Data quality issues encountered in 2022 were related to RPD failures, blank detect results, and hold-time exceedances. Teck continues to monitor QA/QC results to identify any potential issues with laboratory precision or sample contamination. Due to the relative infrequency of blank sample detections and RPD failures, Teck's dataset is considered to be of high quality and meets the intent of the monitoring program. For the QA/QC issues related to the EVO SRF P2 monitoring, for parameters outlined in Appendix 4C4, Table 1, the following sections outline these RPD failures, blank detect results, and hold-time exceedances.

RPD Results

The precision of laboratory results was evaluated using field duplicate samples. RPD calculations as described above were performed on the 278 field duplicate samples collected during commissioning and normal operations in 2022. Of the 15,519 parameters evaluated for RPD, 223 (1.44%) failed the RPD criteria, 744 (4.79%) received Pass -1, and 200 (1.29%) were Pass-2, based on the criteria displayed below. Appendix E summarizes the 2022 RPD results at the EVO SRF.

Blank Detect Results

In 2022, 279 blank samples were collected to determine if contamination was occurring during bottle storage, sample collection, sample handling, and sample analysis. Of the 15,445 parameters analyzed in these samples, 88 had results above detection limits (0.57%). Blank detect results for 2022 are presented in Appendix E for the EVO SRF.

Hold Time Exceedances

Parameter hold-times were exceeded on 22 of the 114,195 analyses (0.019%) completed in 2022,as detailed in Appendix E. The hold-time exceedances in 2022 were for time-sensitive water quality parameters, specifically turbidity, sulphide, TSS, nitrate and nitrite.

Teck continues to address the causes of hold-time exceedances by working with the laboratories to improve the timely reporting of issues such as equipment malfunctions, sample volumes, shipping delays, and laboratory resources. Timely reporting of these issues to Teck often provides field samplers enough time to resample to meet permit requirements.

Equipment Calibration

Equipment calibrations are summarized in Table 7.

Table 17. EVO SRF P2 Equipment Calibration

Equipment	Model	Calibration Frequency	Last Calibrated
Field Meter #1 (PQ#1)	YSI Pro Quatro Handheld Multiparameter Instrument #1 (PQ#1)	Weekly calibration, daily verification	12/31/2022
Field Meter #2 (PQ#2)	YSI Pro Quatro Handheld Multiparameter Instrument #2 (PQ#2)	Weekly calibration, daily verification	12/31/2022
Field Meter #3 (PQ#3)	YSI Pro Quatro Handheld Multiparameter Instrument #3 (PQ#3)	Weekly calibration, daily verification	11/18/2022
Field Meter #4 (EXO#4)	YSI EXO Handheld Multiparameter Instrument #4 (EXO#1)	Weekly calibration, daily verification	12/11/2022
Field Turbidimeter #1 (2100Q#1)	Hach 2100Q Portable Field Turbidity Meter #1 (2100Q#1)	Weekly calibration, daily verification	12/11/2022
Field Turbidimeter #2 (2100Q#2)	Hach 2100Q Portable Field Turbidity Meter #2 (2100Q#2)	Weekly calibration, daily verification	12/31/2022
Field Turbidimeter #3 (2100Q#3)	Hach 2100Q Portable Field Turbidity Meter #3 (2100Q#3)	Weekly calibration, daily verification	12/31/2022

Fording River Operations South Active Water Treatment Facility

Executive Summary

Commissioning of the Fording River Operations South Active Water Treatment Facility (FRO-S AWTF) commenced in Q4 2021 and the operational phase began on July 1, 2022. The FRO-S AWTF achieved an average throughput of 8,064 m^3/day and 91% availability in 2022, treating a total volume of 2,943,529 m^3. The facility removed a total of 173,831 kg of nitrate (averaging 476 kg removed per day) and 1,269 kg of selenium (averaging 3.5 kg removed per day) in 2022.

The FRO-S AWTF achieved selenium and nitrate load removal records for all treatment facilities in 2022 removing 1,262 kg/day nitrate on November 22, 2022 and 7.3 kg/day of selenium on October 18, 2022. The facility also achieved record throughput for the facility of17,333 m^3/d on September 23, 2022.

During commissioning and early operations, throughput was slowly increased as AWTF components were brought online and control systems and processes were optimized. This is typical of commissioning a new facility of this type.

The Annual Status Form is included in Appendix A of this report.

Facility Performance

This section summarizes the facility performance in 2022. Teck developed key performance metrics for the FRO-S AWTF and submitted these to the director on March 22, 2022, as required under section 4D2.2 of Permit 107517. The performance metrics currently tracked and presented in this report include:

- Nitrate and Selenium load removal;
- Facility throughput and availability;
- Selenium concentration at effluent outlet (FS_BPO, E321351);
- Nitrate concentration at effluent outlet (FS_BPO, E321351);
- Occurrences of level 3 alarm strategy responses; and
- Temperature differential between FR_SCOUTDS (E320695) and FR_FR3 (E320693) with consideration of Swift Creek Sediment Pond discharge and facility effluent temperature measured at FS_EFF-SC (E321231).

These performance metrics align with the Elk Valley Water Quality Plan (EVWQP) goals and environmental management objectives. Any proposed changes to the metrics will be communicated to the director at least 15 days prior to being implemented

Selenium and Nitrate Load Removal

This section provides a summary of the FRO-S AWTF selenium and nitrate load removal in 2022.

Nitrate Removal

The FRO-S AWTF daily average, daily maximum and total nitrate removal results for 2022 are summarized below. The maximum daily nitrate load removal of 1,262 kg/day on November 22, 2022 was a record for all Teck water treatment facilities.

Table 16. FRO-S AWTF Estimated Nitrate Removal

	Nitrate Load Removal
Daily Average	476.3 kg/day
Daily Maximum	1,262.5 kg/day
Total	173,831 kg

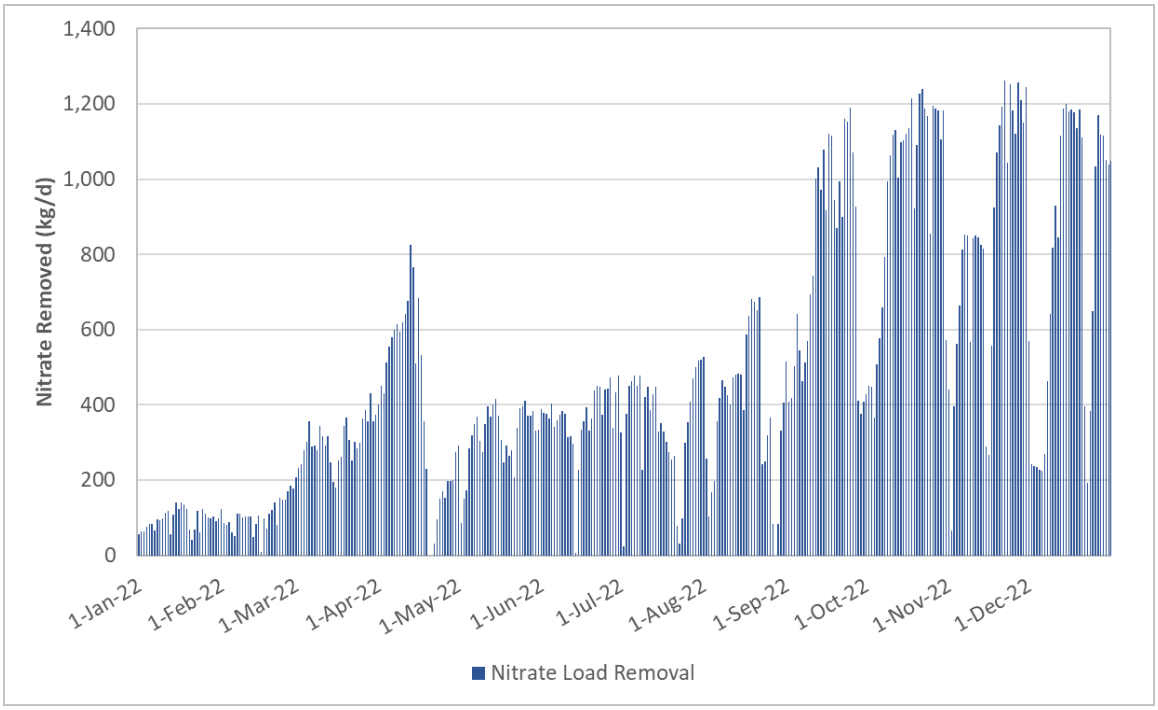

Figure 37. FRO-S AWTF Nitrate Load Removal

Selenium Removal

The FRO-S AWTF daily average, daily maximum and total selenium removal for 2022 are summarized below. The maximum daily selenium load removal of 7.3 kg/day on October 18, 2022 was a record for all Teck water treatment facilities.

Table 17. FRO-S AWTF Estimated Selenium Removal

	Selenium Load Removal
Daily Average	3.5 kg/day
Daily Maximum	7.3 kg/day
Total	1,269.4 kg

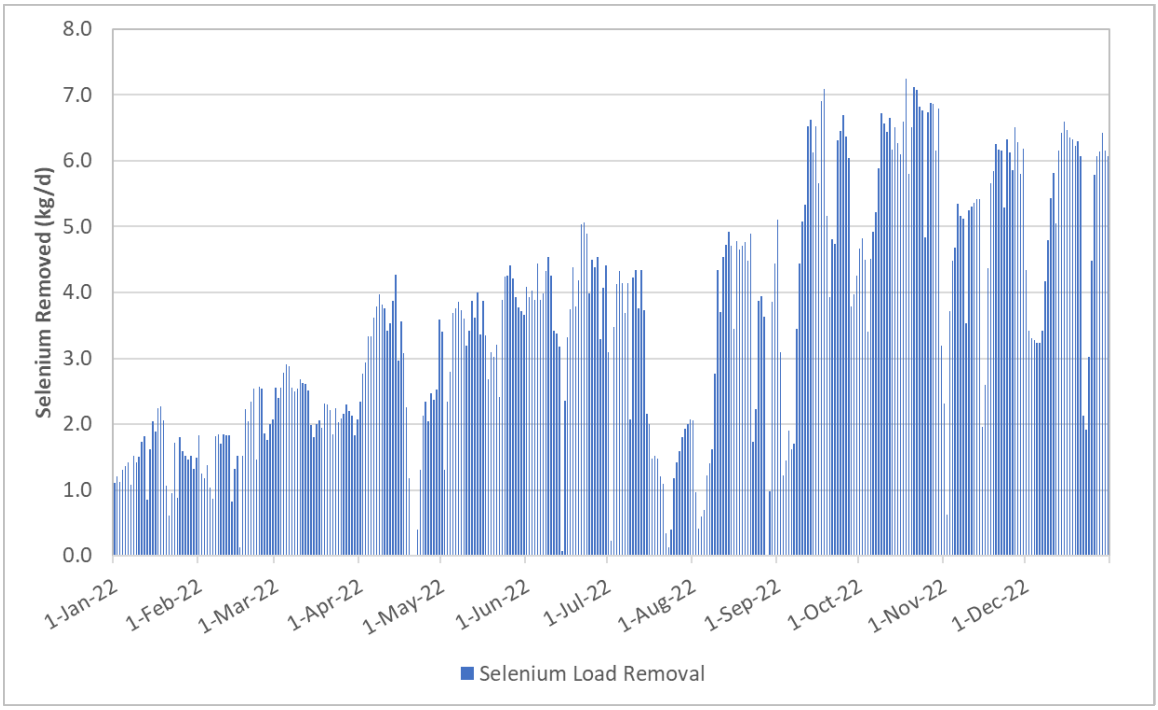

Figure 38. FRO-S AWTF Estimated Selenium Load Removal

Influent Sources and Flow Rates

Influent water from Swift/Cataract Creeks was initially used for FRO-S AWTF commissioning, and intake of Kilmarnock Creek influent commenced in late February 2022. Swift/Cataract influent was generally prioritized over Kilmarnock influent for treatment due to higher selenium concentrations. There was no intake of Kilmarnock Clean Water Diversion (KCWD) influent to the FRO-S AWTF in 2022. The average daily influent flow rate and total influent volume for the FRO-S AWTF in 2022 are summarized below.

Table 18. FRO-S AWTF 2022 Influent Sources and Flow Rates

Influent Source	Average Daily Throughput	Total Volume Treated
Swift/Cataract Creeks	5,050 m^3/day	1,843,156 m^3
Kilmarnock Creek	3,014 m^3/day	1,100,373 m^3
Total Combined Influent	8,064 m^3/day	2,943,529 m^3

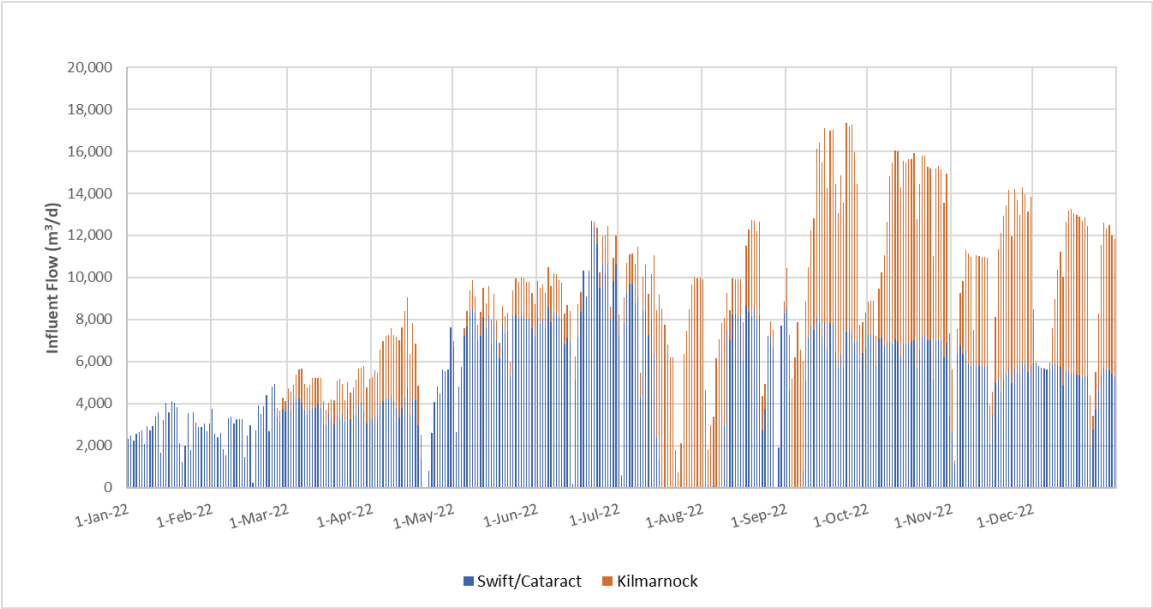

Figure 39. FRO-S AWTF 2022 Throughput

The FRO-S AWTF commenced forward flow commissioning with a target throughput of 2,500 m^3/d on December 22, 2021. During commissioning and early operations in 2022, throughput was slowly increased as AWTF control systems and processes were optimized. This is typical of commissioning a new facility of this type. A summary of facility bypasses is included in Appendix B.

By mid-September 2022, AWTF had increased to the point that greater than 90% of the available influent from Swift/Cataract and Kilmarnock Creeks was being treated. Facility throughput gradually decreased from September to December 2022 as creek flows decreased and less influent was available for treatment.

From July 17 to August 8, 2022, the FRO-S AWTF temporarily ceased treatment of Swift/Cataract Creek influent while the effluent chillers were being upgraded and commissioned. With the chillers offline, it would not have been possible to manage discharge temperature at the Fording River outfall (E323231) in accordance with the limits in Permit 107517. Kilmarnock Creek influent was treated during this period. The chiller upgrades are summarized in the Continuous Improvement section. The FRO-S AWTF also temporarily ceased treatment of Swift/Cataract influent from September 3 to 6, 2022, while the chillers were offline for unplanned maintenance.

Quantities of Reagents Used and Residuals Generated

The table below summarizes the quantity of reagents used in 2022.

Table 19. FRO-S AWTF 2022 Reagent Use

Reagent	Total Volume or Mass
Methanol	476,747 L
Acetic Acid	538,128 L
Ferric Chloride	508,680 L
Ballasted Sand Clarifier Polymer	7,216 kg
Gravity Thickener Polymer	612 kg
Ammonium Chloride	20,000 L

Reagent	Total Volume or Mass
Phosphoric Acid	19,039 L
Hydrogen Peroxide	77,110 L
Sodium Sulphite	86,995 kg
Liquid Oxygen	637,227 Nm^3
Antiscalant	42,239 L
Sodium Nitrate	61,381 kg
Hydrochloric Acid	39,016 L
Citric Acid	16,344 kg

In 2022, a total of 1,319,160 kg of solid waste (treatment residuals) was generated by the FRO-S AWTF and shipped to an off-site landfill for disposal.

Continuous Improvement Initiatives

During FRO-S AWTF commissioning and early operations in 2022, efforts were focused on commissioning facility components, increasing treatment capacity, and optimizing the treatment processes and controls. This will be described in more detail in the FRO-S AWTF Commissioning Report, which will be submitted within 12 months of finalizing the commissioning phase, as per clause 4A8 of Permit 107517. Improvements made to the effluent chillers, post-commissioning, are described below.

Effluent Chiller Booster Pump Installation

During the warmer months of the year, the FRO-S AWTF operates effluent chillers to meet Permit 107517 temperature compliance limits at the Fording River outfall. The chillers are heat exchangers with treated effluent flowing through one circuit and refrigerated glycol flowing through a separate circuit. The treated effluent flows directly to the Fording River outfall after passing through the chillers.

The chillers were designed to operate with higher pressure on the effluent side and lower pressure on the glycol side. During chiller testing and pre-commissioning, it was observed that the pressure on the effluent side was lower than the pressure on the glycol side, indicating that the chillers were not operating as designed. If the chillers were operated this way, there could have been the risk of effluent being contaminated with glycol if a leak occurred inside the chiller.

To mitigate this risk, Teck installed booster pumps to increase the effluent pressure in the chillers. After the booster pumps were installed in August 2022, testing confirmed that the effluent pressure in the chillers was higher than the glycol pressure. This upgrade eliminated the risk of glycol contaminating the effluent if a leak inside the chiller were to occur.

Reportable Spills and Incidents

There were five reportable spills at the FRO-S AWTF in 2022.

Ammonium Chloride Unloading Spill (DGIR #215095)

On March 14, 2022, approximately 200-250 L of 20% ammonium chloride solution was released to frozen ground in a gravel parking area at the FRO-S AWTF. The spill occurred when a transport tote was punctured while being unloaded from a truck. The area was isolated and bermed, and absorbent pads were used to soak

up the free liquids. On March 15, approximately 0.15 m of surface soil was excavated from the spill area and placed in bins for disposal at an off-site landfill. Teck reviewed and updated chemical handling procedures to avoid a similar incident in the future. The spill was reported to EMBC on March 15, 2022.

Solids Conditioning Tank (DGIR #220044)

On April 4, 2022, a vacuum truck was connected to the drain of the solids conditioning tank (SCT) and was removing solids from the tank. Once the solids were removed, the vacuum truck was approximately full. At that point in the solids removal process, valves were being closed on the SCT to finish the operation. The hose on the vacuum truck came off due to the truck being full and effluent from the SCT feeding the truck too fast. Effluent from the SCT was released outside of the secondary containment. The majority of the effluent was cleaned up and placed into the plant north sump. The area was monitored and no additional effluent was observed and no additional cleanup was required. The spill was reported to EMBC on April 4, 2022.

Discharge of Clean-in-Place Wastewater (DGIR #221535)

On July 23, 2022, an empty antiscalant tote was filled with clean-in-place (CIP) wastewater that contained trace amounts of hydrogen peroxide. Due to a labelling error, this tote was connected to the Swift/Cataract Antiscalant Addition Facility (SC AAF). This resulted in the SC AAF dosing CIP wastewater to the environment instead of antiscalant for a period of approximately 40 minutes. It is estimated that approximately 40 mg of hydrogen peroxide was discharged to the environment. Given that the source of treated water was flowing at 9,040 m^3/day, this would have resulted in an estimated 0.00001 mg/L of hydrogen peroxide discharged into the Fording River.

The SC AAF was immediately shut down once the error was realized and the tote containing CIP wastewater was removed, labelled appropriately, and replaced with a tote of antiscalant. Samples for hydrogen peroxide were taken upstream and downstream of the discharge point, with all results showing non-detectable concentrations. Labelling requirements and the potential impacts of improper labelling were discussed with the site operators and a chemical transfer checklist was created and posted in key areas of the AWTF. Teck reported the spill to EMBC on July 23, 2022.

Acetic Acid Unloading Spill (DGIR #221782)

On August 9, 2022, while unloading acetic acid from a delivery truck to the acetic acid storage tank, a drip containment bucket overfilled and ran off the pad to the gravel pad. Approximately 10 L of 60% acetic acid overfilled a spill containment bucket and ran to ground.

Impacted soil (wet with white staining) was scraped up and placed in containment for offsite disposal. The full containment bucket was placed in chemical storage for disposal. Bulk chemical unloading procedures were reviewed, and additional training on spill prevention and spill response was provided to all operations staff during the September site safety meetings. Teck reported the spill to EMBC on August 10, 2022.

Kilmarnock Creek Influent Toxicity Failure (DGIR #222004)

Weekly sampling and toxicity analysis of intake source water at Kilmarnock Creek on August 1, 2022 indicated an acutely toxic response to *Daphnia magna* greater than 50% in the 20°C lab test. Analysis conducted at 10°C and 20°C (with antiscalant) did not show acute toxicity greater than 50%, nor did testing on Rainbow Trout. Kilmarnock Creek flows subsurface under an active waste rock spoil pile at FRO before daylighting prior to being collected within an intake pipeline which conveys some of the flow to the FRO-S AWTF for treatment. At the time of the spill, the FRO-S AWTF was only treating a portion of the impacted water due to available throughput capacity. Analysis conducted at 10°C, and analysis conducted with antiscalant addition showed a

reduction or removal of toxicity, indicating that the effects were likely consistent with calcite precipitation. It is not expected that the toxicity failure substantively impacted water in Kilmarnock Creek for the following reasons:

- The sample water was between 3-5°C before mixing with 5-10°C Kilmarnock Clean Water Diversion (KCWD) water.
- The sample water was heavily mixed with KCWD water and treated effluent. At the time of the sample, the FRO-S AWTF was treating 9,900 m^3/d of Kilmarnock Creek influent, which mixed with approximately 5,200 m^3/d of untreated Kilmarnock Creek water and 29,000 m^3/d of KCWD at the point of discharge.
- The treated effluent that is discharged back into Kilmarnock Creek is dosed with antiscalant.
- The water in the Kilmarnock Settling Ponds was infiltrating to ground at this time.

Follow-up Kilmarnock Creek influent sampling on August 8, 2022 indicated an acutely toxic response to *Daphnia magna* less than 50% in the 20°C lab test. The FRO-S AWTF continues to increase treatment capacity to reduce the quantity of untreated Kilmarnock Creek water bypassing the facility. Weekly samples of influent and effluent continue to be collected to monitor for toxicity. Teck reported the toxicity failure as a spill to ENV, EMLI, the KNC and EMBC on August 25, 2022.

Incidents resulting in bypasses of Authorized Works

In the FRO-S AWTF operational period in 2022 (i.e., from July 1, 2022 onwards), there were a total of seven downtime events that resulted in bypass of the Authorized Works as defined in Permit 107517 Section 4D1.6 for greater than 24 hours. A table displaying all bypasses of Authorized Works at the FRO-S AWTF in 2022 is presented in Appendix B. A summary of bypass events greater than 24 hours in duration is presented below.

July 1-2, 2022 – Unscheduled downtime due to power outage and subsequent process upset.

The FRO-S AWTF shut down on July 1, 2022 due to a power outage, which caused an unexpected loss of communication to the AWTF process control system. This resulted in ammonia and nitrite concentrations triggering alarm level 3 in the AWTF treatment process, leading to an extended recirculation event. Teck completed the enhanced monitoring at FR_FRABCH (E223753) and FR_SCOUTDS (E320695) as required under Section 4D2.3 of Permit 107517.

Investigation and Corrective Actions:

The facility remained in internal recirculation until ammonia and nitrite were reduced below alarm levels and operational thresholds. Learnings from the process upset were discussed with the process and operations teams, and processes were refined to prevent a similar event in the future. The alarm table was revised in July 2022 to include responses for ammonia at the sand filter effluent, in order to allow operations to identify and respond to high ammonia issues more quickly.

Future Preventative Actions

No future preventative actions were identified in response to this event.

July 22-24, 2022 – Planned shutdown for AOP maintenance and subsequent process upset.

On July 22, 2022, the FRO-S AWTF was shut down for planned maintenance on the AOP. The extended shutdown resulted in ammonia concentrations exceeding alarm levels in the AWTF treatment process, leading to an extended recirculation event. Teck completed the enhanced monitoring at FR_FRABCH (E223753) and FR_SCOUTDS (E320695) as required under Section 4D2.3 of Permit 107517.

Investigation and Corrective Actions:

The facility remained in internal recirculation until ammonia was reduced below alarm levels and operational thresholds. Learnings from the process upset were discussed with the process and operations teams, and processes were refined to prevent a similar event during future maintenance shutdowns.

Future Preventative Actions

No future preventative actions were identified in response to this event.

August 23-24, 2022 – Planned maintenance shutdown.

On August 23 and 24, 2022, the FRO-S AWTF was shut down for planned maintenance. Teck completed the enhanced monitoring at FR_FRABCH (E223753) and FR_SCOUTDS (E320695) as required under Section 4D2.3 of Permit 107517.

Investigation and Corrective Actions:

As this was a planned maintenance shutdown, no investigation or corrective actions were required.

Future Preventative Actions

No future preventative actions were identified in response to this event.

August 27-29, 2022 – Unscheduled downtime due to pipe failure.

On August 27, 2022, the pipeline between the sand filters and the AOP (inside the AWTF) failed. The AWTF was shut down over the weekend while operations and maintenance staff sourced replacement parts and repaired the pipe. Teck completed the enhanced monitoring at FR_FRABCH (E223753) and FR_SCOUTDS (E320695) as required under Section 4D2.3 of Permit 107517.

Investigation and Corrective Actions:

The AWTF maintenance team investigated to determine the cause of the pipe failure. It was determined that the pipe was under stress during certain operating conditions. The AWTF was shut down for approximately 5 hours on October 25, 2022 to conduct additional repairs on the pipe to prevent a future failure.

Future Preventative Actions

No future preventative actions were identified in response to this event.

November 1-2, 2022 – Unscheduled downtime due to ammonia alarm level 3.

On November 1, 2022, ammonia results at the sand filter effluent during routine operational sampling triggered an alarm level 3. The AWTF was immediately placed in internal recirculation as per the alarm table response. Teck completed the enhanced monitoring at FR_FRABCH (E223753) and FR_SCOUTDS (E320695) as required under Section 4D2.3 of Permit 107517.

Investigation and Corrective Actions:

The facility remained in internal recirculation until ammonia was reduced below alarm levels and operational thresholds. Learnings from the process upset were discussed with the process and operations teams, and processes were refined to prevent a similar event in the future.

Future Preventative Actions

No future preventative actions were identified in response to this event.

November 15-16, 2022 – Scheduled maintenance downtime followed by unplanned downtime due to Peroxide alarm

The FROS AWTF was shut down on November 15, 2022, at approximately 07:50 for planned maintenance. The facility briefly returned to forward flow at 17:30, before going into recirculation again at 18:00 due to high hydrogen peroxide levels at BPI. Teck completed the enhanced monitoring at FR_FRABCH (E223753) and FR_SCOUTDS (E320695) as required under Section 4D2.3 of Permit 107517.

Investigation and Corrective Actions:

Teck returned the facility to forward flow once hydrogen peroxide concentrations returned to allowable discharge limits at 09:30 on November 16, 2022. A dosing error was identified as the cause of the hydrogen peroxide. Updates were made to dosing process to prevent further issues. Samples were collected within the ERP to prove that hydrogen peroxide concentrations were acceptable for discharge prior to resuming forward flow.

Future Preventative Actions

No future preventative actions were identified in response to this event.

December 22-23, 2022 – Unscheduled downtime due to AOP chiller faults during extreme cold weather.

The FROS AWTF was shut down on December 22, 2022, at approximately 08:30 due to extreme cold temperatures causing mechanical issues with the AOP. Teck completed the enhanced monitoring at FR_FRABCH (E223753) and FR_SCOUTDS (E320695) as required under Section 4D2.3 of Permit 107517.

Investigation and Corrective Actions:

Teck return the facility to forward flow once conditions allowed at 10:30 on December 23, 2022. FROS AWTF maintenance team insulated sensitive components to prevent further cold weather shut downs.

Future Preventative Actions

No future preventative actions were identified in response to this event.

Discharges to the Turnbull South Pit Tailings Storage Facility

There were no discharges of any FRO-S AWTF effluent to the Turnbull South Pit Tailings Storage Facility in 2022.

Non-compliances

There were three non-compliances at the FRO-S AWTF in 2022, as detailed below.

FS_BPI – April 14-15, 2022

Permit Condition and Non-Compliance

Section 4A3 of Permit 107517 requires Teck to submit an Operations Plan for each selenium and nitrate treatment facility. On the morning of April 15, 2022, it was noted that ozone results at the buffer pond inlet (FS_BPI) triggered a level 3 alarm on the FRO-S AWTF alarm table in several samples between 20:00 on April 14, 2022 and 02:00 on April 15, 2022. The appropriate alarm table response was not fully followed and the

AWTF remained in forward flow until a power outage shut down the facility at approximately 05:30 on April 15. Subsequent sampling and data review suggested that the elevated ozone results may have been false. There was no evidence of ozone discharge to the receiving environment.

Probable Cause of Non-Compliance

This non-compliance was caused by human error. Operations and laboratory staff failed to identify and/or respond to the elevated ozone results at FS_BPI. Based on subsequent review of the laboratory data, it is suspected that the elevated ozone results were the result of analytical interference or a laboratory QA/QC issue.

Reporting

Teck reported this non-compliance to The Ministry of Environment and Climate Change Strategy (ENV), the Ministry of Energy, Mines, and Low Carbon Innovation (EMLI), and the Ktunaxa Nation Council (KNC) on April 15, 2022.

Immediate Actions Taken to Mitigate Non-Compliance

Additional water quality monitoring in the AWTF and buffer pond was implemented as described below. The buffer pond aerators were activated to aid in the degradation of ozone in the pond, if present. Data from the online oxidation-reduction potential (ORP) analyzers was reviewed, and was not indicative of ozone discharge from the AOP to the buffer pond.

Additional Monitoring Conducted

Teck collected samples at five discrete locations in the buffer pond to confirm that no detectable ozone was present. The sampling frequency at FS_BPO (E321351) was increased to every three hours to monitor for ozone at the pond outlet. No ozone was detected at FS_BPO.

Additional Actions Taken to Prevent Non-Compliance

The incident was reviewed and discussed in the daily site meeting and with the individuals involved. In May 2022, Teck environmental staff delivered advanced alarm table training to FRO-S AWTF operations and laboratory technicians to supplement the alarm table training provided during staff onboarding.

FR_FRABCH – Week of May 22, 2022

Permit Condition and Non-Compliance

According to Permit 107517 Section 4D3, Teck is required to collect samples weekly at FR_FRABCH (E223753) between March 15 and July 15. During a review of sampling results, it was identified that a nitrate sample for Teck internal laboratory analysis was not collected during the week of May 22, 2022. A sample was collected for external laboratory analysis of nitrate.

Note that FR_FRABCH data is reported under separate cover in the quarterly Elk Valley Regional Water Quality Report.

Probable Cause of Non-Compliance

The non-compliance was caused by human error. Sampling requirements may have been miscommunicated to the field sampling crew, or the samplers missed collecting the extra bottle required for internal nitrate analysis while collecting the weekly FR_FRABCH sample. The missing sample was not immediately noticed by FRO-S AWTF personnel.

Reporting

Teck reported this non-compliance to ENV, EMLI, and the KNC on June 15, 2022.

Immediate Actions Taken to Mitigate Non-Compliance

Upon discovery, the missed data point was reported to ENV, EMLI, and the KNC. Teck requested sample back from the external laboratory, but the sample was returned on June 13, beyond the hold time for nitrate analysis.

Additional Monitoring Conducted

No additional monitoring was conducted as a result of this non-compliance. External laboratory results for nitrate at FR_FRABCH were available for the week of May 22.

Additional Actions Taken to Prevent Non-Compliance

A weekly reminder prompt and spreadsheet was established to confirm that the FR_FRABCH internal nitrate sample is collected according to permit requirements. Requirements were discussed with the sampling crew to help avoid further issues.

Following discussion between Teck and ENV about the rationale for the internal laboratory nitrate analysis permit requirement at FR_FRABCH, this requirement was removed from Permit 107517 in the January 27, 2023 revision. FR_FRABCH samples continue to be analyzed for nitrate at an external laboratory.

FR_FRABCH and FR_SCOUTDS – July 27, 2022

Permit Condition and Non-Compliance

According to Section 9.1 in Permit 107517 (v. December 1, 2021), Teck is required to submit all water quality data associated with surface sampling programs to the EMS database within 30 days of the end of the quarter in which the samples were collected. Upon a review of the Q2 2022 data on July 27, it was identified that some data required from table 4D3 had not been included in the two previous quarterly EMS uploads (Q4 2021 and Q1 2022). The data that was not submitted included:

- Teck internal lab nitrate results at FR_FRABCH (EMS E223753)
- BOD at FR_SCOUTDS (EMS E320695)
- Selenium speciation at FR_SCOUTDS (EMS E320695)
- Total sulphide at FR_SCOUTDS (EMS E320695)
- Bromate at FR_SCOUTDS (EMS E320695)
- Teck internal lab hydrogen peroxide at FR_SCOUTDS (EMS E320695)

Probable Cause of Non-Compliance

Review of the event indicated that the data was missed during the Q4 2021 and Q1 2022 quarterly data submissions due to a miscommunication of data submission responsibility, and the sample locations being listed in multiple tables in the permit.

Reporting

Teck reported this non-compliance to ENV, EMLI, and the KNC on July 28, 2022.

Immediate Actions Taken to Mitigate Non-Compliance

Teck submitted all outstanding data to the EMS database on July 28, 2022.

Additional Monitoring Conducted

No additional monitoring was conducted.

Additional Actions Taken to Prevent Non-Compliance

An internal investigation was conducted to determine the root cause of the non-compliance. The FRO-S AWTF environment team and FRO environment team met to clarify roles and responsibilities with respect to EMS uploads. Communication procedures and documentation were reviewed and improved to minimize the potential for a similar non-compliance to occur during future EMS submissions.

Map

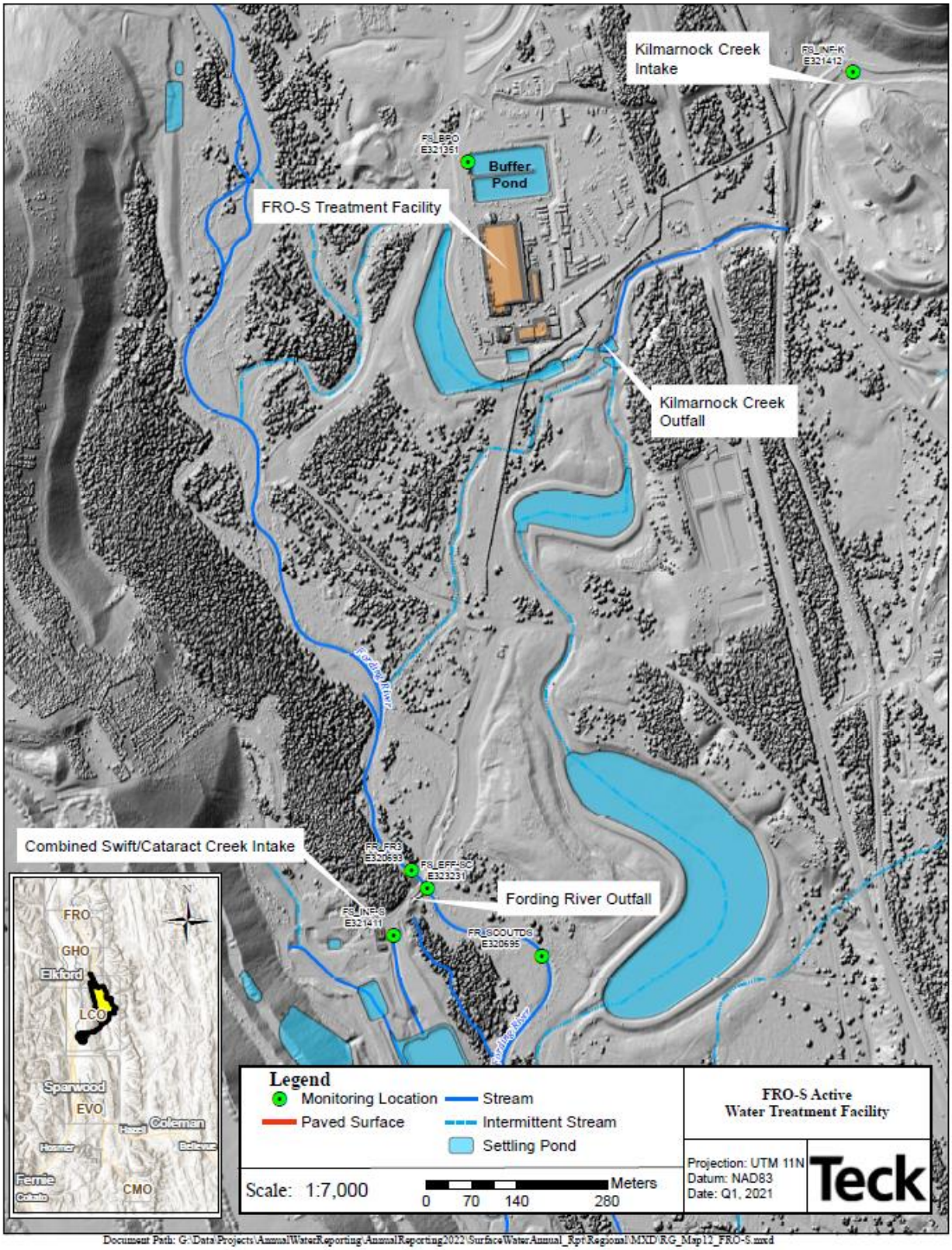

Figure 40. Map of the FRO-S AWTF and Associated Influent, Effluent and Receiving Environment Locations

Operational and Receiving Environment Monitoring Data

This section provides a summary and evaluation of key operational and receiving environment monitoring data associated with the FRO-S AWTF. Data related to the FRO-S AWTF effluent (E321351) and selenium and nitrate data for the downstream compliance point FR_FRABCH (E223753) are included below. Additional monitoring data required in Table 4D3 of Permit 107517 for 2022 is included in Appendix C.

Operational Data

Appendix 4, Section 4D1.2 of Permit 107517 requires the FRO-S AWTF effluent (E321351) to meet the following discharge limit:

Table 20. FRO-S AWTF Effluent (E321351) 107517 Permit Limits

Parameter	Units	Criteria	Sample Count	Limit
Antiscalant*	mg/L	2 minute weighted	Continuous	25

The 25 mg/L antiscalant discharge limit for FRO-S AWTF effluent was not exceeded in 2022.

Effluent selenium and nitrate concentrations in 2022 are shown on the figures below.

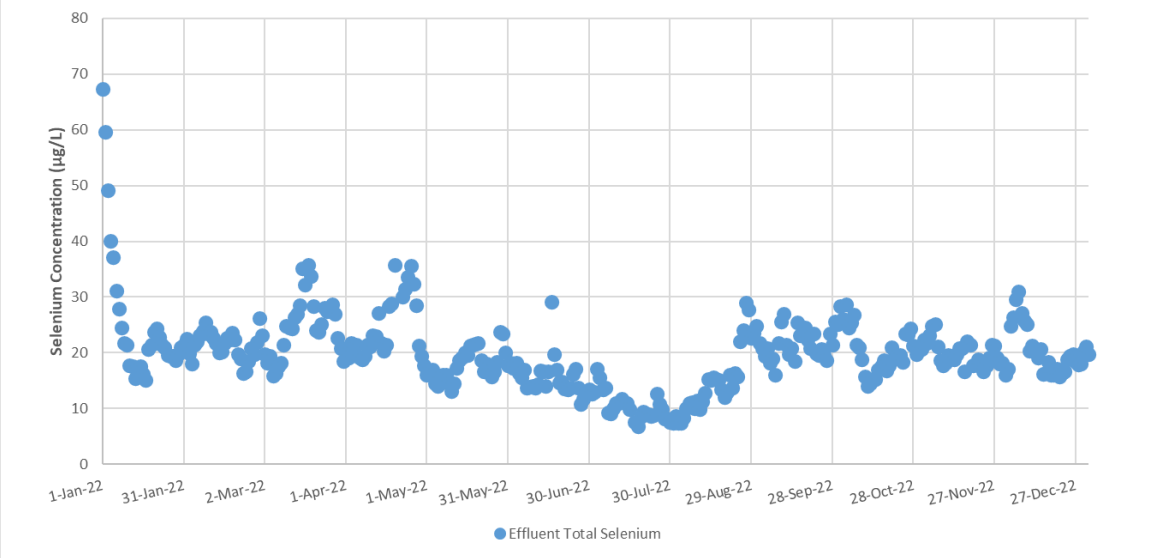

Figure 41. FRO-S AWTF Effluent (E321351) Total Selenium

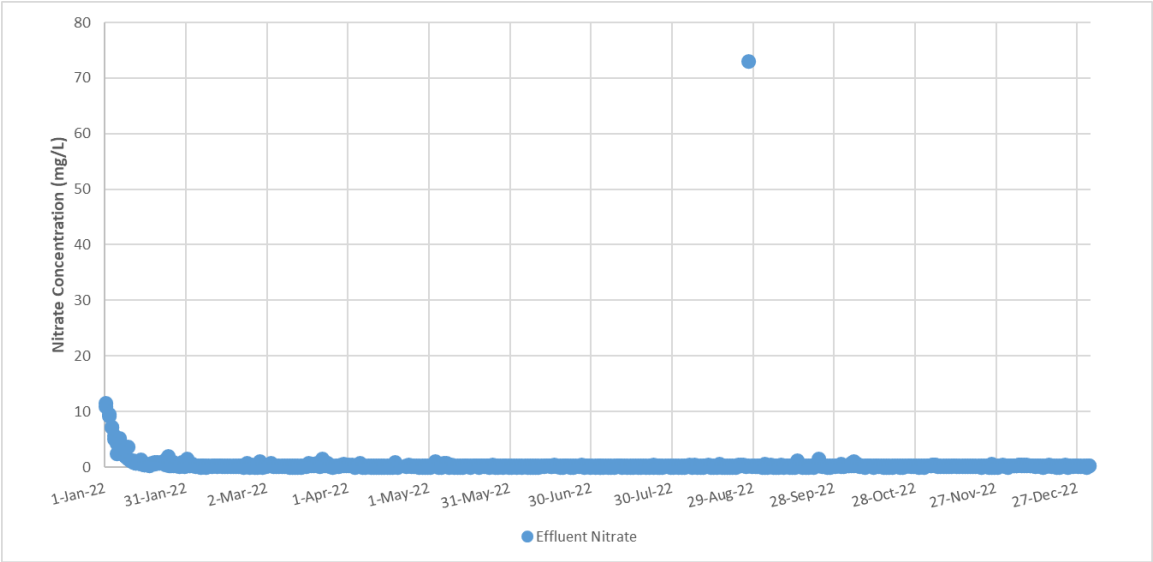

Figure 42. FRO-S AWTF Effluent (E321351) Nitrate

The external laboratory result for effluent nitrate on August 27, 2022 (73.1 mg/L) was inconsistent with the Teck internal laboratory result (<0.23 mg/L) and other process monitoring data. This result is suspected to be an analytical error, but this could not be confirmed by the external laboratory.

The AOP oxidizes the more bioavailable selenium species to selenate. FRO-S AWTF effluent speciation is shown below. The average concentration of non-selenate in the FRO-S AWTF effluent (E321351) was 0.54 ug/L in 2022. An evaluation of the concentrations of selenium in the aquatic biota (periphyton, invertebrates, and fish) downstream of the treatment facility can be found in the 2022 FRO LAEMP Report.

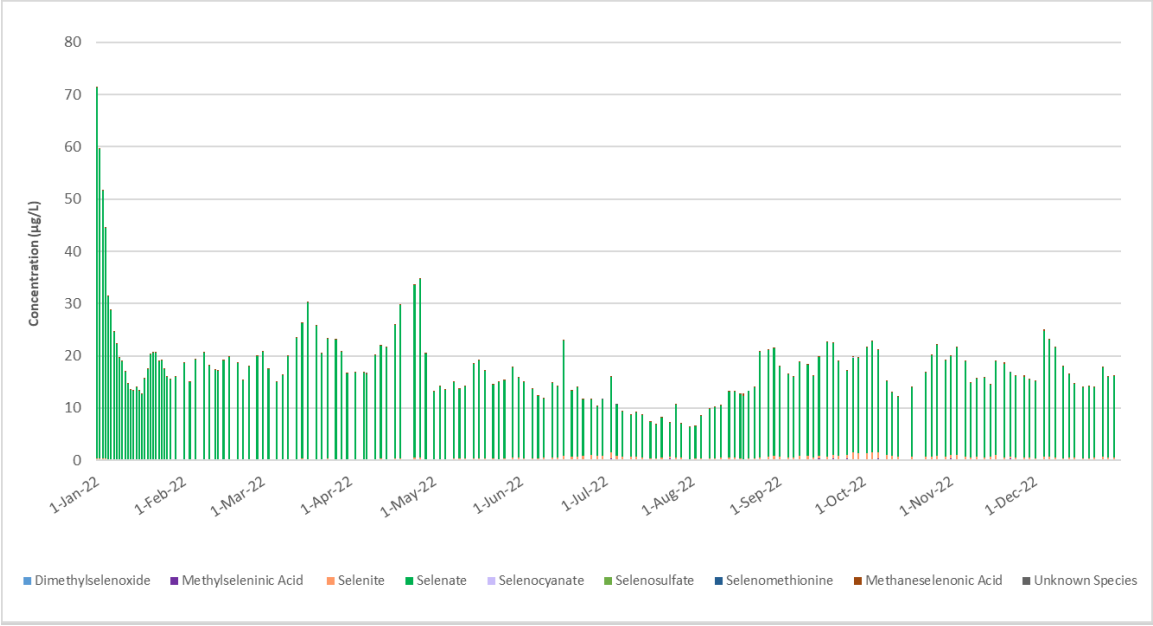

Figure 43. FRO-S AWTF Effluent (E321351) Selenium Speciation

Appendix 4, Section 4D1.4 of Permit 107517 requires FRO-S AWTF effluent temperature to be equivalent to or below the monthly average limits in Table 21 at the Fording River Outfall (FS_EFF-SC; E323231). These limits were not in effect during the FRO-S AWTF commissioning period; however, when ENV granted approval to

extend the commissioning period until June 30, 2022, a condition of the approval was that the monthly average temperature limits for May and June 2022 must be met.

Table 21. Monthly average Permit 107517 temperature limits at FS_EFF-SC (E323231)

Parameter	Limit (*monthly average*)	
Temperature	January 1 to February 28	6°C
	March 1 to April 30*	6°C
	May 1 to September 30	13°C
	October 1 to October 31*	10°C
	November 1 to November 30*	6°C
	December 1 to December 31	6°C

* Effective date – September 1, 2022

FRO-S AWTF discharge temperatures at FS_EFF-SC (E323231), upstream receiving environment temperatures at FR_FR3 (E320693) and downstream receiving environment temperatures at FR_SCOUTDS (E320695) are shown below. Monthly average discharge temperatures at FS_EFF-SC (E323231) were less than the Permit 107517 limits for all months that the limits were in effect (May to December 2022). Hourly average temperature data for FS_EFF-SC, FR_FR3 and FR_SCOUTDS in 2022 is included in Appendix C. In 2022, the average difference between upstream temperatures at FR_FR3 and downstream temperatures at FR_SCOUTDS was approximately 0.1°C. The upstream and downstream temperature differential did not exceed 1°C, except during periods when one or both instream temperature sensors appeared to be frozen.

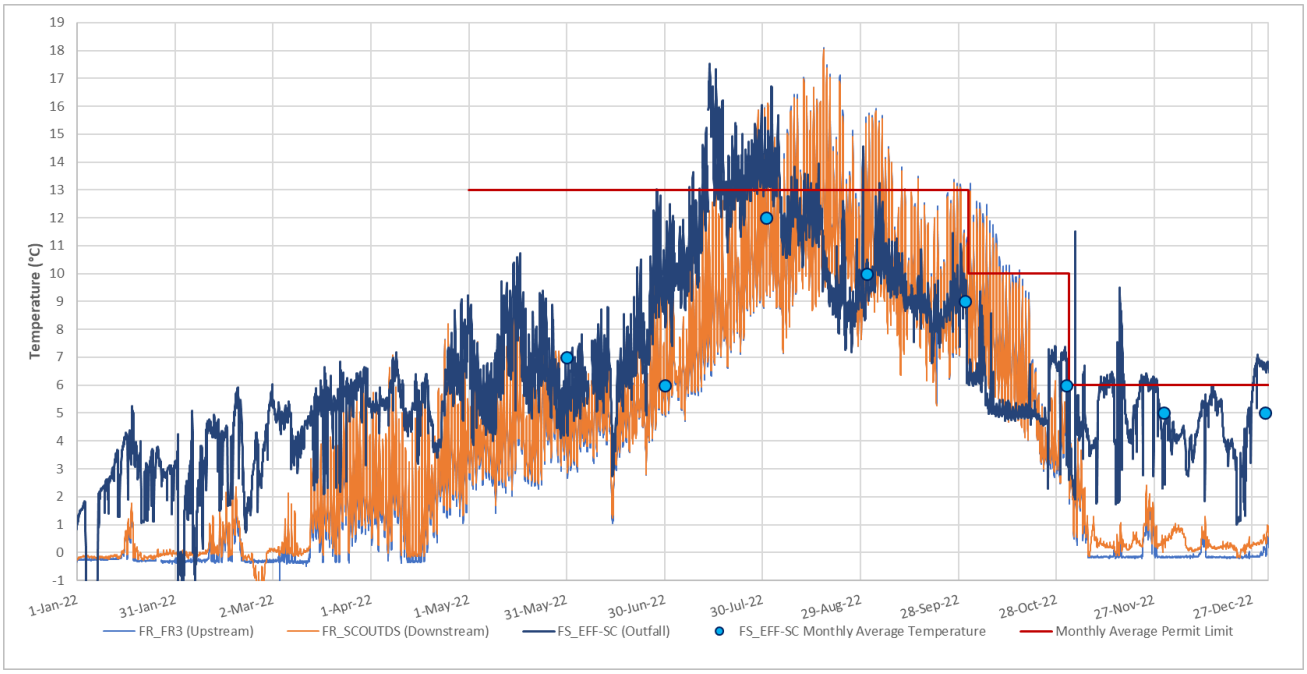

Figure 44. FRO-S AWTF Discharge Temperature Compared to 107517 Permit Limits

Receiving Environment Data

The Fording River compliance point (FR_FRABCH; E223753), downstream of the treatment facility, is required to meet Permit 107517 monthly average and daily maximum limits for nitrate and selenium. Permit 107517 also specifies a monthly average limit for sulphate at FR_FRABCH.

Table 22. Fording River Compliance Point FR_FRABCH (E223753) 107517 Permit Limits

Parameter	Units	Criteria	Limit
Total Selenium	µg/L	Daily Maximum	100
Total Selenium	µg/L	Monthly Average	85
Nitrate	mg/L	Daily Maximum	21.0
Nitrate	mg/L	Monthly Average	18.0
Sulphate	mg/L	Monthly Average	577

There were non-compliances at FR_FRABCH for nitrate and selenium in 2022. Monthly average nitrate and selenium concentrations exceeded the permit limit for each month from January to April, and for November and December. The nitrate monthly average also exceeded the limit from August to October. Monthly average sulphate concentrations were below the permit limit throughout 2022. A comparison of the receiving environment data against Approved and Working BC Water Quality Guidelines is included in the Permit 107517 Surface Water Quality Monitoring 2022 Annual Report.

Daily maximum nitrate concentrations exceeded the permit limit for all samples collected from January to April and September to December. Daily maximum selenium concentrations exceeded the permit limit in 12 of 20 samples collected from January to April. The following graphs display 2022 FR_FRABCH (E223753) results compared to the nitrate, selenium, and sulphate monthly average limits.

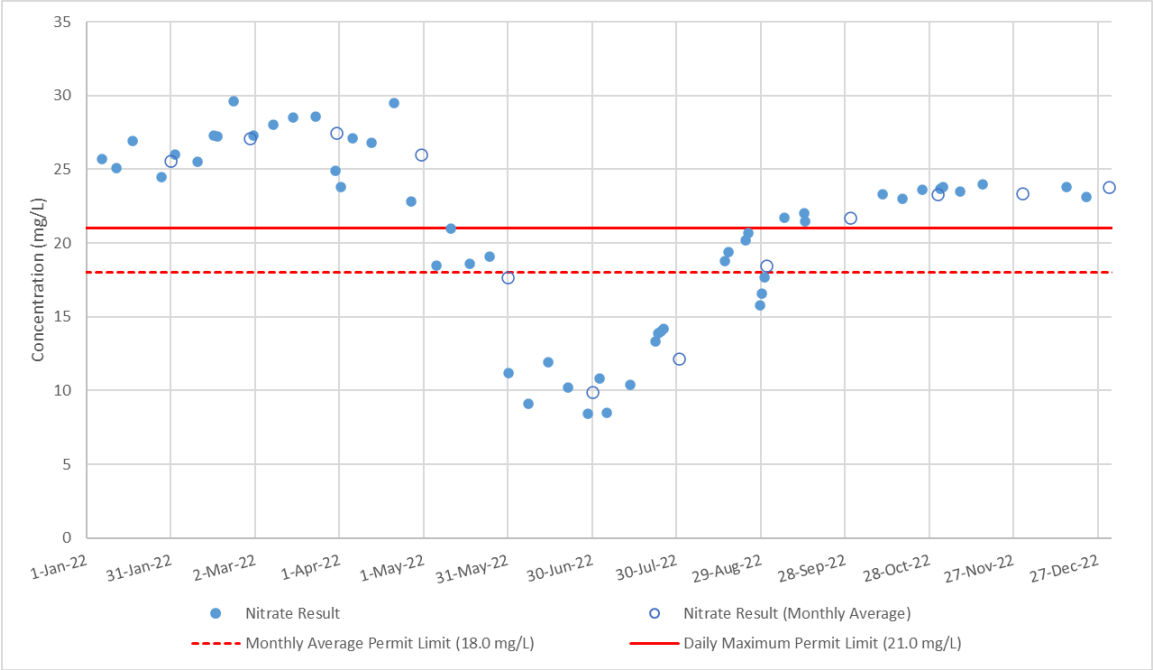

Figure 45. FR_FRABCH (E223753) Nitrate Compared to 107517 Permit Limits

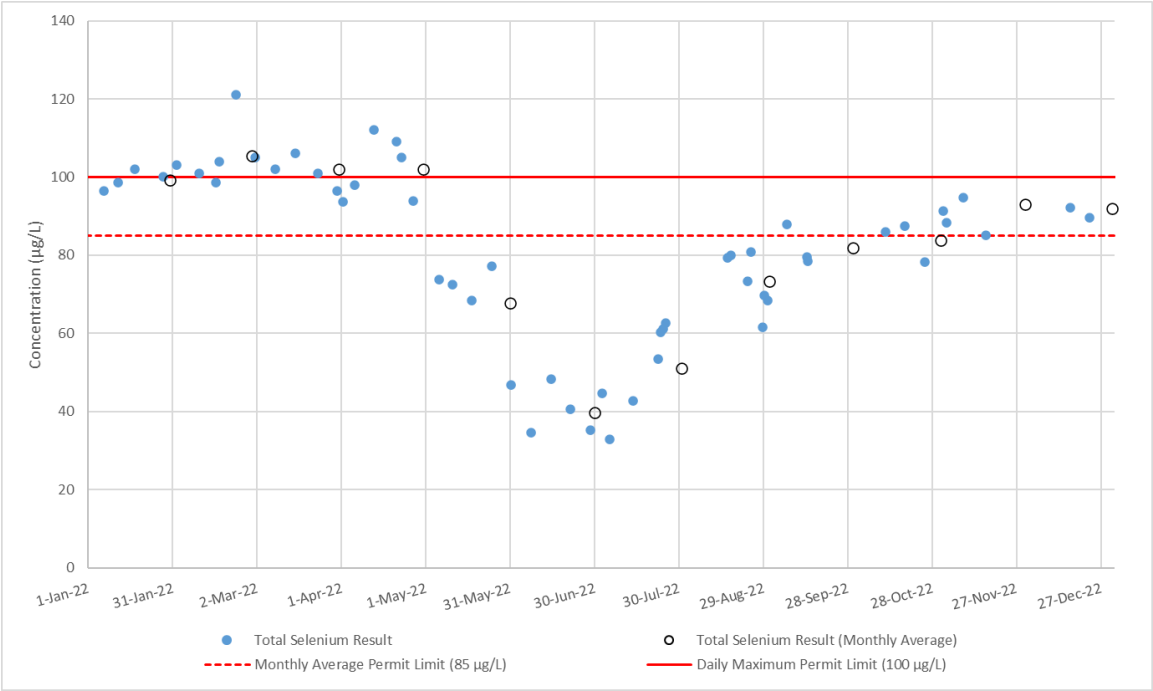

Figure 46. FR_FRABCH (E223753) Total Selenium Compared to 107517 Permit Limits

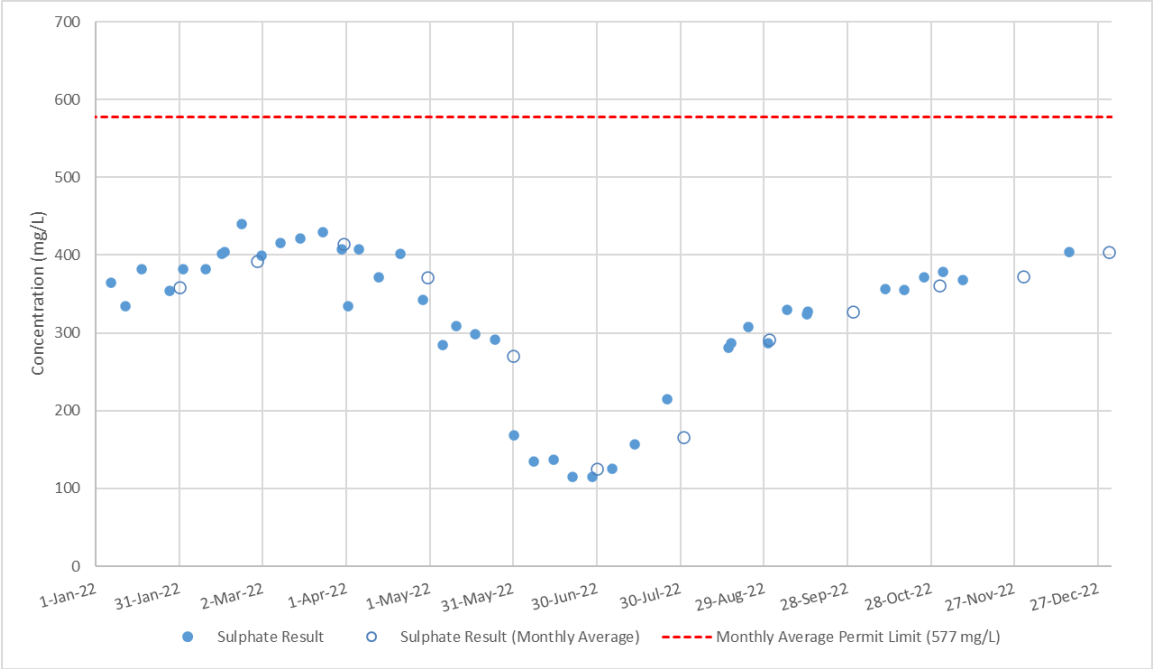

Figure 47. FR_FRABCH (E223753) Sulphate Compared to 107517 Permit Limit

Influent and receiving environment selenium speciation data at Swift/Cataract influent (E321411), Kilmarnock influent (E321412), FR_FRABCH (E223753) and FR_SCOUTDS (E320695) is presented below.

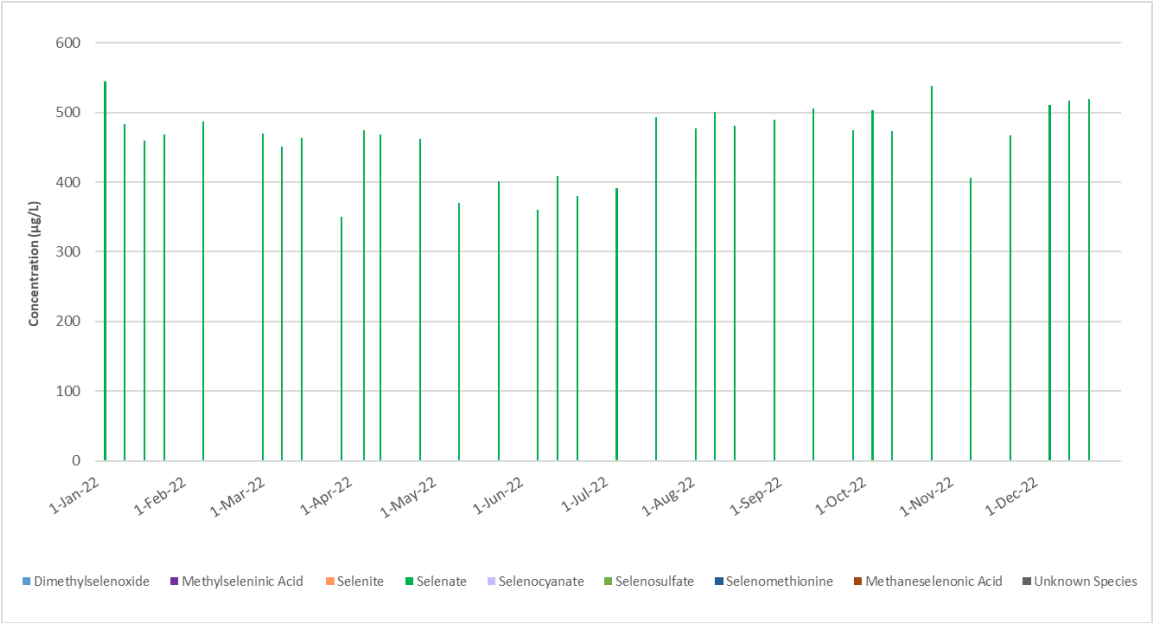

Figure 48. FS_INF-S (E321411) Selenium Speciation Results

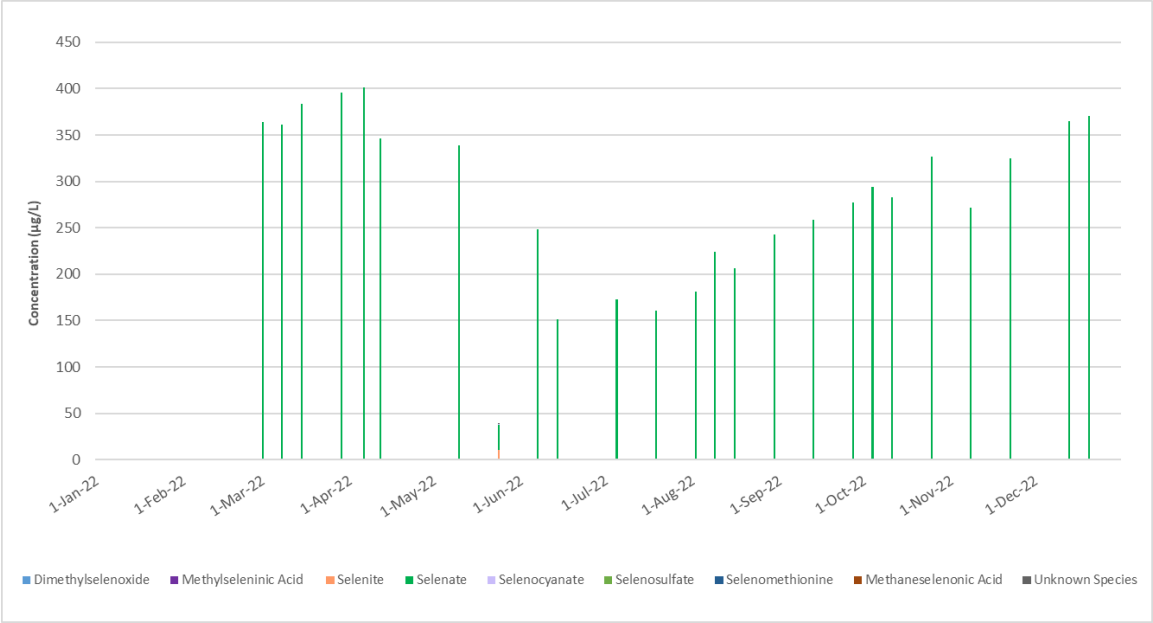

Figure 49. FS_INF-K (E321412) Selenium Speciation Results

The May 24, 2022 speciation result at FS_INF-K was inconsistent the total/dissolved selenium results and the expected values for this location. It is suspected that a sampling or laboratory error occurred.

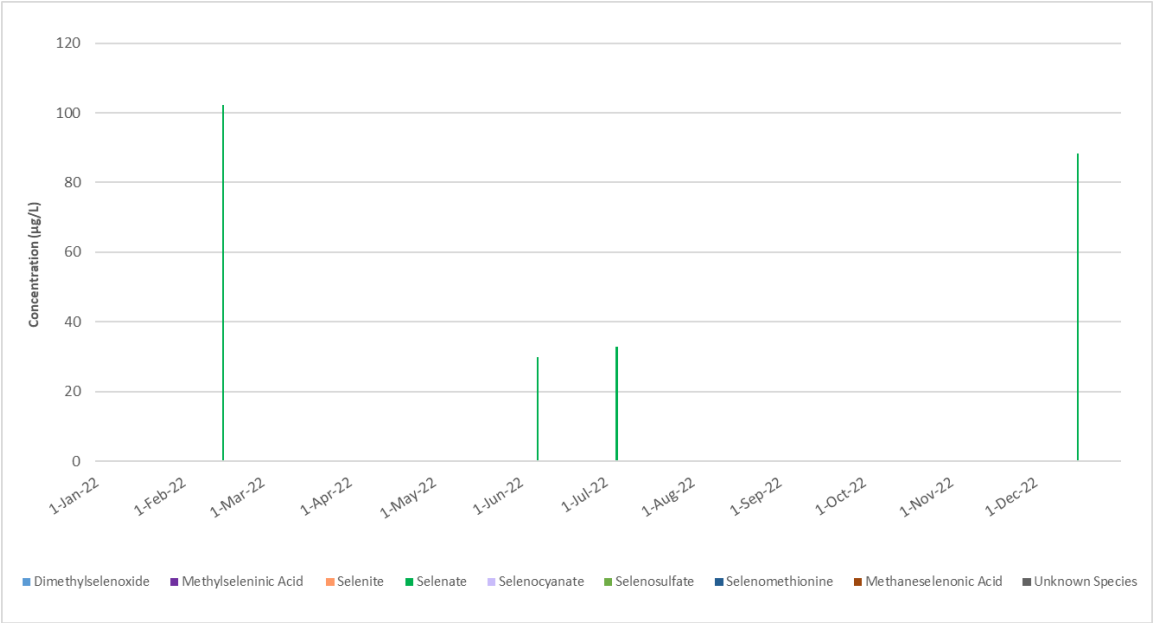

Figure 50. FR_FRABCH (E223753) Selenium Speciation Results

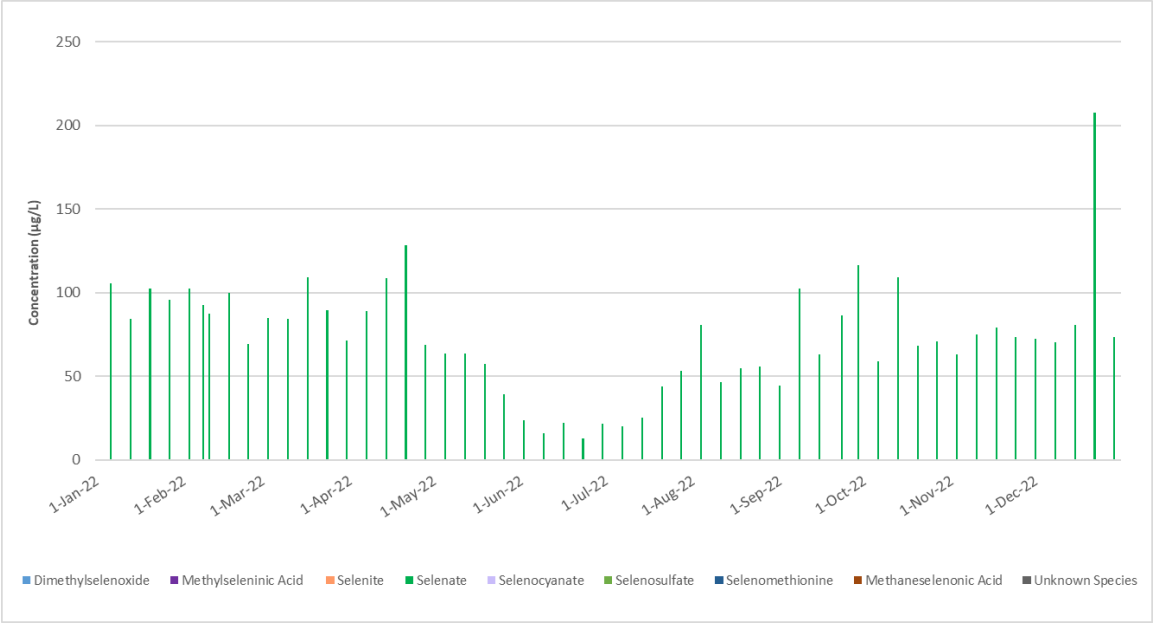

Figure 51. FR_SCOUTDS (E32065) Selenium Speciation Results

Site Performance Objectives

Permit 107517 does not include any site performance objectives for the FRO-S AWTF.

Acute Toxicity

As per Section 6.2 of Permit 107517, effluent is not acutely toxic if it does not cause greater than 50% mortality in 48-hour *Daphnia magna* and 96-hour Rainbow Trout 100% (single concentration) acute lethality toxicity tests.

All acute toxicity test results conducted on FRO-S AWTF effluent in 2022 on rainbow trout (*Oncorhynchus mykiss*) and water flea (*Daphnia magna)* are provided in Appendix D. Acute toxicity tests were conducted as required by Sections 8.1 and 4D3 of Permit 107517. The acute toxicity tests conducted on the FRO-S AWTF effluent (E321351) in 2022 were:

- 96-hour Rainbow Trout 100% (single concentration) acute lethality toxicity tests.
- 48-hour *Daphnia magna* 100% (single concentration) acute lethality toxicity tests.

There were no acute toxicity failures on the FRO-S AWTF effluent in 2022. The results from the *Daphnia magna* and Rainbow Trout tests are summarized below.

Daphnia magna Test Results

In 2022, 54 *Daphnia magna* 100% (single concentration) 20°C acute lethality toxicity tests were conducted on samples collected from FRO-S AWTF effluent. One test result exhibited 3% mortality.

Rainbow Trout Test Results

In 2022, 54 Rainbow Trout 100% (single concentration) acute lethality toxicity tests were conducted on samples collected from FRO-S AWTF effluent. One test result exhibited 10% mortality.

QA/QC Summary

Teck has established a quality assurance/quality control (QA/QC) program to promote the collection of high quality environmental data. Teck has developed protocols and procedures to collect representative samples and to minimize the potential for deterioration and contamination of samples before laboratory analysis.

Despite the considerable level of effort and management system tools employed to achieve high-quality data, there were instances in 2022 where data quality issues occurred.

The results of the QA/QC program are summarized below. A detailed explanation and tabulated results of the QA/QC program are included in Appendix E of this report.

QA/QC Results

Data quality issues encountered in 2022 were related to RPDs outside of acceptance criteria, blank detects, and hold-time exceedances. Teck continues to monitor QA/QC results to identify any potential issues with laboratory precision or sample contamination. Due to the relative infrequency of QA/QC issues, Teck's dataset is considered to be of high quality and meets the intent of the monitoring program.

RPD Results

The precision of laboratory results was evaluated using field duplicate samples. The RPDs of duplicate samples (4,284 data points) were calculated and evaluated against the RPD acceptance criteria outlined above. Of those, 177 (or 4.1%) were classified as Fail, 396 (9.2%) were classified as Pass-1, and 81 (1.9%) were classified as Pass-2. A summary of the 2022 RPD results is provided in Appendix E.

Blank Detect Results

In 2022, blank samples were collected to determine if contamination was occurring during bottle storage, sample collection, sample handling, and sample analysis. Of the 5,339 parameters analyzed in these samples, 128 had results above detection limits (2.4%). Blank detect results for 2022 are presented in Appendix E for the FRO-S AWTF.

Hold Time Exceedances

Parameter hold-times were exceeded on 60 of the 17,597 analyses (0.3%) completed at external laboratories 2022, as detailed in Appendix E. The hold-time exceedances in 2022 were for time-sensitive water quality parameters, specifically turbidity, sulphide, TDS, TSS, nitrate and BOD.

Teck continues to address the causes of hold-time exceedances by working with the laboratories to improve the timely reporting of issues such as equipment malfunctions, sample volumes, shipping delays, and laboratory resources. Timely reporting of these issues to Teck often provides field samplers enough time to resample to meet permit requirements.

Equipment Calibration

Equipment calibrations for the FRO-S AWTF are summarized in Table 23.

Table 23. FRO-S AWTF Equipment Calibration

Equipment	Model	Calibration Frequency	Last Calibrated
Field Meter #1	YSI Handheld Multiparameter Instrument (Pro Quatro) (Temperature, pH, DO, Spec Cond., ORP)	Monthly in-house calibration, daily verification	3/5/2023
Field Meter #2	YSI Handheld Multiparameter Instrument (Pro Quatro) (Temperature, pH, DO, Spec Cond., ORP)	Monthly in-house calibration, daily verification	3/5/2023
Field Meter #3	YSI Handheld Multiparameter Instrument (Pro Quatro) (Temperature, pH, DO, Spec Cond., ORP)	Monthly in-house calibration, daily verification	3/5/2023
Field Meter #4	YSI Handheld Multiparameter Instrument (Pro Quatro) (Temperature, pH, DO, Spec Cond., ORP)	Monthly in-house calibration, daily verification	3/5/2023
In-house Spectrometer #1	Hach DR3900	Yearly by manufacturer	7/20/2022
In-house Spectrometer #2	Hach DR3900	Yearly by manufacturer	1/18/2023
Discrete Analyzer #1	Thermo Fisher Gallery Discrete Analyzer	Yearly by manufacturer	2/17/2023
Discrete Analyzer #2	Thermo Fisher Gallery Discrete Analyzer	Yearly by manufacturer	2/17/2023
Turbidity Analyzer #1	Hach TU5200	Yearly by manufacturer	7/21/2022
Turbidity Analyzer #2*	Hach TU5200	Yearly by manufacturer	1/18/2023

Appendix A – Annual Status Form

Annual Compliance Status Form

AUTHORIZATION NUMBER:	107517
AUTHORIZATION TYPE:	Permit
LEGAL AUTHORIZATION HOLDER NAME:	Teck Coal Limited
PERIOD OF COMPLIANCE STATUS ASSESSMENT:	2022-01-01 to 2022-12-31
AUTHORIZED PERSON NAME:	Jocelyn Traverse
AUTHORIZED PERSON SIGNATURE:	
SIGNATURE DATE:	

I understand that it is an offense to mislead a government official, and I declare that all of the information presented is accurate and true.
I have been given the authority by the authorization holder to sign this form.

AUTHORIZATION CLAUSE NUMBER	AUTHORIZATION CLAUSE DESCRIPTION	COMPLIANT? (Yes/No/ND)	RATIONALE FOR YOUR COMPLIANCE DETERMINATION	LOCATION OF SUPPORTING INFORMATION IN ANNUAL REPORT
Section 5.2.1	The permittee must develop a nickel benchmark derivation workplan and submit it to the director for approval by August 31, 2021. The workplan must incorporate feedback from the EMC and include proposed methodologies and timelines for the derivation of a nickel benchmark that could be applied in the receiving environment of the Elk Valley. Once the final nickel benchmark is derived, the director may require additional mitigation to be implemented.	Yes	Section 5.2.2.1 was amended with a new submission date of June 3, 2022. The updated EVO SRF Nickel Trigger Response Plan was submitted May 31, 2022.	N/A
Section 5.2.2	The permittee must develop and implement a Trigger Response Plan (TRP) for nickel. The TRP must be submitted to the director for approval 30 days prior to the end of the commissioning period for the EVO SRF, and the permittee must notify the director at least 15 days prior to implementing any proposed changes to the approved TRP. The TRP must describe the actions to be taken if total nickel concentrations in the effluent exceed an initial trigger value of 36 ug/L, calculated as a quarterly (13-week) rolling average at the Effluent Retention Pond Outlet (F2_BPO, E321812), when the SRF is discharging to Erickson Creek.	Yes	Section 5.2.2.1 was amended with a new submission date of June 3, 2022. The updated EVO SRF Nickel Trigger Response Plan was submitted May 31, 2022.	N/A
Section 5.2.2	The purpose of the TRP is to ensure that procedures to manage nickel concentrations in the effluent are implemented in a timely manner to minimize risks associated with elevated nickel concentrations in the receiving environment of Erickson Creek. The TRP procedures must include, but not be limited to, an increase in effluent and/ or receiving environment monitoring to confirm exceedances of triggers, specific management actions to be implemented where trigger exceedances are confirmed, and a schedule for implementation of the management actions.	Yes	Section 5.2.2.1 was amended with a new submission date of June 3, 2022. The updated EVO SRF Nickel Trigger Response Plan was submitted May 31, 2022.	N/A
Section 5.2.2	The permittee must review and update the TRP within 9 months of the submission of the final nickel benchmark to the director. The updated TRP must be submitted to the director and must include consideration of: i. The final nickel benchmark as per Section 5.2.1, ii. Results from the Elkview Operations Local Aquatic Effects Monitoring Program as per Section 8.3.5, and ii. any other relevant plans, data or information.	Yes	The updated EVO SRF Nickel Trigger Response Plan was submitted May 31, 2022.	N/A

AUTHORIZATION CLAUSE NUMBER	AUTHORIZATION CLAUSE DESCRIPTION	COMPLIANT? (Yes/No/ND)	RATIONALE FOR YOUR COMPLIANCE DETERMINATION	LOCATION OF SUPPORTING INFORMATION IN ANNUAL REPORT
Section 8.3.5	The permittee must develop and implement a LAEMP to determine the magnitude and extent of influence from EVO SRF discharge on water quality (including temperature), calcite and benthic invertebrate communities to assess what factors are contributing to the observed effects. The study design must be reviewed by the EMC and submitted to the director for approval by June 30, 2021. The LAEMP must be designed to an appropriate temporal scale to capture short term, local effects to the immediate receiving environment, and must consider the possibility of impacts resulting from potential selenium speciation. The LAEMP must focus on Erickson Creek from EV_ECOUT (E321814) to EV_EC1 (0200097) and Michel Creek between EV_MC3 (0200203) and EV_MC2 (E300091) for 2021-2023.	Yes	Included in 2022 Annual LAEMP Report	N/A
Section 8.3.5	Until the 2021-2023 LAEMP study design is approved and implemented, the permittee must continue the pre-operational aquatic effects monitoring program as outlined in Section 8.2.2 the EVO SRF Phase 2 Operations application.	Yes	No longer relevant as the study design has now been approved.	N/A
Section 8.3.5	The permittee must notify the director at least 15 days prior to implementing any proposed changes to the approved LAEMP. Any changes to the approved study design must be reported in the annual LAEMP report.	Yes	N/A	N/A
Section 9.1	The permittee must submit the results of the discharge and receiving environment water sampling program directly into the EMS database using the appropriate EMS site identification numbers within 30 days of the end of the quarter in which the samples were collected. Flow data is to be submitted annually.	No	Some parameters were missed in the EMS submission for E223753 and E320695 in Q1 2022. When this was discovered, the missing data were submitted; however, this error was not discovered or resolved within 30 days of the end of the quarter.	FRO-S AWTF - Non-compliances section
Section 9.3	All acute toxicity test lab reports must include data and/or observations for pH, temperature, and formation of precipitate either in the vessel or on the organism. Lab reports for the 48-hour *Daphnia magna* single concentration toxicity test must also include data and/or observations for hardness and alkalinity.	Yes	Included in the 2022 annual treatment performance report.	Acute Toxicity section for each facility Appendix D
Section 9.3	The permittee must prepare on an annual basis a report summarizing all acute and chronic toxicity data from the laboratory and an interpreted summary and discussion of results, including recommendations and subsequent actions. This report is to be submitted to the director by April 30 of each year following the data collection calendar year.	ND	Separate deliverable due April 30.	
Section 4A1	Commissioning means bringing the selenium and nitrate treatment facility works into operation. A maximum of 120 days in forward flow during commissioning is considered a reasonable time to undertake operational refinement or adjustment of works to optimize efficiency and/or effluent quality prior to moving to the operational phase of the treatment facility. The permittee must notify the director when the facility commences forward flow and commissioning must be completed within 120 days of commencing forward flow. Alternative commissioning periods must be approved by the director.	Yes	Alternative commissioning period for the FRO-S AWTF was approved by ENV on April 22, 2022. Notifications were provided as per Section 4A1.	FRO-S AWTF - Operational and Receiving Environment Monitoring Data section
Section 4A1	During commissioning of a treatment facility, the authorized discharge limits for each specific facility included in the subsequent sections do not apply, but the discharge is required to be non-acutely toxic as per Section 6.2.	Yes	Acute toxicity testing results indicated that the FRO-S AWTF effluent was non-acutely toxic during the commissioning period.	FRO-S AWTF - Acute Toxicity section
Section 4A2	A Commissioning Plan for each selenium and nitrate treatment facility must be prepared by a Qualified Professional, submitted to the director and implemented prior to commencement of the discharge from the treatment facility.	Yes	Commissiong Plan was submitted for FRO-N SRF Phase 1 in 2022. The FRO-N SRF remained in pre-commissioning throughout 2022. No water treatment facilities commenced discharge for the first time in 2022.	N/A
Section 4A2	The Commissioning Plan must include but is not necessarily limited to operational procedures required to commission and to start-up following a shut-down of the water treatment facility, including any additional monitoring and reporting required to demonstrate that no adverse environmental impacts result from commissioning.	Yes	FRO-N SRF Phase 1 Commissioning Plan met all requirements.	N/A

Authorized Person Initial:_____

Date:_____

AUTHORIZATION CLAUSE NUMBER	AUTHORIZATION CLAUSE DESCRIPTION		COMPLIANT? (Yes/No/ND)	RATIONALE FOR YOUR COMPLIANCE DETERMINATION	LOCATION OF SUPPORTING INFORMATION IN ANNUAL REPORT
Section 4A3	An Operations Plan for each selenium and nitrate treatment facility and the associated authorized works in Appendix 4 must be prepared by a Qualified Professional, submitted to the director and implemented prior to commencement of the discharge from the treatment facility during the operational phase.		Yes	Operations Plans were submitted prior to the commencement of discharge from each water treatment facility.	N/A
Section 4A3	Operations Plan must include but is not necessarily limited to:	The facility operator's manual, with provision for its continual improvement;	Yes	Included in the Operations Plan for each water treatment facility.	N/A
Section 4A3	Operations Plan must include but is not necessarily limited to:	An overview of the planned maintenance program which includes an inventory of facility components and authorized replacement parts, and a detailed description of inspection, repair and replacement frequency for facility components;	Yes	Included in the Operations Plan for each water treatment facility.	N/A
Section 4A3	Operations Plan must include but is not necessarily limited to:	Documentation to verify that the facility is operated at all times within specifications and in a manner to ensure compliance with this authorization and other applicable legislation;	Yes	Included in the Operations Plan for each water treatment facility.	N/A
Section 4A3	Operations Plan must include but is not necessarily limited to:	Procedures for safely shutting down the treatment facility; and	Yes	Included in the Operations Plan for each water treatment facility.	N/A
Section 4A3	Operations Plan must include but is not necessarily limited to:	Actions to be taken if effluent quality fails to meet the requirements of this permit;	Yes	Included in the Operations Plan for each water treatment facility.	N/A
Section 4A3	Operations Plan must include but is not necessarily limited to:	Contingency planning which describes built-in redundancy of the facility and outlines measures to prevent emergency conditions from occurring; and	Yes	Included in the Operations Plan for each water treatment facility.	N/A
Section 4A3	Operations Plan must include but is not necessarily limited to:	Key metrics to be used to demonstrate the performance of the treatment facility relative to the intended performance.	Yes	Included in the Operations Plan for each water treatment facility.	N/A
Section 4A3	The Operations Plan must be reviewed and updated following the first year of facility operations and as needed thereafter to assess its appropriateness for the authorized works, discharges and conditions.	Results of the initial review must be provided to the director in the commissioning report prepared under Section 4A8 of this permit.	Yes	Included in the Operations Plan for each water treatment facility.	N/A
Section 4A3	Any significant update to the plan must be submitted to the director within 30 days of adoption.		Yes	Updated EVO-SRF Operations Plan was submitted to the director within 30 days of adoption with the submission of the Commissioning Report.	N/A
Section 4A3	Minor updates must be summarized in the quarterly report for the time period when the minor update was made.		Yes	Minor Operations Plan updates were summarized in the 2022 quarterly treatment performance reports.	N/A
Section 4A4	The permittee must notify the director in writing, prior to implementing changes to any process that may adversely affect the quality and/or quantity of the discharge from the selenium and nitrate treatment facilities.		Yes	WLC AWTF notified director of process modification for gravity thickener repairs prior to commencing work. EVO SRF notified director of process modification for the Nickel Inground Treatment Trial, Installation of Recirculation Pipe,Installation of Sulphide Treatment Tank, and Notification for addition of a filtration system to the Sulphide Treatment Tank Pilot.	
Section 4A6	A Site-Specific Environmental Emergency Response Plan must be prepared for all selenium and nitrate treatment facilities		Yes	Each water treatment facility has a site-specific Environmental Emergency Response Plan in place.	N/A
Section 4A6	The plan must be submitted to the director prior to commencement of the discharge from the selenium and nitrate treatment facilities		Yes	Environmental Emergency Response Plans were submitted prior to the commencement of discharge from each water treatment facility.	N/A

Authorized Person Initial:_____ Date:_____

AUTHORIZATION CLAUSE NUMBER	AUTHORIZATION CLAUSE DESCRIPTION		COMPLIANT? (Yes/No/ND)	RATIONALE FOR YOUR COMPLIANCE DETERMINATION	LOCATION OF SUPPORTING INFORMATION IN ANNUAL REPORT
Section 4A6	The Site-Specific Environmental Emergency Response Plan must include, but is not limited to:	A description of measures to mitigate any health or environmental impacts, if emergencies occur;	Yes	Included in the Environmental Emergency Response Plan for each facility.	N/A
Section 4A6	The Site-Specific Environmental Emergency Response Plan must include, but is not limited to:	Specific reference to the Spill Reporting Regulation;	Yes	Included in the Environmental Emergency Response Plan for each facility.	N/A
Section 4A6	The Site-Specific Environmental Emergency Response Plan must include, but is not limited to:	Instructions for staff in the event of an emergency, including contact information for local authorities (fire, police, public health), Emergency Management BC, and the director.	Yes	Included in the Environmental Emergency Response Plan for each facility.	N/A
Section 4A6	Any significant update to the Site-Specific Environmental Emergency Response Plan must be submitted to the director within 30 days of adoption.		ND	No significant updates to Environmental Emergency Response Plans were made in 2022.	N/A
Section 4A6	Minor updates to the Site Specific Environmental Emergency Response Plan must be summarized in the quarterly report for the time period when the minor update was made.		Yes	Minor Environmental Emergency Response Plan updates were summarized in the 2022 quarterly treatment performance reports.	N/A
Section 4A7	The permittee must sample the parameters at the sampling sites at the specific frequencies as defined in subsequent sections in Appendix 4.		No	Missed samples included: - Four TKN analyses and two TOC analyses at E321791 in June/July 2022 - Teck internal nitrate analysis at E223753 for the week of May 22, 2022	EVO SRF - Non-compliances section FRO-S AWTF - Non-compliances section
Section 4A8	Within 12 months of finalizing the commissioning phase of the selenium and nitrate treatment facility, the permittee must submit a commissioning report, prepared by a Qualified Professional to the director.	The report must document the results of performance monitoring and system optimization over the first year of operations at the facility and recommend any necessary system improvements.	Yes	EVO SRF Commissioning Report was submitted on August 13, 2022, within 12 months of finalizing the commissioning phase.	N/A
Section 4A9	The permittee must submit a quarterly treatment performance report to the director within 30 days of the end of the quarter in which the samples were collected.		Yes	Quarterly treatment performance reports were prepared and submitted within 30 days of the end of each quarter in 2022.	N/A
Section 4A9	The quarterly treatment performance report must include the following for each water treatment facility:	Effluent water quality results used to calculate monthly averages for the limits in Section 2 and Appendix 4, if applicable;	Yes	Reported in the 2022 quarterly treatment performance reports.	N/A
Section 4A9	The quarterly treatment performance report must include the following for each water treatment facility:	Calculated rolling 30-day cumulative total hours in recirculation for each day of the quarter;	Yes	Reported in the 2022 quarterly treatment performance reports.	N/A
Section 4A9	The quarterly treatment performance report must include the following for each water treatment facility:	A summary of timing and duration of authorized and unauthorized bypass events (i.e., full recirculation events) and routine and enhanced monitoring conducted during each bypass event;	Yes	Reported in the 2022 quarterly treatment performance reports.	N/A
Section 4A9	The quarterly treatment performance report must include the following for each water treatment facility:	Effluent water quality results exceeding limits and targets or other criteria, such as daily maximums or as specified by the director;	Yes	Reported in the 2022 quarterly treatment performance reports.	N/A
Section 4A9	The quarterly treatment performance report must include the following for each water treatment facility:	Facility throughput and availability;	Yes	Reported in the 2022 quarterly treatment performance reports.	N/A
Section 4A9	The quarterly treatment performance report must include the following for each water treatment facility:	Selenium and nitrate load removal;	Yes	Reported in the 2022 quarterly treatment performance reports.	N/A

Authorized Person Initial:_____

Date:_____

AUTHORIZATION CLAUSE NUMBER	AUTHORIZATION CLAUSE DESCRIPTION		COMPLIANT? (Yes/No/ND)	RATIONALE FOR YOUR COMPLIANCE DETERMINATION	LOCATION OF SUPPORTING INFORMATION IN ANNUAL REPORT
Section 4A9	The quarterly treatment performance report must include the following for each water treatment facility:	A summary of selenium speciation data;	Yes	Reported in the 2022 quarterly treatment performance reports.	N/A
Section 4A9	The quarterly treatment performance report must include the following for each water treatment facility:	Identification of all missing data and all QA/QC issues;	Yes	Reported in the 2022 quarterly treatment performance reports.	N/A
Section 4A9	The quarterly treatment performance report must include the following for each water treatment facility:	All toxicity test results and raw laboratory data sheets for all mortality results;	Yes	Reported in the 2022 quarterly treatment performance reports.	N/A
Section 4A9	The quarterly treatment performance report must include the following for each water treatment facility:	Identification of all missing data and all QA/QC issues;	Yes	Reported in the 2022 quarterly treatment performance reports.	N/A
	The quarterly treatment performance report must include the following for each water treatment facility:	All toxicity test results and raw laboratory data sheets for all mortality results;	Yes	Reported in the 2022 quarterly treatment performance reports.	N/A
Section 4A9	The quarterly treatment performance report must include the following for each water treatment facility:	Identification of all missing data and all QA/QC issues;	Yes	Reported in the 2022 quarterly treatment performance reports.	N/A
Section 4E	Fording River Operations - North SRF (FRO-N SRF) Phase 1		ND	N/A - Requirements of section 4E of Permit 107517 are not yet activated as FRO-N SRF has remained in pre-commissioning.	N/A
Section 4A9	The quarterly treatment performance report must include the following for each water treatment facility:	Identification of all missing data and all QA/QC issues;	Yes	Reported in the 2022 quarterly treatment performance reports.	N/A
Section 4A9	The quarterly treatment performance report must include the following for each water treatment facility:	All reportable spills or other incidents related to water quality, occurring in the quarter;	Yes	Reported in the 2022 quarterly treatment performance reports.	N/A
Section 4A9	The quarterly treatment performance report must include the following for each water treatment facility:	A summary of operational and/or performance highlights and trends from the quarter;	Yes	Reported in the 2022 quarterly treatment performance reports.	N/A
Section 4A9	The quarterly treatment performance report must include the following for each water treatment facility:	Effluent water quality results exceeding alarm level 3 at the effluent retention pond;	Yes	Reported in the 2022 quarterly treatment performance reports.	N/A
Section 4A9	The quarterly treatment performance report must include the following for each water treatment facility:	Explanation of the most probable cause(s) of any non-compliances;	Yes	Reported in the 2022 quarterly treatment performance reports.	N/A
Section 4A9	The quarterly treatment performance report must include the following for each water treatment facility:	All measures taken to reduce or eliminate non-compliances; and	Yes	Reported in the 2022 quarterly treatment performance reports.	N/A

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Section 4A9	The quarterly treatment performance report must include the following for each water treatment facility:	Any additional sampling results for the compliance points identified in Section 2 obtained for any reason, whether compliance, maintenance, or operational purposes. All test data must be reported within 30 days of the end of the quarter in which sampling occurred. These additional results may be reported in summary form. Further information on the testing event may be requested in writing by the director.	Yes	Reported in the 2022 quarterly treatment performance reports.	N/A
Section 4A10	The permittee must submit an annual treatment performance report to the director by March 31 of each year following the data collection calendar year.		Yes	The 2022 annual treatment performance report accompanies this submission.	N/A
Section 4A10	The report must include the following for each water treatment facility:	A summary of facility performance compared to the key performance metrics listed in the Operations Plan;	Yes	Included in the 2022 annual treatment performance report.	Facility Performance section for each facility
Section 4A10	The report must include the following for each water treatment facility:	Influent sources and flow rates, including alternate sources;	Yes	Included in the 2022 annual treatment performance report.	Influent Sources and Flow Rates section for each facility
Section 4A10	The report must include the following for each water treatment facility:	Selenium and nitrate load removal;	Yes	Included in the 2022 annual treatment performance report.	Selenium and Nitrate Load Removal section for each facility
Section 4A10	The report must include the following for each water treatment facility:	Quantities of reagents used and residuals generated;	Yes	Included in the 2022 annual treatment performance report.	Quantities of Reagents Used and Residuals Generated section for each facility
Section 4A10	The report must include the following for each water treatment facility:	Details on continuous improvement initiatives;	Yes	Included in the 2022 annual treatment performance report.	Continuous Improvement Initiatives section for each facility
Section 4A10	The report must include the following for each water treatment facility:	A description of any incidents including process upsets, spills (quantity and quality, including analytical results), issues with and bypasses of the Authorized Works, including recirculation events and contingency discharges;	Yes	Included in the 2022 annual treatment performance report.	Reportable Spills and Incidents section for each facility Appendix B
Section 4A10	The report must include the following for each water treatment facility:	Quantity and quality of effluent (e.g., non-hazardous waste liquids) discharged to the Turnbull South Pit	Yes	Included in the 2022 annual treatment performance report.	Discharges to the Turnbull South Pit Tailings Storage Facility section for each facility
Section 4A10	The report must include the following for each water treatment facility:	A summary of all non-compliances with the requirements of Appendix 4, submitted in an Annual Status Form;	Yes	This Annual Status Form.	Non-compliances section for each facility Appendix A
Section 4A10	The report must include the following for each water treatment facility:	A map of monitoring locations with EMS and permittee descriptors;	Yes	Included in the 2022 annual treatment performance report.	Map section for each facility

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Section 4A10	The report must include the following for each water treatment facility:	A summary and evaluation of key operational and receiving environment monitoring data associated with the selenium and nitrate treatment facilities and all analytical results from the monitoring plans in Appendix 4 for the reporting year. Data must be suitably tabulated (i.e., excel spreadsheets), with appropriate graphs and comparison of results to limits, Approved and Working Water Quality Guidelines, Site Performance Objectives, or other criteria and benchmarks as specified by the director;	Yes	Included in the 2022 annual treatment performance report.	Operational and Receiving Environment Monitoring Data section for each facility Site Performance Objectives sections for each facility Appendix C
Section 4A10	The report must include the following for each water treatment facility:	If Site Performance Objectives in Appendix 4 are exceeded the permittee must provide an interpretation of significance, and the status of corrective actions and/or ongoing investigations;	Yes	Included in the 2022 annual treatment performance report.	Site Performance Objectives section for each facility
Section 4A10	The report must include the following for each water treatment facility:	All acute toxicity test-specific reports from the laboratory and an interpreted summary and discussion of results, including recommendations and all subsequent actions;	Yes	Included in the 2022 annual treatment performance report.	Acute Toxicity section for each facility Appendix D
Section 4A10	The report must include the following for each water treatment facility:	All acute toxicity test-specific reports must include data and/or observations for hardness, alkalinity, pH, temperature, and formation of precipitate either in the vessel or on the organism.	Yes	Included in the 2022 annual treatment performance report.	Acute Toxicity section for each facility Appendix D
Section 4A10	The report must include the following for each water treatment facility:	A summary of all QA/QC issues during the year	Yes	Included in the 2022 annual treatment performance report.	QA/QC Summary section for each facility Appendix E
Section 4B1	The WLC AWTF influent is comprised of contact water from waste rock pile and non-hazardous leachate from the WLC AWTF residual waste landfill		Yes	N/A	
Section 4B1.1	The maximum authorized rate of discharge of effluent from the WLC AWTF is 8,300 cubic meters per day.		Yes	Flow rate did not exceed 8,300 m3/day. Max flow rate in 2022 was 7577 m3/day	Reported in the Annual Water Treatment Report for 2022 under the West Line Creek Active Water Treatment Facility, Section: Influent Sources and Flow Rates
Section 4B1.2	The characteristics of the discharge at the Buffer Pond Outfall (E291569) at WLC AWTF must not exceed the limits specified.	Ammonia must not exceed 1.0 mg/L.	Yes	Ammonia did not exceed 1.0 mg/L in 2022.	Reported in the Annual Water Treatment Report for 2022 under the West Line Creek Active Water Treatment Facility, Section: Operational and Receiving Environment Monitoring Data; Operational Data
Section 4B1.2	The characteristics of the discharge at the Buffer Pond Outfall (E291569) at WLC AWTF must not exceed the limits specified.	Biological Oxygen Demand must not exceed 25 mg/L.	Yes	BOD did not exceed 25 mg/L in 2022.	Reported in the Annual Water Treatment Report for 2022 under the West Line Creek Active Water Treatment Facility, Section: Operational and Receiving Environment Monitoring Data; Operational Data
Section 4B1.2	The characteristics of the discharge at the Buffer Pond Outfall (E291569) at WLC AWTF must not exceed the limits specified.	The pH range must not exceed 6.5-8.5	Yes	The pH range did now exceed 6.5-8.5 in 2022.	Reported in the Annual Water Treatment Report for 2022 under the West Line Creek Active Water Treatment Facility, Section: Operational and Receiving Environment Monitoring Data; Operational Data
Section 4B1.2	The characteristics of the discharge at the Buffer Pond Outfall (E291569) at WLC AWTF must not exceed the limits specified.	Nitrate must not exceed 3.0 mg/L.	Yes	Nitrate did not exceed 3.0 mg/L in 2022.	Reported in the Annual Water Treatment Report for 2022 under the West Line Creek Active Water Treatment Facility, Section: Operational and Receiving Environment Monitoring Data; Operational Data

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Section 4B1.2	The characteristics of the discharge at the Buffer Pond Outfall (E291569) at WLC AWTF must not exceed the limits specified.	Total Phosphorus must not exceed 0.3 mg/L.	Yes	Total Phosphorus did not exceed 0.3 mg/L in 2022.	Reported in the Annual Water Treatment Report for 2022 under the West Line Creek Active Water Treatment Facility, Section: Operational and Receiving Environment Monitoring Data; Operational Data
Section 4B1.2	The characteristics of the discharge at the Buffer Pond Outfall (E291569) at WLC AWTF must not exceed the limits specified.	Total Selenium must not exceed 20 µg/L, monthly average.	No	The monthly average permit limit for Total Selenium was exceeded once in March 2022.	Reported in the Annual Water Treatment Report for 2022 under the West Line Creek Active Water Treatment Facility, Section: Operational and Receiving Environment Monitoring Data; Operational Data
Section 4B1.2	The characteristics of the discharge at the Buffer Pond Outfall (E291569) at WLC AWTF must not exceed the limits specified.	Total Suspended Solids must not exceed 10.0 mg/L	Yes	Total Suspended Solids did not exceed 10.0 mg/L in 2022.	Reported in the Annual Water Treatment Report for 2022 under the West Line Creek Active Water Treatment Facility, Section: Operational and Receiving Environment Monitoring Data; Operational Data
Section 4B1.2	The characteristics of the discharge at the Buffer Pond Outfall (E291569) at WLC AWTF must not exceed the limits specified.	Antiscalant must not exceed 25 mg/L, two-minute time weighted average	Yes	Antiscalant concentration did not exceed 25 mg/L, two-minute time weighted average in 2022.	Reported in the Annual Water Treatment Report for 2022 under the West Line Creek Active Water Treatment Facility, Section: Operational and Receiving Environment Monitoring Data; Operational Data
Section 4C1	The EVO SRF influent is comprised of contact water from Erickson Creek and Natal Pit		Yes	As communicated on May 17, 2022, Teck temporarily extended the downtime on the Erickson pipeline to investigate benthic invertebrate (BIT) results in Erickson Creek. During this time the EVO SRF P2 continued to treat only Natal Pit influent until Erickson Creek was brought back online as an influent source on October 4, 2022.	Reported in the Annual Water Treatment Report for 2022 under the Elkview Saturated Rock Fill Water Treatment Facility, Section: Influent Sources and Flow Rates.
Section 4C1.2	The treated effluent discharged to Erickson Creek must not be acutely toxic as per Section 6.2.	The toxicity (96 hr rainbow trout single concentration, and 48 hr Daphnia magna single concentration) must not exceed 50% mortality	Yes	No acute toxicity results exceeded 50% mortality in 2022 at F2_BPO, E321812.	Reported in the Annual Water Treatment Report for 2022 under the Elkview Saturated Rock Fill Water Treatment Facility, Section: Receiving Environment Monitoring Data; Acute Toxicity
Section 4C1.2	The characteristics of the discharge at the Effluent Retention Pond Outlet (F2_BPO, E321812) must be equivalent to or better than:	The toxicity (96 hr rainbow trout single concentration, and 48 hr Daphnia magna single concentration) must not exceed 50% mortality	Yes	No acute toxicity results exceeded 50% mortality in 2022 at F2_BPO, E321812.	Reported in the Annual Water Treatment Report for 2022 under the Elkview Saturated Rock Fill Water Treatment Facility, Section: Receiving Environment Monitoring Data; Acute Toxicity
Section 4C1.2	The characteristics of the discharge at the Effluent Retention Pond Outlet (F2_BPO, E321812) must be equivalent to or better than:	Antiscalant in the discharge at the treated effluent outlet of the EVO SRF must not exceed 25 mg/L, two-minute time weighted average	Yes	Antiscalant in the discharge at the treated effluent outlet of the EVO SRF did not exceed 25 mg/L, two-minute time weighted average in 2022.	Reported in the Annual Water Treatment Report for 2022 under the Elkview Saturated Rock Fill Water Treatment Facility, Section: Receiving Environment Monitoring Data.
Section 4C1.2	The characteristics of the discharge at the Effluent Retention Pond Outlet (F2_BPO, E321812) must be equivalent to or better than:	Ammonia in the discharge at the treated effluent outlet of the EVO SRF must not exceed 1.2 mg/L.	Yes	Ammonia in the discharge at the treated effluent outlet of the EVO SRF did not exceed 1.2 mg/L in 2022.	Reported in the Annual Water Treatment Report for 2022 under the Elkview Saturated Rock Fill Water Treatment Facility, Section: Receiving Environment Monitoring Data.
Section 4C1.2	The characteristics of the discharge at the Effluent Retention Pond Outlet (F2_BPO, E321812) must be equivalent to or better than:	Biochemical Oxygen Demand (BOD) in the discharge at the treated effluent outlet of the EVO SRF must not exceed 25 mg/L.	Yes	Biochemical Oxygen Demand (BOD) in the discharge at the treated effluent outlet of the EVO SRF did not exceed 25 mg/L in 2022.	Reported in the Annual Water Treatment Report for 2022 under the Elkview Saturated Rock Fill Water Treatment Facility, Section: Receiving Environment Monitoring Data.
Section 4C1.2	The characteristics of the discharge at the Effluent Retention Pond Outlet (F2_BPO, E321812) must be equivalent to or better than:	Nitrite in the discharge at the treated effluent outlet of the EVO SRF must not exceed 0.4 mg/L.	Yes	Nitrite in the discharge at the treated effluent outlet of the EVO SRF did not exceed 0.4 mg/L in 2022.	Reported in the Annual Water Treatment Report for 2022 under the Elkview Saturated Rock Fill Water Treatment Facility, Section: Receiving Environment Monitoring Data.
Section 4C1.2	The characteristics of the discharge at the Effluent Retention Pond Outlet (F2_BPO, E321812) must be equivalent to or better than:	Sulfide in the discharge at the treated effluent outlet of the EVO SRF must not exceed 0.01 mg/L.	No	Teck received results for a water sample collected on September 4, 2022 at F2_BPO (E321812) with a sulphide result of 0.0267 mg/L, exceeding the limit of 0.01 mg/L as outlined in Permit 107517 Appendix 4C Section 4C1.2.	Reported in the Annual Water Treatment Report for 2022 under the Elkview Saturated Rock Fill Water Treatment Facility, Section: Non-compliance.
Section 4C1.2	The characteristics of the discharge at the Effluent Retention Pond Outlet (F2_BPO, E321812) must be equivalent to or better than:	Total Phosphorus in the discharge at the treated effluent outlet of the EVO SRF must not exceed 0.10 mg/L, monthly average.	Yes	Total Phosphorus in the discharge at the treated effluent outlet of the EVO SRF did not exceed 0.10 mg/L, monthly average in 2022.	Reported in the Annual Water Treatment Report for 2022 under the Elkview Saturated Rock Fill Water Treatment Facility, Section: Receiving Environment Monitoring Data.
Section 4C1.2	The characteristics of the discharge at the Effluent Retention Pond Outlet (F2_BPO, E321812) must be equivalent to or better than:	The pH range of the discharge at the treated effluent outlet of the EVO SRF must not exceed 6.5-9.0	Yes	The pH range of the discharge at the treated effluent outlet of the EVO SRF did not exceed 6.5-9.0 in 2022.	Reported in the Annual Water Treatment Report for 2022 under the Elkview Saturated Rock Fill Water Treatment Facility, Section: Receiving Environment Monitoring Data.

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Section 4C1.2	The characteristics of the discharge at the Effluent Retention Pond Outlet (F2_BPO, E321812) must be equivalent to or better than:	Dissolved Oxygen in the discharge at the treated effluent outlet of the EVO SRF must not be less than 5.0 mg/L.	Yes	Dissolved Oxygen in the discharge at the treated effluent outlet of the EVO SRF did not go below 5.0 mg/L in 2022.	Reported in the Annual Water Treatment Report for 2022 under the Elkview Saturated Rock Fill Water Treatment Facility, Section: Receiving Environment Monitoring Data.
Section 4C2.1	Water temperature measured at Erickson Creek at mouth (EV_EC1; 0200097) must be managed to be equivalent to or below the following maximum daily temperature limits:	Temperature at EV_EC1 (0200097) must be managed to not exceed 7°C from January 1 to April 30 and November 1 to December 31	Yes	Temperature at EV_EC1 (0200097) did not exceed 7°C from January 1 to April 30 and November 1 to December 31 in 2022.	Reported in the Annual Water Treatment Report for 2022 under the Elkview Saturated Rock Fill Water Treatment Facility, Section: Site Performance Objectives and Appendix C.
Section 4C2.1	Water temperature measured at Erickson Creek at mouth (EV_EC1) must be managed to not exceed the upper temperature thresholds based on the following Site Performance Objectives.	Temperature at EV_EC1 (0200097) must be managed to not exceed 13°C between May 1 to August 31	Yes	Temperature at EV_EC1 (0200097) did not exceed 13°C between May 1 to August 31 in 2022.	Reported in the Annual Water Treatment Report for 2022 under the Elkview Saturated Rock Fill Water Treatment Facility, Section: Site Performance Objectives and Appendix C.
Section 4C2.1	Water temperature measured at Erickson Creek at mouth (EV_EC1) must be managed to not exceed the upper temperature thresholds based on the following Site Performance Objectives.	Temperature at EV_EC1 (0200097) must be managed to not exceed 10°C between September 1 to October 31	Yes	Temperature at EV_EC1 (0200097) did not exceed 10°C between September 1 to October 31 in 2022.	Reported in the Annual Water Treatment Report for 2022 under the Elkview Saturated Rock Fill Water Treatment Facility, Section: Site Performance Objectives and Appendix C.
Section 4C3.1	The permittee must develop and implement an operational contingency plan (alarm strategy) to manage the parameters listed in Section 4C1.2 related to operation of the EVO SRF.	The plan must be submitted to the director 30 days prior to the end of the commissioning period for the EVO SRF, and the permittee must notify the director at least 15 days prior to implementing any proposed changes to the plan.	Yes	The plan was submitted to the director on August 13, 2021. No changes were implemented to the plan in 2022.	N/A
Section 4C3.1	The permittee must develop and implement an operational contingency plan (alarm strategy) to manage the parameters listed in Section 4C1.2 related to operation of the EVO SRF that pose a risk of impacts to receptors in the receiving environment.	The plan must include an operational monitoring program and thresholds that trigger management actions that will be implemented to mitigate the risk of impacts.	Yes	The plan was submitted to the director on August 13, 2021. No changes were implemented to the plan in 2022.	N/A
Section 4C3.1	The permittee must develop and implement an operational contingency plan (alarm strategy) to manage the parameters listed in Section 4C1.2 related to operation of the EVO SRF that pose a risk of impacts to receptors in the receiving environment.	If the onsite laboratory sample results are in exceedance of the limits specified in Section 4C1.2, the permittee must immediately collect samples for analysis at a CALA certified laboratory. These results must be included in the routine reports per Section 4A of Appendix 4.	Yes	The plan was submitted to the director on August 13, 2021. No changes were implemented to the plan in 2022.	N/A
Section 4C3.2	The permittee must develop and track key metrics demonstrating the performance of the EVO SRF, including but not limited to removal of nitrate and selenium load.		Yes	Included in the 2022 annual treatment performance report. No changes were implemented to the key metrics in 2022.	Reported in the Annual Water Treatment Report for 2022 under the Elkview Saturated Rock Fill Water Treatment Facility, Section: Facility Performance.
Section 4C3.2	The performance metrics to be tracked must be submitted to the director 30 days prior to the end of the commissioning period for the EVO SRF, and the permittee must notify the director at least 15 days prior to implementing any proposed changes to the metrics.		Yes	Regulatory submission July 14, 2021 in EVO SRF P2 Operations Plan. No changes were implemented to the key metrics in 2022.	N/A
Section 4C3.2	The performance metrics must align with the EVWQP goals and environmental management objectives.		Yes	N/A	N/A
Section 4C3.2	The permittee must present the performance metrics results at routine regulator updates and in routine reports per Section 4A of Appendix 4.		Yes	Included in the 2022 quaterly and annual treatment performance reports. No changes were implemented to the key metrics in 2022.	Reported in the Annual Water Treatment Report for 2022 under the Elkview Saturated Rock Fill Water Treatment Facility, Section: Facility Performance.

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Section 4C3.3	The permittee must develop and implement a discharge management plan to manage discharge from the EVO SRF to Erickson Creek.	Yes	The plan was submitted to the director on July 14, 2021. No changes were implemented to the plan in 2022.	Reported in the Annual Water Treatment Report for 2022 under the Elkview Saturated Rock Fill Water Treatment Facility, Section: Discharge Management - Erickson Creek
Section 4C3.3	The plan must be submitted to the director 30 days prior to the end of the commissioning period for the EVO SRF, and the permittee must notify the director at least 15 days prior to implementing any proposed changes to the plan.	Yes	The plan was submitted to the director on July 14, 2021. No changes were implemented to the plan in 2022.	N/A
Section 4C3.3	The plan must describe the actions and monitoring Teck will implement to minimize change in streamflow between upstream and downstream of the Erickson Creek intake/outfall structure and follow the Federal Department of Fisheries and Oceans Canada (DFO) guidance on allowable rates of change in streamflow to avoid adverse effects to fish habitat.	Yes	The plan was submitted to the director on July 14, 2021. No changes were implemented to the plan in 2022.	N/A
Section 4C3.3	The permittee must report the monitoring results from the plan in the routine reports per Section 4A of Appendix 4.	Yes	Reported in the Quarterly and Annual Water Treatment Report for 2022 under the Elkview Saturated Rock Fill Water Treatment Facility.	Reported in the Annual Water Treatment Report for 2022 under the Elkview Saturated Rock Fill Water Treatment Facility, Section: Discharge Management - Erickson Creek
Section 4C3.4	The permittee must develop and implement the following studies under the Adaptive Management Plan (AMP) to resolve uncertainties regarding the water balance in Erickson Creek and potential unidentified mine contact water discharge pathways.	Yes	and feedback from the Elk Valley Groundwater Working Ground. The final study designs were submitted to the director on March 31 2021. Teck is currently developing a report to detail implementation of the AMP study design with an anticipated submission of Q2 2023.	N/A
Section 4C3.4	The permittee must develop and implement the following studies under the Adaptive Management Plan (AMP) to resolve uncertainties regarding the water balance in Erickson Creek and potential unidentified mine contact water discharge pathways. Uncertainty: Michel Creek contaminant load balance study. The study must resolve uncertainty related to the potential existence of an unaccounted mine contact water discharge pathway from EVO to Michel Creek. The study must utilize measured water quality data from mine contact surface water and groundwater sources. If the mass balance for contaminant loadings cannot be adequately closed to the satisfaction of the director, then Teck must develop and implement an additional study to locate and characterize the missing contaminant load pathway(s).	Yes	Teck is currently developing a report to detail implementation of the AMP study design with an anticipated submission of Q2 2023.	N/A
Section 4C3.4	The study designs must incorporate feedback from the Elk Valley Groundwater Working Group and be submitted to the director for approval by March 31, 2021.	Yes	Teck developed and submitted two AMP study designs, incorporating comments and feedback from the Elk Valley Groundwater Working Ground. The final study designs were submitted to the director on March 31 2021.	N/A
Section 4C3.5	The permittee must regularly inspect the Authorized Works and maintain them in good working order, in accordance with the Operations Plan	Yes	Authorized Works were inspected and maintained in accordance with the Operations Plan in 2022. Records of inspections and maintenance were maintained both electronically and in hard copy.	N/A
Section 4C3.5	The permittee must maintain a record of inspections and maintenance of the Authorized Works and make the record available to an officer upon request.	Yes	Records of inspections and maintenance of authorized works were maintained both electronically and hard-copy in operator check-sheets.	N/A
Section 4C3.5	In the event of an emergency or other condition which prevents normal operation of the Authorized Works or leads to an unauthorized discharge, the permittee must take remedial action immediately to restore the normal operation of the Authorized Works and to prevent any unauthorized discharges.	Yes	There was one unauthorized discharge at the EVO SRF in 2022. The unauthorized discharge was ceased as soon as it was discovered, and reported as a spill (DGIR #222409). Conditions preventing normal operation of the Authorized Works were resolved as soon as possible.	Reported in the Annual Water Treatment Report for 2022 under the Elkview Saturated Rock Fill Water Treatment Facility, Section: Non-compliance.

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Section 4C3.5	The permittee must not allow any discharge of influent or effluent authorized in Section 4C1 to bypass the Authorized Works, except with the prior written approval of the director or as defined in the table in Section 4C3.5	Planned maintenance, unplanned maintenance and other downtime when influent bypasses the SRF <24 Consecutive Hours in Recirculation: Reporting; Meet all existing requirements of permit.	Yes	All downtime events when influent bypasses the SRF <24 Consecutive Hours in Recirculation meet all existing requirements of permit.	N/A
Section 4C3.5	The permittee must not allow any discharge of influent or effluent authorized in Section 4C1 to bypass the Authorized Works, except with the prior written approval of the director or as defined in the table in Section 4C3.5	Planned maintenance, unplanned maintenance and other downtime when influent bypasses the SRF ≥ 24 Consecutive Hours in Recirculation: Reporting; meet all existing requirements of Permit; immediate notification to director.	Yes	Notification of extended bypass events and enhanced monitoring during such events was conducted as per the table in Section 4C3.5.	Reported in the Annual Water Treatment Report for 2022 under the Elkview Saturated Rock Fill Water Treatment Facility, Section: Incidents resulting in bypasses of Authorized Works
Section 4C3.5	The permittee must not allow any discharge of influent or effluent authorized in Section 4C1 to bypass the Authorized Works, except with the prior written approval of the director or as defined in the table in Section 4C3.5	Discharge from influent or effluent pipelines to maintain design pressure, prevent freezing or prevent water quality changes: meet all existing requirements of Permit	Yes	Notification of extended bypass events and enhanced monitoring during such events was conducted as per the table in Section 4C3.5.	Reported in the Annual Water Treatment Report for 2022 under the Elkview Saturated Rock Fill Water Treatment Facility, Section: Incidents resulting in bypasses of Authorized Works
Section 4D1.2	The treated effluent discharged to the Fording River and Kilmarnock Creek must no be acutely toxic, as per Section 6.2.	The toxicity (96 hr rainbow trout single concentration, and 48 hr Daphnia magna single concentration) must not exceed 50% mortality	Yes	No FRO-S AWTF effluent toxicity test results exceeded 50% mortality in 2022.	FRO-S AWTF - Acute Toxicity section
Section 4D1.2	The characteristics of the discharge at the Effluent Retention Pond outlet (FS_BPO, E321351) must be equivalent to or better than:	Antiscalant concentration must not exceed 25 mg/L, two-minute time weighted average	Yes	Antiscalant concentration did not exceed 25 mg/L, two-minute time weighted average in 2022.	FRO-S AWTF - Operational and Receiving Environment Monitoring Data section
Section 4D1.4	The permittee must manage FRO-S AWTF effluent temperature to be equivalent to or below the following monthly average temperature limits at the Fording River Outfall (FS_EFF-SC; E323231):	January 1 to February 28: 6°C March 1 to April 30*: 6°C May 1 to September 30: 13°C October 1 to October 31*: 10°C November 1 to November 30*: 6°C December 1 to December 31: 6°C *Effective date - September 1, 2022	Yes	The monthly average permit limits for temperature came into effect in May 2022. Monthly average discharge temperatures at E323231 were less than the permit limits for all months from May to December 2022.	FRO-S AWTF - Operational and Receiving Environment Monitoring Data section
Section 4D1.5	The permittee must manage the parameters listed in the table below in accordance with the operational contingency plan required in Section 4D2.1.	Parameters to be managed include: sulphide, nitrate, ammonia, dissolved oxygen, pH, hydrogen peroxide, ozone, biological oxygen demand, total phosphorus, chloride, and total suspended solids.	Yes	The Operational Contingency Plan was submitted to ENV on March 22, 2022. The parameters listed in Section 4D1.5 were managed in accordance with the Operational Contingency Plan in 2022.	N/A
Section 4D2.1	The permittee must develop and implement an operational contingency plan to manage the parameters listed in Section 4D1.5 related to the operation of the AWTF. The plan must be submitted to the direction 30 days prior to the end of the commissioning period of the FRO-S AWTF, and the permittee must notify the director at least 15 days prior to implementing any proposed changes to the plan.	The plan must include an operational monitoring program and thresholds that trigger management actions that will be implemented to mitigate the risk of impacts.	Yes	The Operational Contingency Plan was submitted to ENV on March 22, 2022.	N/A
Section 4D2.2	The permittee must develop and track key metrics demonstrating the performance of the AWTF, including but not limited to removal of nitrate and selenium load, and implementation of alarm strategy level 3 responses.		Yes	The Operational Contingency Plan was submitted to ENV on March 22, 2022. Key performance metrics are summarized in Quarterly Treatment Performance Reports and the 2022 Annual Treatment Performance Report.	FRO-S AWTF - Facility Performance section FRO-S AWTF - Selenium and Nitrate Load Removal section FRO-S AWTF - Operational and Receiving Environment Monitoring Data section

Authorized Person Initial:_____

Date:_____

AUTHORIZATION CLAUSE NUMBER	AUTHORIZATION CLAUSE DESCRIPTION		COMPLIANT? (Yes/No/ND)	RATIONALE FOR YOUR COMPLIANCE DETERMINATION	LOCATION OF SUPPORTING INFORMATION IN ANNUAL REPORT
Section 4D2.2	The permittee must complete an engineering review of the temperature management system and determine necessary modifications needed to meet the permit limits for temperature in Section 4D1.4, and submit the report to the director by July 31, 2021.		Yes	Submitted engineering review report to ENV July 30, 2021. Submitted revised report October 1, 2021.	N/A
Section 4D2.3	FRO-S AWTF Maintenance of Works, Emergency Procedures and Bypasses	The permittee must regularly inspect the Authorized Works and maintain them in good working order, in accordance with the Operations Plan. The permittee must maintain a record of inspections and maintenance of the Authorized Works and make the record available to an officer upon request.	Yes	Authorized Works were inspected and maintained in accordance with the Operations Plan in 2022. Records of inspections and maintenance were maintained.	N/A
Section 4D2.3	FRO-S AWTF Maintenance of Works, Emergency Procedures and Bypasses	In the event of an emergency or other condition which prevents normal operation of the Authorized Works or leads to an unauthorized discharge, the permittee must take remedial action immediately to restore the normal operation of the Authorized Works and to prevent any unauthorized discharges.	Yes	There was one unauthorized discharge at the FRO-S AWTF in 2022. The unauthorized discharge was ceased as soon as it was discovered, and reported as a spill (DGIR #221535). Conditions preventing normal operation of the Authorized Works were resolved as soon as possible.	FRO-S AWTF - Influent Sources and Flow Rates section FRO-S AWTF - Reportable Spills and Incidents section Appendix B
Section 4D2.3	FRO-S AWTF Maintenance of Works, Emergency Procedures and Bypasses	The permittee must not allow any discharge of influent or effluent authorized in Section 4D1 to bypass the Authorized Works, except with the prior written approval of the director or as defined in the following table.	Yes	Notification of extended bypass events and enhanced monitoring during such events was conducted as per the table in Section 4D2.3.	FRO-S AWTF - Influent Sources and Flow Rates section; Appendix B
Section 4D2.4	Four Adaptive Management Plan study designs (Kilmarnock Clean Water Diversion study, Kilmarnock Creek Intake groundwater study, Fording River valley groundwater study, Swift Creek Sediment Ponds seepage study) must be submitted to the director and KNC by April 30, 2021. The permittee must provide quarterly updates to ENV and KNC on implementation of the workplans.		Yes	Submitted Adaptive Management Plan study designs April 29, 2021.	N/A
Section 4D2.5	The permittee must submit a study design for an Upper Fording River Chronic Toxicity Study to the director by January 31, 2021, for approval. The study design must be reviewed by the EMC and be designed as a study to evaluate the cause, extent, and magnitude of chronic effects in the upper Fording River. The permittee must provide a summary of EMC advice and how it was considered in the study design. Monitoring results and interpretation must be compiled into a written report and submitted to the director by April 15, 2022. The final report must be to the satisfaction of the director.		Yes	Submitted study design January 28, 2021. Submitted interpretive report April 14, 2022, and resubmitted with revisions on September 20, 2022.	N/A
Section 4D2.6	The permittee must undertake a study to assess the accuracy of monthly average surface water nitrate, selenium and sulphate concentration calculations at FR_FRABCH with the below listed sampling frequencies. A report on findings must be submitted to the director by May 31, 2022.		Yes	Submitted May 30, 2022.	N/A
Section 4D2.7	The permittee must undertake an assessment to determine the appropriate timing for water quality sample collection at FR_FRABCH that is representative of the conditions during FRO-S AWTF recirculation. A summary report must be submitted to the director by April 30, 2023.		Yes	N/A - Not required until April 30, 2023.	N/A
Section 4D2.8	The permittee must develop a plan to manage potential risks to fish from effluent discharged from the Fording River Outfall… The plan must be submitted to the director by 7 days prior to forward flow commissioning of the FRO-S AWTF.		Yes	Fording River Outfall Fish Plan submitted November 18, 2021.	N/A

AUTHORIZATION CLAUSE NUMBER	AUTHORIZATION CLAUSE DESCRIPTION	COMPLIANT? (Yes/No/ND)	RATIONALE FOR YOUR COMPLIANCE DETERMINATION	LOCATION OF SUPPORTING INFORMATION IN ANNUAL REPORT
Section 4D2.8	The permittee must complete an assessment of modifications required to meet a potential site performance objective for temperature of +/- 1 degree Celcius of background downstream of the Fording River Outfall, or other temperature requirements developed to support the Westslope Cutthroat Trout Recovery Plan. The assessment must be submitted to the director by June 30, 2023.	Yes	N/A - Not required until June 30, 2023.	N/A

Appendix B – Water Treatment Facility Bypass Summary

Table B-1. WLC AWTF Bypasses - 2022

Date	Bypass Duration in Hours	Reason	Routine and Enhanced Monitoring
2-Jan-2022	11.6	1. AOP quench tank level sensor fault 2. Frost fighters set of the smoke detector at the AOP building, chillers prevented going to forward flow	
3-Jan-2022	8.45	Unscheduled power outage and communication faults	
4-Jan-2022	1.02	Switched WLC AWTF back from generator power to line power	Routine monitoring
12-Jan-2022	1.83	1. Routine BSC lamella cleaning 2. Planned AOP contact tank level sensor replacement	
23-Jan-2022	1.3	1. Routine BSC lamella cleaning 2. Planned maintenance to flush polylines, complete sand purge, and change screens on all sand filter airlifts	
3-Feb-2022	4.3	AOP Quench tank level transmitter froze which shutdown AOP and AWTF was put into recirculation, when attempted to go back into forward flow the chillers faulted causing AWTF to go back into recirculation	
5-Feb-2022	0.97	Routine BSC lamella cleaning	
15-Feb-2022 to 16-Feb-2022	7.9	Routine BSC lamella cleaning, planned maintenance work, and planned network patching	Routine monitoring
27-Feb-2022	1.77	AOP tripped on Post Destructor Ozone Concentration	
5-Mar-2022	0.93	Routine BSC lamella cleaning and sand purge	
22-Mar-2022	1.87	Routine BSC lamella cleaning	Routine monitoring
30-Mar-2022	0.83	High-high level on Quench Tank	
5-Apr-2022	1.7	Routine BSC lamella cleaning	
15-Apr-2022	0.08	Short shutdown associated with faulty ozone destruct bypass, had the trip bypassed until it could be fixed	
19-Apr-2022	1.58	Routine BSC lamella cleaning	
28-Apr-2022	4.25	Shutdown due to power outage, too short a power outage to switch to generator,	

Date	Bypass Duration in Hours	Reason	Routine and Enhanced Monitoring
		issues resetting AOP on start up, needed electrician to reset side stream pumps	
29-Apr-2022	9.5	A power trip caused the plant to go into recirculation and the AOP tripped when trying to transition back to forward flow	
6-May-2022	0.92	Routine BSC lamella cleaning	
12-May-2022	0.15	Shutdown proactively for a power outage that did not end up happening	
13-May-2022 to 14-May 2022	10.7	AOP shutdown due to low-level on 17-P-51A initially, then tripped on O2/O3 sensor faults and stayed down until next morning. Also had issues clearing side stream pump fault.	
3-Jun-2022	0.33	Shutdown due to FBR low fluidization flow rate	
7-June-2022 to 9-Jun-2022	53.93	Planned annual maintenance shutdown	
10-Jun-2022	3.73	AOP tripped on hot magnetic parts	
11-Jun-2022	7.55	AOP tripped on hot magnetic parts, found AC unit was not running upon inspection	
14-Jun-2022	0.37	Suspect arc when snow fell on power lines, plant transitioned to generator power	
15-Jun-2022	9.53	Lost generator power as the generator tripped when refuelling and it took time to trouble shoot. Suspected generator was airlocked from fuelling too quickly	
16-Jun-2022 to 17-Jun-2022	10.7	AOP tripped on low O2 alarm in the middle of the night, plant went into recirculation with high total phosphorus until 12:00 the next day	
17-Jun-2022	0.78	Plant transitioned back to line power but there were issues with the AOP Teledyne analyzer reading low and tripping out the generator	
22-Jun-2022	1.06	Transitioned to generator power due to shovel move in the pit	
23-Jun-2022	0.76	Transition plant back to line power	
30-Jun-2022	14.23	Plant was put into recirculation due to level 3 ammonia alarm at SP20	

Date	Bypass Duration in Hours	Reason	Routine and Enhanced Monitoring
5-Jul-2022	2.45	Shutdown due to communications fault	
6-Jul-2022	11.63	Multiple shutdowns due to communications faults, delay changed on fault alarm to minimize faulting	
7-Jul-2022	2.67	Shutdown to communications fault, delay was adjusted on additional fault alarms	
12-Jul-2022	3.17	Shutdown due to communications fault	
13-Jul-2022	7.48	Restarted plant in the morning following communications fault. Power outage occurred in the afternoon.	
14-Jul-2022	2.05	Shutdown for routine lamella cleaning and stayed down to troubleshoot communications issues.	
15-Jul-2022	0.38	AOP shutdown due to low-level on Ozone Inductor Side Stream pump initially, then tripped on O2/O3 sensor faults and stayed down until next morning. Also had issues clearing side stream pump fault.	
17-Jul-2022	4.9	Shutdown due to BSC communications faults	
19-Jul-2022	6.55	Shutdown due to BSC communications issues, replaced faulty switch in the BSC cabinet	Routine Monitoring
20-Jul-2022	0.05	Plant tripped on methanol pumps interlock, SCADA froze	
21-Jul-2022	0.5	Plant tripped on communications faults	
22-Jul-2022	2.63	Shutdown due to mine power outage	
23-Jul-2022	0.73	Plant switched back to line power from generator power.	
26-Jul-2022 to 29Jul-2022	85.22	Plant shutdown for planned maintenance	Routine Monitoring
2-Aug-2022	0.23	Contractor tripped plant when closing electrical cabinet door	
3-Aug-2022	1.65	Plant put into recirculation due to alarm level 3 for ozone at SP38	
13-Aug-2022	0.98	Shutdown for routine lamella cleaning	

Date	Bypass Duration in Hours	Reason	Routine and Enhanced Monitoring
25-Aug-2022	0.43	Shutdown caused by AOP tripping. Believed to be a communications issue with AOP chemicals	
26-Aug-2022	1.25	Shutdown due to power outage. Switched to generator power and then back to line power once it was restored	
28-Aug-2022	2.71	Plant put in recirculation due to level 3 alarm for turbidity at SP20	
29-Aug-2022	15.88	Plant remained in recirculation from level 3 alarm for turbidity at SP20	
30-Aug-2022 to 1-Sept-2022	62.42	Planned shutdown for ozone generator repair	Routine Monitoring
14-Sept-2022	1.33	Shutdown for routine lamella cleaning	
27-Sept-2022	1.68	Shutdown for routine lamella cleaning	
29-Sept-2022	0.3	Plant tripped on effluent pump speed when running at 7700 m^3/day to test flow rate	
11-Oct-2022	1.38	Shutdown for routine lamella cleaning	
13-Oct-2022	1.63	Shutdown for planned power outage, switched to generator power and then back to line power.	
21-Oct-2022	1.4	Shutdown for routine lamella cleaning followed by short power outage	
22-Oct-2022	1.72	Shutdown due to communications fault	
3-Nov-2022	0.43	Shutdown due to short power outage	
4-Nov-2022	0.67	Shutdown for routine lamella cleaning	
21-Nov-2022	1.58	Shutdown for routine lamella cleaning	
1-Dec-2022	0.58	Shutdown for routine lamella cleaning	
16-Dec-2022	0.73	Shutdown for routine lamella cleaning	
29-Dec-2022	0.43	Shutdown due to FBR communications issue followed by a minor fault in the AOP	

Table B-2. EVO SRF P2 Bypasses - 2022

Date	Bypass Duration in Hours	Reason	Routine and Enhanced Monitoring
3-Jan-2022	0.17	Unplanned shutdown due to mechanical error at Erickson Booster Station 1	
19-Jan-2022	6.17	Unplanned shutdown due to mechanical issue	
19-Jan-2022	7	Unplanned shutdown due to mechanical issue caused by cold temperatures	
25-Jan-2022	3.95	Planned shutdown to perform preventative maintenance	
1-Feb-2022	6.93	Shutdown due to mechanical issue	
1-Feb-2022	2.43	Unplanned shutdown due to mechanical	
3-Feb-2022	3.27	Unplanned Erickson shutdown due to mechanical issue caused by cold temperatures	
8-Feb-2022	0.32	Planned shutdown to perform preventative maintenance	
8-Feb-2022	0.93	Planned shutdown to perform preventative maintenance	
9-Feb-2022	0.67	Planned shutdown to perform preventative maintenance	
23-Feb-2022	3.75	Planned shutdown to perform preventative maintenance	
1-Mar-2022	0.23	Unplanned shutdown due to programing fault on intake level	Routine Monitoring
4-Mar-2022	4.47	Unplanned shutdown due to mechanical issue at Erickson Booster Station 3	
9-Mar-2022	3.32	Shutdown due to EVO power outage	
18-Mar-2022	0.87	Facility switch from isolated recycle to partial recycle mode to accommodate sodium nitrate supply issue	
23-Mar-2022	6.87	Preventative shutdown to maintain in-creek temperature compliance in Erickson Creek	
24-Mar-2022	9.52		
26-Mar-2022		Facility shutdown due to EVO power outage	Enhanced Monitoring
27-Mar-2022			
28-Mar-2022	47.78		
28-Mar-2022	14.33		Routine Monitoring

Date	Bypass Duration in Hours	Reason	Routine and Enhanced Monitoring
29-Mar-2022		Unplanned shutdown due to mechanical issue at Injection Break Tank	
30-Mar-2022	1.53	Erickson shutdown due to EVO power outage	
4-Apr-2022	0.72	EVO mine power outage caused shutdown of Erickson and Natal	Routine
8-Apr-2022	1.73	EVO power outage due to shovel move	
9-Apr-2022 to 4-Oct-2022	4278.39	Erickson Creek treatment down for maintenance and benthic invertebrate investigation	Enhanced Monitoring
5-Oct-2022	24.42	Unplanned shutdown to troubleshoot 9460 valve	Enhanced Monitoring
6-Oct-2022	0.37	Unplanned shutdown due to rupture disc failure at Booster 2	Routine
7-Oct-2022	2	Unplanned shutdown due to programming error	
11-Oct-2022	21.7	Elkview mine power outage	Routine Monitoring
14-Oct-2022	0.05	Unplanned shutdown due to flow warning	Routine Monitoring
19-Oct-2022	2.85	Unplanned shutdown due to electrical maintenance at Booster Station 1	Routine Monitoring
20-Oct-2022	1	Elkview mine power outage	
25-Oct-2022	5.88	Planned preventative maintenance on Erickson Pipeline	Routine Monitoring
26-Oct-2022	8.98	Planned preventative maintenance on Erickson Pipeline	Routine Monitoring
2-Nov-2022	0.85	Planned repair maintenance on Tank-5 drain valve	
3-Nov-2022	1.18	Elkview mine power outage	
8-Nov-2022	8.47	Unplanned shutdown due to maintenance issue	Routine Monitoring
13-Nov-2022	4.65	Unplanned shutdown due to VFD-Drive fault at Erickson Booster Stations	
21-Nov-2022	0.17	Unplanned shutdown due to mechanical issue on antiscalant pump	
25-Nov-2022	0.02	Elkview mine power outage	
21-Dec-2022	3.7	Elkview mine power outage	

Table B-3. FRO-S AWTF Bypasses - 2022

Date	Bypass Duration in Hours	Reason	Routine and Enhanced Monitoring
1-Jan-2022	0.33	Low pressure on FBR fluidization pump	
1-Jan-2022	0.08	Troubleshooting intake pump drive fault	
3-Jan-2022	0.13	Power failure	
7-Jan-2022	3.08	Rupture disk failure on heat exchanger	
7-Jan-2022	0.67	An interlock on flow differential occurred	
9-Jan-2022	0.37	Incorrectly positioned manual valve	
9-Jan-2022	0.5	Low suction pressure on FBR fluidization pump	
10-Jan-2022	0.6	Intake pump ground fault	
11-Jan-2022	0.32	AOP shutdown - potentially due to ozone spike in AOP room	
12-Jan-2022	0.58	AOP was stopped by Process in order to do some testing on the permissives	
13-Jan-2022	10.2	Plant down for planned maintenance	
13-Jan-2022	2.8	AOP tripped due to control valve fault	
14-Jan-2022	0.02	Switched between intake pumps	
14-Jan-2022	0.08	AOP shut down due to sodium sulfite low alarm	
16-Jan-2022	3.25	Plant was shut down for intake logic testing. Heat exchanger feed pump issues delayed restart.	
20-Jan-2022	24.3	Shut down due to leaking gaskets on heat exchanger	
22-Jan-2022	3.77	Replace failed rupture disk	
22-Jan-2022	3.03	Plant shutdown on suspected low methanol flow	
22-Jan-2022	1.5	Plant tripped as bypasses on intake pumps were disabled	
23-Jan-2022	1.12	CBSF pump interlocked on low flow	
24-Jan-2022	10.63	Shut down due to sand filter high effluent turbidity and problems with high tank levels in the AWTF	
28-Jan-2022	0.83	Plant shutdown due to high level in FBR B2	

29-Jan-2022	1	Plant shut down due to low FBR B1 suction pressure on fluidization pumps	
30-Jan-2022	0.8	Plant shut down for inspection of FBR B3 control valve and piping	
31-Jan-2022	0.3	Plant shut down due to high level in drainage tank	
2-Feb-2022	1.5	Shut down due to pressure transmitter fault	
2-Feb-2022	0.3	Shut down plant to replace heat exchanger rupture disc	
3-Feb-2022	1.1	Shut down for maintenance to install high point vent on FBR B3	
4-Feb-2022	1.5	Fire alarm due to use of fire hose in process area resulted in plant shut down	
4-Feb-2022	0.3	Plant down due to hydrogen peroxide pump issues and calibrating gas sensors	
5-Feb-2022	4.2	Power outage and issues with uninterruptible power supply to control system	
5-Feb-2022	19.1	Plant shut down due to AOP valve fault and high CBSF effluent tank level	
7-Feb-2022	1.0	Methanol tank maintenance	
9-Feb-2022	1.0	Plant shut down due instrumentation fault	
13-Feb-2022	0.6	Plant shut down to replace leaking rupture disk in heat exchanger	
13-Feb-2022	11	Shut down for heat exchanger maintenance	
14-Feb-2022	0.7	Boiler down; plant was shut down	
14-Feb-2022	0.8	Plant tripped due to intake logic testing	
14-Feb-2022	1.5	Plant tripped due to intake logic testing	
14-Feb-2022	0.7	Plant tripped due to intake logic testing	
16-Feb-2022	23	Planned maintenance shutdown for control system software patch, ferric mixing tank work, FBR B3 venting improvements	
17-Feb-2022	2.1	Critical manual valve on heat exchanger was shut, causing plant to trip	
19-Feb-2022	2.2	Plant tripped while switching between heat exchangers	
20-Feb-2022	0.9	Plant went down on hydrogen peroxide low flow alarm	

22-Feb-2022	1.5	Shut down due to blown boiler fuse	
22-Feb-2022	0.9	Plant shutdown due to methanol system issues	
22-Feb-2022	5.3	Hydrogen peroxide dosing pump would not maintain flow	
25-Feb-2022	1.1	Bypass valve was closed which resulted in plant shutdown	
14-Mar-2022	1.5	Shutdown to switch to summer mode for chiller testing	
14-Mar-2022	1.2	Shutdown to switch back to winter mode	
15-Mar-2022	1.5	Intake/outfall logic testing	
15-Mar-2022	1.0	Intake/outfall logic testing caused the Swift intake pumps to shutdown on wet well level	
17-Mar-2022	1.6	Intake/outfall logic testing	
17-Mar-2022	0.2	Intake/outfall logic testing	
18-Mar-2022	1.5	Shut down intakes in order to lower the level in the blend tank	
18-Mar-2022	0.1	Intake/outfall logic testing	
18-Mar-2022	0.5	Intake/outfall logic testing	
18-Mar-2022	0.5	Intake/outfall logic testing	
18-Mar-2022	0.5	Intake/outfall logic testing	
18-Mar-2022	0.7	Intake/outfall logic testing	
21-Mar-2022	0.9	Low suction pressure on FBR B1 fluidization pump	
22-Mar-2022	0.5	Low suction pressure FBR B1 fluidization pump	
22-Mar-2022	1.0	High level in plant drainage tank and FBR B1 fluidization pump low suction pressure	
22-Mar-2022	1.7	Low suction pressure on FBR B1 fluidization pump	
22-Mar-2022	2.4	Low suction pressure on FBR B1 fluidization pump	
22-Mar-2022	0.3	Low suction pressure on FBR B1 fluidization pump	
24-Mar-2022	2.0	Swift MCC Failure	
30-Mar-2022	4.2	Ozone alarm level 3 at FS_BPI	
3-Apr-22	2.0	Plant drainage tank high alarm caused intake pumps to shut off.	
15-Apr-22	3.0	Power outage. Backup generators did not start up properly.	

15-Apr-22	1.5	Ozone alarm level 3 at BPI.	
19-Apr-22	68.5	High ammonia in AWTF process. Placed AWTF in recirculation to proactively manage high ammonia and avoid discharging water with elevated ammonia to the buffer pond. Ammonia remained below alarm level 1 at BPI.	
28-Apr-22	1.1	Power outage. Restarted on backup generators.	
28-Apr-22	1.6	AWTF shut down due to fire alarm. Restarted after confirming that it was a false alarm.	
29-Apr-22	0.3	Switched from backup generators back to grid power.	
1-May-22	0.8	Buffer pond wetwell level sensor was removed in error during maintenance activities, causing the intake pumps to trip.	
1-May-22	15.0	Ozone alarm level 3 at BPI.	
3-May-22	1.4	Ozone alarm level 3 at BPI.	
6-May-22	0.6	AWTF tripped while switching from low flow to high flow outfall discharge lines.	
10-May-22	3.3	Planned shutdown for maintenance work on Fording outfall piping.	
11-May-22	2.5	Control system trip during flow ramp down.	
13-May-22	0.3	Flushed FBR A1 loop, causing pH to spike and shut down AWTF.	
15-May-22	0.6	Planned BC Hydro power outage. AWTF shut down during switch from grid power to generator power.	
15-May-22	1.0	Electrical issue while operator on generator power.	
15-May-22	0.4	Intake pump fault.	
17-May-22	0.4	Switch from winter mode to summer mode for testing.	
17-May-22	2.0	AWTF shutdown due to Swift intake/outfall flow differential alarm. No stage change observed at downstream Fording River hydrometric station.	
20-May-22	0.5	AOP eductor pumps airlocked causing AOP to shut down.	
22-May-22	7.0	Planned shutdown to complete chiller testing.	
31-May-22	1.5	AWTF shutdown due to control system fault.	

3-Jun-22	1.1	FBR Train A low fluidization pressure led to AWTF trip.	
4-Jun-22	0.3	FBR Train A low fluidization pressure led to AWTF trip.	
4-June-22	1.0	FBR Train A low fluidization pressure led to AWTF trip.	
6-Jun-22	1.5	Swift intake wetwell level sensor was removed in error during maintenance activities, causing the intake pumps to trip.	
11-Jun-22	2.7	AWTF tripped while switching between heat exchangers.	
12-Jun-22	0.3	AWTF tripped during adjustment of FBR level sensor.	
13-Jun-22	0.7	Power outage due to snow storm. Restarted on backup generators.	
14-Jun-22	23.3	Electrical power supply and generator issues.	
15-Jun-22	1.7	Plant drainage tank high level alarm.	
17-Jun-22	2.5	AWTF tripped while switching between heat exchangers.	
19-Jun-22	2.1	AWTF tripped while switching between heat exchangers.	
20-Jun-22	2.2	AWTF shutdown due to FBR level control valve fault.	
22-Jun-22	1.0	Programming change shut down AWTF.	
24-Jun-22	1.0	Programming change shut down AWTF.	
25-Jun-22	1.2	AWTF shutdown due to FBR acetic acid dosing pump fault.	
27-Jun-22	0.3	Admin building false fire alarm caused AWTF shutdown.	
28-Jun-22	0.7	Admin building false fire alarm caused AWTF shutdown.	
28-Jun-22	0.5	Boiler system trip caused AWTF shutdown.	
1-Jul-22	4.3	Planned power outage resulted in an unexpected loss of communication to the AWTF process control system.	
2-Jul-22	22.0	Recirculation to reduce high ammonia and nitrite concentrations in the AWTF process after the previous day's shutdown.	Enhanced monitoring
7-Jul-22	1.9	Lockout/tagout required sulfite dosing pumps to be temporarily locked out, resulting in ozone alarm level 3 at FS_BPI.	

8-Jul-22	0.6	CBSF tank level too high. Adjusted settings and restarted.	
9-Jul-22	12.4	CBSF effluent pumps shut down, temporarily unable to restart pumps.	
12-Jul-22	1.4	Fire alarm (false alarm) caused sodium sulfite dosing issue.	
13-Jul-22	0.7	Power outage. Restarted on backup generators.	
15-Jul-22	4.1	FBR valve faults.	
22-Jul-22	16.3	Planned shutdown for AOP maintenance.	Enhanced monitoring
23-Jul-22	21.2	Recirculation to reduce high ammonia concentrations in the AWTF process after maintenance shutdown.	Enhanced monitoring
24-Jul-22	15.4		
27-Jul-22	0.5	Plant tripped while testing maximum heat exchanger flow.	
2-Aug-22	12.8	Effluent line between CBSFs and AOP failed.	
3-Aug-22	16.5	Recirculation to reduce high ammonia concentrations in the AWTF process after shutdown to repair CBSF effluent line.	
4-Aug-22	11.9	Recirculation to reduce high ammonia concentrations in the AWTF process after shutdown for CBSF effluent line repair.	
5-Aug-22	10.4	Recirculation to reduce high ammonia concentrations in the AWTF process after shutdown for CBSF effluent line repair.	
9-Aug-22	2.2	Power outage. Restarted on backup generators.	
10-Aug-22	0.7	Chiller tripped during control logic testing.	
11-Aug-22	2.7	Failure of an AOP control valve.	
15-Aug-22	0.6	Recirculation to reduce high ammonia concentrations in AWTF process.	
16-Aug-22	5.7		
23-Aug-22	16.0	Planned maintenance shutdown.	Enhanced monitoring
24-Aug-22	4.3		
27-Aug-22	3.7	Effluent line between CBSFs and AOP failed. Shutdown to source parts and complete repair.	
28-Aug-22	24.0		Enhanced monitoring
29-Aug-22	17.7		Enhanced monitoring
2-Sep-22	3.3	Troubleshooting intake control logic issues.	
3-Sep-22	1.8	Chiller fault.	

5-Sep-22	1.0	Level 3 ozone alarm at BPI.	
6-Sep-22	4.3	Level 3 ozone alarm at BPI.	
7-Sep-22	2.8	Level 3 ozone alarm at BPI.	
8-Sep-22	1.6	Power outage.	
9-Sep-22	1.3	AOP chiller fault.	
10-Sep-22	1.1	Critical valve accidentally closed while performing maintenance.	
11-Sep-22	1.4	Power fault with buffer pond effluent pump system.	
13-Sep-22	0.3	AOP chiller over pressurized glycol line.	
14-Sep-22	2.0	Low ozone in AOP.	
16-Sep-22	1.5	AWTF control system tripped while switching between heat exchangers.	
19-Sep-22	2.4	Shutdown due to hydrogen peroxide dosing issues and level 3 ozone alarm at FS_BPI.	
20-Sep-22	1.6	High turbidity at BSCs due to polymer dosing issue.	
21-Sep-22	2.6	Ozone generator ground fault.	
26-Sep-22	1.0	AWTF control system tripped due to incorrectly positioned valve.	
28-Sep-22	4.2	Shutdown due to low ozone destructor gas feed flow.	
29-Sep-22	1.7	Delayed AOP start-up caused AWTF shutdown.	
30-Sep-22	1.0	Power outage. Restarted on generator power.	
4-Oct-22	3.5	AOP shut down while purging ozone generator	
7-Oct-22	0.6	FBR high level alarm	
13-Oct-22	1.2	Ozone alarm level 3 at BPI	
19-Oct-22	3.0	Power outage	
25-Oct-22	5.3	Planned shutdown to repair CBSF effluent pipe	
29-Oct-22	1.0	AWTF shutdown due to Swift intake/outfall flow differential alarm. No stage change observed at downstream Fording River hydrometric station.	
31-Oct-22	10.9	Ozone generator fault	
1-Nov-22	10.3	High ammonia at sand filter effluent	Enhanced monitoring
2-Nov-22	19.7		

5-Nov-22	1.2	AOP chiller fault	
9-Nov-22	7.1	Planned shutdown to repair winter mode piping	
15-Nov-22	15.1	Planned maintenance shutdown. AWTF remained in recirculation due to hydrogen peroxide alarm level 3 at BPI.	Enhanced monitoring
16-Nov-22	9.1		
17-Nov-22	1.4	Incorrect Swift/Cataract to Kilmarnock influent ratio setting caused AWTF to trip	
20-Nov-22	0.3	Maintenance on Swift wetwell level sensors caused AWTF to trip	
21-Nov-22	0.3	AWTF shutdown due to fault caused by loose wiring in I/O cabinet	
23-Nov-22	1.8	AOP chiller ground fault	
26-Nov-22	1.0	Filter press issue caused AWTF compressed air system to lose pressure	
28-Nov-22	0.3	Incorrect valve closed during a lockout/tagout procedure	
29-Nov-22	0.9	AWTF tripped while switching between heat exchangers	
30-Nov-22	0.6	AWTF shutdown due to false alarm on admin building sprinkler system	
12-Dec-22	2.4	Ozone alarm level 3 at BPI	
22-Dec-22	14.1	AOP chiller faults during extreme cold weather	Enhanced monitoring
23-Dec-22	9.4		
24-Dec-22	4.1	AOP fault; plant fire alarm (false alarm)	
25-Dec-22	0.4	AOP low suction pressure	
26-Dec-22	0.3	AOP fault	
28-Dec-22	0.2	Incorrect valve closed during a lockout/tagout procedure	

Appendix C – Permit 107517 Monitoring Data

This appendix contains the 2022 monitoring data for:

- WLC AWTF, as required by Table 4B3 of Permit 107517
- EVO SRF P2, as required by Table 4C4 of Permit 107517
- FROS AWTF, as required by Table 4D3 of Permit 107517

			48-h Static acute lethality test using Daphnia ma	96-Hr 100% Conc. Acute lethality test for R. Trout	Alkalinity, Total (As CaCO3)	Aluminum	Aluminum	Antimony	Antimony	Arsenic	Arsenic	Barium	Barium	Beryllium	Beryllium	BIOCHEMICAL OXYGEN DEMAND, FIVE DAY	Bismuth	Bismuth	Boron	Boron	BROMATE
		CHEMICAL_NAME	N	N	N	D	T	D	T	D	T	D	T	D	T	N	D	T	D	T	N
		FRACTION																			
		REPORT_RESULT_UNIT	%	%	mg/l	mg/l	mg/l	ug/l	ug/l	ug/l	ug/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l
SAMPLE_DATE	SYS_LOC_CODE	SAMPLE_TYPE_CODE	REPORT_RESULT_TEXT	REPORT_RESULT_TEXT	REPORT_RESULT_TEXT	REPORT_RESULT_TEXT	REPORT_RESULT_TEXT	REPORT_RESULT_TEXT	REPORT_RESULT_TEXT	REPORT_RESULT_TEXT	REPORT_RESULT_TEXT	REPORT_RESULT_TEXT	REPORT_RESULT_TEXT	REPORT_RESULT_TEXT	REPORT_RESULT_TEXT	REPORT_RESULT_TEXT	REPORT_RESULT_TEXT	REPORT_RESULT_TEXT	REPORT_RESULT_TEXT	REPORT_RESULT_TEXT	REPORT_RESULT_TEXT
1/1/2022	WL_LCI_SP02	N																			
1/1/2022	WL_WLCI_SP01	N																			
1/1/2022	WL_BFWB_OUT_SP21	N																			
1/1/2022	WL_BFWB_OUT_SP21	N																			
1/1/2022	WL_WLCI_SP01	N																			
1/1/2022	WL_LCI_SP02	N																			
1/1/2022	WL_WLCI_SP01	N																			
1/2/2022	WL_LCI_SP02	N																			
1/2/2022	WL_WLCI_SP01	N																			
1/2/2022	WL_BFWB_OUT_SP21	N																			
1/2/2022	WL_BFWB_OUT_SP21	N																			
1/2/2022	WL_LCI_SP02	N																			
1/2/2022	WL_WLCI_SP01	N																			
1/3/2022	WL_LCI_SP02	N																			
1/3/2022	WL_WLCI_SP01	N																			
1/3/2022	WL_BFWB_OUT_SP21	N																			
1/3/2022	WL_BFWB_OUT_SP21	N																			
1/3/2022	WL_BFWB_OUT_SP21	N																			
1/4/2022	WL_BFWB_OUT_SP21	N																			
1/4/2022	WL_BFWB_OUT_SP21	N																			
1/4/2022	WL_LCI_SP02	N																			
1/4/2022	WL_WLCI_SP01	N																			
1/4/2022	WL_BFWB_OUT_SP21	N														< 2.0					
1/4/2022	WL_BFWB_OUT_SP21	N																			
1/5/2022	WL_LCI_SP02	N																			
1/5/2022	WL_WLCI_SP01	N																			
1/5/2022	WL_BFWB_OUT_SP21	N																			
1/5/2022	WL_BFWB_OUT_SP21	N														< 2.0					
1/6/2022	WL_LCI_SP02	N																			
1/6/2022	WL_WLCI_SP01	N																			
1/6/2022	WL_BFWB_OUT_SP21	N														< 2.0					
1/6/2022	WL_BFWB_OUT_SP21	N																			
1/6/2022	WL_BFWB_OUT_SP21	N																			
1/6/2022	WL_BFWB_OUT_SP21	N																			
1/6/2022	WL_BFWB_OUT_SP21	N																			
1/7/2022	WL_LCI_SP02	N																			
1/7/2022	WL_WLCI_SP01	N																			
1/7/2022	WL_BFWB_OUT_SP21	N														< 2.0					
1/7/2022	WL_BFWB_OUT_SP21	N																			
1/8/2022	WL_LCI_SP02	N																			
1/8/2022	WL_WLCI_SP01	N																			
1/8/2022	WL_BFWB_OUT_SP21	N																			
1/8/2022	WL_BFWB_OUT_SP21	N																			
1/9/2022	WL_LCI_SP02	N																			
1/9/2022	WL_WLCI_SP01	N																			
1/9/2022	WL_BFWB_OUT_SP21	N														< 2.0					
1/9/2022	WL_BFWB_OUT_SP21	N																			
1/10/2022	WL_LCI_SP02	N			225	0.0217	0.0218	0.40	0.39	0.14	0.14	0.0612	0.0636	< 0.020	< 0.020		< 0.000050	< 0.000050	0.020	0.018	< 0.30
1/10/2022	WL_WLCI_SP01	N			313	0.0227	0.0248	0.47	0.48	0.27	0.24	0.0201	0.0208	< 0.040	< 0.040		< 0.000100	< 0.000100	< 0.020	< 0.020	< 0.30
1/10/2022	WL_BFWB_OUT_SP21	N	0	0	241	0.0214	0.0216	0.15	0.15	< 0.10	< 0.10	0.0293	0.0293	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.021	0.021	11.9
1/10/2022	WL_BFWB_OUT_SP21	N																			
1/10/2022	WL_BFWB_OUT_SP21	N																			
1/11/2022	WL_LCI_SP02	N																			
1/11/2022	WL_WLCI_SP01	N																			
1/11/2022	WL_BFWB_OUT_SP21	N																			
1/12/2022	WL_LCI_SP02	N																			
1/12/2022	WL_WLCI_SP01	N																			
1/12/2022	WL_BFWB_OUT_SP21	N																			
1/12/2022	WL_BFWB_OUT_SP21	N														< 2.0					
1/13/2022	WL_LCI_SP02	N																			
1/13/2022	WL_WLCI_SP01	N																			

		CHEMICAL_NAME FRACTION REPORT_RESULT_UNIT	48-h Static acute lethality test using Daphnia ma N %	96-Hr 100% Conc. Acute lethality test for R. Trout N %	Alkalinity, Total (As CaCO3) N mg/l	Aluminum D mg/l	Aluminum T mg/l	Antimony D ug/l	Antimony T ug/l	Arsenic D ug/l	Arsenic T ug/l	Barium D mg/l	Barium T mg/l	Beryllium D ug/l	Beryllium T ug/l	BIOCHEMICAL OXYGEN DEMAND, FIVE DAY N mg/l	Bismuth D mg/l	Bismuth T mg/l	Boron D mg/l	Boron T mg/l	BROMATE N ug/l
1/13/2022	WL_BFWB_OUT_SP21	N																			
1/13/2022	WL_BFWB_OUT_SP21	N																			
1/14/2022	WL_LCI_SP02	N																			
1/14/2022	WL_WLCI_SP01	N																			
1/14/2022	WL_BFWB_OUT_SP21	N														< 2.0					
1/14/2022	WL_BFWB_OUT_SP21	N																			
1/15/2022	WL_LCI_SP02	N																			
1/15/2022	WL_WLCI_SP01	N																			
1/15/2022	WL_BFWB_OUT_SP21	N																			
1/15/2022	WL_BFWB_OUT_SP21	N																			
1/16/2022	WL_LCI_SP02	N																			
1/16/2022	WL_WLCI_SP01	N																			
1/16/2022	WL_BFWB_OUT_SP21	N														< 2.0					
1/16/2022	WL_BFWB_OUT_SP21	N																			
1/17/2022	WL_LCI_SP02	N																			
1/17/2022	WL_WLCI_SP01	N																			
1/17/2022	WL_BFWB_OUT_SP21	N														< 2.0					
1/17/2022	WL_BFWB_OUT_SP21	N																			
1/18/2022	WL_LCI_SP02	N																			
1/18/2022	WL_WLCI_SP01	N																			
1/18/2022	WL_BFWB_OUT_SP21	N																			
1/18/2022	WL_BFWB_OUT_SP21	N																			
1/19/2022	WL_LCI_SP02	N																			
1/19/2022	WL_WLCI_SP01	N																			
1/19/2022	WL_BFWB_OUT_SP21	N																			
1/19/2022	WL_BFWB_OUT_SP21	N														< 2.0					
1/20/2022	WL_LCI_SP02	N																			
1/20/2022	WL_WLCI_SP01	N																			
1/20/2022	WL_BFWB_OUT_SP21	N																			
1/20/2022	WL_BFWB_OUT_SP21	N																			
1/21/2022	WL_LCI_SP02	N																			
1/21/2022	WL_WLCI_SP01	N																			
1/21/2022	WL_BFWB_OUT_SP21	N														< 2.0					
1/21/2022	WL_BFWB_OUT_SP21	N																			
1/21/2022	WL_WLCI_SP01	N																			
1/21/2022	WL_BFWB_OUT_SP21	N														< 2.0					
1/22/2022	WL_LCI_SP02	N																			
1/22/2022	WL_WLCI_SP01	N																			
1/22/2022	WL_BFWB_OUT_SP21	N																			
1/22/2022	WL_BFWB_OUT_SP21	N																			
1/23/2022	WL_LCI_SP02	N																			
1/23/2022	WL_WLCI_SP01	N																			
1/23/2022	WL_BFWB_OUT_SP21	N														< 2.0					
1/23/2022	WL_BFWB_OUT_SP21	N																			
1/24/2022	WL_LCI_SP02	N				< 0.0030	< 0.0030	0.44	0.40	0.16	0.17	0.0690	0.0687	< 0.020	< 0.020		< 0.000050	< 0.000050	0.019	0.021	
1/24/2022	WL_WLCI_SP01	N				< 0.0030	< 0.0060	0.51	0.51	0.28	0.30	0.0202	0.0217	< 0.020	< 0.040		< 0.000050	< 0.000100	0.015	< 0.020	
1/24/2022	WL_BFWB_OUT_SP21	N	0	0	263	< 0.0030	< 0.0030	0.18	0.16	< 0.10	< 0.10	0.0328	0.0325	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.023	0.022	12.2
1/24/2022	WL_BFWB_OUT_SP21	N																			
1/25/2022	WL_LCI_SP02	N																			
1/25/2022	WL_WLCI_SP01	N																			
1/25/2022	WL_BFWB_OUT_SP21	N																			
1/25/2022	WL_BFWB_OUT_SP21	N																			
1/26/2022	WL_LCI_SP02	N																			
1/26/2022	WL_WLCI_SP01	N																			
1/26/2022	WL_BFWB_OUT_SP21	N																			
1/26/2022	WL_BFWB_OUT_SP21	N														< 2.0					
1/27/2022	WL_LCI_SP02	N																			
1/27/2022	WL_WLCI_SP01	N																			
1/27/2022	WL_BFWB_OUT_SP21	N																			
1/27/2022	WL_BFWB_OUT_SP21	N																			
1/28/2022	WL_LCI_SP02	N																			
1/28/2022	WL_WLCI_SP01	N																			
1/28/2022	WL_BFWB_OUT_SP21	N														< 2.0					
1/28/2022	WL_BFWB_OUT_SP21	N																			
1/29/2022	WL_LCI_SP02	N																			
1/29/2022	WL_WLCI_SP01	N																			
1/29/2022	WL_BFWB_OUT_SP21	N																			
1/29/2022	WL_BFWB_OUT_SP21	N																			

		CHEMICAL_NAME FRACTION REPORT_RESULT_UNIT	48-h Static acute lethality test using Daphnia ma N %	96-Hr 100% Conc. Acute lethality test for R. Trout N %	Alkalinity, Total (As CaCO3) N mg/l	Aluminum D mg/l	Aluminum T mg/l	Antimony D ug/l	Antimony T ug/l	Arsenic D ug/l	Arsenic T ug/l	Barium D mg/l	Barium T mg/l	Beryllium D ug/l	Beryllium T ug/l	BIOCHEMICAL OXYGEN DEMAND, FIVE DAY N mg/l	Bismuth D mg/l	Bismuth T mg/l	Boron D mg/l	Boron T mg/l	BROMATE N ug/l
1/30/2022	WL_LCI_SP02	N																			
1/30/2022	WL_WLCI_SP01	N																			
1/30/2022	WL_BFWB_OUT_SP21	N														< 2.0					
1/30/2022	WL_BFWB_OUT_SP21	N																			
1/31/2022	WL_LCI_SP02	N																			
1/31/2022	WL_WLCI_SP01	N																			
1/31/2022	WL_BFWB_OUT_SP21	N														< 2.0					
1/31/2022	WL_BFWB_OUT_SP21	N																			
2/1/2022	WL_LCI_SP02	N				< 0.0030		0.40		0.18		0.0670		< 0.020			< 0.000050		0.018		
2/1/2022	WL_WLCI_SP01	N				< 0.0060		0.47		0.32		0.0193		< 0.040			< 0.000100		< 0.020		
2/1/2022	WL_BFWB_OUT_SP21	N																			
2/2/2022	WL_BFWB_OUT_SP21	N																			
2/2/2022	WL_LCI_SP02	N																			
2/2/2022	WL_WLCI_SP01	N																			
2/2/2022	WL_BFWB_OUT_SP21	N														< 2.0					
2/2/2022	WL_BFWB_OUT_SP21	N																			
2/2/2022	WL_LCI_SP02	N																			
2/2/2022	WL_WLCI_SP01	N																			
2/3/2022	WL_LCI_SP02	N																			
2/3/2022	WL_WLCI_SP01	N																			
2/3/2022	WL_BFWB_OUT_SP21	N																			
2/3/2022	WL_BFWB_OUT_SP21	N																			
2/4/2022	WL_LCI_SP02	N																			
2/4/2022	WL_WLCI_SP01	N																			
2/4/2022	WL_BFWB_OUT_SP21	N														< 2.0					
2/4/2022	WL_BFWB_OUT_SP21	N																			
2/5/2022	WL_LCI_SP02	N																			
2/5/2022	WL_WLCI_SP01	N																			
2/5/2022	WL_BFWB_OUT_SP21	N																			
2/6/2022	WL_LCI_SP02	N																			
2/6/2022	WL_WLCI_SP01	N																			
2/6/2022	WL_BFWB_OUT_SP21	N																			
2/6/2022	WL_BFWB_OUT_SP21	N																			
2/7/2022	WL_LCI_SP02	N			229	< 0.0030	0.0040	0.43	0.46	0.13	0.19	0.0747	0.0784	< 0.020	< 0.020		< 0.000050	< 0.000050	0.019	0.022	< 0.30
2/7/2022	WL_WLCI_SP01	N			318	< 0.0060	< 0.0060	0.50	0.51	0.26	0.33	0.0216	0.0221	< 0.040	< 0.040		< 0.000100	< 0.000100	< 0.020	< 0.020	< 0.30
2/7/2022	WL_BFWB_OUT_SP21	N	0	0	264	< 0.0030	< 0.0030	0.15	0.15	< 0.10	< 0.10	0.0350	0.0352	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.024	0.027	11.2
2/8/2022	WL_LCI_SP02	N																			
2/8/2022	WL_WLCI_SP01	N																			
2/8/2022	WL_BFWB_OUT_SP21	N																			
2/9/2022	WL_LCI_SP02	N																			
2/9/2022	WL_WLCI_SP01	N																			
2/9/2022	WL_BFWB_OUT_SP21	N																			
2/9/2022	WL_BFWB_OUT_SP21	N														2.1					
2/10/2022	WL_LCI_SP02	N																			
2/10/2022	WL_WLCI_SP01	N																			
2/10/2022	WL_BFWB_OUT_SP21	N																			
2/10/2022	WL_BFWB_OUT_SP21	N																			
2/11/2022	WL_LCI_SP02	N																			
2/11/2022	WL_WLCI_SP01	N																			
2/11/2022	WL_BFWB_OUT_SP21	N														< 2.0					
2/11/2022	WL_BFWB_OUT_SP21	N																			
2/12/2022	WL_LCI_SP02	N																			
2/12/2022	WL_WLCI_SP01	N																			
2/12/2022	WL_BFWB_OUT_SP21	N																			
2/12/2022	WL_BFWB_OUT_SP21	N																			
2/13/2022	WL_LCI_SP02	N																			
2/13/2022	WL_WLCI_SP01	N																			
2/13/2022	WL_BFWB_OUT_SP21	N														< 2.0					
2/13/2022	WL_BFWB_OUT_SP21	N																			
2/14/2022	WL_LCI_SP02	N																			
2/14/2022	WL_WLCI_SP01	N																			
2/14/2022	WL_BFWB_OUT_SP21	N														< 2.0					
2/14/2022	WL_BFWB_OUT_SP21	N																			
2/15/2022	WL_LCI_SP02	N																			

		CHEMICAL_NAME FRACTION REPORT_RESULT_UNIT	48-h Static acute lethality test using Daphnia ma N %	96-Hr 100% Conc. Acute lethality test for R. Trout N %	Alkalinity, Total (As CaCO3) N mg/l	Aluminum D mg/l	Aluminum T mg/l	Antimony D ug/l	Antimony T ug/l	Arsenic D ug/l	Arsenic T ug/l	Barium D mg/l	Barium T mg/l	Beryllium D ug/l	Beryllium T ug/l	BIOCHEMICAL OXYGEN DEMAND, FIVE DAY N mg/l	Bismuth D mg/l	Bismuth T mg/l	Boron D mg/l	Boron T mg/l	BROMATE N ug/l
2/15/2022	WL_WLCI_SP01	N																			
2/15/2022	WL_BFWB_OUT_SP21	N																			
2/15/2022	WL_BFWB_OUT_SP21	N																			
2/16/2022	WL_LCI_SP02	N																			
2/16/2022	WL_WLCI_SP01	N																			
2/16/2022	WL_BFWB_OUT_SP21	N																			
2/16/2022	WL_BFWB_OUT_SP21	N														< 2.0					
2/17/2022	WL_LCI_SP02	N																			
2/17/2022	WL_WLCI_SP01	N																			
2/17/2022	WL_BFWB_OUT_SP21	N																			
2/17/2022	WL_BFWB_OUT_SP21	N																			
2/18/2022	WL_LCI_SP02	N																			
2/18/2022	WL_WLCI_SP01	N																			
2/18/2022	WL_BFWB_OUT_SP21	N														< 2.0					
2/18/2022	WL_BFWB_OUT_SP21	N																			
2/19/2022	WL_LCI_SP02	N																			
2/19/2022	WL_WLCI_SP01	N																			
2/19/2022	WL_BFWB_OUT_SP21	N																			
2/19/2022	WL_BFWB_OUT_SP21	N																			
2/20/2022	WL_LCI_SP02	N																			
2/20/2022	WL_WLCI_SP01	N																			
2/20/2022	WL_BFWB_OUT_SP21	N														< 2.0					
2/20/2022	WL_BFWB_OUT_SP21	N																			
2/21/2022	WL_LCI_SP02	N				0.0264	0.0298	0.42	0.46	0.11	< 0.10	0.0721	0.0902	< 0.020	< 0.020		< 0.000050	< 0.000050	0.019	0.023	
2/21/2022	WL_WLCI_SP01	N				0.0284	0.0312	0.47	0.44	0.28	0.24	0.0209	0.0243	< 0.040	< 0.040		< 0.000100	< 0.000100	< 0.020	< 0.020	
2/21/2022	WL_BFWB_OUT_SP21	N	3	0	268	0.0256	0.0336	0.13	0.14	< 0.10	< 0.10	0.0330	0.0440	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.025	0.027	15.2
2/21/2022	WL_BFWB_OUT_SP21	N																			
2/22/2022	WL_LCI_SP02	N																			
2/22/2022	WL_WLCI_SP01	N																			
2/22/2022	WL_BFWB_OUT_SP21	N																			
2/22/2022	WL_BFWB_OUT_SP21	N																			
2/23/2022	WL_LCI_SP02	N																			
2/23/2022	WL_WLCI_SP01	N																			
2/23/2022	WL_BFWB_OUT_SP21	N																			
2/23/2022	WL_BFWB_OUT_SP21	N														< 2.0					
2/24/2022	WL_LCI_SP02	N																			
2/24/2022	WL_WLCI_SP01	N																			
2/24/2022	WL_BFWB_OUT_SP21	N																			
2/24/2022	WL_BFWB_OUT_SP21	N																			
2/25/2022	WL_LCI_SP02	N																			
2/25/2022	WL_WLCI_SP01	N																			
2/25/2022	WL_BFWB_OUT_SP21	N														< 2.0					
2/25/2022	WL_BFWB_OUT_SP21	N																			
2/26/2022	WL_BFWB_OUT_SP21	N																			
2/26/2022	WL_LCI_SP02	N																			
2/26/2022	WL_WLCI_SP01	N																			
2/26/2022	WL_BFWB_OUT_SP21	N																			
2/27/2022	WL_LCI_SP02	N																			
2/27/2022	WL_WLCI_SP01	N																			
2/27/2022	WL_BFWB_OUT_SP21	N														< 2.0					
2/27/2022	WL_BFWB_OUT_SP21	N																			
2/28/2022	WL_LCI_SP02	N																			
2/28/2022	WL_WLCI_SP01	N																			
2/28/2022	WL_BFWB_OUT_SP21	N														< 2.0					
2/28/2022	WL_BFWB_OUT_SP21	N																			
3/1/2022	WL_LCI_SP02	N																			
3/1/2022	WL_WLCI_SP01	N																			
3/1/2022	WL_BFWB_OUT_SP21	N																			
3/1/2022	WL_BFWB_OUT_SP21	N																			
3/1/2022	WL_BFWB_OUT_SP21	N																			
3/1/2022	WL_BFWB_OUT_SP21	N																			
3/2/2022	WL_LCI_SP02	N																			
3/2/2022	WL_WLCI_SP01	N																			
3/2/2022	WL_BFWB_OUT_SP21	N																			
3/2/2022	WL_BFWB_OUT_SP21	N														< 2.0					
3/3/2022	WL_LCI_SP02	N																			

		CHEMICAL_NAME FRACTION REPORT_RESULT_UNIT	48-h Static acute lethality test using Daphnia ma N %	96-Hr 100% Conc. Acute lethality test for R. Trout N %	Alkalinity, Total (As CaCO3) N mg/l	Aluminum D mg/l	Aluminum T mg/l	Antimony D ug/l	Antimony T ug/l	Arsenic D ug/l	Arsenic T ug/l	Barium D mg/l	Barium T mg/l	Beryllium D ug/l	Beryllium T ug/l	BIOCHEMICAL OXYGEN DEMAND, FIVE DAY N mg/l	Bismuth D mg/l	Bismuth T mg/l	Boron D mg/l	Boron T mg/l	BROMATE N ug/l
3/3/2022	WL_WLCI_SP01	N																			
3/3/2022	WL_BFWB_OUT_SP21	N																			
3/3/2022	WL_BFWB_OUT_SP21	N																			
3/3/2022	WL_BFWB_OUT_SP21	N																			
3/3/2022	WL_BFWB_OUT_SP21	N																			
3/4/2022	WL_LCI_SP02	N																			
3/4/2022	WL_WLCI_SP01	N																			
3/4/2022	WL_BFWB_OUT_SP21	N														< 2.0					
3/4/2022	WL_BFWB_OUT_SP21	N																			
3/4/2022	WL_BFWB_OUT_SP21	N																			
3/4/2022	WL_BFWB_OUT_SP21	N																			
3/5/2022	WL_LCI_SP02	N																			
3/5/2022	WL_WLCI_SP01	N																			
3/5/2022	WL_BFWB_OUT_SP21	N																			
3/5/2022	WL_BFWB_OUT_SP21	N																			
3/6/2022	WL_LCI_SP02	N																			
3/6/2022	WL_WLCI_SP01	N																			
3/6/2022	WL_BFWB_OUT_SP21	N														< 2.0					
3/6/2022	WL_BFWB_OUT_SP21	N																			
3/7/2022	WL_LCI_SP02	N			227	< 0.0030	< 0.0030	0.41	0.38	0.16	0.13	0.0726	0.0664	< 0.020	< 0.020		< 0.000050	< 0.000050	0.017	0.019	< 0.30
3/7/2022	WL_WLCI_SP01	N			340	< 0.0060	< 0.0060	0.50	0.47	0.28	0.23	0.0223	0.0201	< 0.040	< 0.040		< 0.000100	< 0.000100	< 0.020	< 0.020	< 0.30
3/7/2022	WL_BFWB_OUT_SP21	N	3	0		< 0.0030	0.0039	0.14	0.15	< 0.10	< 0.10	0.0358	0.0363	< 0.020	< 0.020		< 0.000050	< 0.000050	0.023	0.027	
3/7/2022	WL_BFWB_OUT_SP21	N			266											< 2.0					17.3
3/8/2022	WL_LCI_SP02	N																			
3/8/2022	WL_WLCI_SP01	N																			
3/8/2022	WL_BFWB_OUT_SP21	N																			
3/8/2022	WL_BFWB_OUT_SP21	N																			
3/8/2022	WL_BFWB_OUT_SP21	N																			
3/8/2022	WL_BFWB_OUT_SP21	N																			
3/9/2022	WL_LCI_SP02	N																			
3/9/2022	WL_WLCI_SP01	N																			
3/9/2022	WL_BFWB_OUT_SP21	N																			
3/9/2022	WL_BFWB_OUT_SP21	N														< 2.0					
3/9/2022	WL_BFWB_OUT_SP21	N																			
3/9/2022	WL_BFWB_OUT_SP21	N																			
3/9/2022	WL_LCI_SP02	N																			
3/9/2022	WL_LCI_SP02	N																			
3/10/2022	WL_LCI_SP02	N																			
3/10/2022	WL_LCI_SP02	N																			
3/10/2022	WL_WLCI_SP01	N																			
3/10/2022	WL_BFWB_OUT_SP21	N																			
3/10/2022	WL_BFWB_OUT_SP21	N																			
3/11/2022	WL_LCI_SP02	N																			
3/11/2022	WL_WLCI_SP01	N																			
3/11/2022	WL_BFWB_OUT_SP21	N														< 2.0					
3/11/2022	WL_BFWB_OUT_SP21	N																			
3/11/2022	WL_BFWB_OUT_SP21	N																			
3/11/2022	WL_BFWB_OUT_SP21	N																			
3/12/2022	WL_LCI_SP02	N																			
3/12/2022	WL_WLCI_SP01	N																			
3/12/2022	WL_BFWB_OUT_SP21	N																			
3/12/2022	WL_BFWB_OUT_SP21	N																			
3/13/2022	WL_LCI_SP02	N																			
3/13/2022	WL_WLCI_SP01	N																			
3/13/2022	WL_BFWB_OUT_SP21	N														< 2.0					
3/14/2022	WL_LCI_SP02	N																			
3/14/2022	WL_WLCI_SP01	N																			
3/14/2022	WL_BFWB_OUT_SP21	N																			
3/14/2022	WL_BFWB_OUT_SP21	N														< 2.0					
3/15/2022	WL_LCI_SP02	N																			
3/15/2022	WL_WLCI_SP01	N																			
3/15/2022	WL_BFWB_OUT_SP21	N																			
3/15/2022	WL_BFWB_OUT_SP21	N																			
3/16/2022	WL_LCI_SP02	N																			
3/16/2022	WL_WLCI_SP01	N																			
3/16/2022	WL_BFWB_OUT_SP21	N																			

		CHEMICAL_NAME FRACTION REPORT_RESULT_UNIT	48-h Static acute lethality test using Daphnia ma N %	96-Hr 100% Conc. Acute lethality test for R. Trout N %	Alkalinity, Total (As CaCO3) N mg/l	Aluminum D mg/l	Aluminum T mg/l	Antimony D ug/l	Antimony T ug/l	Arsenic D ug/l	Arsenic T ug/l	Barium D mg/l	Barium T mg/l	Beryllium D ug/l	Beryllium T ug/l	BIOCHEMICAL OXYGEN DEMAND, FIVE DAY N mg/l	Bismuth D mg/l	Bismuth T mg/l	Boron D mg/l	Boron T mg/l	BROMATE N ug/l
3/16/2022	WL_BFWB_OUT_SP21	N																			
3/16/2022	WL_BFWB_OUT_SP21	N														< 2.0					
3/17/2022	WL_LCI_SP02	N																			
3/17/2022	WL_WLCI_SP01	N																			
3/17/2022	WL_BFWB_OUT_SP21	N																			
3/17/2022	WL_BFWB_OUT_SP21	N																			
3/18/2022	WL_LCI_SP02	N																			
3/18/2022	WL_WLCI_SP01	N																			
3/18/2022	WL_BFWB_OUT_SP21	N														< 2.0					
3/18/2022	WL_BFWB_OUT_SP21	N																			
3/19/2022	WL_LCI_SP02	N																			
3/19/2022	WL_WLCI_SP01	N																			
3/19/2022	WL_BFWB_OUT_SP21	N																			
3/19/2022	WL_BFWB_OUT_SP21	N																			
3/20/2022	WL_LCI_SP02	N																			
3/20/2022	WL_WLCI_SP01	N																			
3/20/2022	WL_BFWB_OUT_SP21	N														< 2.0					
3/20/2022	WL_BFWB_OUT_SP21	N																			
3/20/2022	WL_BFWB_OUT_SP21	N																			
3/20/2022	WL_BFWB_OUT_SP21	N																			
3/21/2022	WL_LCI_SP02	N				< 0.0030	0.0051	0.42	0.45	0.13	0.15	0.0687	0.0754	< 0.020	< 0.020		< 0.000050	< 0.000050	0.017	0.021	
3/21/2022	WL_WLCI_SP01	N				< 0.0060	< 0.0060	0.47	0.50	0.29	0.28	0.0218	0.0237	< 0.040	< 0.040		< 0.000100	< 0.000100	< 0.020	< 0.020	
3/21/2022	WL_BFWB_OUT_SP21	N	0	0	256	< 0.0030	< 0.0030	0.13	0.13	< 0.10	< 0.10	0.0367	0.0390	< 0.020	< 0.020	2.0	< 0.000050	< 0.000050	0.022	0.028	23.8
3/21/2022	WL_BFWB_OUT_SP21	N																			
3/22/2022	WL_LCI_SP02	N																			
3/22/2022	WL_WLCI_SP01	N																			
3/22/2022	WL_BFWB_OUT_SP21	N																			
3/22/2022	WL_BFWB_OUT_SP21	N																			
3/23/2022	WL_LCI_SP02	N																			
3/23/2022	WL_WLCI_SP01	N																			
3/23/2022	WL_BFWB_OUT_SP21	N																			
3/23/2022	WL_BFWB_OUT_SP21	N														< 2.0					
3/23/2022	WL_LCI_SP02	N																			
3/23/2022	WL_LCI_SP02	N																			
3/24/2022	WL_LCI_SP02	N																			
3/24/2022	WL_WLCI_SP01	N																			
3/24/2022	WL_BFWB_OUT_SP21	N																			
3/24/2022	WL_BFWB_OUT_SP21	N																			
3/25/2022	WL_LCI_SP02	N																			
3/25/2022	WL_WLCI_SP01	N																			
3/25/2022	WL_BFWB_OUT_SP21	N														< 2.0					
3/25/2022	WL_BFWB_OUT_SP21	N																			
3/26/2022	WL_BFWB_OUT_SP21	N																			
3/26/2022	WL_LCI_SP02	N																			
3/26/2022	WL_WLCI_SP01	N																			
3/26/2022	WL_BFWB_OUT_SP21	N																			
3/27/2022	WL_BFWB_OUT_SP21	N																			
3/27/2022	WL_LCI_SP02	N																			
3/27/2022	WL_WLCI_SP01	N																			
3/27/2022	WL_BFWB_OUT_SP21	N														< 2.0					
3/28/2022	WL_LCI_SP02	N																			
3/28/2022	WL_WLCI_SP01	N																			
3/28/2022	WL_BFWB_OUT_SP21	N														< 2.0					
3/28/2022	WL_BFWB_OUT_SP21	N																			
3/29/2022	WL_LCI_SP02	N																			
3/29/2022	WL_WLCI_SP01	N																			
3/29/2022	WL_BFWB_OUT_SP21	N																			
3/29/2022	WL_BFWB_OUT_SP21	N																			
3/30/2022	WL_LCI_SP02	N																			
3/30/2022	WL_WLCI_SP01	N																			
3/30/2022	WL_BFWB_OUT_SP21	N																			
3/30/2022	WL_BFWB_OUT_SP21	N														< 2.0					
3/31/2022	WL_LCI_SP02	N																			
3/31/2022	WL_WLCI_SP01	N																			
3/31/2022	WL_BFWB_OUT_SP21	N																			
3/31/2022	WL_BFWB_OUT_SP21	N																			

		CHEMICAL_NAME FRACTION REPORT_RESULT_UNIT	48-h Static acute lethality test using Daphnia ma N %	96-Hr 100% Conc. Acute lethality test for R. Trout N %	Alkalinity, Total (As CaCO3) N mg/l	Aluminum D mg/l	Aluminum T mg/l	Antimony D ug/l	Antimony T ug/l	Arsenic D ug/l	Arsenic T ug/l	Barium D mg/l	Barium T mg/l	Beryllium D ug/l	Beryllium T ug/l	BIOCHEMICAL OXYGEN DEMAND, FIVE DAY N mg/l	Bismuth D mg/l	Bismuth T mg/l	Boron D mg/l	Boron T mg/l	BROMATE N ug/l
4/1/2022	WL_LCI_SP02	N																			
4/1/2022	WL_WLCI_SP01	N																			
4/1/2022	WL_BFWB_OUT_SP21	N														< 2.0					
4/1/2022	WL_BFWB_OUT_SP21	N																			
4/2/2022	WL_LCI_SP02	N																			
4/2/2022	WL_WLCI_SP01	N																			
4/2/2022	WL_BFWB_OUT_SP21	N																			
4/2/2022	WL_BFWB_OUT_SP21	N																			
4/3/2022	WL_LCI_SP02	N																			
4/3/2022	WL_WLCI_SP01	N																			
4/3/2022	WL_BFWB_OUT_SP21	N														< 2.0					
4/3/2022	WL_BFWB_OUT_SP21	N																			
4/4/2022	WL_LCI_SP02	N			227	0.0032	0.0036	0.43	0.41	0.14	0.15	0.0542	0.0542	< 0.020	< 0.020		< 0.000050	< 0.000050	0.019	0.023	< 0.30
4/4/2022	WL_WLCI_SP01	N			329	< 0.0060	< 0.0060	0.46	0.50	0.27	0.28	0.0218	0.0220	< 0.040	< 0.040		< 0.000100	< 0.000100	< 0.020	< 0.020	< 0.30
4/4/2022	WL_BFWB_OUT_SP21	N	0	0	251	0.0044	0.0042	0.16	0.14	< 0.10	< 0.10	0.0284	0.0281	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.023	0.024	20.2
4/5/2022	WL_LCI_SP02	N																			
4/5/2022	WL_WLCI_SP01	N																			
4/5/2022	WL_BFWB_OUT_SP21	N																			
4/5/2022	WL_BFWB_OUT_SP21	N																			
4/6/2022	WL_LCI_SP02	N																			
4/6/2022	WL_WLCI_SP01	N																			
4/6/2022	WL_BFWB_OUT_SP21	N																			
4/6/2022	WL_BFWB_OUT_SP21	N														< 2.0					
4/7/2022	WL_LCI_SP02	N																			
4/7/2022	WL_WLCI_SP01	N																			
4/7/2022	WL_BFWB_OUT_SP21	N																			
4/7/2022	WL_BFWB_OUT_SP21	N																			
4/8/2022	WL_LCI_SP02	N																			
4/8/2022	WL_WLCI_SP01	N																			
4/8/2022	WL_BFWB_OUT_SP21	N														< 2.0					
4/8/2022	WL_BFWB_OUT_SP21	N																			
4/8/2022	WL_BFWB_OUT_SP21	N																			
4/9/2022	WL_LCI_SP02	N																			
4/9/2022	WL_WLCI_SP01	N																			
4/9/2022	WL_BFWB_OUT_SP21	N																			
4/9/2022	WL_BFWB_OUT_SP21	N																			
4/10/2022	WL_LCI_SP02	N																			
4/10/2022	WL_WLCI_SP01	N																			
4/10/2022	WL_BFWB_OUT_SP21	N														< 2.0					
4/10/2022	WL_BFWB_OUT_SP21	N																			
4/11/2022	WL_LCI_SP02	N																			
4/11/2022	WL_WLCI_SP01	N																			
4/11/2022	WL_BFWB_OUT_SP21	N														< 2.0					
4/11/2022	WL_BFWB_OUT_SP21	N																			
4/12/2022	WL_LCI_SP02	N																			
4/12/2022	WL_WLCI_SP01	N																			
4/12/2022	WL_BFWB_OUT_SP21	N																			
4/12/2022	WL_BFWB_OUT_SP21	N																			
4/13/2022	WL_LCI_SP02	N																			
4/13/2022	WL_WLCI_SP01	N																			
4/13/2022	WL_BFWB_OUT_SP21	N																			
4/13/2022	WL_BFWB_OUT_SP21	N														< 2.0					
4/14/2022	WL_LCI_SP02	N																			
4/14/2022	WL_WLCI_SP01	N																			
4/14/2022	WL_BFWB_OUT_SP21	N																			
4/14/2022	WL_BFWB_OUT_SP21	N																			
4/15/2022	WL_LCI_SP02	N																			
4/15/2022	WL_WLCI_SP01	N																			
4/15/2022	WL_BFWB_OUT_SP21	N														< 2.0					
4/15/2022	WL_BFWB_OUT_SP21	N																			
4/16/2022	WL_LCI_SP02	N																			
4/16/2022	WL_WLCI_SP01	N																			
4/16/2022	WL_BFWB_OUT_SP21	N																			
4/16/2022	WL_BFWB_OUT_SP21	N																			
4/17/2022	WL_LCI_SP02	N																			
4/17/2022	WL_WLCI_SP01	N																			

		CHEMICAL_NAME FRACTION REPORT_RESULT_UNIT	48-h Static acute lethality test using Daphnia ma N %	96-Hr 100% Conc. Acute lethality test for R. Trout N %	Alkalinity, Total (As CaCO3) N mg/l	Aluminum D mg/l	Aluminum T mg/l	Antimony D ug/l	Antimony T ug/l	Arsenic D ug/l	Arsenic T ug/l	Barium D mg/l	Barium T mg/l	Beryllium D ug/l	Beryllium T ug/l	BIOCHEMICAL OXYGEN DEMAND, FIVE DAY N mg/l	Bismuth D mg/l	Bismuth T mg/l	Boron D mg/l	Boron T mg/l	BROMATE N ug/l
4/17/2022	WL_BFWB_OUT_SP21	N														< 2.0					
4/17/2022	WL_BFWB_OUT_SP21	N																			
4/18/2022	WL_LCI_SP02	N				0.0036	0.0045	0.43	0.35	0.14	0.14	0.0592	0.0540	< 0.020	< 0.020		< 0.000050	< 0.000050	0.022	0.019	
4/18/2022	WL_WLCI_SP01	N				< 0.0060	< 0.0060	0.51	0.48	0.32	0.26	0.0232	0.0216	< 0.040	< 0.040		< 0.000100	< 0.000100	< 0.020	< 0.020	
4/18/2022	WL_BFWB_OUT_SP21	N	0	0	227	0.0034	0.0044	0.16	0.14	< 0.10	< 0.10	0.0308	0.0283	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.023	0.022	18.2
4/18/2022	WL_BFWB_OUT_SP21	N																			
4/19/2022	WL_LCI_SP02	N																			
4/19/2022	WL_WLCI_SP01	N																			
4/19/2022	WL_BFWB_OUT_SP21	N																			
4/19/2022	WL_BFWB_OUT_SP21	N																			
4/20/2022	WL_LCI_SP02	N																			
4/20/2022	WL_WLCI_SP01	N																			
4/20/2022	WL_BFWB_OUT_SP21	N																			
4/20/2022	WL_BFWB_OUT_SP21	N														< 2.0					
4/21/2022	WL_LCI_SP02	N																			
4/21/2022	WL_WLCI_SP01	N																			
4/21/2022	WL_BFWB_OUT_SP21	N																			
4/21/2022	WL_BFWB_OUT_SP21	N																			
4/22/2022	WL_LCI_SP02	N																			
4/22/2022	WL_WLCI_SP01	N																			
4/22/2022	WL_BFWB_OUT_SP21	N														< 2.0					
4/22/2022	WL_BFWB_OUT_SP21	N																			
4/23/2022	WL_LCI_SP02	N																			
4/23/2022	WL_WLCI_SP01	N																			
4/23/2022	WL_BFWB_OUT_SP21	N																			
4/23/2022	WL_BFWB_OUT_SP21	N																			
4/24/2022	WL_LCI_SP02	N																			
4/24/2022	WL_WLCI_SP01	N																			
4/24/2022	WL_BFWB_OUT_SP21	N														< 2.0					
4/24/2022	WL_BFWB_OUT_SP21	N																			
4/25/2022	WL_LCI_SP02	N																			
4/25/2022	WL_WLCI_SP01	N																			
4/25/2022	WL_BFWB_OUT_SP21	N														< 2.0					
4/25/2022	WL_BFWB_OUT_SP21	N																			
4/26/2022	WL_LCI_SP02	N																			
4/26/2022	WL_WLCI_SP01	N																			
4/26/2022	WL_BFWB_OUT_SP21	N																			
4/27/2022	WL_LCI_SP02	N																			
4/27/2022	WL_WLCI_SP01	N																			
4/27/2022	WL_BFWB_OUT_SP21	N																			
4/28/2022	WL_LCI_SP02	N																			
4/28/2022	WL_WLCI_SP01	N																			
4/28/2022	WL_BFWB_OUT_SP21	N																			
4/29/2022	WL_BFWB_OUT_SP21	N														< 2.0					
4/29/2022	WL_LCI_SP02	N																			
4/29/2022	WL_WLCI_SP01	N																			
4/29/2022	WL_BFWB_OUT_SP21	N																			
4/29/2022	WL_BFWB_OUT_SP21	N																			
4/29/2022	WL_LCI_SP02	N																			
4/29/2022	WL_WLCI_SP01	N																			
4/29/2022	WL_LCI_SP02	N																			
4/29/2022	WL_WLCI_SP01	N																			
4/30/2022	WL_LCI_SP02	N																			
4/30/2022	WL_WLCI_SP01	N																			
4/30/2022	WL_BFWB_OUT_SP21	N																			
4/30/2022	WL_BFWB_OUT_SP21	N																			
5/1/2022	WL_LCI_SP02	N																			
5/1/2022	WL_WLCI_SP01	N																			
5/1/2022	WL_BFWB_OUT_SP21	N														< 2.0					
5/1/2022	WL_BFWB_OUT_SP21	N																			
5/2/2022	WL_LCI_SP02	N			230	< 0.0030	0.0050	0.39	0.40	0.15	0.14	0.0508	0.0476	< 0.020	< 0.020		< 0.000050	< 0.000050	0.019	0.018	< 0.30
5/2/2022	WL_WLCI_SP01	N			388	< 0.0060	< 0.0060	0.51	0.54	0.29	0.27	0.0219	0.0222	< 0.040	< 0.040		< 0.000100	< 0.000100	< 0.020	< 0.020	< 0.30
5/2/2022	WL_BFWB_OUT_SP21	N	3	0	223	0.0033	0.0044	0.15	0.14	< 0.10	< 0.10	0.0256	0.0253	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.021	0.020	14.3

		CHEMICAL_NAME FRACTION REPORT_RESULT_UNIT	48-h Static acute lethality test using Daphnia ma N %	96-Hr 100% Conc. Acute lethality test for R. Trout N %	Alkalinity, Total (As CaCO3) N mg/l	Aluminum D mg/l	Aluminum T mg/l	Antimony D ug/l	Antimony T ug/l	Arsenic D ug/l	Arsenic T ug/l	Barium D mg/l	Barium T mg/l	Beryllium D ug/l	Beryllium T ug/l	BIOCHEMICAL OXYGEN DEMAND, FIVE DAY N mg/l	Bismuth D mg/l	Bismuth T mg/l	Boron D mg/l	Boron T mg/l	BROMATE N ug/l
5/2/2022	WL_BFWB_OUT_SP21	N																			
5/3/2022	WL_LCI_SP02	N																			
5/3/2022	WL_WLCI_SP01	N																			
5/3/2022	WL_BFWB_OUT_SP21	N																			
5/3/2022	WL_BFWB_OUT_SP21	N																			
5/3/2022	WL_BFWB_OUT_SP21	N																			
5/4/2022	WL_LCI_SP02	N																			
5/4/2022	WL_WLCI_SP01	N																			
5/4/2022	WL_BFWB_OUT_SP21	N																			
5/4/2022	WL_BFWB_OUT_SP21	N														< 2.0					
5/5/2022	WL_LCI_SP02	N																			
5/5/2022	WL_WLCI_SP01	N																			
5/5/2022	WL_BFWB_OUT_SP21	N																			
5/5/2022	WL_BFWB_OUT_SP21	N																			
5/6/2022	WL_LCI_SP02	N																			
5/6/2022	WL_WLCI_SP01	N																			
5/6/2022	WL_BFWB_OUT_SP21	N														< 2.0					
5/6/2022	WL_BFWB_OUT_SP21	N																			
5/6/2022	WL_LCI_SP02	N																			
5/7/2022	WL_LCI_SP02	N																			
5/7/2022	WL_WLCI_SP01	N																			
5/7/2022	WL_BFWB_OUT_SP21	N																			
5/7/2022	WL_BFWB_OUT_SP21	N																			
5/8/2022	WL_LCI_SP02	N																			
5/8/2022	WL_WLCI_SP01	N																			
5/8/2022	WL_BFWB_OUT_SP21	N														< 2.0					
5/8/2022	WL_BFWB_OUT_SP21	N																			
5/9/2022	WL_LCI_SP02	N																			
5/9/2022	WL_WLCI_SP01	N																			
5/9/2022	WL_BFWB_OUT_SP21	N														< 2.0					
5/9/2022	WL_BFWB_OUT_SP21	N																			
5/10/2022	WL_LCI_SP02	N																			
5/10/2022	WL_WLCI_SP01	N																			
5/10/2022	WL_BFWB_OUT_SP21	N																			
5/10/2022	WL_BFWB_OUT_SP21	N																			
5/11/2022	WL_LCI_SP02	N																			
5/11/2022	WL_WLCI_SP01	N																			
5/11/2022	WL_WLCI_SP01	N																			
5/11/2022	WL_BFWB_OUT_SP21	N																			
5/11/2022	WL_BFWB_OUT_SP21	N														< 2.0					
5/12/2022	WL_LCI_SP02	N																			
5/12/2022	WL_WLCI_SP01	N																			
5/12/2022	WL_BFWB_OUT_SP21	N																			
5/12/2022	WL_BFWB_OUT_SP21	N																			
5/13/2022	WL_LCI_SP02	N																			
5/13/2022	WL_WLCI_SP01	N																			
5/13/2022	WL_BFWB_OUT_SP21	N														< 2.0					
5/13/2022	WL_BFWB_OUT_SP21	N																			
5/14/2022	WL_LCI_SP02	N																			
5/14/2022	WL_WLCI_SP01	N																			
5/14/2022	WL_BFWB_OUT_SP21	N																			
5/14/2022	WL_BFWB_OUT_SP21	N																			
5/15/2022	WL_LCI_SP02	N																			
5/15/2022	WL_WLCI_SP01	N																			
5/15/2022	WL_BFWB_OUT_SP21	N														< 2.0					
5/15/2022	WL_BFWB_OUT_SP21	N																			
5/16/2022	WL_LCI_SP02	N				< 0.0060	< 0.0030	0.38	0.36	0.15	0.16	0.0398	0.0415	< 0.020	< 0.020		< 0.000050	< 0.000050	0.018	0.017	
5/16/2022	WL_WLCI_SP01	N				< 0.0060	< 0.0060	0.51	0.50	0.27	0.34	0.0215	0.0203	< 0.040	< 0.040		< 0.000100	< 0.000100	< 0.020	0.024	
5/16/2022	WL_BFWB_OUT_SP21	N	0	0	255	< 0.0060	< 0.0030	0.23	0.24	< 0.10	0.11	0.0169	0.0188	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.021	0.020	10.0
5/16/2022	WL_BFWB_OUT_SP21	N																			
5/17/2022	WL_LCI_SP02	N																			
5/17/2022	WL_WLCI_SP01	N																			
5/17/2022	WL_BFWB_OUT_SP21	N																			
5/17/2022	WL_BFWB_OUT_SP21	N																			
5/18/2022	WL_LCI_SP02	N																			
5/18/2022	WL_WLCI_SP01	N																			

		CHEMICAL_NAME FRACTION REPORT_RESULT_UNIT	48-h Static acute lethality test using Daphnia ma N %	96-Hr 100% Conc. Acute lethality test for R. Trout N %	Alkalinity, Total (As CaCO3) N mg/l	Aluminum D mg/l	Aluminum T mg/l	Antimony D ug/l	Antimony T ug/l	Arsenic D ug/l	Arsenic T ug/l	Barium D mg/l	Barium T mg/l	Beryllium D ug/l	Beryllium T ug/l	BIOCHEMICAL OXYGEN DEMAND, FIVE DAY N mg/l	Bismuth D mg/l	Bismuth T mg/l	Boron D mg/l	Boron T mg/l	BROMATE N ug/l
5/18/2022	WL_BFWB_OUT_SP21	N																			
5/18/2022	WL_BFWB_OUT_SP21	N														< 2.0					
5/19/2022	WL_LCI_SP02	N																			
5/19/2022	WL_WLCI_SP01	N																			
5/19/2022	WL_BFWB_OUT_SP21	N																			
5/19/2022	WL_BFWB_OUT_SP21	N																			
5/20/2022	WL_LCI_SP02	N																			
5/20/2022	WL_WLCI_SP01	N																			
5/20/2022	WL_BFWB_OUT_SP21	N														< 2.0					
5/20/2022	WL_BFWB_OUT_SP21	N																			
5/21/2022	WL_LCI_SP02	N																			
5/21/2022	WL_WLCI_SP01	N																			
5/21/2022	WL_BFWB_OUT_SP21	N																			
5/21/2022	WL_BFWB_OUT_SP21	N																			
5/22/2022	WL_LCI_SP02	N																			
5/22/2022	WL_WLCI_SP01	N																			
5/22/2022	WL_BFWB_OUT_SP21	N														< 2.0					
5/22/2022	WL_BFWB_OUT_SP21	N																			
5/23/2022	WL_LCI_SP02	N																			
5/23/2022	WL_WLCI_SP01	N																			
5/23/2022	WL_BFWB_OUT_SP21	N														< 2.0					
5/23/2022	WL_BFWB_OUT_SP21	N																			
5/24/2022	WL_LCI_SP02	N																			
5/24/2022	WL_WLCI_SP01	N																			
5/24/2022	WL_BFWB_OUT_SP21	N																			
5/24/2022	WL_BFWB_OUT_SP21	N																			
5/24/2022	WL_BFWB_OUT_SP21	N																			
5/24/2022	WL_BFWB_OUT_SP21	N																			
5/25/2022	WL_LCI_SP02	N																			
5/25/2022	WL_WLCI_SP01	N																			
5/25/2022	WL_BFWB_OUT_SP21	N																			
5/25/2022	WL_BFWB_OUT_SP21	N														< 2.0					
5/26/2022	WL_LCI_SP02	N																			
5/26/2022	WL_WLCI_SP01	N																			
5/26/2022	WL_BFWB_OUT_SP21	N																			
5/26/2022	WL_BFWB_OUT_SP21	N																			
5/27/2022	WL_LCI_SP02	N																			
5/27/2022	WL_WLCI_SP01	N																			
5/27/2022	WL_BFWB_OUT_SP21	N														< 2.0					
5/27/2022	WL_BFWB_OUT_SP21	N																			
5/28/2022	WL_LCI_SP02	N																			
5/28/2022	WL_WLCI_SP01	N																			
5/28/2022	WL_BFWB_OUT_SP21	N																			
5/28/2022	WL_BFWB_OUT_SP21	N																			
5/28/2022	WL_BFWB_OUT_SP21	N																			
5/28/2022	WL_BFWB_OUT_SP21	N																			
5/28/2022	WL_BFWB_OUT_SP21	N																			
5/28/2022	WL_BFWB_OUT_SP21	N																			
5/28/2022	WL_BFWB_OUT_SP21	N																			
5/29/2022	WL_LCI_SP02	N																			
5/29/2022	WL_WLCI_SP01	N																			
5/29/2022	WL_BFWB_OUT_SP21	N														< 2.0					
5/29/2022	WL_BFWB_OUT_SP21	N																			
5/30/2022	WL_LCI_SP02	N				< 0.0030	0.0040	0.35	0.33	0.15	0.16	0.0344	0.0345	< 0.020	< 0.020		< 0.000050	< 0.000050	0.016	0.017	
5/30/2022	WL_WLCI_SP01	N				< 0.0030	< 0.0030	0.50	0.52	0.24	0.22	0.0171	0.0172	< 0.020	< 0.020		< 0.000050	< 0.000050	0.019	0.021	
5/30/2022	WL_BFWB_OUT_SP21	N	0	0	424	< 0.0030	0.0035	0.20	0.19	< 0.10	< 0.10	0.0130	0.0132	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.021	0.021	6.90
5/30/2022	WL_BFWB_OUT_SP21	N																			
5/31/2022	WL_LCI_SP02	N																			
5/31/2022	WL_WLCI_SP01	N																			
5/31/2022	WL_BFWB_OUT_SP21	N																			
5/31/2022	WL_BFWB_OUT_SP21	N																			
6/1/2022	WL_LCI_SP02	N																			
6/1/2022	WL_WLCI_SP01	N																			
6/1/2022	WL_BFWB_OUT_SP21	N																			
6/1/2022	WL_BFWB_OUT_SP21	N														< 2.0					

		CHEMICAL_NAME FRACTION REPORT_RESULT_UNIT	48-h Static acute lethality test using Daphnia ma N %	96-Hr 100% Conc. Acute lethality test for R. Trout N %	Alkalinity, Total (As CaCO3) N mg/l	Aluminum D mg/l	Aluminum T mg/l	Antimony D ug/l	Antimony T ug/l	Arsenic D ug/l	Arsenic T ug/l	Barium D mg/l	Barium T mg/l	Beryllium D ug/l	Beryllium T ug/l	BIOCHEMICAL OXYGEN DEMAND, FIVE DAY N mg/l	Bismuth D mg/l	Bismuth T mg/l	Boron D mg/l	Boron T mg/l	BROMATE N ug/l
6/2/2022	WL_LCI_SP02	N																			
6/2/2022	WL_WLCI_SP01	N																			
6/2/2022	WL_BFWB_OUT_SP21	N																			
6/2/2022	WL_BFWB_OUT_SP21	N																			
6/3/2022	WL_LCI_SP02	N																			
6/3/2022	WL_WLCI_SP01	N																			
6/3/2022	WL_BFWB_OUT_SP21	N														< 2.0					
6/3/2022	WL_BFWB_OUT_SP21	N																			
6/4/2022	WL_LCI_SP02	N																			
6/4/2022	WL_WLCI_SP01	N																			
6/4/2022	WL_BFWB_OUT_SP21	N																			
6/4/2022	WL_BFWB_OUT_SP21	N																			
6/5/2022	WL_LCI_SP02	N																			
6/5/2022	WL_WLCI_SP01	N																			
6/5/2022	WL_BFWB_OUT_SP21	N														< 2.0					
6/5/2022	WL_BFWB_OUT_SP21	N																			
6/6/2022	WL_LCI_SP02	N																			
6/6/2022	WL_WLCI_SP01	N																			
6/6/2022	WL_BFWB_OUT_SP21	N														< 2.0					
6/6/2022	WL_BFWB_OUT_SP21	N																			
6/7/2022	WL_LCI_SP02	N																			
6/7/2022	WL_WLCI_SP01	N																			
6/7/2022	WL_BFWB_OUT_SP21	N																			
6/7/2022	WL_LCI_SP02	N																			
6/7/2022	WL_WLCI_SP01	N																			
6/7/2022	WL_BFWB_OUT_SP21	N																			
6/8/2022	WL_LCI_SP02	N																			
6/8/2022	WL_WLCI_SP01	N																			
6/9/2022	WL_LCI_SP02	N																			
6/9/2022	WL_WLCI_SP01	N																			
6/9/2022	WL_WLCI_SP01	N																			
6/9/2022	WL_BFWB_OUT_SP21	N																			
6/9/2022	WL_BFWB_OUT_SP21	N																			
6/10/2022	WL_LCI_SP02	N																			
6/10/2022	WL_WLCI_SP01	N																			
6/10/2022	WL_BFWB_OUT_SP21	N														< 2.0					
6/10/2022	WL_BFWB_OUT_SP21	N																			
6/11/2022	WL_LCI_SP02	N																			
6/11/2022	WL_WLCI_SP01	N																			
6/11/2022	WL_BFWB_OUT_SP21	N																			
6/11/2022	WL_BFWB_OUT_SP21	N																			
6/12/2022	WL_LCI_SP02	N																			
6/12/2022	WL_WLCI_SP01	N																			
6/12/2022	WL_BFWB_OUT_SP21	N														< 2.0					
6/12/2022	WL_BFWB_OUT_SP21	N																			
6/13/2022	WL_LCI_SP02	N			159	< 0.0030	0.0055	0.32	0.32	0.14	0.14	0.0237	0.0226	< 0.020	< 0.020		< 0.000050	< 0.000050	0.012	0.011	< 0.30
6/13/2022	WL_WLCI_SP01	N			324	< 0.0030	< 0.0030	0.46	0.46	0.14	0.13	0.0138	0.0131	< 0.020	< 0.020		< 0.000050	< 0.000050	0.022	0.020	< 0.30
6/13/2022	WL_BFWB_OUT_SP21	N	0	0	279	< 0.0030	0.0072	0.11	0.11	< 0.10	< 0.10	0.00800	0.00732	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.028	0.026	4.11
6/13/2022	WL_BFWB_OUT_SP21	N																			
6/14/2022	WL_LCI_SP02	N																			
6/14/2022	WL_WLCI_SP01	N																			
6/14/2022	WL_BFWB_OUT_SP21	N																			
6/14/2022	WL_BFWB_OUT_SP21	N																			
6/15/2022	WL_LCI_SP02	N																			
6/15/2022	WL_WLCI_SP01	N																			
6/15/2022	WL_BFWB_OUT_SP21	N																			
6/15/2022	WL_BFWB_OUT_SP21	N														< 2.0					
6/15/2022	WL_WLCI_SP01	N																			
6/16/2022	WL_BFWB_OUT_SP21	N																			
6/16/2022	WL_LCI_SP02	N																			
6/16/2022	WL_WLCI_SP01	N																			
6/16/2022	WL_BFWB_OUT_SP21	N																			
6/16/2022	WL_LCI_SP02	N																			
6/16/2022	WL_BFWB_OUT_SP21	N																			
6/16/2022	WL_LCI_SP02	N																			
6/16/2022	WL_WLCI_SP01	N																			

		CHEMICAL_NAME FRACTION REPORT_RESULT_UNIT	48-h Static acute lethality test using Daphnia ma N %	96-Hr 100% Conc. Acute lethality test for R. Trout N %	Alkalinity, Total (As CaCO3) N mg/l	Aluminum D mg/l	Aluminum T mg/l	Antimony D ug/l	Antimony T ug/l	Arsenic D ug/l	Arsenic T ug/l	Barium D mg/l	Barium T mg/l	Beryllium D ug/l	Beryllium T ug/l	BIOCHEMICAL OXYGEN DEMAND, FIVE DAY N mg/l	Bismuth D mg/l	Bismuth T mg/l	Boron D mg/l	Boron T mg/l	BROMATE N ug/l
6/17/2022	WL_LCI_SP02	N																			
6/17/2022	WL_WLCI_SP01	N																			
6/17/2022	WL_BFWB_OUT_SP21	N														< 2.0					
6/17/2022	WL_BFWB_OUT_SP21	N																			
6/18/2022	WL_LCI_SP02	N																			
6/18/2022	WL_WLCI_SP01	N																			
6/18/2022	WL_BFWB_OUT_SP21	N																			
6/18/2022	WL_BFWB_OUT_SP21	N																			
6/19/2022	WL_LCI_SP02	N																			
6/19/2022	WL_WLCI_SP01	N																			
6/19/2022	WL_BFWB_OUT_SP21	N														< 2.0					
6/19/2022	WL_BFWB_OUT_SP21	N																			
6/20/2022	WL_WLCI_SP01	N																			
6/20/2022	WL_BFWB_OUT_SP21	N														< 2.0					
6/20/2022	WL_LCI_SP02	N																			
6/20/2022	WL_BFWB_OUT_SP21	N																			
6/21/2022	WL_LCI_SP02	N																			
6/21/2022	WL_WLCI_SP01	N																			
6/21/2022	WL_BFWB_OUT_SP21	N																			
6/21/2022	WL_BFWB_OUT_SP21	N																			
6/22/2022	WL_LCI_SP02	N																			
6/22/2022	WL_WLCI_SP01	N																			
6/22/2022	WL_BFWB_OUT_SP21	N																			
6/22/2022	WL_BFWB_OUT_SP21	N														< 2.0					
6/23/2022	WL_LCI_SP02	N																			
6/23/2022	WL_WLCI_SP01	N																			
6/23/2022	WL_BFWB_OUT_SP21	N																			
6/23/2022	WL_BFWB_OUT_SP21	N																			
6/24/2022	WL_LCI_SP02	N																			
6/24/2022	WL_WLCI_SP01	N																			
6/24/2022	WL_BFWB_OUT_SP21	N														< 2.0					
6/24/2022	WL_BFWB_OUT_SP21	N																			
6/25/2022	WL_LCI_SP02	N																			
6/25/2022	WL_WLCI_SP01	N																			
6/25/2022	WL_BFWB_OUT_SP21	N																			
6/25/2022	WL_BFWB_OUT_SP21	N																			
6/26/2022	WL_LCI_SP02	N																			
6/26/2022	WL_WLCI_SP01	N																			
6/26/2022	WL_BFWB_OUT_SP21	N														< 2.0					
6/26/2022	WL_BFWB_OUT_SP21	N																			
6/27/2022	WL_LCI_SP02	N				< 0.0030	0.0062	0.33	0.38	0.15	0.18	0.0219	0.0226	< 0.020	< 0.020		< 0.000050	< 0.000050	0.012	0.012	
6/27/2022	WL_WLCI_SP01	N				0.0038	0.0047	0.43	0.46	0.17	0.17	0.0140	0.0138	< 0.020	< 0.020		< 0.000050	< 0.000050	0.018	0.019	
6/27/2022	WL_BFWB_OUT_SP21	N		0	256	0.0046	0.0072	0.12	0.13	< 0.10	0.11	0.00752	0.00823	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.021	0.021	5.08
6/27/2022	WL_BFWB_OUT_SP21	N	0																		
6/27/2022	WL_BFWB_OUT_SP21	N																			
6/27/2022	WL_BFWB_OUT_SP21	N																			
6/28/2022	WL_LCI_SP02	N																			
6/28/2022	WL_WLCI_SP01	N																			
6/28/2022	WL_BFWB_OUT_SP21	N																			
6/28/2022	WL_BFWB_OUT_SP21	N																			
6/29/2022	WL_LCI_SP02	N																			
6/29/2022	WL_WLCI_SP01	N																			
6/29/2022	WL_BFWB_OUT_SP21	N																			
6/29/2022	WL_BFWB_OUT_SP21	N														< 2.0					
6/30/2022	WL_LCI_SP02	N																			
6/30/2022	WL_WLCI_SP01	N																			
6/30/2022	WL_LCI_SP02	N																			
6/30/2022	WL_WLCI_SP01	N																			
6/30/2022	WL_BFWB_OUT_SP21	N																			
6/30/2022	WL_BFWB_OUT_SP21	N																			
7/1/2022	WL_LCI_SP02	N																			
7/1/2022	WL_WLCI_SP01	N																			
7/1/2022	WL_BFWB_OUT_SP21	N														< 2.0					
7/1/2022	WL_LCI_SP02	N																			
7/1/2022	WL_BFWB_OUT_SP21	N																			
7/2/2022	WL_LCI_SP02	N																			

		CHEMICAL_NAME FRACTION REPORT_RESULT_UNIT	48-h Static acute lethality test using Daphnia ma N %	96-Hr 100% Conc. Acute lethality test for R. Trout N %	Alkalinity, Total (As CaCO3) N mg/l	Aluminum D mg/l	Aluminum T mg/l	Antimony D ug/l	Antimony T ug/l	Arsenic D ug/l	Arsenic T ug/l	Barium D mg/l	Barium T mg/l	Beryllium D ug/l	Beryllium T ug/l	BIOCHEMICAL OXYGEN DEMAND, FIVE DAY N mg/l	Bismuth D mg/l	Bismuth T mg/l	Boron D mg/l	Boron T mg/l	BROMATE N ug/l
7/2/2022	WL_WLCI_SP01	N																			
7/2/2022	WL_BFWB_OUT_SP21	N																			
7/2/2022	WL_WLCI_SP01	N																			
7/2/2022	WL_BFWB_OUT_SP21	N																			
7/3/2022	WL_LCI_SP02	N																			
7/3/2022	WL_WLCI_SP01	N																			
7/3/2022	WL_BFWB_OUT_SP21	N														< 2.0					
7/3/2022	WL_LCI_SP02	N																			
7/3/2022	WL_BFWB_OUT_SP21	N																			
7/4/2022	WL_LCI_SP02	N																			
7/4/2022	WL_WLCI_SP01	N																			
7/4/2022	WL_BFWB_OUT_SP21	N														< 2.0					
7/4/2022	WL_BFWB_OUT_SP21	N																			
7/5/2022	WL_LCI_SP02	N																			
7/5/2022	WL_WLCI_SP01	N																			
7/5/2022	WL_BFWB_OUT_SP21	N																			
7/5/2022	WL_BFWB_OUT_SP21	N																			
7/6/2022	WL_LCI_SP02	N																			
7/6/2022	WL_WLCI_SP01	N																			
7/6/2022	WL_BFWB_OUT_SP21	N																			
7/6/2022	WL_BFWB_OUT_SP21	N														< 2.0					
7/7/2022	WL_LCI_SP02	N																			
7/7/2022	WL_WLCI_SP01	N																			
7/7/2022	WL_BFWB_OUT_SP21	N																			
7/7/2022	WL_BFWB_OUT_SP21	N																			
7/7/2022	WL_BFWB_OUT_SP21	N																			
7/7/2022	WL_LCI_SP02	N																			
7/7/2022	WL_WLCI_SP01	N																			
7/7/2022	WL_LCI_SP02	N																			
7/8/2022	WL_LCI_SP02	N																			
7/8/2022	WL_WLCI_SP01	N																			
7/8/2022	WL_BFWB_OUT_SP21	N														< 2.0					
7/8/2022	WL_BFWB_OUT_SP21	N																			
7/9/2022	WL_LCI_SP02	N																			
7/9/2022	WL_WLCI_SP01	N																			
7/9/2022	WL_BFWB_OUT_SP21	N																			
7/9/2022	WL_BFWB_OUT_SP21	N																			
7/10/2022	WL_LCI_SP02	N																			
7/10/2022	WL_WLCI_SP01	N																			
7/10/2022	WL_BFWB_OUT_SP21	N														< 2.0					
7/10/2022	WL_BFWB_OUT_SP21	N																			
7/11/2022	WL_LCI_SP02	N			195	< 0.0030	0.0039	0.32	0.31	0.13	0.12	0.0262	0.0245	< 0.020	< 0.020		< 0.000050	< 0.000050	0.013	0.013	< 0.30
7/11/2022	WL_WLCI_SP01	N			364	< 0.0030	< 0.0030	0.39	0.37	0.14	0.15	0.0173	0.0168	< 0.020	< 0.020		< 0.000050	< 0.000050	0.019	0.020	< 0.30
7/11/2022	WL_BFWB_OUT_SP21	N	0	0	300	< 0.0030	< 0.0030	< 0.10	< 0.10	< 0.10	< 0.10	0.0106	0.0102	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.022	0.022	7.12
7/11/2022	WL_BFWB_OUT_SP21	N																			
7/12/2022	WL_LCI_SP02	N																			
7/12/2022	WL_WLCI_SP01	N																			
7/12/2022	WL_BFWB_OUT_SP21	N																			
7/12/2022	WL_BFWB_OUT_SP21	N																			
7/13/2022	WL_LCI_SP02	N																			
7/13/2022	WL_WLCI_SP01	N																			
7/13/2022	WL_BFWB_OUT_SP21	N														< 2.0					
7/13/2022	WL_BFWB_OUT_SP21	N																			
7/14/2022	WL_LCI_SP02	N																			
7/14/2022	WL_WLCI_SP01	N																			
7/14/2022	WL_BFWB_OUT_SP21	N																			
7/14/2022	WL_BFWB_OUT_SP21	N																			
7/15/2022	WL_LCI_SP02	N																			
7/15/2022	WL_WLCI_SP01	N																			
7/15/2022	WL_BFWB_OUT_SP21	N														< 2.0					
7/15/2022	WL_BFWB_OUT_SP21	N																			
7/16/2022	WL_LCI_SP02	N																			
7/16/2022	WL_WLCI_SP01	N																			
7/16/2022	WL_BFWB_OUT_SP21	N																			
7/16/2022	WL_BFWB_OUT_SP21	N																			
7/17/2022	WL_LCI_SP02	N																			

		CHEMICAL_NAME FRACTION REPORT_RESULT_UNIT	48-h Static acute lethality test using Daphnia ma N %	96-Hr 100% Conc. Acute lethality test for R. Trout N %	Alkalinity, Total (As CaCO3) N mg/l	Aluminum D mg/l	Aluminum T mg/l	Antimony D ug/l	Antimony T ug/l	Arsenic D ug/l	Arsenic T ug/l	Barium D mg/l	Barium T mg/l	Beryllium D ug/l	Beryllium T ug/l	BIOCHEMICAL OXYGEN DEMAND, FIVE DAY N mg/l	Bismuth D mg/l	Bismuth T mg/l	Boron D mg/l	Boron T mg/l	BROMATE N ug/l
7/17/2022	WL_WLCI_SP01	N																			
7/17/2022	WL_BFWB_OUT_SP21	N														< 2.0					
7/17/2022	WL_BFWB_OUT_SP21	N																			
7/18/2022	WL_LCI_SP02	N																			
7/18/2022	WL_WLCI_SP01	N																			
7/18/2022	WL_BFWB_OUT_SP21	N														< 2.0					
7/18/2022	WL_BFWB_OUT_SP21	N																			
7/19/2022	WL_LCI_SP02	N																			
7/19/2022	WL_WLCI_SP01	N																			
7/19/2022	WL_BFWB_OUT_SP21	N																			
7/19/2022	WL_BFWB_OUT_SP21	N																			
7/20/2022	WL_LCI_SP02	N																			
7/20/2022	WL_WLCI_SP01	N																			
7/20/2022	WL_BFWB_OUT_SP21	N														< 2.0					
7/20/2022	WL_BFWB_OUT_SP21	N																			
7/21/2022	WL_LCI_SP02	N																			
7/21/2022	WL_WLCI_SP01	N																			
7/21/2022	WL_BFWB_OUT_SP21	N																			
7/21/2022	WL_BFWB_OUT_SP21	N																			
7/22/2022	WL_LCI_SP02	N																			
7/22/2022	WL_WLCI_SP01	N																			
7/22/2022	WL_BFWB_OUT_SP21	N														< 2.0					
7/22/2022	WL_BFWB_OUT_SP21	N																			
7/23/2022	WL_LCI_SP02	N																			
7/23/2022	WL_WLCI_SP01	N																			
7/23/2022	WL_BFWB_OUT_SP21	N																			
7/23/2022	WL_BFWB_OUT_SP21	N																			
7/24/2022	WL_LCI_SP02	N																			
7/24/2022	WL_WLCI_SP01	N																			
7/24/2022	WL_BFWB_OUT_SP21	N														< 2.0					
7/24/2022	WL_BFWB_OUT_SP21	N																			
7/25/2022	WL_LCI_SP02	N				< 0.0030	0.0033	0.39	0.38	0.14	0.15	0.0474	0.0414	< 0.020	< 0.020		< 0.000050	< 0.000050	0.020	0.018	
7/25/2022	WL_WLCI_SP01	N				< 0.0030	< 0.0030	0.40	0.39	0.14	0.18	0.0195	0.0188	< 0.020	< 0.020		< 0.000050	< 0.000050	0.022	0.024	
7/25/2022	WL_BFWB_OUT_SP21	N		0	348	0.0033	< 0.0030	0.11	0.10	< 0.10	0.13	0.0126	0.0114	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.025	0.022	8.69
7/25/2022	WL_BFWB_OUT_SP21	N	0																		
7/26/2022	WL_BFWB_OUT_SP21	N																			
7/26/2022	WL_LCI_SP02	N																			
7/26/2022	WL_WLCI_SP01	N																			
7/26/2022	WL_LCI_SP02	N																			
7/26/2022	WL_WLCI_SP01	N																			
7/26/2022	WL_BFWB_OUT_SP21	N																			
7/27/2022	WL_LCI_SP02	N																			
7/27/2022	WL_WLCI_SP01	N																			
7/28/2022	WL_LCI_SP02	N																			
7/28/2022	WL_WLCI_SP01	N																			
7/29/2022	WL_LCI_SP02	N																			
7/29/2022	WL_WLCI_SP01	N																			
7/29/2022	WL_WLCI_SP01	N																			
7/29/2022	WL_LCI_SP02	N																			
7/29/2022	WL_WLCI_SP01	N																			
7/29/2022	WL_BFWB_OUT_SP21	N														< 2.0					
7/29/2022	WL_BFWB_OUT_SP21	N																			
7/29/2022	WL_LCI_SP02	N																			
7/29/2022	WL_BFWB_OUT_SP21	N																			
7/30/2022	WL_LCI_SP02	N																			
7/30/2022	WL_WLCI_SP01	N																			
7/30/2022	WL_BFWB_OUT_SP21	N																			
7/30/2022	WL_BFWB_OUT_SP21	N																			
7/31/2022	WL_LCI_SP02	N																			
7/31/2022	WL_WLCI_SP01	N																			
7/31/2022	WL_BFWB_OUT_SP21	N														< 2.0					
7/31/2022	WL_BFWB_OUT_SP21	N																			
8/1/2022	WL_LCI_SP02	N																			
8/1/2022	WL_WLCI_SP01	N																			
8/1/2022	WL_BFWB_OUT_SP21	N														< 2.0					
8/1/2022	WL_BFWB_OUT_SP21	N																			

		CHEMICAL_NAME FRACTION REPORT_RESULT_UNIT	48-h Static acute lethality test using Daphnia ma N %	96-Hr 100% Conc. Acute lethality test for R. Trout N %	Alkalinity, Total (As CaCO3) N mg/l	Aluminum D mg/l	Aluminum T mg/l	Antimony D ug/l	Antimony T ug/l	Arsenic D ug/l	Arsenic T ug/l	Barium D mg/l	Barium T mg/l	Beryllium D ug/l	Beryllium T ug/l	BIOCHEMICAL OXYGEN DEMAND, FIVE DAY N mg/l	Bismuth D mg/l	Bismuth T mg/l	Boron D mg/l	Boron T mg/l	BROMATE N ug/l
8/2/2022	WL_LCI_SP02	N																			
8/2/2022	WL_WLCI_SP01	N																			
8/2/2022	WL_BFWB_OUT_SP21	N																			
8/2/2022	WL_BFWB_OUT_SP21	N																			
8/3/2022	WL_LCI_SP02	N																			
8/3/2022	WL_WLCI_SP01	N																			
8/3/2022	WL_BFWB_OUT_SP21	N														< 2.0					
8/3/2022	WL_BFWB_OUT_SP21	N																			
8/4/2022	WL_LCI_SP02	N																			
8/4/2022	WL_WLCI_SP01	N																			
8/4/2022	WL_BFWB_OUT_SP21	N																			
8/4/2022	WL_BFWB_OUT_SP21	N																			
8/5/2022	WL_LCI_SP02	N																			
8/5/2022	WL_WLCI_SP01	N																			
8/5/2022	WL_BFWB_OUT_SP21	N														< 2.0					
8/5/2022	WL_BFWB_OUT_SP21	N																			
8/6/2022	WL_LCI_SP02	N																			
8/6/2022	WL_WLCI_SP01	N																			
8/6/2022	WL_BFWB_OUT_SP21	N																			
8/6/2022	WL_BFWB_OUT_SP21	N																			
8/7/2022	WL_LCI_SP02	N																			
8/7/2022	WL_WLCI_SP01	N																			
8/7/2022	WL_BFWB_OUT_SP21	N														< 2.0					
8/7/2022	WL_BFWB_OUT_SP21	N																			
8/8/2022	WL_LCI_SP02	N			227	< 0.0030	< 0.0030	0.37	0.40	0.16	0.13	0.0557	0.0542	< 0.020	< 0.020		< 0.000050	< 0.000050	0.021	0.020	< 0.30
8/8/2022	WL_WLCI_SP01	N			374	0.0042	< 0.0030	0.36	0.40	0.18	0.15	0.0222	0.0204	< 0.020	< 0.020		< 0.000050	< 0.000050	0.021	0.023	< 0.30
8/8/2022	WL_BFWB_OUT_SP21	N	0	0	338	< 0.0030	< 0.0030	< 0.10	0.10	< 0.10	< 0.10	0.0136	0.0129	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.023	0.023	9.87
8/8/2022	WL_BFWB_OUT_SP21	N																			
8/9/2022	WL_LCI_SP02	N																			
8/9/2022	WL_WLCI_SP01	N																			
8/9/2022	WL_BFWB_OUT_SP21	N																			
8/9/2022	WL_BFWB_OUT_SP21	N																			
8/10/2022	WL_LCI_SP02	N																			
8/10/2022	WL_WLCI_SP01	N																			
8/10/2022	WL_BFWB_OUT_SP21	N														< 2.0					
8/10/2022	WL_BFWB_OUT_SP21	N																			
8/11/2022	WL_LCI_SP02	N																			
8/11/2022	WL_WLCI_SP01	N																			
8/11/2022	WL_BFWB_OUT_SP21	N																			
8/11/2022	WL_BFWB_OUT_SP21	N																			
8/12/2022	WL_LCI_SP02	N																			
8/12/2022	WL_WLCI_SP01	N																			
8/12/2022	WL_BFWB_OUT_SP21	N														< 2.0					
8/12/2022	WL_BFWB_OUT_SP21	N																			
8/13/2022	WL_LCI_SP02	N																			
8/13/2022	WL_WLCI_SP01	N																			
8/13/2022	WL_BFWB_OUT_SP21	N																			
8/13/2022	WL_BFWB_OUT_SP21	N																			
8/14/2022	WL_LCI_SP02	N																			
8/14/2022	WL_WLCI_SP01	N																			
8/14/2022	WL_BFWB_OUT_SP21	N														< 2.0					
8/14/2022	WL_BFWB_OUT_SP21	N																			
8/15/2022	WL_LCI_SP02	N																			
8/15/2022	WL_WLCI_SP01	N																			
8/15/2022	WL_BFWB_OUT_SP21	N														< 2.0					
8/15/2022	WL_BFWB_OUT_SP21	N																			
8/16/2022	WL_LCI_SP02	N																			
8/16/2022	WL_WLCI_SP01	N																			
8/16/2022	WL_BFWB_OUT_SP21	N																			
8/16/2022	WL_BFWB_OUT_SP21	N																			
8/17/2022	WL_LCI_SP02	N																			
8/17/2022	WL_WLCI_SP01	N																			
8/17/2022	WL_BFWB_OUT_SP21	N														< 2.0					
8/17/2022	WL_BFWB_OUT_SP21	N																			
8/17/2022	WL_BFWB_OUT_SP21	N																			

		CHEMICAL_NAME FRACTION REPORT_RESULT_UNIT	48-h Static acute lethality test using Daphnia ma N %	96-Hr 100% Conc. Acute lethality test for R. Trout N %	Alkalinity, Total (As CaCO3) N mg/l	Aluminum D mg/l	Aluminum T mg/l	Antimony D ug/l	Antimony T ug/l	Arsenic D ug/l	Arsenic T ug/l	Barium D mg/l	Barium T mg/l	Beryllium D ug/l	Beryllium T ug/l	BIOCHEMICAL OXYGEN DEMAND, FIVE DAY N mg/l	Bismuth D mg/l	Bismuth T mg/l	Boron D mg/l	Boron T mg/l	BROMATE N ug/l
8/17/2022	WL_BFWB_OUT_SP21	N			308	< 0.0010	< 0.0030	< 0.10	0.10	< 0.10	0.11	0.0179	0.0187	< 0.020	< 0.020		< 0.000050	< 0.000050	0.022	0.024	
8/18/2022	WL_LCI_SP02	N																			
8/18/2022	WL_WLCI_SP01	N																			
8/18/2022	WL_BFWB_OUT_SP21	N			317	0.0051	< 0.0030	0.10	< 0.10	0.12	< 0.10	0.0169	0.0170	< 0.020	< 0.020		< 0.000050	< 0.000050	0.025	0.020	
8/18/2022	WL_BFWB_OUT_SP21	N			317	0.0051	< 0.0030	0.10	< 0.10	0.12	< 0.10	0.0169	0.0170	< 0.020	< 0.020		< 0.000050	< 0.000050	0.025	0.020	
8/19/2022	WL_LCI_SP02	N																			
8/19/2022	WL_WLCI_SP01	N																			
8/19/2022	WL_BFWB_OUT_SP21	N														< 2.0					
8/19/2022	WL_BFWB_OUT_SP21	N																			
8/20/2022	WL_LCI_SP02	N																			
8/20/2022	WL_WLCI_SP01	N																			
8/20/2022	WL_BFWB_OUT_SP21	N																			
8/20/2022	WL_BFWB_OUT_SP21	N																			
8/21/2022	WL_LCI_SP02	N																			
8/21/2022	WL_WLCI_SP01	N																			
8/21/2022	WL_BFWB_OUT_SP21	N														< 2.0					
8/21/2022	WL_BFWB_OUT_SP21	N																			
8/22/2022	WL_BFWB_OUT_SP21	N	0	0	314	< 0.0030	0.0036	< 0.10	< 0.10	< 0.10	< 0.10	0.0187	0.0194	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.022	0.020	10.9
8/22/2022	WL_LCI_SP02	N				< 0.0030	0.0044	0.38	0.37	0.13	0.12	0.0615	0.0612	< 0.020	< 0.020		< 0.000050	< 0.000050	0.020	0.018	
8/22/2022	WL_WLCI_SP01	N				< 0.0060	< 0.0030	0.38	0.38	< 0.20	0.15	0.0234	0.0235	< 0.040	< 0.020		< 0.000100	< 0.000050	0.021	0.018	
8/22/2022	WL_BFWB_OUT_SP21	N																			
8/23/2022	WL_LCI_SP02	N																			
8/23/2022	WL_WLCI_SP01	N																			
8/23/2022	WL_BFWB_OUT_SP21	N																			
8/23/2022	WL_BFWB_OUT_SP21	N																			
8/24/2022	WL_LCI_SP02	N																			
8/24/2022	WL_WLCI_SP01	N																			
8/24/2022	WL_BFWB_OUT_SP21	N														< 2.0					
8/24/2022	WL_BFWB_OUT_SP21	N																			
8/25/2022	WL_LCI_SP02	N																			
8/25/2022	WL_WLCI_SP01	N																			
8/25/2022	WL_BFWB_OUT_SP21	N																			
8/25/2022	WL_BFWB_OUT_SP21	N																			
8/26/2022	WL_LCI_SP02	N																			
8/26/2022	WL_WLCI_SP01	N																			
8/26/2022	WL_BFWB_OUT_SP21	N														< 2.0					
8/26/2022	WL_BFWB_OUT_SP21	N																			
8/27/2022	WL_LCI_SP02	N																			
8/27/2022	WL_WLCI_SP01	N																			
8/27/2022	WL_BFWB_OUT_SP21	N																			
8/27/2022	WL_BFWB_OUT_SP21	N																			
8/28/2022	WL_LCI_SP02	N																			
8/28/2022	WL_WLCI_SP01	N																			
8/28/2022	WL_BFWB_OUT_SP21	N														< 2.0					
8/28/2022	WL_BFWB_OUT_SP21	N																			
8/29/2022	WL_BFWB_OUT_SP21	N																			
8/29/2022	WL_BFWB_OUT_SP21	N														< 2.0					
8/29/2022	WL_BFWB_OUT_SP21	N																			
8/29/2022	WL_BFWB_OUT_SP21	N																			
8/29/2022	WL_BFWB_OUT_SP21	N																			
8/29/2022	WL_LCI_SP02	N																			
8/29/2022	WL_WLCI_SP01	N																			
8/29/2022	WL_BFWB_OUT_SP21	N																			
8/30/2022	WL_BFWB_OUT_SP21	N																			
8/30/2022	WL_BFWB_OUT_SP21	N																			
8/30/2022	WL_LCI_SP02	N																			
8/30/2022	WL_WLCI_SP01	N																			
8/30/2022	WL_BFWB_OUT_SP21	N																			
8/30/2022	WL_LCI_SP02	N																			
8/30/2022	WL_WLCI_SP01	N																			
8/31/2022	WL_LCI_SP02	N																			
8/31/2022	WL_WLCI_SP01	N																			
9/1/2022	WL_LCI_SP02	N																			

		CHEMICAL_NAME FRACTION REPORT_RESULT_UNIT	48-h Static acute lethality test using Daphnia ma N %	96-Hr 100% Conc. Acute lethality test for R. Trout N %	Alkalinity, Total (As CaCO3) N mg/l	Aluminum D mg/l	Aluminum T mg/l	Antimony D ug/l	Antimony T ug/l	Arsenic D ug/l	Arsenic T ug/l	Barium D mg/l	Barium T mg/l	Beryllium D ug/l	Beryllium T ug/l	BIOCHEMICAL OXYGEN DEMAND, FIVE DAY N mg/l	Bismuth D mg/l	Bismuth T mg/l	Boron D mg/l	Boron T mg/l	BROMATE N ug/l
9/1/2022	WL_WLCI_SP01	N																			
9/1/2022	WL_LCI_SP02	N																			
9/1/2022	WL_WLCI_SP01	N																			
9/1/2022	WL_BFWB_OUT_SP21	N																			
9/1/2022	WL_BFWB_OUT_SP21	N																			
9/2/2022	WL_LCI_SP02	N																			
9/2/2022	WL_WLCI_SP01	N																			
9/2/2022	WL_BFWB_OUT_SP21	N																			
9/2/2022	WL_BFWB_OUT_SP21	N														< 2.0					
9/3/2022	WL_LCI_SP02	N																			
9/3/2022	WL_WLCI_SP01	N																			
9/3/2022	WL_BFWB_OUT_SP21	N																			
9/3/2022	WL_BFWB_OUT_SP21	N																			
9/4/2022	WL_LCI_SP02	N																			
9/4/2022	WL_WLCI_SP01	N																			
9/4/2022	WL_BFWB_OUT_SP21	N														< 2.0					
9/4/2022	WL_BFWB_OUT_SP21	N																			
9/5/2022	WL_LCI_SP02	N			224	< 0.0030	0.0090	0.37	0.37	0.12	0.14	0.0531	0.0530	< 0.020	< 0.020		< 0.000050	< 0.000050	0.018	0.019	< 0.30
9/5/2022	WL_WLCI_SP01	N			413	< 0.0060	< 0.0030	0.41	0.40	< 0.20	0.13	0.0253	0.0236	< 0.040	< 0.020		< 0.000100	< 0.000050	0.022	0.022	< 0.30
9/5/2022	WL_BFWB_OUT_SP21	N	0	10	342	< 0.0030	< 0.0030	< 0.10	< 0.10	< 0.10	< 0.10	0.0159	0.0148	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.024	0.023	7.21
9/5/2022	WL_BFWB_OUT_SP21	N																			
9/6/2022	WL_LCI_SP02	N																			
9/6/2022	WL_WLCI_SP01	N																			
9/6/2022	WL_BFWB_OUT_SP21	N																			
9/6/2022	WL_BFWB_OUT_SP21	N																			
9/6/2022	WL_BFWB_OUT_SP21	N																			
9/7/2022	WL_LCI_SP02	N																			
9/7/2022	WL_WLCI_SP01	N																			
9/7/2022	WL_BFWB_OUT_SP21	N														< 2.0					
9/7/2022	WL_BFWB_OUT_SP21	N																			
9/7/2022	WL_BFWB_OUT_SP21	N														< 2.0					
9/8/2022	WL_LCI_SP02	N																			
9/8/2022	WL_WLCI_SP01	N																			
9/8/2022	WL_BFWB_OUT_SP21	N																			
9/8/2022	WL_BFWB_OUT_SP21	N																			
9/9/2022	WL_LCI_SP02	N																			
9/9/2022	WL_WLCI_SP01	N																			
9/9/2022	WL_BFWB_OUT_SP21	N														< 2.0					
9/9/2022	WL_BFWB_OUT_SP21	N																			
9/10/2022	WL_LCI_SP02	N																			
9/10/2022	WL_WLCI_SP01	N																			
9/10/2022	WL_BFWB_OUT_SP21	N																			
9/10/2022	WL_BFWB_OUT_SP21	N																			
9/11/2022	WL_LCI_SP02	N																			
9/11/2022	WL_WLCI_SP01	N																			
9/11/2022	WL_BFWB_OUT_SP21	N														< 2.0					
9/11/2022	WL_BFWB_OUT_SP21	N																			
9/12/2022	WL_LCI_SP02	N																			
9/12/2022	WL_WLCI_SP01	N																			
9/12/2022	WL_BFWB_OUT_SP21	N														< 2.0					
9/12/2022	WL_BFWB_OUT_SP21	N																			
9/13/2022	WL_LCI_SP02	N																			
9/13/2022	WL_WLCI_SP01	N																			
9/13/2022	WL_BFWB_OUT_SP21	N																			
9/13/2022	WL_BFWB_OUT_SP21	N																			
9/13/2022	WL_WLCI_SP01	N																			
9/14/2022	WL_LCI_SP02	N																			
9/14/2022	WL_WLCI_SP01	N																			
9/14/2022	WL_BFWB_OUT_SP21	N														< 2.0					
9/14/2022	WL_BFWB_OUT_SP21	N																			
9/15/2022	WL_LCI_SP02	N																			
9/15/2022	WL_WLCI_SP01	N																			
9/15/2022	WL_BFWB_OUT_SP21	N																			
9/15/2022	WL_BFWB_OUT_SP21	N																			
9/16/2022	WL_LCI_SP02	N																			
9/16/2022	WL_WLCI_SP01	N																			
9/16/2022	WL_BFWB_OUT_SP21	N														< 2.0					

		CHEMICAL_NAME FRACTION REPORT_RESULT_UNIT	48-h Static acute lethality test using Daphnia ma N %	96-Hr 100% Conc. Acute lethality test for R. Trout N %	Alkalinity, Total (As CaCO3) N mg/l	Aluminum D mg/l	Aluminum T mg/l	Antimony D ug/l	Antimony T ug/l	Arsenic D ug/l	Arsenic T ug/l	Barium D mg/l	Barium T mg/l	Beryllium D ug/l	Beryllium T ug/l	BIOCHEMICAL OXYGEN DEMAND, FIVE DAY N mg/l	Bismuth D mg/l	Bismuth T mg/l	Boron D mg/l	Boron T mg/l	BROMATE N ug/l
9/16/2022	WL_BFWB_OUT_SP21	N																			
9/17/2022	WL_LCI_SP02	N																			
9/17/2022	WL_WLCI_SP01	N																			
9/17/2022	WL_BFWB_OUT_SP21	N																			
9/18/2022	WL_LCI_SP02	N																			
9/18/2022	WL_WLCI_SP01	N																			
9/18/2022	WL_BFWB_OUT_SP21	N														< 2.0					
9/18/2022	WL_BFWB_OUT_SP21	N																			
9/19/2022	WL_LCI_SP02	N				< 0.0030	< 0.0030	0.36	0.40	0.13	0.15	0.0627	0.0614	< 0.020	< 0.020		< 0.000050	< 0.000050	0.020	0.018	
9/19/2022	WL_WLCI_SP01	N				< 0.0060	< 0.0060	0.44	0.45	< 0.20	< 0.20	0.0264	0.0272	< 0.040	< 0.040		< 0.000100	< 0.000100	0.022	0.022	
9/19/2022	WL_BFWB_OUT_SP21	N	0	0	310	< 0.0030	0.0033	0.10	0.11	< 0.10	0.10	0.0250	0.0262	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.024	0.020	8.70
9/20/2022	WL_LCI_SP02	N																			
9/20/2022	WL_WLCI_SP01	N																			
9/20/2022	WL_BFWB_OUT_SP21	N																			
9/20/2022	WL_BFWB_OUT_SP21	N																			
9/21/2022	WL_LCI_SP02	N																			
9/21/2022	WL_WLCI_SP01	N																			
9/21/2022	WL_BFWB_OUT_SP21	N														< 2.0					
9/21/2022	WL_BFWB_OUT_SP21	N																			
9/22/2022	WL_LCI_SP02	N																			
9/22/2022	WL_WLCI_SP01	N																			
9/22/2022	WL_BFWB_OUT_SP21	N																			
9/22/2022	WL_BFWB_OUT_SP21	N																			
9/23/2022	WL_LCI_SP02	N																			
9/23/2022	WL_WLCI_SP01	N																			
9/23/2022	WL_BFWB_OUT_SP21	N														< 2.0					
9/23/2022	WL_BFWB_OUT_SP21	N																			
9/24/2022	WL_LCI_SP02	N																			
9/24/2022	WL_WLCI_SP01	N																			
9/24/2022	WL_BFWB_OUT_SP21	N																			
9/24/2022	WL_BFWB_OUT_SP21	N																			
9/25/2022	WL_LCI_SP02	N																			
9/25/2022	WL_WLCI_SP01	N																			
9/25/2022	WL_BFWB_OUT_SP21	N														< 2.0					
9/25/2022	WL_BFWB_OUT_SP21	N																			
9/26/2022	WL_LCI_SP02	N																			
9/26/2022	WL_WLCI_SP01	N																			
9/26/2022	WL_BFWB_OUT_SP21	N														< 2.0					
9/26/2022	WL_BFWB_OUT_SP21	N																			
9/27/2022	WL_LCI_SP02	N																			
9/27/2022	WL_WLCI_SP01	N																			
9/27/2022	WL_BFWB_OUT_SP21	N																			
9/27/2022	WL_BFWB_OUT_SP21	N																			
9/28/2022	WL_LCI_SP02	N																			
9/28/2022	WL_WLCI_SP01	N																			
9/28/2022	WL_BFWB_OUT_SP21	N														< 2.0					
9/28/2022	WL_BFWB_OUT_SP21	N																			
9/29/2022	WL_LCI_SP02	N																			
9/29/2022	WL_WLCI_SP01	N																			
9/29/2022	WL_BFWB_OUT_SP21	N																			
9/29/2022	WL_BFWB_OUT_SP21	N																			
9/30/2022	WL_LCI_SP02	N																			
9/30/2022	WL_WLCI_SP01	N																			
9/30/2022	WL_BFWB_OUT_SP21	N														< 2.0					
9/30/2022	WL_BFWB_OUT_SP21	N																			
10/1/2022	WL_LCI_SP02	N																			
10/1/2022	WL_WLCI_SP01	N																			
10/1/2022	WL_BFWB_OUT_SP21	N																			
10/1/2022	WL_BFWB_OUT_SP21	N																			
10/2/2022	WL_LCI_SP02	N																			
10/2/2022	WL_WLCI_SP01	N																			
10/2/2022	WL_BFWB_OUT_SP21	N														< 2.0					
10/2/2022	WL_BFWB_OUT_SP21	N																			
10/2/2022	WL_BFWB_OUT_SP21	N																			
10/3/2022	WL_LCI_SP02	N			220	< 0.0030	0.0032	0.39	0.35	0.12	0.10	0.0589	0.0572	< 0.020	< 0.020		< 0.000050	< 0.000050	0.018	0.019	< 0.30

		CHEMICAL_NAME FRACTION REPORT_RESULT_UNIT	48-h Static acute lethality test using Daphnia ma N %	96-Hr 100% Conc. Acute lethality test for R. Trout N %	Alkalinity, Total (As CaCO3) N mg/l	Aluminum D mg/l	Aluminum T mg/l	Antimony D ug/l	Antimony T ug/l	Arsenic D ug/l	Arsenic T ug/l	Barium D mg/l	Barium T mg/l	Beryllium D ug/l	Beryllium T ug/l	BIOCHEMICAL OXYGEN DEMAND, FIVE DAY N mg/l	Bismuth D mg/l	Bismuth T mg/l	Boron D mg/l	Boron T mg/l	BROMATE N ug/l
10/3/2022	WL_WLCI_SP01	N			470	< 0.0060	< 0.0060	0.45	0.45	< 0.20	< 0.20	0.0274	0.0267	< 0.040	< 0.040		< 0.000100	< 0.000100	0.023	0.021	< 0.60
10/3/2022	WL_BFWB_OUT_SP21	N	0	0	316	< 0.0030	< 0.0060	< 0.10	< 0.20	< 0.10	< 0.20	0.0272	0.0313	< 0.020	< 0.040	< 2.0	< 0.000050	< 0.000100	0.022	0.023	7.87
10/3/2022	WL_BFWB_OUT_SP21	N																			
10/4/2022	WL_LCI_SP02	N																			
10/4/2022	WL_WLCI_SP01	N																			
10/4/2022	WL_BFWB_OUT_SP21	N																			
10/4/2022	WL_BFWB_OUT_SP21	N																			
10/5/2022	WL_LCI_SP02	N																			
10/5/2022	WL_WLCI_SP01	N																			
10/5/2022	WL_BFWB_OUT_SP21	N														< 2.0					
10/5/2022	WL_BFWB_OUT_SP21	N																			
10/6/2022	WL_LCI_SP02	N																			
10/6/2022	WL_WLCI_SP01	N																			
10/6/2022	WL_BFWB_OUT_SP21	N																			
10/6/2022	WL_BFWB_OUT_SP21	N																			
10/7/2022	WL_LCI_SP02	N																			
10/7/2022	WL_WLCI_SP01	N																			
10/7/2022	WL_BFWB_OUT_SP21	N														< 2.0					
10/7/2022	WL_BFWB_OUT_SP21	N																			
10/8/2022	WL_LCI_SP02	N																			
10/8/2022	WL_WLCI_SP01	N																			
10/8/2022	WL_BFWB_OUT_SP21	N																			
10/8/2022	WL_BFWB_OUT_SP21	N																			
10/9/2022	WL_LCI_SP02	N																			
10/9/2022	WL_WLCI_SP01	N																			
10/9/2022	WL_BFWB_OUT_SP21	N														< 2.0					
10/9/2022	WL_BFWB_OUT_SP21	N																			
10/10/2022	WL_LCI_SP02	N																			
10/10/2022	WL_WLCI_SP01	N																			
10/10/2022	WL_BFWB_OUT_SP21	N														< 2.0					
10/10/2022	WL_BFWB_OUT_SP21	N																			
10/11/2022	WL_LCI_SP02	N																			
10/11/2022	WL_WLCI_SP01	N																			
10/11/2022	WL_BFWB_OUT_SP21	N																			
10/11/2022	WL_BFWB_OUT_SP21	N																			
10/12/2022	WL_LCI_SP02	N																			
10/12/2022	WL_WLCI_SP01	N																			
10/12/2022	WL_BFWB_OUT_SP21	N														2.2					
10/12/2022	WL_BFWB_OUT_SP21	N																			
10/13/2022	WL_LCI_SP02	N																			
10/13/2022	WL_WLCI_SP01	N																			
10/13/2022	WL_BFWB_OUT_SP21	N																			
10/13/2022	WL_BFWB_OUT_SP21	N																			
10/14/2022	WL_LCI_SP02	N																			
10/14/2022	WL_WLCI_SP01	N																			
10/14/2022	WL_BFWB_OUT_SP21	N														< 2.0					
10/14/2022	WL_BFWB_OUT_SP21	N																			
10/15/2022	WL_LCI_SP02	N																			
10/15/2022	WL_WLCI_SP01	N																			
10/15/2022	WL_BFWB_OUT_SP21	N																			
10/15/2022	WL_BFWB_OUT_SP21	N																			
10/16/2022	WL_LCI_SP02	N																			
10/16/2022	WL_WLCI_SP01	N																			
10/16/2022	WL_BFWB_OUT_SP21	N														< 2.0					
10/16/2022	WL_BFWB_OUT_SP21	N																			
10/17/2022	WL_LCI_SP02	N				< 0.0030	< 0.0030	0.38	0.35	0.15	0.13	0.0571	0.0546	< 0.020	< 0.020		< 0.000050	< 0.000050	0.019	0.017	
10/17/2022	WL_WLCI_SP01	N				< 0.0060	< 0.0060	0.46	0.43	< 0.20	< 0.20	0.0279	0.0285	< 0.040	< 0.040		< 0.000100	< 0.000100	0.022	0.021	
10/17/2022	WL_BFWB_OUT_SP21	N	0	0	309	< 0.0030	< 0.0030	0.13	0.12	< 0.10	< 0.10	0.0288	0.0275	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.022	0.020	7.33
10/17/2022	WL_BFWB_OUT_SP21	N																			
10/18/2022	WL_LCI_SP02	N																			
10/18/2022	WL_WLCI_SP01	N																			
10/18/2022	WL_BFWB_OUT_SP21	N																			
10/18/2022	WL_BFWB_OUT_SP21	N																			
10/19/2022	WL_LCI_SP02	N																			

		CHEMICAL_NAME FRACTION REPORT_RESULT_UNIT	48-h Static acute lethality test using Daphnia ma N %	96-Hr 100% Conc. Acute lethality test for R. Trout N %	Alkalinity, Total (As CaCO3) N mg/l	Aluminum D mg/l	Aluminum T mg/l	Antimony D ug/l	Antimony T ug/l	Arsenic D ug/l	Arsenic T ug/l	Barium D mg/l	Barium T mg/l	Beryllium D ug/l	Beryllium T ug/l	BIOCHEMICAL OXYGEN DEMAND, FIVE DAY N mg/l	Bismuth D mg/l	Bismuth T mg/l	Boron D mg/l	Boron T mg/l	BROMATE N ug/l
10/19/2022	WL_WLCI_SP01	N																			
10/19/2022	WL_BFWB_OUT_SP21	N														< 2.0					
10/19/2022	WL_BFWB_OUT_SP21	N																			
10/20/2022	WL_LCI_SP02	N																			
10/20/2022	WL_WLCI_SP01	N																			
10/20/2022	WL_BFWB_OUT_SP21	N																			
10/20/2022	WL_BFWB_OUT_SP21	N																			
10/21/2022	WL_LCI_SP02	N																			
10/21/2022	WL_WLCI_SP01	N																			
10/21/2022	WL_BFWB_OUT_SP21	N														< 2.0					
10/21/2022	WL_BFWB_OUT_SP21	N																			
10/22/2022	WL_LCI_SP02	N																			
10/22/2022	WL_WLCI_SP01	N																			
10/22/2022	WL_BFWB_OUT_SP21	N																			
10/22/2022	WL_BFWB_OUT_SP21	N																			
10/23/2022	WL_LCI_SP02	N																			
10/23/2022	WL_WLCI_SP01	N																			
10/23/2022	WL_BFWB_OUT_SP21	N														< 2.0					
10/23/2022	WL_BFWB_OUT_SP21	N																			
10/24/2022	WL_LCI_SP02	N																			
10/24/2022	WL_WLCI_SP01	N																			
10/24/2022	WL_BFWB_OUT_SP21	N														< 2.0					
10/24/2022	WL_BFWB_OUT_SP21	N																			
10/25/2022	WL_LCI_SP02	N																			
10/25/2022	WL_WLCI_SP01	N																			
10/25/2022	WL_BFWB_OUT_SP21	N														< 2.0					
10/25/2022	WL_BFWB_OUT_SP21	N																			
10/26/2022	WL_LCI_SP02	N																			
10/26/2022	WL_WLCI_SP01	N																			
10/26/2022	WL_BFWB_OUT_SP21	N														< 2.0					
10/26/2022	WL_BFWB_OUT_SP21	N																			
10/27/2022	WL_LCI_SP02	N																			
10/27/2022	WL_WLCI_SP01	N																			
10/27/2022	WL_BFWB_OUT_SP21	N																			
10/27/2022	WL_BFWB_OUT_SP21	N																			
10/27/2022	WL_WLCI_SP01	N																			
10/28/2022	WL_LCI_SP02	N																			
10/28/2022	WL_WLCI_SP01	N																			
10/28/2022	WL_BFWB_OUT_SP21	N														2.3					
10/28/2022	WL_BFWB_OUT_SP21	N																			
10/29/2022	WL_LCI_SP02	N																			
10/29/2022	WL_WLCI_SP01	N																			
10/29/2022	WL_BFWB_OUT_SP21	N																			
10/29/2022	WL_BFWB_OUT_SP21	N																			
10/30/2022	WL_LCI_SP02	N																			
10/30/2022	WL_WLCI_SP01	N																			
10/30/2022	WL_BFWB_OUT_SP21	N														< 2.0					
10/30/2022	WL_BFWB_OUT_SP21	N																			
10/31/2022	WL_LCI_SP02	N				< 0.0030	< 0.0030	0.37	0.36	0.10	0.12	0.0549	0.0552	< 0.020	< 0.020		< 0.000050	< 0.000050	0.018	0.020	
10/31/2022	WL_WLCI_SP01	N				< 0.0060	< 0.0060	0.46	0.47	< 0.20	0.20	0.0256	0.0275	< 0.040	< 0.040		< 0.000100	< 0.000100	< 0.020	0.027	
10/31/2022	WL_BFWB_OUT_SP21	N	0	0	223	< 0.0030	< 0.0030	0.13	0.16	< 0.10	< 0.10	0.0284	0.0280	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.018	0.019	10.4
10/31/2022	WL_BFWB_OUT_SP21	N																			
11/1/2022	WL_LCI_SP02	N																			
11/1/2022	WL_WLCI_SP01	N																			
11/1/2022	WL_BFWB_OUT_SP21	N																			
11/1/2022	WL_BFWB_OUT_SP21	N																			
11/2/2022	WL_LCI_SP02	N																			
11/2/2022	WL_WLCI_SP01	N																			
11/2/2022	WL_BFWB_OUT_SP21	N														< 2.0					
11/2/2022	WL_BFWB_OUT_SP21	N																			
11/3/2022	WL_LCI_SP02	N																			
11/3/2022	WL_WLCI_SP01	N																			
11/3/2022	WL_BFWB_OUT_SP21	N																			
11/3/2022	WL_BFWB_OUT_SP21	N																			
11/4/2022	WL_LCI_SP02	N																			
11/4/2022	WL_WLCI_SP01	N																			

		CHEMICAL_NAME FRACTION REPORT_RESULT_UNIT	48-h Static acute lethality test using Daphnia ma N %	96-Hr 100% Conc. Acute lethality test for R. Trout N %	Alkalinity, Total (As CaCO3) N mg/l	Aluminum D mg/l	Aluminum T mg/l	Antimony D ug/l	Antimony T ug/l	Arsenic D ug/l	Arsenic T ug/l	Barium D mg/l	Barium T mg/l	Beryllium D ug/l	Beryllium T ug/l	BIOCHEMICAL OXYGEN DEMAND, FIVE DAY N mg/l	Bismuth D mg/l	Bismuth T mg/l	Boron D mg/l	Boron T mg/l	BROMATE N ug/l
11/4/2022	WL_BFWB_OUT_SP21	N														< 2.0					
11/4/2022	WL_BFWB_OUT_SP21	N																			
11/5/2022	WL_LCI_SP02	N																			
11/5/2022	WL_WLCI_SP01	N																			
11/5/2022	WL_BFWB_OUT_SP21	N																			
11/5/2022	WL_BFWB_OUT_SP21	N																			
11/6/2022	WL_LCI_SP02	N																			
11/6/2022	WL_WLCI_SP01	N																			
11/6/2022	WL_BFWB_OUT_SP21	N														< 2.0					
11/6/2022	WL_BFWB_OUT_SP21	N																			
11/7/2022	WL_LCI_SP02	N																			
11/7/2022	WL_WLCI_SP01	N																			
11/7/2022	WL_BFWB_OUT_SP21	N														< 2.0					
11/7/2022	WL_BFWB_OUT_SP21	N																			
11/8/2022	WL_LCI_SP02	N																			
11/8/2022	WL_WLCI_SP01	N																			
11/8/2022	WL_BFWB_OUT_SP21	N																			
11/8/2022	WL_BFWB_OUT_SP21	N																			
11/9/2022	WL_LCI_SP02	N																			
11/9/2022	WL_WLCI_SP01	N																			
11/9/2022	WL_BFWB_OUT_SP21	N														< 2.0					
11/9/2022	WL_BFWB_OUT_SP21	N																			
11/10/2022	WL_LCI_SP02	N																			
11/10/2022	WL_WLCI_SP01	N																			
11/10/2022	WL_BFWB_OUT_SP21	N																			
11/10/2022	WL_BFWB_OUT_SP21	N																			
11/11/2022	WL_LCI_SP02	N																			
11/11/2022	WL_WLCI_SP01	N																			
11/11/2022	WL_BFWB_OUT_SP21	N														< 2.0					
11/11/2022	WL_BFWB_OUT_SP21	N																			
11/12/2022	WL_LCI_SP02	N																			
11/12/2022	WL_WLCI_SP01	N																			
11/12/2022	WL_BFWB_OUT_SP21	N																			
11/12/2022	WL_BFWB_OUT_SP21	N																			
11/12/2022	WL_WLCI_SP01	N																			
11/12/2022	WL_BFWB_OUT_SP21	N																			
11/12/2022	WL_BFWB_OUT_SP21	N																			
11/13/2022	WL_LCI_SP02	N																			
11/13/2022	WL_WLCI_SP01	N																			
11/13/2022	WL_BFWB_OUT_SP21	N														< 2.0					
11/13/2022	WL_BFWB_OUT_SP21	N																			
11/14/2022	WL_BFWB_OUT_SP21	N																			
11/14/2022	WL_LCI_SP02	N			221	< 0.0030	< 0.0030	0.40	0.47	0.12	0.14	0.0591	0.0619	< 0.020	< 0.020		< 0.000050	< 0.000050	0.021	0.021	< 0.30
11/14/2022	WL_WLCI_SP01	N			362	< 0.0060	< 0.0060	0.51	0.49	0.27	0.21	0.0247	0.0253	< 0.040	< 0.040		< 0.000100	< 0.000100	< 0.020	0.021	< 0.30
11/14/2022	WL_BFWB_OUT_SP21	N	0	0	253	< 0.0030	0.0030	0.16	0.16	< 0.10	< 0.10	0.0284	0.0290	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.020	0.019	9.14
11/14/2022	WL_BFWB_OUT_SP21	N																			
11/15/2022	WL_LCI_SP02	N																			
11/15/2022	WL_WLCI_SP01	N																			
11/15/2022	WL_BFWB_OUT_SP21	N																			
11/15/2022	WL_BFWB_OUT_SP21	N																			
11/15/2022	WL_BFWB_OUT_SP21	N																			
11/16/2022	WL_LCI_SP02	N																			
11/16/2022	WL_WLCI_SP01	N																			
11/16/2022	WL_BFWB_OUT_SP21	N														< 2.0					
11/16/2022	WL_BFWB_OUT_SP21	N																			
11/17/2022	WL_LCI_SP02	N																			
11/17/2022	WL_WLCI_SP01	N																			
11/17/2022	WL_BFWB_OUT_SP21	N																			
11/17/2022	WL_BFWB_OUT_SP21	N																			
11/18/2022	WL_LCI_SP02	N																			
11/18/2022	WL_WLCI_SP01	N																			
11/18/2022	WL_BFWB_OUT_SP21	N														< 2.0					
11/18/2022	WL_BFWB_OUT_SP21	N																			
11/19/2022	WL_LCI_SP02	N																			
11/19/2022	WL_WLCI_SP01	N																			
11/19/2022	WL_BFWB_OUT_SP21	N																			
11/19/2022	WL_BFWB_OUT_SP21	N																			
11/20/2022	WL_LCI_SP02	N																			
11/20/2022	WL_WLCI_SP01	N																			

		CHEMICAL_NAME FRACTION REPORT_RESULT_UNIT	48-h Static acute lethality test using Daphnia ma N %	96-Hr 100% Conc. Acute lethality test for R. Trout N %	Alkalinity, Total (As CaCO3) N mg/l	Aluminum D mg/l	Aluminum T mg/l	Antimony D ug/l	Antimony T ug/l	Arsenic D ug/l	Arsenic T ug/l	Barium D mg/l	Barium T mg/l	Beryllium D ug/l	Beryllium T ug/l	BIOCHEMICAL OXYGEN DEMAND, FIVE DAY N mg/l	Bismuth D mg/l	Bismuth T mg/l	Boron D mg/l	Boron T mg/l	BROMATE N ug/l
11/20/2022	WL_BFWB_OUT_SP21	N														< 2.0					
11/20/2022	WL_BFWB_OUT_SP21	N																			
11/21/2022	WL_LCI_SP02	N																			
11/21/2022	WL_WLCI_SP01	N																			
11/21/2022	WL_BFWB_OUT_SP21	N														< 2.0					
11/21/2022	WL_BFWB_OUT_SP21	N																			
11/22/2022	WL_LCI_SP02	N																			
11/22/2022	WL_WLCI_SP01	N																			
11/22/2022	WL_BFWB_OUT_SP21	N																			
11/22/2022	WL_BFWB_OUT_SP21	N																			
11/23/2022	WL_LCI_SP02	N																			
11/23/2022	WL_WLCI_SP01	N																			
11/23/2022	WL_BFWB_OUT_SP21	N														< 2.0					
11/23/2022	WL_BFWB_OUT_SP21	N																			
11/24/2022	WL_LCI_SP02	N																			
11/24/2022	WL_WLCI_SP01	N																			
11/24/2022	WL_BFWB_OUT_SP21	N																			
11/24/2022	WL_BFWB_OUT_SP21	N																			
11/25/2022	WL_LCI_SP02	N																			
11/25/2022	WL_WLCI_SP01	N																			
11/25/2022	WL_BFWB_OUT_SP21	N														< 2.0					
11/25/2022	WL_BFWB_OUT_SP21	N																			
11/26/2022	WL_LCI_SP02	N																			
11/26/2022	WL_WLCI_SP01	N																			
11/26/2022	WL_BFWB_OUT_SP21	N																			
11/26/2022	WL_BFWB_OUT_SP21	N																			
11/27/2022	WL_LCI_SP02	N																			
11/27/2022	WL_WLCI_SP01	N																			
11/27/2022	WL_BFWB_OUT_SP21	N														< 2.0					
11/27/2022	WL_BFWB_OUT_SP21	N																			
11/28/2022	WL_LCI_SP02	N				< 0.0030	< 0.0030	0.38	0.39	0.13	0.12	0.0556	0.0555	< 0.020	< 0.020		< 0.000050	< 0.000050	0.018	0.020	
11/28/2022	WL_WLCI_SP01	N				< 0.0060	< 0.0060	0.59	0.50	0.25	0.25	0.0233	0.0223	< 0.040	< 0.040		< 0.000100	< 0.000100	< 0.020	< 0.020	
11/28/2022	WL_BFWB_OUT_SP21	N	0	0	242	< 0.0030	0.0032	0.12	0.14	< 0.10	< 0.10	0.0287	0.0291	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.016	0.019	9.78
11/28/2022	WL_BFWB_OUT_SP21	N																			
11/29/2022	WL_LCI_SP02	N																			
11/29/2022	WL_WLCI_SP01	N																			
11/29/2022	WL_BFWB_OUT_SP21	N																			
11/29/2022	WL_BFWB_OUT_SP21	N																			
11/30/2022	WL_LCI_SP02	N																			
11/30/2022	WL_WLCI_SP01	N																			
11/30/2022	WL_BFWB_OUT_SP21	N														< 2.0					
11/30/2022	WL_BFWB_OUT_SP21	N																			
12/1/2022	WL_LCI_SP02	N																			
12/1/2022	WL_WLCI_SP01	N																			
12/1/2022	WL_BFWB_OUT_SP21	N																			
12/1/2022	WL_BFWB_OUT_SP21	N																			
12/2/2022	WL_LCI_SP02	N																			
12/2/2022	WL_WLCI_SP01	N																			
12/2/2022	WL_BFWB_OUT_SP21	N														< 2.0					
12/2/2022	WL_BFWB_OUT_SP21	N																			
12/3/2022	WL_LCI_SP02	N																			
12/3/2022	WL_WLCI_SP01	N																			
12/3/2022	WL_BFWB_OUT_SP21	N																			
12/3/2022	WL_BFWB_OUT_SP21	N																			
12/4/2022	WL_LCI_SP02	N																			
12/4/2022	WL_WLCI_SP01	N																			
12/4/2022	WL_BFWB_OUT_SP21	N														< 2.0					
12/4/2022	WL_BFWB_OUT_SP21	N																			
12/5/2022	WL_LCI_SP02	N																			
12/5/2022	WL_WLCI_SP01	N																			
12/5/2022	WL_BFWB_OUT_SP21	N														< 2.0					
12/5/2022	WL_BFWB_OUT_SP21	N																			
12/6/2022	WL_LCI_SP02	N																			
12/6/2022	WL_WLCI_SP01	N																			
12/6/2022	WL_BFWB_OUT_SP21	N																			
12/6/2022	WL_BFWB_OUT_SP21	N																			

		CHEMICAL_NAME FRACTION REPORT_RESULT_UNIT	48-h Static acute lethality test using Daphnia ma N %	96-Hr 100% Conc. Acute lethality test for R. Trout N %	Alkalinity, Total (As CaCO3) N mg/l	Aluminum D mg/l	Aluminum T mg/l	Antimony D ug/l	Antimony T ug/l	Arsenic D ug/l	Arsenic T ug/l	Barium D mg/l	Barium T mg/l	Beryllium D ug/l	Beryllium T ug/l	BIOCHEMICAL OXYGEN DEMAND, FIVE DAY N mg/l	Bismuth D mg/l	Bismuth T mg/l	Boron D mg/l	Boron T mg/l	BROMATE N ug/l
12/7/2022	WL_LCI_SP02	N																			
12/7/2022	WL_WLCI_SP01	N																			
12/7/2022	WL_BFWB_OUT_SP21	N														< 2.0					
12/7/2022	WL_BFWB_OUT_SP21	N																			
12/8/2022	WL_LCI_SP02	N																			
12/8/2022	WL_WLCI_SP01	N																			
12/8/2022	WL_BFWB_OUT_SP21	N																			
12/8/2022	WL_BFWB_OUT_SP21	N																			
12/9/2022	WL_LCI_SP02	N																			
12/9/2022	WL_WLCI_SP01	N																			
12/9/2022	WL_BFWB_OUT_SP21	N														< 2.0					
12/9/2022	WL_BFWB_OUT_SP21	N																			
12/10/2022	WL_LCI_SP02	N																			
12/10/2022	WL_WLCI_SP01	N																			
12/10/2022	WL_BFWB_OUT_SP21	N																			
12/10/2022	WL_BFWB_OUT_SP21	N																			
12/11/2022	WL_LCI_SP02	N																			
12/11/2022	WL_WLCI_SP01	N																			
12/11/2022	WL_BFWB_OUT_SP21	N														< 2.0					
12/11/2022	WL_BFWB_OUT_SP21	N																			
12/12/2022	WL_LCI_SP02	N			217	< 0.0030	< 0.0030	0.38	0.39	0.16	0.16	0.0582	0.0576	< 0.020	< 0.020		< 0.000050	< 0.000050	0.020	0.019	< 0.30
12/12/2022	WL_WLCI_SP01	N			340	< 0.0060	< 0.0060	0.46	0.47	0.30	0.27	0.0224	0.0229	< 0.040	< 0.040		< 0.000100	< 0.000100	< 0.020	< 0.020	< 0.30
12/12/2022	WL_BFWB_OUT_SP21	N	0	0	234	< 0.0030	0.0036	0.16	0.14	< 0.10	< 0.10	0.0290	0.0285	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.018	0.018	10.7
12/12/2022	WL_BFWB_OUT_SP21	N																			
12/13/2022	WL_LCI_SP02	N																			
12/13/2022	WL_WLCI_SP01	N																			
12/13/2022	WL_BFWB_OUT_SP21	N																			
12/13/2022	WL_BFWB_OUT_SP21	N																			
12/14/2022	WL_LCI_SP02	N																			
12/14/2022	WL_WLCI_SP01	N																			
12/14/2022	WL_BFWB_OUT_SP21	N														< 2.0					
12/14/2022	WL_BFWB_OUT_SP21	N																			
12/15/2022	WL_LCI_SP02	N																			
12/15/2022	WL_WLCI_SP01	N																			
12/15/2022	WL_BFWB_OUT_SP21	N																			
12/15/2022	WL_BFWB_OUT_SP21	N																			
12/16/2022	WL_LCI_SP02	N																			
12/16/2022	WL_WLCI_SP01	N																			
12/16/2022	WL_BFWB_OUT_SP21	N														< 2.0					
12/16/2022	WL_BFWB_OUT_SP21	N																			
12/17/2022	WL_LCI_SP02	N																			
12/17/2022	WL_WLCI_SP01	N																			
12/17/2022	WL_BFWB_OUT_SP21	N																			
12/17/2022	WL_BFWB_OUT_SP21	N																			
12/18/2022	WL_LCI_SP02	N																			
12/18/2022	WL_WLCI_SP01	N																			
12/18/2022	WL_BFWB_OUT_SP21	N														< 2.0					
12/18/2022	WL_BFWB_OUT_SP21	N																			
12/19/2022	WL_LCI_SP02	N																			
12/19/2022	WL_WLCI_SP01	N																			
12/19/2022	WL_BFWB_OUT_SP21	N														< 2.0					
12/19/2022	WL_BFWB_OUT_SP21	N																			
12/20/2022	WL_LCI_SP02	N																			
12/20/2022	WL_WLCI_SP01	N																			
12/20/2022	WL_BFWB_OUT_SP21	N																			
12/20/2022	WL_BFWB_OUT_SP21	N																			
12/21/2022	WL_LCI_SP02	N																			
12/21/2022	WL_WLCI_SP01	N																			
12/21/2022	WL_BFWB_OUT_SP21	N														< 2.0					
12/21/2022	WL_BFWB_OUT_SP21	N																			
12/22/2022	WL_LCI_SP02	N																			
12/22/2022	WL_WLCI_SP01	N																			
12/22/2022	WL_BFWB_OUT_SP21	N														< 2.0					
12/22/2022	WL_BFWB_OUT_SP21	N																			
12/23/2022	WL_LCI_SP02	N																			
12/23/2022	WL_WLCI_SP01	N																			

		CHEMICAL_NAME FRACTION REPORT_RESULT_UNIT	48-h Static acute lethality test using Daphnia ma N %	96-Hr 100% Conc. Acute lethality test for R. Trout N %	Alkalinity, Total (As CaCO3) N mg/l	Aluminum D mg/l	Aluminum T mg/l	Antimony D ug/l	Antimony T ug/l	Arsenic D ug/l	Arsenic T ug/l	Barium D mg/l	Barium T mg/l	Beryllium D ug/l	Beryllium T ug/l	BIOCHEMICAL OXYGEN DEMAND, FIVE DAY N mg/l	Bismuth D mg/l	Bismuth T mg/l	Boron D mg/l	Boron T mg/l	BROMATE N ug/l
12/23/2022	WL_BFWB_OUT_SP21	N														< 2.0					
12/23/2022	WL_BFWB_OUT_SP21	N																			
12/24/2022	WL_BFWB_OUT_SP21	N														< 2.0					
12/24/2022	WL_BFWB_OUT_SP21	N																			
12/24/2022	WL_LCI_SP02	N																			
12/24/2022	WL_WLCI_SP01	N																			
12/25/2022	WL_LCI_SP02	N																			
12/25/2022	WL_WLCI_SP01	N																			
12/25/2022	WL_BFWB_OUT_SP21	N																			
12/25/2022	WL_BFWB_OUT_SP21	N																			
12/26/2022	WL_LCI_SP02	N																			
12/26/2022	WL_WLCI_SP01	N																			
12/26/2022	WL_BFWB_OUT_SP21	N														< 2.0					
12/26/2022	WL_BFWB_OUT_SP21	N																			
12/27/2022	WL_LCI_SP02	N				< 0.0030	0.0032	0.37	0.37	0.14	0.14	0.0546	0.0560	< 0.020	< 0.020		< 0.000050	< 0.000050	0.017	0.018	
12/27/2022	WL_WLCI_SP01	N				< 0.0060	0.0063	0.47	0.47	0.26	0.30	0.0222	0.0244	< 0.040	< 0.040		< 0.000100	< 0.000100	< 0.020	< 0.020	
12/27/2022	WL_BFWB_OUT_SP21	N	0	0	228	< 0.0030	< 0.0030	0.12	0.12	< 0.10	< 0.10	0.0284	0.0304	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.016	0.017	10.9
12/27/2022	WL_BFWB_OUT_SP21	N																			
12/28/2022	WL_LCI_SP02	N																			
12/28/2022	WL_WLCI_SP01	N																			
12/28/2022	WL_BFWB_OUT_SP21	N														< 2.0					
12/28/2022	WL_BFWB_OUT_SP21	N																			
12/29/2022	WL_LCI_SP02	N																			
12/29/2022	WL_WLCI_SP01	N																			
12/29/2022	WL_BFWB_OUT_SP21	N														< 2.0					
12/29/2022	WL_BFWB_OUT_SP21	N																			
12/30/2022	WL_LCI_SP02	N																			
12/30/2022	WL_WLCI_SP01	N																			
12/30/2022	WL_BFWB_OUT_SP21	N														< 2.0					
12/30/2022	WL_BFWB_OUT_SP21	N																			
12/31/2022	WL_LCI_SP02	N																			
12/31/2022	WL_WLCI_SP01	N																			
12/31/2022	WL_BFWB_OUT_SP21	N																			
12/31/2022	WL_BFWB_OUT_SP21	N																			
1/1/2023	WL_LCI_SP02	N																			
1/1/2023	WL_WLCI_SP01	N																			
1/1/2023	WL_BFWB_OUT_SP21	N														< 2.0					
1/1/2023	WL_BFWB_OUT_SP21	N																			

		CHEMICAL_NAME	Bromide	Cadmium	Cadmium	Calcium	Carbon, Dissolved Organic	Carbon, Total Organic	Chloride	Chromium	Chromium	Cobalt	Cobalt	Conductivity, Lab	Copper	Copper	Dimethylselenoxide	Dissolved Oxygen, Field	Fluoride	Hardness, Total or Dissolved CaCO3	Hardness, Total or Dissolved CaCO3	Hydrogen Peroxide	Iron
		FRACTION	N	D	T	T	D	T	D	D	T	D	T	N	D	T	D	N	N	D	T	N	D
		REPORT_RESULT_UNIT	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	ug/l	ug/l	ug/l	ug/l	us/cm	ug/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/
SAMPLE_DATE	SYS_LOC_CODE	SAMPLE_TYPE_CODE	REPORT_RESULT_TEXT	REPORT_RESULT_TEXT	REPORT_RESULT_TEXT	REPORT_RESULT_TEXT	REPORT_RESULT_TEXT	REPORT_RESULT_TEXT	REPORT_RESULT_TEXT	REPORT_RESULT_TEXT	REPORT_RESULT_TEXT	REPORT_RESULT_TEXT	REPORT_RESULT_TEXT	REPORT_RESULT_TEXT	REPORT_RESULT_TEXT	REPORT_RESULT_TEXT	REPORT_RESULT_TEXT	REPORT_RESULT_TEXT	REPORT_RESULT_TEXT	REPORT_RESULT_TEXT	REPORT_RESULT_TEXT	REPORT_RESULT_TEXT	REPOR RESUL TEXT
1/1/2022	WL_LCI_SP02	N																12.53					
1/1/2022	WL_WLCI_SP01	N																16.45					
1/1/2022	WL_BFWB_OUT_SP21	N															0.058	17.94				0.218	
1/1/2022	WL_BFWB_OUT_SP21	N																					
1/1/2022	WL_WLCI_SP01	N																13.72					
1/1/2022	WL_LCI_SP02	N																					
1/1/2022	WL_WLCI_SP01	N																					
1/2/2022	WL_LCI_SP02	N																10.96					
1/2/2022	WL_WLCI_SP01	N																11.58					
1/2/2022	WL_BFWB_OUT_SP21	N																16.36				0.155	
1/2/2022	WL_BFWB_OUT_SP21	N																					
1/2/2022	WL_LCI_SP02	N																					
1/2/2022	WL_WLCI_SP01	N																					
1/3/2022	WL_LCI_SP02	N															< 0.010	11.25					
1/3/2022	WL_WLCI_SP01	N															0.019	11.22					
1/3/2022	WL_BFWB_OUT_SP21	N															0.044	17.28				0.207	
1/3/2022	WL_BFWB_OUT_SP21	N																					
1/3/2022	WL_BFWB_OUT_SP21	N																18.73					
1/4/2022	WL_BFWB_OUT_SP21	N																19.81					
1/4/2022	WL_BFWB_OUT_SP21	N																18.7					
1/4/2022	WL_LCI_SP02	N																11.43					
1/4/2022	WL_WLCI_SP01	N																11.86					
1/4/2022	WL_BFWB_OUT_SP21	N																17.24				0.287	
1/4/2022	WL_BFWB_OUT_SP21	N																					
1/5/2022	WL_LCI_SP02	N																12.34					
1/5/2022	WL_WLCI_SP01	N																12.9					
1/5/2022	WL_BFWB_OUT_SP21	N																19.38				0.315	
1/5/2022	WL_BFWB_OUT_SP21	N																					
1/6/2022	WL_LCI_SP02	N																12.02					
1/6/2022	WL_WLCI_SP01	N																12.61					
1/6/2022	WL_BFWB_OUT_SP21	N																19.7				0.294	
1/6/2022	WL_BFWB_OUT_SP21	N																17.88					
1/6/2022	WL_BFWB_OUT_SP21	N																					
1/6/2022	WL_BFWB_OUT_SP21	N																19.92					
1/6/2022	WL_BFWB_OUT_SP21	N																					
1/6/2022	WL_BFWB_OUT_SP21	N																					
1/7/2022	WL_LCI_SP02	N																11.79					
1/7/2022	WL_WLCI_SP01	N																11.84					
1/7/2022	WL_BFWB_OUT_SP21	N																18.35				0.304	
1/7/2022	WL_BFWB_OUT_SP21	N																					
1/8/2022	WL_LCI_SP02	N																10.91					
1/8/2022	WL_WLCI_SP01	N																11.15					
1/8/2022	WL_BFWB_OUT_SP21	N																18.8				0.285	
1/8/2022	WL_BFWB_OUT_SP21	N																					
1/9/2022	WL_LCI_SP02	N																11.56					
1/9/2022	WL_WLCI_SP01	N																11.33					
1/9/2022	WL_BFWB_OUT_SP21	N																19.18				0.241	
1/9/2022	WL_BFWB_OUT_SP21	N																					
1/10/2022	WL_LCI_SP02	N	< 0.250	0.325	0.323	138	0.56	0.69	11.0	0.18	0.18	< 0.10	< 0.10	1150	1.37	1.33		11.63	0.184	667	615		< 0.01
1/10/2022	WL_WLCI_SP01	N	< 0.250	0.189	0.216	265	1.13	1.20	4.77	0.29	< 0.20	< 0.20	< 0.20	2140	1.84	1.78		11.12	0.209	1540	1450		< 0.02
1/10/2022	WL_BFWB_OUT_SP21	N	< 0.250	0.0119	< 0.0150	188	1.22	1.31	98.0	0.43	0.15	0.65	0.66	1730	1.37	1.50		19.62	0.202	1020	955	0.235	0.038
1/10/2022	WL_BFWB_OUT_SP21	N																					
1/10/2022	WL_BFWB_OUT_SP21	N																					
1/11/2022	WL_LCI_SP02	N																12.2					
1/11/2022	WL_WLCI_SP01	N																11.11					
1/11/2022	WL_BFWB_OUT_SP21	N															0.048	19.08				0.277	
1/12/2022	WL_LCI_SP02	N																11.34					
1/12/2022	WL_WLCI_SP01	N																11.52					
1/12/2022	WL_BFWB_OUT_SP21	N																18.7				0.289	
1/12/2022	WL_BFWB_OUT_SP21	N																					
1/13/2022	WL_LCI_SP02	N																11.15					
1/13/2022	WL_WLCI_SP01	N																11.24					

		CHEMICAL_NAME FRACTION REPORT_RESULT_UNIT	Bromide N mg/l	Cadmium D ug/l	Cadmium T ug/l	Calcium T mg/l	Carbon, Dissolved Organic D mg/l	Carbon, Total Organic T mg/l	Chloride D mg/l	Chromium D ug/l	Chromium T ug/l	Cobalt D ug/l	Cobalt T ug/l	Conductivity, Lab N us/cm	Copper D ug/l	Copper T ug/l	Dimethylseleneoxide D ug/l	Dissolved Oxygen, Field N mg/l	Fluoride N mg/l	Hardness, Total or Dissolved CaCO3 D mg/l	Hardness, Total or Dissolved CaCO3 T mg/l	Hydrogen Peroxide N mg/l	Iron D mg/
1/13/2022	WL_BFWB_OUT_SP21	N																16.12				0.364	
1/13/2022	WL_BFWB_OUT_SP21	N																					
1/14/2022	WL_LCI_SP02	N																11.53					
1/14/2022	WL_WLCI_SP01	N																10.89					
1/14/2022	WL_BFWB_OUT_SP21	N																20.18				0.289	
1/14/2022	WL_BFWB_OUT_SP21	N																					
1/15/2022	WL_LCI_SP02	N																11.9					
1/15/2022	WL_WLCI_SP01	N																11.33					
1/15/2022	WL_BFWB_OUT_SP21	N																19.67				0.348	
1/15/2022	WL_BFWB_OUT_SP21	N																					
1/16/2022	WL_LCI_SP02	N																12.34					
1/16/2022	WL_WLCI_SP01	N																10.7					
1/16/2022	WL_BFWB_OUT_SP21	N																20.94				0.365	
1/16/2022	WL_BFWB_OUT_SP21	N																					
1/17/2022	WL_LCI_SP02	N																12.28					
1/17/2022	WL_WLCI_SP01	N																11.54					
1/17/2022	WL_BFWB_OUT_SP21	N																19.81				0.326	
1/17/2022	WL_BFWB_OUT_SP21	N																					
1/18/2022	WL_LCI_SP02	N																12.23					
1/18/2022	WL_WLCI_SP01	N																10.94					
1/18/2022	WL_BFWB_OUT_SP21	N															0.039	17.76				0.376	
1/18/2022	WL_BFWB_OUT_SP21	N																					
1/19/2022	WL_LCI_SP02	N																10.65					
1/19/2022	WL_WLCI_SP01	N																10.55					
1/19/2022	WL_BFWB_OUT_SP21	N																18.02				0.274	
1/19/2022	WL_BFWB_OUT_SP21	N																					
1/20/2022	WL_LCI_SP02	N																11.02					
1/20/2022	WL_WLCI_SP01	N																10.72					
1/20/2022	WL_BFWB_OUT_SP21	N																15.05				0.324	
1/20/2022	WL_BFWB_OUT_SP21	N																					
1/21/2022	WL_LCI_SP02	N																11.94					
1/21/2022	WL_WLCI_SP01	N																10.94					
1/21/2022	WL_BFWB_OUT_SP21	N																19.91				0.329	
1/21/2022	WL_BFWB_OUT_SP21	N																					
1/22/2022	WL_LCI_SP02	N																12.25					
1/22/2022	WL_WLCI_SP01	N																11.67					
1/22/2022	WL_BFWB_OUT_SP21	N																21.04				0.317	
1/22/2022	WL_BFWB_OUT_SP21	N																					
1/23/2022	WL_LCI_SP02	N																10.86					
1/23/2022	WL_WLCI_SP01	N																10.3					
1/23/2022	WL_BFWB_OUT_SP21	N																18.12				0.261	
1/23/2022	WL_BFWB_OUT_SP21	N																					
1/24/2022	WL_LCI_SP02	N		0.312	0.289	140				0.12	< 0.10	< 0.10	< 0.10		< 0.50	1.46		10.44		625	616		< 0.01
1/24/2022	WL_WLCI_SP01	N		0.105	0.110	262				0.14	< 0.20	< 0.10	< 0.20		0.62	< 1.00		10.35		1450	1470		< 0.01
1/24/2022	WL_BFWB_OUT_SP21	N	< 0.250	< 0.0100	< 0.0100	186	0.74	0.85	85.4	< 0.10	< 0.10	0.66	0.66	1730	< 0.50	< 0.50		18.43	0.120	975	954	0.239	0.017
1/24/2022	WL_BFWB_OUT_SP21	N																					
1/25/2022	WL_LCI_SP02	N																10.88					
1/25/2022	WL_WLCI_SP01	N																10.35					
1/25/2022	WL_BFWB_OUT_SP21	N															< 0.010	18.82				0.265	
1/25/2022	WL_BFWB_OUT_SP21	N																					
1/26/2022	WL_LCI_SP02	N																10.98					
1/26/2022	WL_WLCI_SP01	N																10.72					
1/26/2022	WL_BFWB_OUT_SP21	N																18.84				0.306	
1/26/2022	WL_BFWB_OUT_SP21	N																					
1/27/2022	WL_LCI_SP02	N																11.09					
1/27/2022	WL_WLCI_SP01	N																10.86					
1/27/2022	WL_BFWB_OUT_SP21	N																17.39				0.266	
1/27/2022	WL_BFWB_OUT_SP21	N																					
1/28/2022	WL_LCI_SP02	N																11.22					
1/28/2022	WL_WLCI_SP01	N																9.86					
1/28/2022	WL_BFWB_OUT_SP21	N																18.51				0.232	
1/28/2022	WL_BFWB_OUT_SP21	N																					
1/29/2022	WL_LCI_SP02	N																11.63					
1/29/2022	WL_WLCI_SP01	N																11.13					
1/29/2022	WL_BFWB_OUT_SP21	N																19.19				0.266	
1/29/2022	WL_BFWB_OUT_SP21	N																					

		CHEMICAL_NAME FRACTION REPORT_RESULT_UNIT	Bromide N mg/l	Cadmium D ug/l	Cadmium T ug/l	Calcium T mg/l	Carbon, Dissolved Organic D mg/l	Carbon, Total Organic T mg/l	Chloride D mg/l	Chromium D ug/l	Chromium T ug/l	Cobalt D ug/l	Cobalt T ug/l	Conductivity, Lab N us/cm	Copper D ug/l	Copper T ug/l	Dimethylselenoxide D ug/l	Dissolved Oxygen, Field N mg/l	Fluoride N mg/l	Hardness, Total or Dissolved CaCO3 D mg/l	Hardness, Total or Dissolved CaCO3 T mg/l	Hydrogen Peroxide N mg/l	Iron D mg/
1/30/2022	WL_LCI_SP02	N																11.24					
1/30/2022	WL_WLCI_SP01	N																9.96					
1/30/2022	WL_BFWB_OUT_SP21	N																18.8				0.27	
1/30/2022	WL_BFWB_OUT_SP21	N																					
1/31/2022	WL_LCI_SP02	N																11.23					
1/31/2022	WL_WLCI_SP01	N																10.98					
1/31/2022	WL_BFWB_OUT_SP21	N																18.57				0.238	
1/31/2022	WL_BFWB_OUT_SP21	N																					
2/1/2022	WL_LCI_SP02	N		0.289		171				0.13		< 0.10			0.53			10.8		680	748		< 0.01
2/1/2022	WL_WLCI_SP01	N		0.0696		308				< 0.20		< 0.20			< 1.00			11.6		1540	1690		< 0.02
2/1/2022	WL_BFWB_OUT_SP21	N															0.052	17.83				0.228	
2/2/2022	WL_BFWB_OUT_SP21	N																				0.282	
2/2/2022	WL_LCI_SP02	N																11.23					
2/2/2022	WL_WLCI_SP01	N																11.81					
2/2/2022	WL_BFWB_OUT_SP21	N																					
2/2/2022	WL_BFWB_OUT_SP21	N																14.19					
2/2/2022	WL_LCI_SP02	N																					
2/2/2022	WL_WLCI_SP01	N																					
2/3/2022	WL_LCI_SP02	N																11.43					
2/3/2022	WL_WLCI_SP01	N																11					
2/3/2022	WL_BFWB_OUT_SP21	N																18.91				0.241	
2/3/2022	WL_BFWB_OUT_SP21	N																					
2/4/2022	WL_LCI_SP02	N																12.01					
2/4/2022	WL_WLCI_SP01	N																12.08					
2/4/2022	WL_BFWB_OUT_SP21	N																21.04				0.253	
2/4/2022	WL_BFWB_OUT_SP21	N																					
2/5/2022	WL_LCI_SP02	N																11.71					
2/5/2022	WL_WLCI_SP01	N																11.88					
2/5/2022	WL_BFWB_OUT_SP21	N																19.39				0.278	
2/6/2022	WL_LCI_SP02	N																11.2					
2/6/2022	WL_WLCI_SP01	N																11.3					
2/6/2022	WL_BFWB_OUT_SP21	N																21.24				0.308	
2/6/2022	WL_BFWB_OUT_SP21	N																21.83					
2/7/2022	WL_LCI_SP02	N	< 0.250	0.303	0.320	159	< 0.50	< 0.50	10.2	0.16	0.13	< 0.10	< 0.10	1170	< 0.50	< 0.50		11.69	0.174	667	715		< 0.01
2/7/2022	WL_WLCI_SP01	N	< 0.250	0.0794	0.0915	285	0.95	1.12	3.86	< 0.20	< 0.20	< 0.20	< 0.20	2230	< 1.00	< 1.00		11.2	0.192	1500	1580		< 0.02
2/7/2022	WL_BFWB_OUT_SP21	N	< 0.250	< 0.0100	< 0.0150	210	0.90	1.09	81.8	< 0.10	0.12	0.68	0.69	1750	< 0.50	0.58		20.62	0.160	996	1040	0.297	0.018
2/8/2022	WL_LCI_SP02	N																10.67					
2/8/2022	WL_WLCI_SP01	N																9.87					
2/8/2022	WL_BFWB_OUT_SP21	N															0.060	20.3				0.292	
2/9/2022	WL_LCI_SP02	N																10.15					
2/9/2022	WL_WLCI_SP01	N																10.53					
2/9/2022	WL_BFWB_OUT_SP21	N																20.7				0.303	
2/9/2022	WL_BFWB_OUT_SP21	N																					
2/10/2022	WL_LCI_SP02	N																10.62					
2/10/2022	WL_WLCI_SP01	N																9.9					
2/10/2022	WL_BFWB_OUT_SP21	N																20.04				0.263	
2/10/2022	WL_BFWB_OUT_SP21	N																					
2/11/2022	WL_LCI_SP02	N																10.77					
2/11/2022	WL_WLCI_SP01	N																11.35					
2/11/2022	WL_BFWB_OUT_SP21	N																19.19				0.28	
2/11/2022	WL_BFWB_OUT_SP21	N																					
2/12/2022	WL_LCI_SP02	N																11.89					
2/12/2022	WL_WLCI_SP01	N																12.45					
2/12/2022	WL_BFWB_OUT_SP21	N																21.56				0.278	
2/12/2022	WL_BFWB_OUT_SP21	N																					
2/13/2022	WL_LCI_SP02	N																11.87					
2/13/2022	WL_WLCI_SP01	N																11.4					
2/13/2022	WL_BFWB_OUT_SP21	N																22.01				0.301	
2/13/2022	WL_BFWB_OUT_SP21	N																					
2/14/2022	WL_LCI_SP02	N																11.64					
2/14/2022	WL_WLCI_SP01	N																12.03					
2/14/2022	WL_BFWB_OUT_SP21	N																20.1				0.268	
2/14/2022	WL_BFWB_OUT_SP21	N																					
2/15/2022	WL_LCI_SP02	N																10.93					

		CHEMICAL_NAME FRACTION REPORT_RESULT_UNIT	Bromide N mg/l	Cadmium D ug/l	Cadmium T ug/l	Calcium T mg/l	Carbon, Dissolved Organic D mg/l	Carbon, Total Organic T mg/l	Chloride D mg/l	Chromium D ug/l	Chromium T ug/l	Cobalt D ug/l	Cobalt T ug/l	Conductivity, Lab N us/cm	Copper D ug/l	Copper T ug/l	Dimethylseleneoxide D ug/l	Dissolved Oxygen, Field N mg/l	Fluoride N mg/l	Hardness, Total or Dissolved CaCO3 D mg/l	Hardness, Total or Dissolved CaCO3 T mg/l	Hydrogen Peroxide N mg/l	Iron D mg/
2/15/2022	WL_WLCI_SP01	N																11.8					
2/15/2022	WL_BFWB_OUT_SP21	N															0.057	21.19				0.309	
2/15/2022	WL_BFWB_OUT_SP21	N																					
2/16/2022	WL_LCI_SP02	N																11.49					
2/16/2022	WL_WLCI_SP01	N																11.38					
2/16/2022	WL_BFWB_OUT_SP21	N																20.75				0.177	
2/16/2022	WL_BFWB_OUT_SP21	N																					
2/17/2022	WL_LCI_SP02	N																11.67					
2/17/2022	WL_WLCI_SP01	N																12.3					
2/17/2022	WL_BFWB_OUT_SP21	N																17.96				0.275	
2/17/2022	WL_BFWB_OUT_SP21	N																					
2/18/2022	WL_LCI_SP02	N																12.3					
2/18/2022	WL_WLCI_SP01	N																10.84					
2/18/2022	WL_BFWB_OUT_SP21	N																23				0.261	
2/18/2022	WL_BFWB_OUT_SP21	N																					
2/19/2022	WL_LCI_SP02	N																12.43					
2/19/2022	WL_WLCI_SP01	N																11.7					
2/19/2022	WL_BFWB_OUT_SP21	N																21.84				0.278	
2/19/2022	WL_BFWB_OUT_SP21	N																					
2/20/2022	WL_LCI_SP02	N																12.52					
2/20/2022	WL_WLCI_SP01	N																11.96					
2/20/2022	WL_BFWB_OUT_SP21	N																17.65				0.272	
2/20/2022	WL_BFWB_OUT_SP21	N																					
2/21/2022	WL_LCI_SP02	N		0.298	0.344	169				< 0.10	0.12	< 0.10	< 0.10		1.94	1.96		11.28		712	742		< 0.01
2/21/2022	WL_WLCI_SP01	N		0.0496	0.0633	310				< 0.20	< 0.20	< 0.20	< 0.20		2.33	2.40		11.54		1650	1720		< 0.02
2/21/2022	WL_BFWB_OUT_SP21	N	< 0.250	< 0.0100	< 0.0100	225	1.00	1.06	85.4	< 0.10	0.12	0.73	0.85	1780	1.88	2.48		18.45	0.147	1050	1150	0.299	0.022
2/21/2022	WL_BFWB_OUT_SP21	N																					
2/22/2022	WL_LCI_SP02	N																12.26					
2/22/2022	WL_WLCI_SP01	N																12.87					
2/22/2022	WL_BFWB_OUT_SP21	N															0.068	16.76				0.317	
2/22/2022	WL_BFWB_OUT_SP21	N																					
2/23/2022	WL_LCI_SP02	N																11.55					
2/23/2022	WL_WLCI_SP01	N																11.28					
2/23/2022	WL_BFWB_OUT_SP21	N																19.68				0.284	
2/23/2022	WL_BFWB_OUT_SP21	N																					
2/24/2022	WL_LCI_SP02	N																11.67					
2/24/2022	WL_WLCI_SP01	N																11.95					
2/24/2022	WL_BFWB_OUT_SP21	N																19.43				0.292	
2/24/2022	WL_BFWB_OUT_SP21	N																					
2/25/2022	WL_LCI_SP02	N																11.39					
2/25/2022	WL_WLCI_SP01	N																11.65					
2/25/2022	WL_BFWB_OUT_SP21	N																19.89				0.272	
2/25/2022	WL_BFWB_OUT_SP21	N																					
2/26/2022	WL_BFWB_OUT_SP21	N																					
2/26/2022	WL_LCI_SP02	N																11.74					
2/26/2022	WL_WLCI_SP01	N																8.11					
2/26/2022	WL_BFWB_OUT_SP21	N																19.81				0.268	
2/27/2022	WL_LCI_SP02	N																11.59					
2/27/2022	WL_WLCI_SP01	N																11.81					
2/27/2022	WL_BFWB_OUT_SP21	N																18.51				0.216	
2/27/2022	WL_BFWB_OUT_SP21	N																					
2/28/2022	WL_LCI_SP02	N																11.2					
2/28/2022	WL_WLCI_SP01	N																11					
2/28/2022	WL_BFWB_OUT_SP21	N																18.7				0.185	
2/28/2022	WL_BFWB_OUT_SP21	N																					
3/1/2022	WL_LCI_SP02	N																10.89					
3/1/2022	WL_WLCI_SP01	N																10.39					
3/1/2022	WL_BFWB_OUT_SP21	N															0.048	19.13				0.229	
3/1/2022	WL_BFWB_OUT_SP21	N																					
3/1/2022	WL_BFWB_OUT_SP21	N																					
3/1/2022	WL_BFWB_OUT_SP21	N																					
3/2/2022	WL_LCI_SP02	N																11.46					
3/2/2022	WL_WLCI_SP01	N																10.91					
3/2/2022	WL_BFWB_OUT_SP21	N																19.81				0.269	
3/2/2022	WL_BFWB_OUT_SP21	N																					
3/3/2022	WL_LCI_SP02	N																11.09					

		CHEMICAL_NAME FRACTION REPORT_RESULT_UNIT	Bromide N mg/l	Cadmium D ug/l	Cadmium T ug/l	Calcium T mg/l	Carbon, Dissolved Organic D mg/l	Carbon, Total Organic T mg/l	Chloride D mg/l	Chromium D ug/l	Chromium T ug/l	Cobalt D ug/l	Cobalt T ug/l	Conductivity, Lab N us/cm	Copper D ug/l	Copper T ug/l	Dimethylselenoxide D ug/l	Dissolved Oxygen, Field N mg/l	Fluoride N mg/l	Hardness, Total or Dissolved CaCO3 D mg/l	Hardness, Total or Dissolved CaCO3 T mg/l	Hydrogen Peroxide N mg/l	Iron D mg/
3/3/2022	WL_WLCI_SP01	N																10.64					
3/3/2022	WL_BFWB_OUT_SP21	N																18.13				0.253	
3/3/2022	WL_BFWB_OUT_SP21	N																					
3/3/2022	WL_BFWB_OUT_SP21	N																					
3/3/2022	WL_BFWB_OUT_SP21	N																					
3/4/2022	WL_LCI_SP02	N																10.9					
3/4/2022	WL_WLCI_SP01	N																11.1					
3/4/2022	WL_BFWB_OUT_SP21	N																18.27				0.237	
3/4/2022	WL_BFWB_OUT_SP21	N																					
3/4/2022	WL_BFWB_OUT_SP21	N																					
3/4/2022	WL_BFWB_OUT_SP21	N																					
3/5/2022	WL_LCI_SP02	N																11.28					
3/5/2022	WL_WLCI_SP01	N																10.99					
3/5/2022	WL_BFWB_OUT_SP21	N																19.21				0.246	
3/5/2022	WL_BFWB_OUT_SP21	N																					
3/6/2022	WL_LCI_SP02	N																11.1					
3/6/2022	WL_WLCI_SP01	N																10.98					
3/6/2022	WL_BFWB_OUT_SP21	N																19.6				0.224	
3/6/2022	WL_BFWB_OUT_SP21	N																					
3/7/2022	WL_LCI_SP02	N	< 0.250	0.287	0.295	150	< 0.50	< 0.50	12.6	0.15	0.15	< 0.10	< 0.10	1180	< 0.50	< 0.50		11.45	0.166	665	657		< 0.01
3/7/2022	WL_WLCI_SP01	N	< 0.250	0.0520	0.0434	285	1.08	1.09	4.74	< 0.20	< 0.20	< 0.20	< 0.20	2210	< 1.00	< 1.00		11.15	0.182	1620	1530		< 0.02
3/7/2022	WL_BFWB_OUT_SP21	N		< 0.0100	< 0.0100	201				0.10	0.15	0.73	0.78		< 0.50	0.54		21.48		983	996	0.243	0.028
3/7/2022	WL_BFWB_OUT_SP21	N	< 0.250				0.83	0.88	93.1					1730					0.187				
3/8/2022	WL_LCI_SP02	N																12.02					
3/8/2022	WL_WLCI_SP01	N																11.7					
3/8/2022	WL_BFWB_OUT_SP21	N															0.081	19.97				0.228	
3/8/2022	WL_BFWB_OUT_SP21	N																					
3/8/2022	WL_BFWB_OUT_SP21	N																					
3/8/2022	WL_BFWB_OUT_SP21	N																					
3/9/2022	WL_LCI_SP02	N																12.1					
3/9/2022	WL_WLCI_SP01	N																11.3					
3/9/2022	WL_BFWB_OUT_SP21	N																19.18				0.247	
3/9/2022	WL_BFWB_OUT_SP21	N																					
3/9/2022	WL_BFWB_OUT_SP21	N																					
3/9/2022	WL_BFWB_OUT_SP21	N																					
3/9/2022	WL_LCI_SP02	N																					
3/9/2022	WL_LCI_SP02	N																					
3/10/2022	WL_LCI_SP02	N																					
3/10/2022	WL_LCI_SP02	N																11.82					
3/10/2022	WL_WLCI_SP01	N																11.84					
3/10/2022	WL_BFWB_OUT_SP21	N																19.95				0.219	
3/10/2022	WL_BFWB_OUT_SP21	N																					
3/11/2022	WL_LCI_SP02	N																11.78					
3/11/2022	WL_WLCI_SP01	N																11.64					
3/11/2022	WL_BFWB_OUT_SP21	N																19.96				0.183	
3/11/2022	WL_BFWB_OUT_SP21	N																					
3/11/2022	WL_BFWB_OUT_SP21	N																					
3/11/2022	WL_BFWB_OUT_SP21	N																					
3/12/2022	WL_LCI_SP02	N																11.73					
3/12/2022	WL_WLCI_SP01	N																10.88					
3/12/2022	WL_BFWB_OUT_SP21	N																					
3/12/2022	WL_BFWB_OUT_SP21	N																19.33				0.224	
3/13/2022	WL_LCI_SP02	N																12.621					
3/13/2022	WL_WLCI_SP01	N																13.19					
3/13/2022	WL_BFWB_OUT_SP21	N																21.61				0.215	
3/14/2022	WL_LCI_SP02	N																11.83					
3/14/2022	WL_WLCI_SP01	N																14.74					
3/14/2022	WL_BFWB_OUT_SP21	N																					
3/14/2022	WL_BFWB_OUT_SP21	N																20.83				0.221	
3/15/2022	WL_LCI_SP02	N																12.63					
3/15/2022	WL_WLCI_SP01	N																12.09					
3/15/2022	WL_BFWB_OUT_SP21	N																					
3/15/2022	WL_BFWB_OUT_SP21	N															0.161	20.66				0.245	
3/16/2022	WL_LCI_SP02	N																11.43					
3/16/2022	WL_WLCI_SP01	N																13.36					
3/16/2022	WL_BFWB_OUT_SP21	N																20.62				0.232	

		CHEMICAL_NAME FRACTION REPORT_RESULT_UNIT	Bromide N mg/l	Cadmium D ug/l	Cadmium T ug/l	Calcium T mg/l	Carbon, Dissolved Organic D mg/l	Carbon, Total Organic T mg/l	Chloride D mg/l	Chromium D ug/l	Chromium T ug/l	Cobalt D ug/l	Cobalt T ug/l	Conductivity, Lab N us/cm	Copper D ug/l	Copper T ug/l	Dimethylselenoxide D ug/l	Dissolved Oxygen, Field N mg/l	Fluoride N mg/l	Hardness, Total or Dissolved CaCO3 D mg/l	Hardness, Total or Dissolved CaCO3 T mg/l	Hydrogen Peroxide N mg/l	Iron D mg/
3/16/2022	WL_BFWB_OUT_SP21	N																					
3/16/2022	WL_BFWB_OUT_SP21	N																					
3/17/2022	WL_LCI_SP02	N																11.87					
3/17/2022	WL_WLCI_SP01	N																11.85					
3/17/2022	WL_BFWB_OUT_SP21	N																20.51				0.227	
3/17/2022	WL_BFWB_OUT_SP21	N																					
3/18/2022	WL_LCI_SP02	N																11.95					
3/18/2022	WL_WLCI_SP01	N																11.74					
3/18/2022	WL_BFWB_OUT_SP21	N																20.22				0.218	
3/18/2022	WL_BFWB_OUT_SP21	N																					
3/19/2022	WL_LCI_SP02	N																11.8					
3/19/2022	WL_WLCI_SP01	N																11.49					
3/19/2022	WL_BFWB_OUT_SP21	N																20.25				0.227	
3/19/2022	WL_BFWB_OUT_SP21	N																					
3/20/2022	WL_LCI_SP02	N																11.7					
3/20/2022	WL_WLCI_SP01	N																11.28					
3/20/2022	WL_BFWB_OUT_SP21	N																20				0.246	
3/20/2022	WL_BFWB_OUT_SP21	N																					
3/20/2022	WL_BFWB_OUT_SP21	N																					
3/20/2022	WL_BFWB_OUT_SP21	N																					
3/21/2022	WL_LCI_SP02	N		0.304	0.321	161				0.13	< 0.50	< 0.10	< 0.10		< 0.50	< 0.50		11.66		646	699		< 0.01
3/21/2022	WL_WLCI_SP01	N		0.0484	0.0523	300				< 0.20	< 0.50	< 0.20	< 0.20		< 1.00	< 1.00		12.74		1540	1650		< 0.02
3/21/2022	WL_BFWB_OUT_SP21	N	< 0.250	< 0.0100	< 0.0100	203	1.18	1.32	98.2	0.10	< 0.50	0.73	0.81	1730	< 0.50	< 0.50		20.5	0.217	964	1010	0.249	0.020
3/21/2022	WL_BFWB_OUT_SP21	N																					
3/22/2022	WL_LCI_SP02	N																12.58					
3/22/2022	WL_WLCI_SP01	N																12.04					
3/22/2022	WL_BFWB_OUT_SP21	N															0.089	20.34				0.228	
3/22/2022	WL_BFWB_OUT_SP21	N																					
3/23/2022	WL_LCI_SP02	N																11.92					
3/23/2022	WL_WLCI_SP01	N																11.97					
3/23/2022	WL_BFWB_OUT_SP21	N																20.82				0.253	
3/23/2022	WL_BFWB_OUT_SP21	N																					
3/23/2022	WL_LCI_SP02	N																					
3/23/2022	WL_LCI_SP02	N																					
3/24/2022	WL_LCI_SP02	N																11.39					
3/24/2022	WL_WLCI_SP01	N																12.16					
3/24/2022	WL_BFWB_OUT_SP21	N																18.18				0.242	
3/24/2022	WL_BFWB_OUT_SP21	N																					
3/25/2022	WL_LCI_SP02	N																10.47					
3/25/2022	WL_WLCI_SP01	N																11					
3/25/2022	WL_BFWB_OUT_SP21	N																18.37				0.26	
3/25/2022	WL_BFWB_OUT_SP21	N																					
3/26/2022	WL_BFWB_OUT_SP21	N																				0.222	
3/26/2022	WL_LCI_SP02	N																11.33					
3/26/2022	WL_WLCI_SP01	N																10.83					
3/26/2022	WL_BFWB_OUT_SP21	N																19.07					
3/27/2022	WL_BFWB_OUT_SP21	N																					
3/27/2022	WL_LCI_SP02	N																10.93					
3/27/2022	WL_WLCI_SP01	N																10.97					
3/27/2022	WL_BFWB_OUT_SP21	N																18.92				0.245	
3/28/2022	WL_LCI_SP02	N																10.63					
3/28/2022	WL_WLCI_SP01	N																10.43					
3/28/2022	WL_BFWB_OUT_SP21	N																18.71				0.213	
3/28/2022	WL_BFWB_OUT_SP21	N																					
3/29/2022	WL_LCI_SP02	N																10.86					
3/29/2022	WL_WLCI_SP01	N																11.55					
3/29/2022	WL_BFWB_OUT_SP21	N															0.134	18.23				0.228	
3/29/2022	WL_BFWB_OUT_SP21	N																					
3/30/2022	WL_LCI_SP02	N																11.83					
3/30/2022	WL_WLCI_SP01	N																11.22					
3/30/2022	WL_BFWB_OUT_SP21	N																19.62				0.234	
3/30/2022	WL_BFWB_OUT_SP21	N																					
3/31/2022	WL_LCI_SP02	N																11.15					
3/31/2022	WL_WLCI_SP01	N																10.45					
3/31/2022	WL_BFWB_OUT_SP21	N																18.58				0.2	
3/31/2022	WL_BFWB_OUT_SP21	N																					

		CHEMICAL_NAME FRACTION REPORT_RESULT_UNIT	Bromide N mg/l	Cadmium D ug/l	Cadmium T ug/l	Calcium T mg/l	Carbon, Dissolved Organic D mg/l	Carbon, Total Organic T mg/l	Chloride D mg/l	Chromium D ug/l	Chromium T ug/l	Cobalt D ug/l	Cobalt T ug/l	Conductivity, Lab N us/cm	Copper D ug/l	Copper T ug/l	Dimethylselenoxide D ug/l	Dissolved Oxygen, Field N mg/l	Fluoride N mg/l	Hardness, Total or Dissolved CaCO3 D mg/l	Hardness, Total or Dissolved CaCO3 T mg/l	Hydrogen Peroxide N mg/l	Iron D mg/
4/1/2022	WL_LCI_SP02	N																11.61					
4/1/2022	WL_WLCI_SP01	N																11.15					
4/1/2022	WL_BFWB_OUT_SP21	N																20.34				0.248	
4/1/2022	WL_BFWB_OUT_SP21	N																					
4/2/2022	WL_LCI_SP02	N																11.72					
4/2/2022	WL_WLCI_SP01	N																11.15					
4/2/2022	WL_BFWB_OUT_SP21	N																19.91				0.274	
4/2/2022	WL_BFWB_OUT_SP21	N																					
4/3/2022	WL_LCI_SP02	N																11.01					
4/3/2022	WL_WLCI_SP01	N																11.34					
4/3/2022	WL_BFWB_OUT_SP21	N																18.64				0.237	
4/3/2022	WL_BFWB_OUT_SP21	N																					
4/4/2022	WL_LCI_SP02	N	< 0.250	0.362	0.344	157	< 0.50	0.58	12.8	0.12	0.11	< 0.10	< 0.10	1110	< 0.50	< 0.50		10.99	0.198	662	680		< 0.01
4/4/2022	WL_WLCI_SP01	N	< 0.250	0.0477	0.0571	281	1.21	1.22	4.98	< 0.20	< 0.20	< 0.20	< 0.20	2070	< 1.00	< 1.00		10.87	0.207	1560	1660		< 0.02
4/4/2022	WL_BFWB_OUT_SP21	N	< 0.250	< 0.0150	< 0.0100	199	1.02	1.22	104	0.11	0.13	0.92	0.92	1690	< 0.50	0.57		18.73	0.210	1020	1050	0.22	0.017
4/5/2022	WL_LCI_SP02	N																11.07					
4/5/2022	WL_WLCI_SP01	N																10.49					
4/5/2022	WL_BFWB_OUT_SP21	N															0.114	12.1				0.234	
4/5/2022	WL_BFWB_OUT_SP21	N																					
4/6/2022	WL_LCI_SP02	N																10.87					
4/6/2022	WL_WLCI_SP01	N																10.51					
4/6/2022	WL_BFWB_OUT_SP21	N																19.26				0.244	
4/6/2022	WL_BFWB_OUT_SP21	N																					
4/7/2022	WL_LCI_SP02	N																11.16					
4/7/2022	WL_WLCI_SP01	N																13.31					
4/7/2022	WL_BFWB_OUT_SP21	N																18.4				0.215	
4/7/2022	WL_BFWB_OUT_SP21	N																					
4/8/2022	WL_LCI_SP02	N																11.32					
4/8/2022	WL_WLCI_SP01	N																10.81					
4/8/2022	WL_BFWB_OUT_SP21	N																19.76				0.188	
4/8/2022	WL_BFWB_OUT_SP21	N																					
4/8/2022	WL_BFWB_OUT_SP21	N																					
4/9/2022	WL_LCI_SP02	N																11.96					
4/9/2022	WL_WLCI_SP01	N																12.04					
4/9/2022	WL_BFWB_OUT_SP21	N																18.9				0.267	
4/9/2022	WL_BFWB_OUT_SP21	N																					
4/10/2022	WL_LCI_SP02	N																11.83					
4/10/2022	WL_WLCI_SP01	N																11.43					
4/10/2022	WL_BFWB_OUT_SP21	N																20.22				0.236	
4/10/2022	WL_BFWB_OUT_SP21	N																					
4/11/2022	WL_LCI_SP02	N																11.15					
4/11/2022	WL_WLCI_SP01	N																11.73					
4/11/2022	WL_BFWB_OUT_SP21	N																18.33				0.218	
4/11/2022	WL_BFWB_OUT_SP21	N																					
4/12/2022	WL_LCI_SP02	N															< 0.010	15.16					
4/12/2022	WL_WLCI_SP01	N															0.017	19.29					
4/12/2022	WL_BFWB_OUT_SP21	N															0.124	19.59				0.231	
4/12/2022	WL_BFWB_OUT_SP21	N																					
4/13/2022	WL_LCI_SP02	N																12.98					
4/13/2022	WL_WLCI_SP01	N																12.41					
4/13/2022	WL_BFWB_OUT_SP21	N																19.94				0.244	
4/13/2022	WL_BFWB_OUT_SP21	N																					
4/14/2022	WL_LCI_SP02	N																13.5					
4/14/2022	WL_WLCI_SP01	N																11.13					
4/14/2022	WL_BFWB_OUT_SP21	N																21.16				0.262	
4/14/2022	WL_BFWB_OUT_SP21	N																					
4/15/2022	WL_LCI_SP02	N																12.95					
4/15/2022	WL_WLCI_SP01	N																12.72					
4/15/2022	WL_BFWB_OUT_SP21	N																21.44				0.229	
4/15/2022	WL_BFWB_OUT_SP21	N																					
4/16/2022	WL_LCI_SP02	N																12.53					
4/16/2022	WL_WLCI_SP01	N																12.16					
4/16/2022	WL_BFWB_OUT_SP21	N																21.84				0.254	
4/16/2022	WL_BFWB_OUT_SP21	N																					
4/17/2022	WL_LCI_SP02	N																12.97					
4/17/2022	WL_WLCI_SP01	N																12.96					

		CHEMICAL_NAME FRACTION REPORT_RESULT_UNIT	Bromide N mg/l	Cadmium D ug/l	Cadmium T ug/l	Calcium T mg/l	Carbon, Dissolved Organic D mg/l	Carbon, Total Organic T mg/l	Chloride D mg/l	Chromium D ug/l	Chromium T ug/l	Cobalt D ug/l	Cobalt T ug/l	Conductivity, Lab N us/cm	Copper D ug/l	Copper T ug/l	Dimethylselenoxide D ug/l	Dissolved Oxygen, Field N mg/l	Fluoride N mg/l	Hardness, Total or Dissolved CaCO3 D mg/l	Hardness, Total or Dissolved CaCO3 T mg/l	Hydrogen Peroxide N mg/l	Iron D mg/
4/17/2022	WL_BFWB_OUT_SP21	N																18.33				0.311	
4/17/2022	WL_BFWB_OUT_SP21	N																					
4/18/2022	WL_LCI_SP02	N		0.340	0.299	144				0.14	0.11	< 0.10	< 0.10		< 0.50	< 0.50		11.86		656	630		< 0.01
4/18/2022	WL_WLCI_SP01	N		0.0452	0.0419	284				0.20	< 0.20	< 0.20	< 0.20		< 1.00	< 1.00		10.98		1480	1520		< 0.02
4/18/2022	WL_BFWB_OUT_SP21	N	< 0.250	< 0.0050	< 0.0100	192	1.00	1.11	98.9	0.15	< 0.10	0.75	0.72	1660	< 0.50	< 0.50		18.22	0.180	947	978	0.233	0.030
4/18/2022	WL_BFWB_OUT_SP21	N																					
4/19/2022	WL_LCI_SP02	N																11.66					
4/19/2022	WL_WLCI_SP01	N																11.38					
4/19/2022	WL_BFWB_OUT_SP21	N															0.112	15.27				0.241	
4/19/2022	WL_BFWB_OUT_SP21	N																					
4/20/2022	WL_LCI_SP02	N																12.09					
4/20/2022	WL_WLCI_SP01	N																11.52					
4/20/2022	WL_BFWB_OUT_SP21	N																20.83				0.276	
4/20/2022	WL_BFWB_OUT_SP21	N																					
4/21/2022	WL_LCI_SP02	N																11.49					
4/21/2022	WL_WLCI_SP01	N																10.95					
4/21/2022	WL_BFWB_OUT_SP21	N																19.88				0.305	
4/21/2022	WL_BFWB_OUT_SP21	N																					
4/22/2022	WL_LCI_SP02	N																11.81					
4/22/2022	WL_WLCI_SP01	N																11.27					
4/22/2022	WL_BFWB_OUT_SP21	N																21.12				0.315	
4/22/2022	WL_BFWB_OUT_SP21	N																					
4/23/2022	WL_LCI_SP02	N																12.78					
4/23/2022	WL_WLCI_SP01	N																11.96					
4/23/2022	WL_BFWB_OUT_SP21	N																21.14				0.282	
4/23/2022	WL_BFWB_OUT_SP21	N																					
4/24/2022	WL_LCI_SP02	N																11.65					
4/24/2022	WL_WLCI_SP01	N																11.98					
4/24/2022	WL_BFWB_OUT_SP21	N																20.94				0.28	
4/24/2022	WL_BFWB_OUT_SP21	N																					
4/25/2022	WL_LCI_SP02	N																11.86					
4/25/2022	WL_WLCI_SP01	N																11.53					
4/25/2022	WL_BFWB_OUT_SP21	N																19.17				0.254	
4/25/2022	WL_BFWB_OUT_SP21	N																					
4/26/2022	WL_LCI_SP02	N																11.81					
4/26/2022	WL_WLCI_SP01	N																11.5					
4/26/2022	WL_BFWB_OUT_SP21	N															0.162	20.3				0.277	
4/27/2022	WL_LCI_SP02	N																11.95					
4/27/2022	WL_WLCI_SP01	N																10.6					
4/27/2022	WL_BFWB_OUT_SP21	N																20.25				0.258	
4/28/2022	WL_LCI_SP02	N																11.86					
4/28/2022	WL_WLCI_SP01	N																11.15					
4/28/2022	WL_BFWB_OUT_SP21	N																20.74				0.287	
4/29/2022	WL_BFWB_OUT_SP21	N																				0.117	
4/29/2022	WL_LCI_SP02	N																					
4/29/2022	WL_WLCI_SP01	N																					
4/29/2022	WL_BFWB_OUT_SP21	N																					
4/29/2022	WL_BFWB_OUT_SP21	N																17.895					
4/29/2022	WL_LCI_SP02	N																12.25					
4/29/2022	WL_WLCI_SP01	N																11.75					
4/29/2022	WL_LCI_SP02	N																11.03					
4/29/2022	WL_WLCI_SP01	N																10.97					
4/30/2022	WL_LCI_SP02	N																11.2					
4/30/2022	WL_WLCI_SP01	N																11.7					
4/30/2022	WL_BFWB_OUT_SP21	N																18.18				0.196	
4/30/2022	WL_BFWB_OUT_SP21	N																					
5/1/2022	WL_LCI_SP02	N																11.32					
5/1/2022	WL_WLCI_SP01	N																11.39					
5/1/2022	WL_BFWB_OUT_SP21	N																17.92				0.17	
5/1/2022	WL_BFWB_OUT_SP21	N																					
5/2/2022	WL_LCI_SP02	N	< 0.250	0.361	0.362	135	< 0.50	< 0.50	9.97	0.11	0.10	< 0.10	< 0.10	1090	< 0.50	< 0.50		11.64	0.176	611	576		< 0.01
5/2/2022	WL_WLCI_SP01	N	< 0.250	0.0705	0.0725	272	1.29	1.30	4.88	< 0.20	0.24	< 0.20	< 0.20	2200	< 1.00	< 1.00		10.84	0.184	1540	1470		< 0.02
5/2/2022	WL_BFWB_OUT_SP21	N	< 0.250	< 0.0050	< 0.0050	208	1.55	1.67	93.9	< 0.10	< 0.10	0.60	0.63	1860	< 0.50	0.52		19.37	0.193	1120	1070	0.239	0.016

		CHEMICAL_NAME FRACTION REPORT_RESULT_UNIT	Bromide N mg/l	Cadmium D ug/l	Cadmium T ug/l	Calcium T mg/l	Carbon, Dissolved Organic D mg/l	Carbon, Total Organic T mg/l	Chloride D mg/l	Chromium D ug/l	Chromium T ug/l	Cobalt D ug/l	Cobalt T ug/l	Conductivity, Lab N us/cm	Copper D ug/l	Copper T ug/l	Dimethylseleneoxide D ug/l	Dissolved Oxygen, Field N mg/l	Fluoride N mg/l	Hardness, Total or Dissolved CaCO3 D mg/l	Hardness, Total or Dissolved CaCO3 T mg/l	Hydrogen Peroxide N mg/l	Iron D mg/
5/2/2022	WL_BFWB_OUT_SP21	N																					
5/3/2022	WL_LCI_SP02	N																11.49					
5/3/2022	WL_WLCI_SP01	N																10.43					
5/3/2022	WL_BFWB_OUT_SP21	N																					
5/3/2022	WL_BFWB_OUT_SP21	N															0.086	18.7				0.188	
5/3/2022	WL_BFWB_OUT_SP21	N																					
5/4/2022	WL_LCI_SP02	N																11.15					
5/4/2022	WL_WLCI_SP01	N																11.1					
5/4/2022	WL_BFWB_OUT_SP21	N																18.8				0.159	
5/4/2022	WL_BFWB_OUT_SP21	N																					
5/5/2022	WL_LCI_SP02	N																11.33					
5/5/2022	WL_WLCI_SP01	N																10.93					
5/5/2022	WL_BFWB_OUT_SP21	N																18.03				0.175	
5/5/2022	WL_BFWB_OUT_SP21	N																					
5/6/2022	WL_LCI_SP02	N																10.81					
5/6/2022	WL_WLCI_SP01	N																10.45					
5/6/2022	WL_BFWB_OUT_SP21	N																17.06				0.178	
5/6/2022	WL_BFWB_OUT_SP21	N																					
5/6/2022	WL_LCI_SP02	N																					
5/7/2022	WL_LCI_SP02	N																12.28					
5/7/2022	WL_WLCI_SP01	N																13.38					
5/7/2022	WL_BFWB_OUT_SP21	N																17.54				0.151	
5/7/2022	WL_BFWB_OUT_SP21	N																					
5/8/2022	WL_LCI_SP02	N																11.31					
5/8/2022	WL_WLCI_SP01	N																10.7					
5/8/2022	WL_BFWB_OUT_SP21	N																18.14				0.171	
5/8/2022	WL_BFWB_OUT_SP21	N																					
5/9/2022	WL_LCI_SP02	N																11.33					
5/9/2022	WL_WLCI_SP01	N																11.19					
5/9/2022	WL_BFWB_OUT_SP21	N																17.49				0.151	
5/9/2022	WL_BFWB_OUT_SP21	N																					
5/10/2022	WL_LCI_SP02	N																11.31					
5/10/2022	WL_WLCI_SP01	N																11.08					
5/10/2022	WL_BFWB_OUT_SP21	N															0.068	19.34				0.205	
5/10/2022	WL_BFWB_OUT_SP21	N																					
5/11/2022	WL_LCI_SP02	N																11.48					
5/11/2022	WL_WLCI_SP01	N																15.44					
5/11/2022	WL_WLCI_SP01	N																14.75					
5/11/2022	WL_BFWB_OUT_SP21	N																19.83				0.206	
5/11/2022	WL_BFWB_OUT_SP21	N																					
5/12/2022	WL_LCI_SP02	N																11.83					
5/12/2022	WL_WLCI_SP01	N																11.25					
5/12/2022	WL_BFWB_OUT_SP21	N																20.69				0.239	
5/12/2022	WL_BFWB_OUT_SP21	N																					
5/13/2022	WL_LCI_SP02	N																11.87					
5/13/2022	WL_WLCI_SP01	N																11.63					
5/13/2022	WL_BFWB_OUT_SP21	N																18.01				0.236	
5/13/2022	WL_BFWB_OUT_SP21	N																					
5/14/2022	WL_LCI_SP02	N																11.42					
5/14/2022	WL_WLCI_SP01	N																10.7					
5/14/2022	WL_BFWB_OUT_SP21	N															0.069	17.42				0.118	
5/14/2022	WL_BFWB_OUT_SP21	N																					
5/15/2022	WL_LCI_SP02	N																10.47					
5/15/2022	WL_WLCI_SP01	N																10.67					
5/15/2022	WL_BFWB_OUT_SP21	N																18.44				0.241	
5/15/2022	WL_BFWB_OUT_SP21	N																					
5/16/2022	WL_LCI_SP02	N		0.422	0.399	135				0.17	0.16	< 0.10	< 0.10		< 0.50	< 0.50		11.83		546	576		< 0.01
5/16/2022	WL_WLCI_SP01	N		0.254	0.261	291				< 0.20	< 0.20	< 0.20	< 0.20		< 1.00	< 1.00		11.28		1550	1530		< 0.02
5/16/2022	WL_BFWB_OUT_SP21	N	< 0.250	< 0.0100	< 0.0100	241	1.33	1.28	91.2	0.15	0.13	0.68	0.64	1820	< 0.50	0.53		17.17	0.218	1210	1250	0.168	0.018
5/16/2022	WL_BFWB_OUT_SP21	N																					
5/17/2022	WL_LCI_SP02	N																10.49					
5/17/2022	WL_WLCI_SP01	N																9.98					
5/17/2022	WL_BFWB_OUT_SP21	N															0.075	17.05				0.189	
5/17/2022	WL_BFWB_OUT_SP21	N																					
5/18/2022	WL_LCI_SP02	N																10.54					
5/18/2022	WL_WLCI_SP01	N																10.9					

		CHEMICAL_NAME FRACTION REPORT_RESULT_UNIT	Bromide N mg/l	Cadmium D ug/l	Cadmium T ug/l	Calcium T mg/l	Carbon, Dissolved Organic D mg/l	Carbon, Total Organic T mg/l	Chloride D mg/l	Chromium D ug/l	Chromium T ug/l	Cobalt D ug/l	Cobalt T ug/l	Conductivity, Lab N us/cm	Copper D ug/l	Copper T ug/l	Dimethylseleneoxide D ug/l	Dissolved Oxygen, Field N mg/l	Fluoride N mg/l	Hardness, Total or Dissolved CaCO3 D mg/l	Hardness, Total or Dissolved CaCO3 T mg/l	Hydrogen Peroxide N mg/l	Iron D mg/
5/18/2022	WL_BFWB_OUT_SP21	N							84.7									18.68				0.257	
5/18/2022	WL_BFWB_OUT_SP21	N																					
5/19/2022	WL_LCI_SP02	N																11.77					
5/19/2022	WL_WLCI_SP01	N																11.27					
5/19/2022	WL_BFWB_OUT_SP21	N																20.15				0.231	
5/19/2022	WL_BFWB_OUT_SP21	N																					
5/20/2022	WL_LCI_SP02	N																11.87					
5/20/2022	WL_WLCI_SP01	N																11.7					
5/20/2022	WL_BFWB_OUT_SP21	N							80.2									20.45				0.26	
5/20/2022	WL_BFWB_OUT_SP21	N																					
5/21/2022	WL_LCI_SP02	N																10.88					
5/21/2022	WL_WLCI_SP01	N																11.33					
5/21/2022	WL_BFWB_OUT_SP21	N																20.03				0.264	
5/21/2022	WL_BFWB_OUT_SP21	N																					
5/22/2022	WL_LCI_SP02	N																10.56					
5/22/2022	WL_WLCI_SP01	N																11.84					
5/22/2022	WL_BFWB_OUT_SP21	N																20.62				0.225	
5/22/2022	WL_BFWB_OUT_SP21	N																					
5/23/2022	WL_LCI_SP02	N																11.24					
5/23/2022	WL_WLCI_SP01	N																11.04					
5/23/2022	WL_BFWB_OUT_SP21	N							85.3									20.39				0.217	
5/23/2022	WL_BFWB_OUT_SP21	N																					
5/24/2022	WL_LCI_SP02	N																11.27					
5/24/2022	WL_WLCI_SP01	N																10.92					
5/24/2022	WL_BFWB_OUT_SP21	N															0.036	19.25				0.228	
5/24/2022	WL_BFWB_OUT_SP21	N															0.067						
5/24/2022	WL_BFWB_OUT_SP21	N															0.062						
5/24/2022	WL_BFWB_OUT_SP21	N															0.073						
5/25/2022	WL_LCI_SP02	N																11.04					
5/25/2022	WL_WLCI_SP01	N																11.6					
5/25/2022	WL_BFWB_OUT_SP21	N							82.9									17.1				0.176	
5/25/2022	WL_BFWB_OUT_SP21	N																					
5/26/2022	WL_LCI_SP02	N																11.61					
5/26/2022	WL_WLCI_SP01	N																10.6					
5/26/2022	WL_BFWB_OUT_SP21	N																18.06				0.156	
5/26/2022	WL_BFWB_OUT_SP21	N																					
5/27/2022	WL_LCI_SP02	N																10.27					
5/27/2022	WL_WLCI_SP01	N																10.62					
5/27/2022	WL_BFWB_OUT_SP21	N							86.6									10.95				0.174	
5/27/2022	WL_BFWB_OUT_SP21	N																					
5/28/2022	WL_LCI_SP02	N																8.05					
5/28/2022	WL_WLCI_SP01	N																10.4					
5/28/2022	WL_BFWB_OUT_SP21	N																17.12				0.167	
5/28/2022	WL_BFWB_OUT_SP21	N																					
5/28/2022	WL_BFWB_OUT_SP21	N																					
5/28/2022	WL_BFWB_OUT_SP21	N																					
5/28/2022	WL_BFWB_OUT_SP21	N																					
5/28/2022	WL_BFWB_OUT_SP21	N																					
5/28/2022	WL_BFWB_OUT_SP21	N																					
5/29/2022	WL_LCI_SP02	N																8.78					
5/29/2022	WL_WLCI_SP01	N																11.61					
5/29/2022	WL_BFWB_OUT_SP21	N																19.46				0.205	
5/29/2022	WL_BFWB_OUT_SP21	N																					
5/30/2022	WL_LCI_SP02	N		0.428	0.454	97.0				0.13	0.13	< 0.10	< 0.10		0.57	0.56		8.74		449	445		< 0.01
5/30/2022	WL_WLCI_SP01	N		0.604	0.638	199				< 0.10	< 0.10	< 0.10	< 0.10		0.80	0.76		11.08		1010	1070		< 0.01
5/30/2022	WL_BFWB_OUT_SP21	N	< 0.250	< 0.0100	0.0104	211	1.58	1.51	79.6	< 0.10	0.13	0.60	0.65	1880	< 0.50	0.56		19.59	0.180	1130	1200	0.217	0.015
5/30/2022	WL_BFWB_OUT_SP21	N																					
5/31/2022	WL_LCI_SP02	N																8.16					
5/31/2022	WL_WLCI_SP01	N																11.14					
5/31/2022	WL_BFWB_OUT_SP21	N															0.030	19.41				0.241	
5/31/2022	WL_BFWB_OUT_SP21	N																					
6/1/2022	WL_LCI_SP02	N																8.08					
6/1/2022	WL_WLCI_SP01	N																9.8					
6/1/2022	WL_BFWB_OUT_SP21	N							85.3									19.99				0.274	
6/1/2022	WL_BFWB_OUT_SP21	N																					

		CHEMICAL_NAME FRACTION REPORT_RESULT_UNIT	Bromide N mg/l	Cadmium D ug/l	Cadmium T ug/l	Calcium T mg/l	Carbon, Dissolved Organic D mg/l	Carbon, Total Organic T mg/l	Chloride D mg/l	Chromium D ug/l	Chromium T ug/l	Cobalt D ug/l	Cobalt T ug/l	Conductivity, Lab N us/cm	Copper D ug/l	Copper T ug/l	Dimethylselenoxide D ug/l	Dissolved Oxygen, Field N mg/l	Fluoride N mg/l	Hardness, Total or Dissolved CaCO3 D mg/l	Hardness, Total or Dissolved CaCO3 T mg/l	Hydrogen Peroxide N mg/l	Iron D mg/
6/2/2022	WL_LCI_SP02	N																11.39					
6/2/2022	WL_WLCI_SP01	N																11.46					
6/2/2022	WL_BFWB_OUT_SP21	N																18.45				0.173	
6/2/2022	WL_BFWB_OUT_SP21	N																					
6/3/2022	WL_LCI_SP02	N																12.26					
6/3/2022	WL_WLCI_SP01	N																14.51					
6/3/2022	WL_BFWB_OUT_SP21	N							86.1									17.82				0.155	
6/3/2022	WL_BFWB_OUT_SP21	N																					
6/4/2022	WL_LCI_SP02	N																11.36					
6/4/2022	WL_WLCI_SP01	N																10.61					
6/4/2022	WL_BFWB_OUT_SP21	N																16.27				0.089	
6/4/2022	WL_BFWB_OUT_SP21	N																					
6/5/2022	WL_LCI_SP02	N																11.47					
6/5/2022	WL_WLCI_SP01	N																10.61					
6/5/2022	WL_BFWB_OUT_SP21	N																12.77				0.059	
6/5/2022	WL_BFWB_OUT_SP21	N																					
6/6/2022	WL_LCI_SP02	N																10.92					
6/6/2022	WL_WLCI_SP01	N																10.81					
6/6/2022	WL_BFWB_OUT_SP21	N							90.0									11.64				0.053	
6/6/2022	WL_BFWB_OUT_SP21	N																					
6/7/2022	WL_LCI_SP02	N																					
6/7/2022	WL_WLCI_SP01	N																					
6/7/2022	WL_BFWB_OUT_SP21	N															0.035						
6/7/2022	WL_LCI_SP02	N																11.26					
6/7/2022	WL_WLCI_SP01	N																10.91					
6/7/2022	WL_BFWB_OUT_SP21	N																					
6/8/2022	WL_LCI_SP02	N																11.01					
6/8/2022	WL_WLCI_SP01	N																10.91					
6/9/2022	WL_LCI_SP02	N																11.4					
6/9/2022	WL_WLCI_SP01	N																11.05					
6/9/2022	WL_WLCI_SP01	N																11.12					
6/9/2022	WL_BFWB_OUT_SP21	N																20.21				0.021	
6/9/2022	WL_BFWB_OUT_SP21	N																					
6/10/2022	WL_LCI_SP02	N																11.07					
6/10/2022	WL_WLCI_SP01	N																10.21					
6/10/2022	WL_BFWB_OUT_SP21	N							95.9									12.34				0.038	
6/10/2022	WL_BFWB_OUT_SP21	N																					
6/11/2022	WL_LCI_SP02	N																11.01					
6/11/2022	WL_WLCI_SP01	N																10.09					
6/11/2022	WL_BFWB_OUT_SP21	N																10.68				0.029	
6/11/2022	WL_BFWB_OUT_SP21	N																					
6/12/2022	WL_LCI_SP02	N																11.16					
6/12/2022	WL_WLCI_SP01	N																9.89					
6/12/2022	WL_BFWB_OUT_SP21	N																13.17				0.05	
6/12/2022	WL_BFWB_OUT_SP21	N																					
6/13/2022	WL_LCI_SP02	N	< 0.050	0.402	0.401	64.6	1.08	0.99	3.08	0.16	0.14	0.12	0.13	575	0.56	0.59		11.4	0.190	288	292		< 0.01
6/13/2022	WL_WLCI_SP01	N	< 0.250	1.22	1.17	133	1.28	1.24	1.09	0.12	0.21	0.14	0.14	1200	0.83	0.84		10.91	0.113	719	695		< 0.01
6/13/2022	WL_BFWB_OUT_SP21	N	< 0.250	< 0.0100	0.0133	136	1.61	1.65	85.8	< 0.10	0.10	0.23	0.28	1340	< 0.50	0.52		13.08	0.128	742	742	0.044	0.016
6/13/2022	WL_BFWB_OUT_SP21	N																					
6/14/2022	WL_LCI_SP02	N																11.76					
6/14/2022	WL_WLCI_SP01	N																11.43					
6/14/2022	WL_BFWB_OUT_SP21	N															0.012	14.1				0.103	
6/14/2022	WL_BFWB_OUT_SP21	N																					
6/15/2022	WL_LCI_SP02	N																11.35					
6/15/2022	WL_WLCI_SP01	N																10.6					
6/15/2022	WL_BFWB_OUT_SP21	N							71.6									24.34				0.175	
6/15/2022	WL_BFWB_OUT_SP21	N																					
6/15/2022	WL_WLCI_SP01	N																					
6/16/2022	WL_BFWB_OUT_SP21	N																19.18					
6/16/2022	WL_LCI_SP02	N																12.04					
6/16/2022	WL_WLCI_SP01	N																11.86					
6/16/2022	WL_BFWB_OUT_SP21	N																				0.065	
6/16/2022	WL_LCI_SP02	N																					
6/16/2022	WL_BFWB_OUT_SP21	N																					
6/16/2022	WL_LCI_SP02	N																					
6/16/2022	WL_WLCI_SP01	N																					

		CHEMICAL_NAME FRACTION REPORT_RESULT_UNIT	Bromide N mg/l	Cadmium D ug/l	Cadmium T ug/l	Calcium T mg/l	Carbon, Dissolved Organic D mg/l	Carbon, Total Organic T mg/l	Chloride D mg/l	Chromium D ug/l	Chromium T ug/l	Cobalt D ug/l	Cobalt T ug/l	Conductivity, Lab N us/cm	Copper D ug/l	Copper T ug/l	Dimethylseleneoxide D ug/l	Dissolved Oxygen, Field N mg/l	Fluoride N mg/l	Hardness, Total or Dissolved CaCO3 D mg/l	Hardness, Total or Dissolved CaCO3 T mg/l	Hydrogen Peroxide N mg/l	Iron D mg/
6/17/2022	WL_LCI_SP02	N																11.37					
6/17/2022	WL_WLCI_SP01	N																10.83					
6/17/2022	WL_BFWB_OUT_SP21	N							83.8									24.19				0.064	
6/17/2022	WL_BFWB_OUT_SP21	N																					
6/18/2022	WL_LCI_SP02	N																11.22					
6/18/2022	WL_WLCI_SP01	N																10.65					
6/18/2022	WL_BFWB_OUT_SP21	N																13.02				0.073	
6/18/2022	WL_BFWB_OUT_SP21	N																					
6/19/2022	WL_LCI_SP02	N																11.58					
6/19/2022	WL_WLCI_SP01	N																10.57					
6/19/2022	WL_BFWB_OUT_SP21	N																12.28				0.051	
6/19/2022	WL_BFWB_OUT_SP21	N																					
6/20/2022	WL_WLCI_SP01	N																10.02					
6/20/2022	WL_BFWB_OUT_SP21	N							73.5									11.93				0.061	
6/20/2022	WL_LCI_SP02	N																11.98					
6/20/2022	WL_BFWB_OUT_SP21	N																					
6/21/2022	WL_LCI_SP02	N																11.23					
6/21/2022	WL_WLCI_SP01	N																10.93					
6/21/2022	WL_BFWB_OUT_SP21	N															< 0.010	12.72				0.017	
6/21/2022	WL_BFWB_OUT_SP21	N																					
6/22/2022	WL_LCI_SP02	N																11.43					
6/22/2022	WL_WLCI_SP01	N																10.62					
6/22/2022	WL_BFWB_OUT_SP21	N																12.79				0.046	
6/22/2022	WL_BFWB_OUT_SP21	N																					
6/23/2022	WL_LCI_SP02	N																10.87					
6/23/2022	WL_WLCI_SP01	N																10.33					
6/23/2022	WL_BFWB_OUT_SP21	N																18.45				0.08	
6/23/2022	WL_BFWB_OUT_SP21	N																					
6/24/2022	WL_LCI_SP02	N																10.31					
6/24/2022	WL_WLCI_SP01	N																10.49					
6/24/2022	WL_BFWB_OUT_SP21	N																11.81				0.056	
6/24/2022	WL_BFWB_OUT_SP21	N																					
6/25/2022	WL_LCI_SP02	N																10.46					
6/25/2022	WL_WLCI_SP01	N																9.77					
6/25/2022	WL_BFWB_OUT_SP21	N																12.15				0.055	
6/25/2022	WL_BFWB_OUT_SP21	N																					
6/26/2022	WL_LCI_SP02	N																10.98					
6/26/2022	WL_WLCI_SP01	N																10.42					
6/26/2022	WL_BFWB_OUT_SP21	N																12.24				0.036	
6/26/2022	WL_BFWB_OUT_SP21	N																					
6/27/2022	WL_LCI_SP02	N		0.514	0.523	69.9				0.14	0.15	0.15	0.17		0.63	0.73		10.61		318	314		< 0.01
6/27/2022	WL_WLCI_SP01	N		1.46	1.45	146				0.11	< 0.10	0.12	0.10		0.96	0.93		10.25		734	722		0.018
6/27/2022	WL_BFWB_OUT_SP21	N	< 0.250	0.0118	< 0.0150	134	0.93	1.04	78.5	< 0.10	< 0.10	0.30	0.36	1290	< 0.50	< 0.50		6.55	0.131	667	671	0.06	0.016
6/27/2022	WL_BFWB_OUT_SP21	N																					
6/27/2022	WL_BFWB_OUT_SP21	N																13.42					
6/27/2022	WL_BFWB_OUT_SP21	N																13.5					
6/28/2022	WL_LCI_SP02	N																					
6/28/2022	WL_WLCI_SP01	N																10.64					
6/28/2022	WL_BFWB_OUT_SP21	N															0.015	12.19				0.042	
6/28/2022	WL_BFWB_OUT_SP21	N																					
6/29/2022	WL_LCI_SP02	N																11.18					
6/29/2022	WL_WLCI_SP01	N																11.15					
6/29/2022	WL_BFWB_OUT_SP21	N																11.84				0.067	
6/29/2022	WL_BFWB_OUT_SP21	N																					
6/30/2022	WL_LCI_SP02	N																11.32					
6/30/2022	WL_WLCI_SP01	N																11.6					
6/30/2022	WL_LCI_SP02	N																					
6/30/2022	WL_WLCI_SP01	N																					
6/30/2022	WL_BFWB_OUT_SP21	N																12.6				0.03	
6/30/2022	WL_BFWB_OUT_SP21	N																					
7/1/2022	WL_LCI_SP02	N																					
7/1/2022	WL_WLCI_SP01	N																10.7					
7/1/2022	WL_BFWB_OUT_SP21	N																11.96				0.129	
7/1/2022	WL_LCI_SP02	N																11.12					
7/1/2022	WL_BFWB_OUT_SP21	N																					
7/2/2022	WL_LCI_SP02	N																10.93					

		CHEMICAL_NAME FRACTION REPORT_RESULT_UNIT	Bromide N mg/l	Cadmium D ug/l	Cadmium T ug/l	Calcium T mg/l	Carbon, Dissolved Organic D mg/l	Carbon, Total Organic T mg/l	Chloride D mg/l	Chromium D ug/l	Chromium T ug/l	Cobalt D ug/l	Cobalt T ug/l	Conductivity, Lab N us/cm	Copper D ug/l	Copper T ug/l	Dimethylseleneoxide D ug/l	Dissolved Oxygen, Field N mg/l	Fluoride N mg/l	Hardness, Total or Dissolved CaCO3 D mg/l	Hardness, Total or Dissolved CaCO3 T mg/l	Hydrogen Peroxide N mg/l	Iron D mg/
7/2/2022	WL_WLCI_SP01	N																11.07					
7/2/2022	WL_BFWB_OUT_SP21	N																12.09				0.052	
7/2/2022	WL_WLCI_SP01	N																					
7/2/2022	WL_BFWB_OUT_SP21	N																					
7/3/2022	WL_LCI_SP02	N																11.04					
7/3/2022	WL_WLCI_SP01	N																10.63					
7/3/2022	WL_BFWB_OUT_SP21	N																12.32				0.059	
7/3/2022	WL_LCI_SP02	N																					
7/3/2022	WL_BFWB_OUT_SP21	N																					
7/4/2022	WL_LCI_SP02	N																10.2					
7/4/2022	WL_WLCI_SP01	N																10.27					
7/4/2022	WL_BFWB_OUT_SP21	N																12.17				0.054	
7/4/2022	WL_BFWB_OUT_SP21	N																					
7/5/2022	WL_LCI_SP02	N															< 0.010	10.32					
7/5/2022	WL_WLCI_SP01	N															< 0.010	10.44					
7/5/2022	WL_BFWB_OUT_SP21	N															0.025	12.05				0.048	
7/5/2022	WL_BFWB_OUT_SP21	N																					
7/6/2022	WL_LCI_SP02	N																10.6					
7/6/2022	WL_WLCI_SP01	N																11.27					
7/6/2022	WL_BFWB_OUT_SP21	N																11.98				0.041	
7/6/2022	WL_BFWB_OUT_SP21	N																					
7/7/2022	WL_LCI_SP02	N																10.55					
7/7/2022	WL_WLCI_SP01	N																11.8					
7/7/2022	WL_BFWB_OUT_SP21	N																10.42				< 0.015	
7/7/2022	WL_BFWB_OUT_SP21	N																					
7/7/2022	WL_BFWB_OUT_SP21	N																					
7/7/2022	WL_LCI_SP02	N																6.16					
7/7/2022	WL_WLCI_SP01	N																10.7					
7/7/2022	WL_LCI_SP02	N																11.5					
7/8/2022	WL_LCI_SP02	N																10.98					
7/8/2022	WL_WLCI_SP01	N																10.57					
7/8/2022	WL_BFWB_OUT_SP21	N																9.89				0.067	
7/8/2022	WL_BFWB_OUT_SP21	N																					
7/9/2022	WL_LCI_SP02	N																11.09					
7/9/2022	WL_WLCI_SP01	N																10.57					
7/9/2022	WL_BFWB_OUT_SP21	N																12.1				0.072	
7/9/2022	WL_BFWB_OUT_SP21	N																					
7/10/2022	WL_LCI_SP02	N																11.28					
7/10/2022	WL_WLCI_SP01	N																10.09					
7/10/2022	WL_BFWB_OUT_SP21	N																12.07				0.066	
7/10/2022	WL_BFWB_OUT_SP21	N																					
7/11/2022	WL_LCI_SP02	N	< 0.050	0.650	0.576	81.6	< 0.50	0.52	4.57	0.16	0.13	0.12	0.11	669	0.62	0.58		11.11	0.195	343	357		< 0.01
7/11/2022	WL_WLCI_SP01	N	< 0.250	1.87	1.80	184	0.75	0.72	1.94	0.10	0.11	< 0.10	< 0.10	1460	0.85	0.89		10.78	0.110	887	916		< 0.01
7/11/2022	WL_BFWB_OUT_SP21	N	< 0.250	0.0187	0.0184	176	1.12	1.21	76.7	< 0.10	0.12	0.43	0.44	1510	< 0.50	< 0.50		12.36	0.122	868	888	0.039	0.020
7/11/2022	WL_BFWB_OUT_SP21	N																					
7/12/2022	WL_LCI_SP02	N																10.88					
7/12/2022	WL_WLCI_SP01	N																10.92					
7/12/2022	WL_BFWB_OUT_SP21	N															0.012	12.5				0.06	
7/12/2022	WL_BFWB_OUT_SP21	N																					
7/13/2022	WL_LCI_SP02	N																9.8					
7/13/2022	WL_WLCI_SP01	N																10.64					
7/13/2022	WL_BFWB_OUT_SP21	N							78.1									9.47				0.039	
7/13/2022	WL_BFWB_OUT_SP21	N																					
7/14/2022	WL_LCI_SP02	N																10.38					
7/14/2022	WL_WLCI_SP01	N																11.61					
7/14/2022	WL_BFWB_OUT_SP21	N																17.45				0.074	
7/14/2022	WL_BFWB_OUT_SP21	N																					
7/15/2022	WL_LCI_SP02	N																10.98					
7/15/2022	WL_WLCI_SP01	N																10.05					
7/15/2022	WL_BFWB_OUT_SP21	N							72.2									12.33				0.029	
7/15/2022	WL_BFWB_OUT_SP21	N																					
7/16/2022	WL_LCI_SP02	N																10.4					
7/16/2022	WL_WLCI_SP01	N																9.88					
7/16/2022	WL_BFWB_OUT_SP21	N																12.54				0.03	
7/16/2022	WL_BFWB_OUT_SP21	N																					
7/17/2022	WL_LCI_SP02	N																10.21					

		CHEMICAL_NAME FRACTION REPORT_RESULT_UNIT	Bromide N mg/l	Cadmium D ug/l	Cadmium T ug/l	Calcium T mg/l	Carbon, Dissolved Organic D mg/l	Carbon, Total Organic T mg/l	Chloride D mg/l	Chromium D ug/l	Chromium T ug/l	Cobalt D ug/l	Cobalt T ug/l	Conductivity, Lab N us/cm	Copper D ug/l	Copper T ug/l	Dimethylselenoxide D ug/l	Dissolved Oxygen, Field N mg/l	Fluoride N mg/l	Hardness, Total or Dissolved CaCO3 D mg/l	Hardness, Total or Dissolved CaCO3 T mg/l	Hydrogen Peroxide N mg/l	Iron D mg/
7/17/2022	WL_WLCI_SP01	N																10.97					
7/17/2022	WL_BFWB_OUT_SP21	N																14.98				0.045	
7/17/2022	WL_BFWB_OUT_SP21	N																					
7/18/2022	WL_LCI_SP02	N																10.29					
7/18/2022	WL_WLCI_SP01	N																10.289					
7/18/2022	WL_BFWB_OUT_SP21	N							74.9									14.3				0.035	
7/18/2022	WL_BFWB_OUT_SP21	N																					
7/19/2022	WL_LCI_SP02	N																11.02					
7/19/2022	WL_WLCI_SP01	N																10.64					
7/19/2022	WL_BFWB_OUT_SP21	N															0.015	16.24				0.058	
7/19/2022	WL_BFWB_OUT_SP21	N																					
7/20/2022	WL_LCI_SP02	N																9.95					
7/20/2022	WL_WLCI_SP01	N																10.57					
7/20/2022	WL_BFWB_OUT_SP21	N							74.5									15.12				0.034	
7/20/2022	WL_BFWB_OUT_SP21	N																					
7/21/2022	WL_LCI_SP02	N																9.95					
7/21/2022	WL_WLCI_SP01	N																11.32					
7/21/2022	WL_BFWB_OUT_SP21	N																15.07				0.035	
7/21/2022	WL_BFWB_OUT_SP21	N																					
7/22/2022	WL_LCI_SP02	N																10.81					
7/22/2022	WL_WLCI_SP01	N																10.93					
7/22/2022	WL_BFWB_OUT_SP21	N							70.9									15.2				0.04	
7/22/2022	WL_BFWB_OUT_SP21	N																					
7/23/2022	WL_LCI_SP02	N																11.23					
7/23/2022	WL_WLCI_SP01	N																11.15					
7/23/2022	WL_BFWB_OUT_SP21	N																23.79				0.073	
7/23/2022	WL_BFWB_OUT_SP21	N																					
7/24/2022	WL_LCI_SP02	N																11.37					
7/24/2022	WL_WLCI_SP01	N																11.6					
7/24/2022	WL_BFWB_OUT_SP21	N																16.77				0.057	
7/24/2022	WL_BFWB_OUT_SP21	N																					
7/25/2022	WL_LCI_SP02	N		0.760	0.712	112				0.12	0.18	< 0.10	< 0.10		0.65	< 0.50		10.41		549	495		< 0.01
7/25/2022	WL_WLCI_SP01	N		2.39	2.30	202				0.11	0.16	< 0.10	< 0.10		0.95	0.92		9.87		1110	1020		< 0.01
7/25/2022	WL_BFWB_OUT_SP21	N	< 0.250	0.0210	0.0292	199	1.28	1.42	72.9	< 0.10	0.16	0.36	0.36	1690	< 0.50	< 0.50		14.63	0.125	1110	999	0.038	0.022
7/25/2022	WL_BFWB_OUT_SP21	N																					
7/26/2022	WL_BFWB_OUT_SP21	N															< 0.010	27.48				< 0.015	
7/26/2022	WL_LCI_SP02	N																					
7/26/2022	WL_WLCI_SP01	N																					
7/26/2022	WL_LCI_SP02	N																10.26					
7/26/2022	WL_WLCI_SP01	N																11.29					
7/26/2022	WL_BFWB_OUT_SP21	N																					
7/27/2022	WL_LCI_SP02	N																11.08					
7/27/2022	WL_WLCI_SP01	N																10.91					
7/28/2022	WL_LCI_SP02	N																10.25					
7/28/2022	WL_WLCI_SP01	N																11.03					
7/29/2022	WL_LCI_SP02	N																11.75					
7/29/2022	WL_WLCI_SP01	N																11.49					
7/29/2022	WL_WLCI_SP01	N																					
7/29/2022	WL_LCI_SP02	N																					
7/29/2022	WL_WLCI_SP01	N																10.39					
7/29/2022	WL_BFWB_OUT_SP21	N							72.9														
7/29/2022	WL_BFWB_OUT_SP21	N																18.36				0.024	
7/29/2022	WL_LCI_SP02	N																11.39					
7/29/2022	WL_BFWB_OUT_SP21	N																					
7/30/2022	WL_LCI_SP02	N																11.67					
7/30/2022	WL_WLCI_SP01	N																10.49					
7/30/2022	WL_BFWB_OUT_SP21	N																13.66				0.05	
7/30/2022	WL_BFWB_OUT_SP21	N																					
7/31/2022	WL_LCI_SP02	N																10.02					
7/31/2022	WL_WLCI_SP01	N																9.78					
7/31/2022	WL_BFWB_OUT_SP21	N																13.78				0.031	
7/31/2022	WL_BFWB_OUT_SP21	N																					
8/1/2022	WL_LCI_SP02	N																11.03					
8/1/2022	WL_WLCI_SP01	N																11.04					
8/1/2022	WL_BFWB_OUT_SP21	N							80.9									13.46				0.08	
8/1/2022	WL_BFWB_OUT_SP21	N																					

		CHEMICAL_NAME FRACTION REPORT_RESULT_UNIT	Bromide N mg/l	Cadmium D ug/l	Cadmium T ug/l	Calcium T mg/l	Carbon, Dissolved Organic D mg/l	Carbon, Total Organic T mg/l	Chloride D mg/l	Chromium D ug/l	Chromium T ug/l	Cobalt D ug/l	Cobalt T ug/l	Conductivity, Lab N us/cm	Copper D ug/l	Copper T ug/l	Dimethylseleneoxide D ug/l	Dissolved Oxygen, Field N mg/l	Fluoride N mg/l	Hardness, Total or Dissolved CaCO3 D mg/l	Hardness, Total or Dissolved CaCO3 T mg/l	Hydrogen Peroxide N mg/l	Iron D mg/
8/2/2022	WL_LCI_SP02	N																10.67					
8/2/2022	WL_WLCI_SP01	N																11.92					
8/2/2022	WL_BFWB_OUT_SP21	N															< 0.010	16.76				0.057	
8/2/2022	WL_BFWB_OUT_SP21	N																					
8/3/2022	WL_LCI_SP02	N																10.37					
8/3/2022	WL_WLCI_SP01	N																11.57					
8/3/2022	WL_BFWB_OUT_SP21	N							72.2									18.66				0.098	
8/3/2022	WL_BFWB_OUT_SP21	N																					
8/4/2022	WL_LCI_SP02	N																10.85					
8/4/2022	WL_WLCI_SP01	N																10.92					
8/4/2022	WL_BFWB_OUT_SP21	N																18.31				0.112	
8/4/2022	WL_BFWB_OUT_SP21	N																					
8/5/2022	WL_LCI_SP02	N																10.7					
8/5/2022	WL_WLCI_SP01	N																11.75					
8/5/2022	WL_BFWB_OUT_SP21	N							72.2									18.71				0.101	
8/5/2022	WL_BFWB_OUT_SP21	N																					
8/6/2022	WL_LCI_SP02	N																10.69					
8/6/2022	WL_WLCI_SP01	N																11.55					
8/6/2022	WL_BFWB_OUT_SP21	N																19.72				0.145	
8/6/2022	WL_BFWB_OUT_SP21	N																					
8/7/2022	WL_LCI_SP02	N																10.65					
8/7/2022	WL_WLCI_SP01	N																11.07					
8/7/2022	WL_BFWB_OUT_SP21	N																19.97				0.124	
8/7/2022	WL_BFWB_OUT_SP21	N																					
8/8/2022	WL_LCI_SP02	N	< 0.050	0.555	0.595	122	< 0.50	< 0.50	8.42	< 0.40	< 0.10	< 0.10	< 0.10	936	0.80	< 0.50		10.5	0.217	517	537		< 0.01
8/8/2022	WL_WLCI_SP01	N	< 0.250	2.64	2.78	239	0.74	0.85	2.81	< 0.30	< 0.10	< 0.10	< 0.10	1760	1.04	1.03		10.22	0.130	1180	1230		< 0.01
8/8/2022	WL_BFWB_OUT_SP21	N	< 0.250	0.0230	0.0239	225	1.09	1.21	72.1	< 0.30	0.17	0.68	0.71	1820	< 0.50	< 0.50		20.05	0.134	1120	1160	0.12	0.022
8/8/2022	WL_BFWB_OUT_SP21	N																					
8/9/2022	WL_LCI_SP02	N																10.7					
8/9/2022	WL_WLCI_SP01	N																10.6					
8/9/2022	WL_BFWB_OUT_SP21	N															< 0.010	19.96				0.127	
8/9/2022	WL_BFWB_OUT_SP21	N																					
8/10/2022	WL_LCI_SP02	N																9.88					
8/10/2022	WL_WLCI_SP01	N																9.6					
8/10/2022	WL_BFWB_OUT_SP21	N							72.8									19.99				0.142	
8/10/2022	WL_BFWB_OUT_SP21	N																					
8/11/2022	WL_LCI_SP02	N																9.57					
8/11/2022	WL_WLCI_SP01	N																9.66					
8/11/2022	WL_BFWB_OUT_SP21	N																20.51				0.171	
8/11/2022	WL_BFWB_OUT_SP21	N																					
8/12/2022	WL_LCI_SP02	N																10.18					
8/12/2022	WL_WLCI_SP01	N																10.45					
8/12/2022	WL_BFWB_OUT_SP21	N							74.1									19.73				0.165	
8/12/2022	WL_BFWB_OUT_SP21	N																					
8/13/2022	WL_LCI_SP02	N																10.22					
8/13/2022	WL_WLCI_SP01	N																11.33					
8/13/2022	WL_BFWB_OUT_SP21	N																19.97				0.152	
8/13/2022	WL_BFWB_OUT_SP21	N																					
8/14/2022	WL_LCI_SP02	N																13.25					
8/14/2022	WL_WLCI_SP01	N																11.07					
8/14/2022	WL_BFWB_OUT_SP21	N																19.14				0.132	
8/14/2022	WL_BFWB_OUT_SP21	N																					
8/15/2022	WL_LCI_SP02	N																10.12					
8/15/2022	WL_WLCI_SP01	N																11.76					
8/15/2022	WL_BFWB_OUT_SP21	N							74.2									19.68				0.107	
8/15/2022	WL_BFWB_OUT_SP21	N																					
8/16/2022	WL_LCI_SP02	N																10.15					
8/16/2022	WL_WLCI_SP01	N																11.04					
8/16/2022	WL_BFWB_OUT_SP21	N															0.039	19.75				0.169	
8/16/2022	WL_BFWB_OUT_SP21	N																					
8/17/2022	WL_LCI_SP02	N																10.3					
8/17/2022	WL_WLCI_SP01	N																10.88					
8/17/2022	WL_BFWB_OUT_SP21	N							72.7									19.9				0.115	
8/17/2022	WL_BFWB_OUT_SP21	N																					
8/17/2022	WL_BFWB_OUT_SP21	N																18.69					

		CHEMICAL_NAME FRACTION REPORT_RESULT_UNIT	Bromide N mg/l	Cadmium D ug/l	Cadmium T ug/l	Calcium T mg/l	Carbon, Dissolved Organic D mg/l	Carbon, Total Organic T mg/l	Chloride D mg/l	Chromium D ug/l	Chromium T ug/l	Cobalt D ug/l	Cobalt T ug/l	Conductivity, Lab N us/cm	Copper D ug/l	Copper T ug/l	Dimethylselenoxide D ug/l	Dissolved Oxygen, Field N mg/l	Fluoride N mg/l	Hardness, Total or Dissolved CaCO3 D mg/l	Hardness, Total or Dissolved CaCO3 T mg/l	Hydrogen Peroxide N mg/l	Iron D mg/
8/17/2022	WL_BFWB_OUT_SP21	N	< 0.250	0.0196	0.0343	238	0.61	0.52	72.8	< 0.10	0.14	0.70	0.75	1820	< 0.20	0.65	0.014		0.140	1160			0.014
8/18/2022	WL_LCI_SP02	N																10.43					
8/18/2022	WL_WLCI_SP01	N																10.82					
8/18/2022	WL_BFWB_OUT_SP21	N	< 0.250	0.0221	0.0211	222	1.04	1.09	73.6	0.19	0.13	0.65	0.70	1780	< 0.50	< 0.50		19.95	0.147	1170		0.165	0.286
8/18/2022	WL_BFWB_OUT_SP21	N	< 0.250	0.0221	0.0211	222	1.04	1.09	73.6	0.19	0.13	0.65	0.70	1780	< 0.50	< 0.50	0.042		0.147	1170	1160		0.286
8/19/2022	WL_LCI_SP02	N																9.98					
8/19/2022	WL_WLCI_SP01	N																10.35					
8/19/2022	WL_BFWB_OUT_SP21	N							73.0									19.41				0.172	
8/19/2022	WL_BFWB_OUT_SP21	N																					
8/20/2022	WL_LCI_SP02	N																10.02					
8/20/2022	WL_WLCI_SP01	N																10.21					
8/20/2022	WL_BFWB_OUT_SP21	N																19.37				0.156	
8/20/2022	WL_BFWB_OUT_SP21	N																					
8/21/2022	WL_LCI_SP02	N																9.31					
8/21/2022	WL_WLCI_SP01	N																10.65					
8/21/2022	WL_BFWB_OUT_SP21	N																18.01				0.159	
8/21/2022	WL_BFWB_OUT_SP21	N																					
8/22/2022	WL_BFWB_OUT_SP21	N	< 0.250	< 0.0250	0.0293	216	1.14	1.22	73.7	< 0.10		0.73	0.72	1750	< 0.50	< 0.50		19.32	0.141	1170	1130	0.141	0.013
8/22/2022	WL_LCI_SP02	N		0.519	0.522	123				< 0.10		< 0.10	< 0.10		< 0.50	< 0.50		9.94		548	544		< 0.01
8/22/2022	WL_WLCI_SP01	N		2.69	2.69	247				< 0.20		< 0.20	< 0.10		1.07	1.08		10.17		1340	1310		< 0.02
8/22/2022	WL_BFWB_OUT_SP21	N																					
8/23/2022	WL_LCI_SP02	N																10.48					
8/23/2022	WL_WLCI_SP01	N																9.85					
8/23/2022	WL_BFWB_OUT_SP21	N															0.038	18.44				0.138	
8/23/2022	WL_BFWB_OUT_SP21	N																					
8/24/2022	WL_LCI_SP02	N																9.93					
8/24/2022	WL_WLCI_SP01	N																10.52					
8/24/2022	WL_BFWB_OUT_SP21	N							72.8									18.49				0.119	
8/24/2022	WL_BFWB_OUT_SP21	N																					
8/25/2022	WL_LCI_SP02	N																10.53					
8/25/2022	WL_WLCI_SP01	N																10.23					
8/25/2022	WL_BFWB_OUT_SP21	N																18.74				0.164	
8/25/2022	WL_BFWB_OUT_SP21	N																					
8/26/2022	WL_LCI_SP02	N																10.15					
8/26/2022	WL_WLCI_SP01	N																8.79					
8/26/2022	WL_BFWB_OUT_SP21	N							74.5									17.53				0.096	
8/26/2022	WL_BFWB_OUT_SP21	N																					
8/27/2022	WL_LCI_SP02	N																10.69					
8/27/2022	WL_WLCI_SP01	N																10.51					
8/27/2022	WL_BFWB_OUT_SP21	N																16.55				0.068	
8/27/2022	WL_BFWB_OUT_SP21	N																					
8/28/2022	WL_LCI_SP02	N																10.08					
8/28/2022	WL_WLCI_SP01	N																10.58					
8/28/2022	WL_BFWB_OUT_SP21	N																16.23				0.045	
8/28/2022	WL_BFWB_OUT_SP21	N																					
8/29/2022	WL_BFWB_OUT_SP21	N																					
8/29/2022	WL_BFWB_OUT_SP21	N							74.2									14.82					
8/29/2022	WL_BFWB_OUT_SP21	N																					
8/29/2022	WL_BFWB_OUT_SP21	N																				< 0.015	
8/29/2022	WL_BFWB_OUT_SP21	N																					
8/29/2022	WL_LCI_SP02	N																10.22					
8/29/2022	WL_WLCI_SP01	N																12.97					
8/29/2022	WL_BFWB_OUT_SP21	N																					
8/30/2022	WL_BFWB_OUT_SP21	N																19.68				0.081	
8/30/2022	WL_BFWB_OUT_SP21	N															0.035						
8/30/2022	WL_LCI_SP02	N																					
8/30/2022	WL_WLCI_SP01	N																					
8/30/2022	WL_BFWB_OUT_SP21	N																					
8/30/2022	WL_LCI_SP02	N																11.01					
8/30/2022	WL_WLCI_SP01	N																11.48					
8/31/2022	WL_LCI_SP02	N																10.56					
8/31/2022	WL_WLCI_SP01	N																11.49					
9/1/2022	WL_LCI_SP02	N																10.69					

		CHEMICAL_NAME FRACTION REPORT_RESULT_UNIT	Bromide N mg/l	Cadmium D ug/l	Cadmium T ug/l	Calcium T mg/l	Carbon, Dissolved Organic D mg/l	Carbon, Total Organic T mg/l	Chloride D mg/l	Chromium D ug/l	Chromium T ug/l	Cobalt D ug/l	Cobalt T ug/l	Conductivity, Lab N us/cm	Copper D ug/l	Copper T ug/l	Dimethylseleneoxide D ug/l	Dissolved Oxygen, Field N mg/l	Fluoride N mg/l	Hardness, Total or Dissolved CaCO3 D mg/l	Hardness, Total or Dissolved CaCO3 T mg/l	Hydrogen Peroxide N mg/l	Iron D mg/
9/1/2022	WL_WLCI_SP01	N																11.92					
9/1/2022	WL_LCI_SP02	N																10.64					
9/1/2022	WL_WLCI_SP01	N																10.72					
9/1/2022	WL_BFWB_OUT_SP21	N																23.6				0.104	
9/1/2022	WL_BFWB_OUT_SP21	N																					
9/2/2022	WL_LCI_SP02	N																10.67					
9/2/2022	WL_WLCI_SP01	N																10.55					
9/2/2022	WL_BFWB_OUT_SP21	N							110								0.102	16.8				0.027	
9/2/2022	WL_BFWB_OUT_SP21	N																					
9/3/2022	WL_LCI_SP02	N																11.5					
9/3/2022	WL_WLCI_SP01	N																11.41					
9/3/2022	WL_BFWB_OUT_SP21	N																17.4				0.057	
9/3/2022	WL_BFWB_OUT_SP21	N																					
9/4/2022	WL_LCI_SP02	N																10.31					
9/4/2022	WL_WLCI_SP01	N																10.57					
9/4/2022	WL_BFWB_OUT_SP21	N																17.67				0.046	
9/4/2022	WL_BFWB_OUT_SP21	N																					
9/5/2022	WL_LCI_SP02	N	< 0.250	0.505	0.499	109	< 0.50	0.62	8.64	0.13	0.22	< 0.10	< 0.10	934	< 0.50	0.50		9.67	0.174	484	478		< 0.01
9/5/2022	WL_WLCI_SP01	N	< 0.250	2.76	2.60	238	< 0.50	< 0.50	3.24	< 0.20	0.14	< 0.20	< 0.10	2030	1.11	1.04		10.77	0.120	1380	1290		< 0.02
9/5/2022	WL_BFWB_OUT_SP21	N	< 0.250	0.0224	0.0193	218	0.72	0.78	78.4	< 0.10	0.18	0.62	0.62	1980	< 0.50	< 0.50		20.34	0.125	1210	1160	0.151	0.019
9/5/2022	WL_BFWB_OUT_SP21	N																					
9/6/2022	WL_LCI_SP02	N																11.19					
9/6/2022	WL_WLCI_SP01	N																9.68					
9/6/2022	WL_BFWB_OUT_SP21	N															0.019	17.03				0.193	
9/6/2022	WL_BFWB_OUT_SP21	N																					
9/6/2022	WL_BFWB_OUT_SP21	N																					
9/7/2022	WL_LCI_SP02	N																10.62					
9/7/2022	WL_WLCI_SP01	N																11.72					
9/7/2022	WL_BFWB_OUT_SP21	N							77.2									19.58				0.199	
9/7/2022	WL_BFWB_OUT_SP21	N																					
9/8/2022	WL_LCI_SP02	N																9.8					
9/8/2022	WL_WLCI_SP01	N																10.7					
9/8/2022	WL_BFWB_OUT_SP21	N																18.88				0.178	
9/8/2022	WL_BFWB_OUT_SP21	N																					
9/9/2022	WL_LCI_SP02	N																11.41					
9/9/2022	WL_WLCI_SP01	N																13.2					
9/9/2022	WL_BFWB_OUT_SP21	N							74.4									19.81				0.2	
9/9/2022	WL_BFWB_OUT_SP21	N																					
9/10/2022	WL_LCI_SP02	N																11.26					
9/10/2022	WL_WLCI_SP01	N																10.37					
9/10/2022	WL_BFWB_OUT_SP21	N																21.17				0.219	
9/10/2022	WL_BFWB_OUT_SP21	N																					
9/11/2022	WL_LCI_SP02	N																11.64					
9/11/2022	WL_WLCI_SP01	N																11.19					
9/11/2022	WL_BFWB_OUT_SP21	N																21.49				0.17	
9/11/2022	WL_BFWB_OUT_SP21	N																					
9/12/2022	WL_LCI_SP02	N																10.67					
9/12/2022	WL_WLCI_SP01	N																10.66					
9/12/2022	WL_BFWB_OUT_SP21	N																21.49				0.221	
9/12/2022	WL_BFWB_OUT_SP21	N																					
9/13/2022	WL_LCI_SP02	N																10.5					
9/13/2022	WL_WLCI_SP01	N																10.94					
9/13/2022	WL_BFWB_OUT_SP21	N															< 0.010	20.12				0.219	
9/13/2022	WL_BFWB_OUT_SP21	N																					
9/13/2022	WL_WLCI_SP01	N																					
9/14/2022	WL_LCI_SP02	N																10.52					
9/14/2022	WL_WLCI_SP01	N																11.93					
9/14/2022	WL_BFWB_OUT_SP21	N							72.5									20.27				0.215	
9/14/2022	WL_BFWB_OUT_SP21	N																					
9/15/2022	WL_LCI_SP02	N																10.44					
9/15/2022	WL_WLCI_SP01	N																10.75					
9/15/2022	WL_BFWB_OUT_SP21	N																19.7				0.177	
9/15/2022	WL_BFWB_OUT_SP21	N																					
9/16/2022	WL_LCI_SP02	N																9.84					
9/16/2022	WL_WLCI_SP01	N																10.75					
9/16/2022	WL_BFWB_OUT_SP21	N																20.86				0.219	

		CHEMICAL_NAME FRACTION REPORT_RESULT_UNIT	Bromide N mg/l	Cadmium D ug/l	Cadmium T ug/l	Calcium T mg/l	Carbon, Dissolved Organic D mg/l	Carbon, Total Organic T mg/l	Chloride D mg/l	Chromium D ug/l	Chromium T ug/l	Cobalt D ug/l	Cobalt T ug/l	Conductivity, Lab N us/cm	Copper D ug/l	Copper T ug/l	Dimethylselenoxide D ug/l	Dissolved Oxygen, Field N mg/l	Fluoride N mg/l	Hardness, Total or Dissolved CaCO3 D mg/l	Hardness, Total or Dissolved CaCO3 T mg/l	Hydrogen Peroxide N mg/l	Iron D mg/
9/16/2022	WL_BFWB_OUT_SP21	N																					
9/17/2022	WL_LCI_SP02	N																9.97					
9/17/2022	WL_WLCI_SP01	N																9.29					
9/17/2022	WL_BFWB_OUT_SP21	N																20.13				0.116	
9/18/2022	WL_LCI_SP02	N																9.9					
9/18/2022	WL_WLCI_SP01	N																10.5					
9/18/2022	WL_BFWB_OUT_SP21	N																20.48				0.167	
9/18/2022	WL_BFWB_OUT_SP21	N																					
9/19/2022	WL_LCI_SP02	N		0.472	0.511	136				0.12	0.14	< 0.10	< 0.10		< 0.50	< 0.50		9.74		567	590		< 0.01
9/19/2022	WL_WLCI_SP01	N		3.01	3.07	293				< 0.20	< 0.20	< 0.20	< 0.20		1.17	1.24		10.93		1470	1530		< 0.02
9/19/2022	WL_BFWB_OUT_SP21	N	< 0.250	0.0250	0.0276	237	0.64	1.30	73.3	0.10	0.13	0.66	0.67	1710	< 0.50	< 0.50		21.31	0.179	1190	1200	0.174	0.022
9/20/2022	WL_LCI_SP02	N																10.59					
9/20/2022	WL_WLCI_SP01	N																11.02					
9/20/2022	WL_BFWB_OUT_SP21	N															0.020	20.48				0.212	
9/20/2022	WL_BFWB_OUT_SP21	N																					
9/21/2022	WL_LCI_SP02	N																10.94					
9/21/2022	WL_WLCI_SP01	N																10.76					
9/21/2022	WL_BFWB_OUT_SP21	N																20.9				0.202	
9/21/2022	WL_BFWB_OUT_SP21	N																					
9/22/2022	WL_LCI_SP02	N																10.92					
9/22/2022	WL_WLCI_SP01	N																11.16					
9/22/2022	WL_BFWB_OUT_SP21	N																20.99				0.244	
9/22/2022	WL_BFWB_OUT_SP21	N																					
9/23/2022	WL_LCI_SP02	N																10.59					
9/23/2022	WL_WLCI_SP01	N																10.95					
9/23/2022	WL_BFWB_OUT_SP21	N																21.18				0.251	
9/23/2022	WL_BFWB_OUT_SP21	N																					
9/24/2022	WL_LCI_SP02	N																10.41					
9/24/2022	WL_WLCI_SP01	N																11.75					
9/24/2022	WL_BFWB_OUT_SP21	N																20.85				0.218	
9/24/2022	WL_BFWB_OUT_SP21	N																					
9/25/2022	WL_LCI_SP02	N																10.68					
9/25/2022	WL_WLCI_SP01	N																12.07					
9/25/2022	WL_BFWB_OUT_SP21	N																21.07				0.205	
9/25/2022	WL_BFWB_OUT_SP21	N																					
9/26/2022	WL_LCI_SP02	N																10.5					
9/26/2022	WL_WLCI_SP01	N																10.9					
9/26/2022	WL_BFWB_OUT_SP21	N																20.63				0.195	
9/26/2022	WL_BFWB_OUT_SP21	N																					
9/27/2022	WL_LCI_SP02	N																10.52					
9/27/2022	WL_WLCI_SP01	N																11.02					
9/27/2022	WL_BFWB_OUT_SP21	N															0.011	20.57				0.209	
9/27/2022	WL_BFWB_OUT_SP21	N																					
9/28/2022	WL_LCI_SP02	N																10.5					
9/28/2022	WL_WLCI_SP01	N																10.84					
9/28/2022	WL_BFWB_OUT_SP21	N																19.74				0.205	
9/28/2022	WL_BFWB_OUT_SP21	N																					
9/29/2022	WL_LCI_SP02	N																10.09					
9/29/2022	WL_WLCI_SP01	N																10.65					
9/29/2022	WL_BFWB_OUT_SP21	N																19.57				0.205	
9/29/2022	WL_BFWB_OUT_SP21	N																					
9/30/2022	WL_LCI_SP02	N																9.55					
9/30/2022	WL_WLCI_SP01	N																10.72					
9/30/2022	WL_BFWB_OUT_SP21	N																18.59				0.127	
9/30/2022	WL_BFWB_OUT_SP21	N																					
10/1/2022	WL_LCI_SP02	N																10.77					
10/1/2022	WL_WLCI_SP01	N																10.94					
10/1/2022	WL_BFWB_OUT_SP21	N																20.24				0.223	
10/1/2022	WL_BFWB_OUT_SP21	N																					
10/2/2022	WL_LCI_SP02	N																10.88					
10/2/2022	WL_WLCI_SP01	N																10.25					
10/2/2022	WL_BFWB_OUT_SP21	N																19.97				0.217	
10/2/2022	WL_BFWB_OUT_SP21	N																					
10/2/2022	WL_BFWB_OUT_SP21	N																					
10/3/2022	WL_LCI_SP02	N	< 0.050	0.471	0.476	132	< 0.50	< 0.50	8.78	0.19	0.11	< 0.10	< 0.10	918	< 0.50	< 0.50		10.3	0.211	517	582		< 0.01

		CHEMICAL_NAME FRACTION REPORT_RESULT_UNIT	Bromide N mg/l	Cadmium D ug/l	Cadmium T ug/l	Calcium T mg/l	Carbon, Dissolved Organic D mg/l	Carbon, Total Organic T mg/l	Chloride D mg/l	Chromium D ug/l	Chromium T ug/l	Cobalt D ug/l	Cobalt T ug/l	Conductivity, Lab N us/cm	Copper D ug/l	Copper T ug/l	Dimethylselenoxide D ug/l	Dissolved Oxygen, Field N mg/l	Fluoride N mg/l	Hardness, Total or Dissolved CaCO3 D mg/l	Hardness, Total or Dissolved CaCO3 T mg/l	Hydrogen Peroxide N mg/l	Iron D mg/
10/3/2022	WL_WLCI_SP01	N	< 0.250	2.86	2.94	279	1.26	1.15	3.60	< 0.20	< 0.20	< 0.20	< 0.20	2030	1.22	1.22		10.71	0.131	1460	1520		< 0.02
10/3/2022	WL_BFWB_OUT_SP21	N	< 0.250	< 0.0200	0.0169	239	1.20	1.22	75.4	< 0.10	< 0.20	0.65	0.82	1650	< 0.50	< 1.00		19.57	0.160	1210	1260	0.182	0.030
10/3/2022	WL_BFWB_OUT_SP21	N																					
10/4/2022	WL_LCI_SP02	N																10.13					
10/4/2022	WL_WLCI_SP01	N																10.15					
10/4/2022	WL_BFWB_OUT_SP21	N															0.017	19.61				0.198	
10/4/2022	WL_BFWB_OUT_SP21	N																					
10/5/2022	WL_LCI_SP02	N																9.67					
10/5/2022	WL_WLCI_SP01	N																9.91					
10/5/2022	WL_BFWB_OUT_SP21	N																19.4				0.233	
10/5/2022	WL_BFWB_OUT_SP21	N																					
10/6/2022	WL_LCI_SP02	N																9.4					
10/6/2022	WL_WLCI_SP01	N																10.42					
10/6/2022	WL_BFWB_OUT_SP21	N																18.4				0.188	
10/6/2022	WL_BFWB_OUT_SP21	N																					
10/7/2022	WL_LCI_SP02	N																10.34					
10/7/2022	WL_WLCI_SP01	N																11.1					
10/7/2022	WL_BFWB_OUT_SP21	N																19.08				0.17	
10/7/2022	WL_BFWB_OUT_SP21	N																					
10/8/2022	WL_LCI_SP02	N																10.11					
10/8/2022	WL_WLCI_SP01	N																10.01					
10/8/2022	WL_BFWB_OUT_SP21	N																18.74				0.213	
10/8/2022	WL_BFWB_OUT_SP21	N																					
10/9/2022	WL_LCI_SP02	N																10.45					
10/9/2022	WL_WLCI_SP01	N																10.24					
10/9/2022	WL_BFWB_OUT_SP21	N																20.04				0.154	
10/9/2022	WL_BFWB_OUT_SP21	N																					
10/10/2022	WL_LCI_SP02	N																10.5					
10/10/2022	WL_WLCI_SP01	N																13.37					
10/10/2022	WL_BFWB_OUT_SP21	N																18.97				0.196	
10/10/2022	WL_BFWB_OUT_SP21	N																					
10/11/2022	WL_LCI_SP02	N															< 0.010	9.7					
10/11/2022	WL_WLCI_SP01	N															0.021	10.5					
10/11/2022	WL_BFWB_OUT_SP21	N															0.012	19.33				0.186	
10/11/2022	WL_BFWB_OUT_SP21	N																					
10/12/2022	WL_LCI_SP02	N																10.12					
10/12/2022	WL_WLCI_SP01	N																11.09					
10/12/2022	WL_BFWB_OUT_SP21	N																19.9				0.185	
10/12/2022	WL_BFWB_OUT_SP21	N																					
10/13/2022	WL_LCI_SP02	N																10.27					
10/13/2022	WL_WLCI_SP01	N																10.92					
10/13/2022	WL_BFWB_OUT_SP21	N																19.46				0.135	
10/13/2022	WL_BFWB_OUT_SP21	N																					
10/14/2022	WL_LCI_SP02	N																10.31					
10/14/2022	WL_WLCI_SP01	N																11.42					
10/14/2022	WL_BFWB_OUT_SP21	N																19.8				0.195	
10/14/2022	WL_BFWB_OUT_SP21	N																					
10/15/2022	WL_LCI_SP02	N																10.75					
10/15/2022	WL_WLCI_SP01	N																11.1					
10/15/2022	WL_BFWB_OUT_SP21	N																20.26				0.23	
10/15/2022	WL_BFWB_OUT_SP21	N																					
10/16/2022	WL_LCI_SP02	N																10.36					
10/16/2022	WL_WLCI_SP01	N																10.52					
10/16/2022	WL_BFWB_OUT_SP21	N																20.04				0.172	
10/16/2022	WL_BFWB_OUT_SP21	N																					
10/17/2022	WL_LCI_SP02	N		0.422	0.423	114				0.10	0.19	< 0.10	< 0.10		< 0.50	< 0.50		10.56		535	517		< 0.01
10/17/2022	WL_WLCI_SP01	N		2.90	3.05	276				< 0.20	< 0.20	< 0.20	< 0.20		1.14	1.28		11.49		1570	1590		< 0.02
10/17/2022	WL_BFWB_OUT_SP21	N	< 0.250	0.0188	0.0177	202	0.90	1.04	76.7	< 0.10	0.20	0.79	0.81	1670	< 0.50	< 0.50		20.77	0.168	1110	1090	0.205	0.028
10/17/2022	WL_BFWB_OUT_SP21	N																					
10/18/2022	WL_LCI_SP02	N																10.4					
10/18/2022	WL_WLCI_SP01	N																11.03					
10/18/2022	WL_BFWB_OUT_SP21	N															0.012	16.55				0.204	
10/18/2022	WL_BFWB_OUT_SP21	N																					
10/19/2022	WL_LCI_SP02	N																10.73					

		CHEMICAL_NAME FRACTION REPORT_RESULT_UNIT	Bromide N mg/l	Cadmium D ug/l	Cadmium T ug/l	Calcium T mg/l	Carbon, Dissolved Organic D mg/l	Carbon, Total Organic T mg/l	Chloride D mg/l	Chromium D ug/l	Chromium T ug/l	Cobalt D ug/l	Cobalt T ug/l	Conductivity, Lab N us/cm	Copper D ug/l	Copper T ug/l	Dimethylseleneoxide D ug/l	Dissolved Oxygen, Field N mg/l	Fluoride N mg/l	Hardness, Total or Dissolved CaCO3 D mg/l	Hardness, Total or Dissolved CaCO3 T mg/l	Hydrogen Peroxide N mg/l	Iron D mg/
10/19/2022	WL_WLCI_SP01	N																10.58					
10/19/2022	WL_BFWB_OUT_SP21	N																20.54				0.218	
10/19/2022	WL_BFWB_OUT_SP21	N																					
10/20/2022	WL_LCI_SP02	N																10.22					
10/20/2022	WL_WLCI_SP01	N																9.7					
10/20/2022	WL_BFWB_OUT_SP21	N																19.8				0.207	
10/20/2022	WL_BFWB_OUT_SP21	N																					
10/21/2022	WL_LCI_SP02	N																10.16					
10/21/2022	WL_WLCI_SP01	N																10.52					
10/21/2022	WL_BFWB_OUT_SP21	N																19.43				0.2	
10/21/2022	WL_BFWB_OUT_SP21	N																					
10/22/2022	WL_LCI_SP02	N																10.35					
10/22/2022	WL_WLCI_SP01	N																10.62					
10/22/2022	WL_BFWB_OUT_SP21	N																18.99				0.189	
10/22/2022	WL_BFWB_OUT_SP21	N																					
10/23/2022	WL_LCI_SP02	N																9.92					
10/23/2022	WL_WLCI_SP01	N																10.4					
10/23/2022	WL_BFWB_OUT_SP21	N																19.29				0.217	
10/23/2022	WL_BFWB_OUT_SP21	N																					
10/24/2022	WL_LCI_SP02	N																10.28					
10/24/2022	WL_WLCI_SP01	N																11.2					
10/24/2022	WL_BFWB_OUT_SP21	N																19.58				0.19	
10/24/2022	WL_BFWB_OUT_SP21	N																					
10/25/2022	WL_LCI_SP02	N																10.25					
10/25/2022	WL_WLCI_SP01	N																11.3					
10/25/2022	WL_BFWB_OUT_SP21	N															0.022	19.75				0.239	
10/25/2022	WL_BFWB_OUT_SP21	N																					
10/26/2022	WL_LCI_SP02	N																9.91					
10/26/2022	WL_WLCI_SP01	N																10.48					
10/26/2022	WL_BFWB_OUT_SP21	N																10.35				0.176	
10/26/2022	WL_BFWB_OUT_SP21	N																					
10/27/2022	WL_LCI_SP02	N																10.28					
10/27/2022	WL_WLCI_SP01	N																10.5					
10/27/2022	WL_BFWB_OUT_SP21	N																18.07				0.197	
10/27/2022	WL_BFWB_OUT_SP21	N																					
10/27/2022	WL_WLCI_SP01	N																					
10/28/2022	WL_LCI_SP02	N																10.6					
10/28/2022	WL_WLCI_SP01	N																10.5					
10/28/2022	WL_BFWB_OUT_SP21	N																18.7				0.236	
10/28/2022	WL_BFWB_OUT_SP21	N																					
10/29/2022	WL_LCI_SP02	N																10.03					
10/29/2022	WL_WLCI_SP01	N																9.53					
10/29/2022	WL_BFWB_OUT_SP21	N																13.07				0.22	
10/29/2022	WL_BFWB_OUT_SP21	N																					
10/30/2022	WL_LCI_SP02	N																9.93					
10/30/2022	WL_WLCI_SP01	N																9.61					
10/30/2022	WL_BFWB_OUT_SP21	N																18.47				0.205	
10/30/2022	WL_BFWB_OUT_SP21	N																					
10/31/2022	WL_LCI_SP02	N		0.364	0.384	118				0.10	0.11	< 0.10	< 0.10		< 0.50	< 0.50		10.11		507	509		< 0.01
10/31/2022	WL_WLCI_SP01	N		1.40	1.54	286				< 0.20	0.36	< 0.20	< 0.20		1.03	2.32		10.04		1510	1570		< 0.02
10/31/2022	WL_BFWB_OUT_SP21	N	< 0.250	0.0153	0.0134	197	1.08	0.97	78.6	< 0.10	0.16	0.75	0.79	1600	< 0.50	< 0.50		17.79	0.211	1000	1010	0.21	0.012
10/31/2022	WL_BFWB_OUT_SP21	N																					
11/1/2022	WL_LCI_SP02	N																9.84					
11/1/2022	WL_WLCI_SP01	N																10.24					
11/1/2022	WL_BFWB_OUT_SP21	N															0.092	18.6				0.219	
11/1/2022	WL_BFWB_OUT_SP21	N																					
11/2/2022	WL_LCI_SP02	N																10.75					
11/2/2022	WL_WLCI_SP01	N																10.3					
11/2/2022	WL_BFWB_OUT_SP21	N																16.88				0.209	
11/2/2022	WL_BFWB_OUT_SP21	N																					
11/3/2022	WL_LCI_SP02	N																10.48					
11/3/2022	WL_WLCI_SP01	N																10.66					
11/3/2022	WL_BFWB_OUT_SP21	N																18.73				0.234	
11/3/2022	WL_BFWB_OUT_SP21	N																					
11/4/2022	WL_LCI_SP02	N																10.13					
11/4/2022	WL_WLCI_SP01	N																10.63					

		CHEMICAL_NAME FRACTION REPORT_RESULT_UNIT	Bromide N mg/l	Cadmium D ug/l	Cadmium T ug/l	Calcium T mg/l	Carbon, Dissolved Organic D mg/l	Carbon, Total Organic T mg/l	Chloride D mg/l	Chromium D ug/l	Chromium T ug/l	Cobalt D ug/l	Cobalt T ug/l	Conductivity, Lab N us/cm	Copper D ug/l	Copper T ug/l	Dimethylselenoxide D ug/l	Dissolved Oxygen, Field N mg/l	Fluoride N mg/l	Hardness, Total or Dissolved CaCO3 D mg/l	Hardness, Total or Dissolved CaCO3 T mg/l	Hydrogen Peroxide N mg/l	Iron D mg/
11/4/2022	WL_BFWB_OUT_SP21	N																18.53				0.165	
11/4/2022	WL_BFWB_OUT_SP21	N																					
11/5/2022	WL_LCI_SP02	N																10.43					
11/5/2022	WL_WLCI_SP01	N																11.21					
11/5/2022	WL_BFWB_OUT_SP21	N																19.7				0.2	
11/5/2022	WL_BFWB_OUT_SP21	N																					
11/6/2022	WL_LCI_SP02	N																11.59					
11/6/2022	WL_WLCI_SP01	N																11.52					
11/6/2022	WL_BFWB_OUT_SP21	N																18.7				0.23	
11/6/2022	WL_BFWB_OUT_SP21	N																					
11/7/2022	WL_LCI_SP02	N																12.08					
11/7/2022	WL_WLCI_SP01	N																11.61					
11/7/2022	WL_BFWB_OUT_SP21	N																18.05				0.246	
11/7/2022	WL_BFWB_OUT_SP21	N																					
11/8/2022	WL_LCI_SP02	N																11.73					
11/8/2022	WL_WLCI_SP01	N																11.77					
11/8/2022	WL_BFWB_OUT_SP21	N															0.022	19.91				0.234	
11/8/2022	WL_BFWB_OUT_SP21	N																					
11/9/2022	WL_LCI_SP02	N																11.92					
11/9/2022	WL_WLCI_SP01	N																11.75					
11/9/2022	WL_BFWB_OUT_SP21	N																21.49				0.261	
11/9/2022	WL_BFWB_OUT_SP21	N																					
11/10/2022	WL_LCI_SP02	N																11.79					
11/10/2022	WL_WLCI_SP01	N																12.13					
11/10/2022	WL_BFWB_OUT_SP21	N																21.75				0.251	
11/10/2022	WL_BFWB_OUT_SP21	N																					
11/11/2022	WL_LCI_SP02	N																11.73					
11/11/2022	WL_WLCI_SP01	N																11.72					
11/11/2022	WL_BFWB_OUT_SP21	N																22.18				0.246	
11/11/2022	WL_BFWB_OUT_SP21	N																					
11/12/2022	WL_LCI_SP02	N																11.46					
11/12/2022	WL_WLCI_SP01	N																12.44					
11/12/2022	WL_BFWB_OUT_SP21	N																19.23				0.249	
11/12/2022	WL_BFWB_OUT_SP21	N																					
11/13/2022	WL_LCI_SP02	N																12.22					
11/13/2022	WL_WLCI_SP01	N																11.91					
11/13/2022	WL_BFWB_OUT_SP21	N																21.21				0.242	
11/13/2022	WL_BFWB_OUT_SP21	N																					
11/14/2022	WL_BFWB_OUT_SP21	N																					
11/14/2022	WL_LCI_SP02	N	< 0.050	0.353	0.360	128	< 0.50	< 0.50	9.10	< 0.10	0.15	< 0.10	< 0.10	932	< 0.50	< 0.50		12.3	0.177	564	562		< 0.01
11/14/2022	WL_WLCI_SP01	N	< 0.250	0.679	0.686	286	0.98	0.94	4.01	< 0.20	< 0.20	< 0.20	< 0.20	2050	< 1.00	< 1.00		12.01	0.188	1550	1560		< 0.02
11/14/2022	WL_BFWB_OUT_SP21	N	< 0.250	< 0.0150	< 0.0150	198	0.93	0.99	76.7	< 0.10	0.12	0.71	0.74	1600	< 0.50	< 0.50		21.04	0.185	1060	1010	0.238	0.021
11/14/2022	WL_BFWB_OUT_SP21	N																					
11/15/2022	WL_LCI_SP02	N																11.16					
11/15/2022	WL_WLCI_SP01	N																11.41					
11/15/2022	WL_BFWB_OUT_SP21	N															0.013	18.7				0.266	
11/15/2022	WL_BFWB_OUT_SP21	N																					
11/15/2022	WL_BFWB_OUT_SP21	N																18.74					
11/16/2022	WL_LCI_SP02	N																11.15					
11/16/2022	WL_WLCI_SP01	N																11.01					
11/16/2022	WL_BFWB_OUT_SP21	N																10.95				0.253	
11/16/2022	WL_BFWB_OUT_SP21	N																					
11/17/2022	WL_LCI_SP02	N																11.75					
11/17/2022	WL_WLCI_SP01	N																11.3					
11/17/2022	WL_BFWB_OUT_SP21	N																19.42				0.389	
11/17/2022	WL_BFWB_OUT_SP21	N																					
11/18/2022	WL_LCI_SP02	N																11.59					
11/18/2022	WL_WLCI_SP01	N																11.14					
11/18/2022	WL_BFWB_OUT_SP21	N																19.34				0.308	
11/18/2022	WL_BFWB_OUT_SP21	N																					
11/19/2022	WL_LCI_SP02	N																11.56					
11/19/2022	WL_WLCI_SP01	N																12.25					
11/19/2022	WL_BFWB_OUT_SP21	N																20.72				0.291	
11/19/2022	WL_BFWB_OUT_SP21	N																					
11/20/2022	WL_LCI_SP02	N																11.19					
11/20/2022	WL_WLCI_SP01	N																11.52					

		CHEMICAL_NAME FRACTION REPORT_RESULT_UNIT	Bromide N mg/l	Cadmium D ug/l	Cadmium T ug/l	Calcium T mg/l	Carbon, Dissolved Organic D mg/l	Carbon, Total Organic T mg/l	Chloride D mg/l	Chromium D ug/l	Chromium T ug/l	Cobalt D ug/l	Cobalt T ug/l	Conductivity, Lab N us/cm	Copper D ug/l	Copper T ug/l	Dimethylselenoxide D ug/l	Dissolved Oxygen, Field N mg/l	Fluoride N mg/l	Hardness, Total or Dissolved CaCO3 D mg/l	Hardness, Total or Dissolved CaCO3 T mg/l	Hydrogen Peroxide N mg/l	Iron D mg/
11/20/2022	WL_BFWB_OUT_SP21	N																20.32				0.236	
11/20/2022	WL_BFWB_OUT_SP21	N																					
11/21/2022	WL_LCI_SP02	N																11.27					
11/21/2022	WL_WLCI_SP01	N																11.43					
11/21/2022	WL_BFWB_OUT_SP21	N																20.591				0.278	
11/21/2022	WL_BFWB_OUT_SP21	N																					
11/22/2022	WL_LCI_SP02	N																11.15					
11/22/2022	WL_WLCI_SP01	N																11.42					
11/22/2022	WL_BFWB_OUT_SP21	N															0.023	20.43				0.273	
11/22/2022	WL_BFWB_OUT_SP21	N																					
11/23/2022	WL_LCI_SP02	N																10.57					
11/23/2022	WL_WLCI_SP01	N																10.87					
11/23/2022	WL_BFWB_OUT_SP21	N																19.23				0.241	
11/23/2022	WL_BFWB_OUT_SP21	N																					
11/24/2022	WL_LCI_SP02	N																10.78					
11/24/2022	WL_WLCI_SP01	N																11.72					
11/24/2022	WL_BFWB_OUT_SP21	N																20.22				0.266	
11/24/2022	WL_BFWB_OUT_SP21	N																					
11/25/2022	WL_LCI_SP02	N																10.53					
11/25/2022	WL_WLCI_SP01	N																10.32					
11/25/2022	WL_BFWB_OUT_SP21	N																19.05				0.243	
11/25/2022	WL_BFWB_OUT_SP21	N																					
11/26/2022	WL_LCI_SP02	N																8.77					
11/26/2022	WL_WLCI_SP01	N																10.47					
11/26/2022	WL_BFWB_OUT_SP21	N																19.34				0.284	
11/26/2022	WL_BFWB_OUT_SP21	N																					
11/27/2022	WL_LCI_SP02	N																9.81					
11/27/2022	WL_WLCI_SP01	N																9.53					
11/27/2022	WL_BFWB_OUT_SP21	N																18.82				0.303	
11/27/2022	WL_BFWB_OUT_SP21	N																					
11/28/2022	WL_LCI_SP02	N		0.314	0.341	122				< 0.10	< 0.10	< 0.10	< 0.10		< 0.50	< 0.50		12.28		549	540		< 0.01
11/28/2022	WL_WLCI_SP01	N		0.472	0.493	275				< 0.20	< 0.20	< 0.20	< 0.20		< 1.00	< 1.00		11.51		1590	1530		< 0.02
11/28/2022	WL_BFWB_OUT_SP21	N	< 0.250	< 0.0100	< 0.0150	206	0.78	0.80	97.3	< 0.10	< 0.10	0.66	0.71	1620	< 0.50	< 0.50		22.21	0.163	1010	1060	0.286	0.027
11/28/2022	WL_BFWB_OUT_SP21	N																					
11/29/2022	WL_LCI_SP02	N																12.44					
11/29/2022	WL_WLCI_SP01	N																11.53					
11/29/2022	WL_BFWB_OUT_SP21	N															0.021	22.65				0.28	
11/29/2022	WL_BFWB_OUT_SP21	N																					
11/30/2022	WL_LCI_SP02	N																11.92					
11/30/2022	WL_WLCI_SP01	N																11.34					
11/30/2022	WL_BFWB_OUT_SP21	N																22.26				0.273	
11/30/2022	WL_BFWB_OUT_SP21	N																					
12/1/2022	WL_LCI_SP02	N																12.53					
12/1/2022	WL_WLCI_SP01	N																11.47					
12/1/2022	WL_BFWB_OUT_SP21	N																21.28				0.288	
12/1/2022	WL_BFWB_OUT_SP21	N																					
12/2/2022	WL_LCI_SP02	N																13.1					
12/2/2022	WL_WLCI_SP01	N																12.2					
12/2/2022	WL_BFWB_OUT_SP21	N																19.84				0.29	
12/2/2022	WL_BFWB_OUT_SP21	N																					
12/3/2022	WL_LCI_SP02	N																12.09					
12/3/2022	WL_WLCI_SP01	N																11.73					
12/3/2022	WL_BFWB_OUT_SP21	N																23.22				0.265	
12/3/2022	WL_BFWB_OUT_SP21	N																					
12/4/2022	WL_LCI_SP02	N																13.65					
12/4/2022	WL_WLCI_SP01	N																13.05					
12/4/2022	WL_BFWB_OUT_SP21	N																22.72				0.284	
12/4/2022	WL_BFWB_OUT_SP21	N																					
12/5/2022	WL_LCI_SP02	N																12.34					
12/5/2022	WL_WLCI_SP01	N																11.57					
12/5/2022	WL_BFWB_OUT_SP21	N																20.02				0.218	
12/5/2022	WL_BFWB_OUT_SP21	N																					
12/6/2022	WL_LCI_SP02	N																11.99					
12/6/2022	WL_WLCI_SP01	N																11.71					
12/6/2022	WL_BFWB_OUT_SP21	N															0.033	22.46				0.26	
12/6/2022	WL_BFWB_OUT_SP21	N																					

		CHEMICAL_NAME FRACTION REPORT_RESULT_UNIT	Bromide N mg/l	Cadmium D ug/l	Cadmium T ug/l	Calcium T mg/l	Carbon, Dissolved Organic D mg/l	Carbon, Total Organic T mg/l	Chloride D mg/l	Chromium D ug/l	Chromium T ug/l	Cobalt D ug/l	Cobalt T ug/l	Conductivity, Lab N us/cm	Copper D ug/l	Copper T ug/l	Dimethylselenoxide D ug/l	Dissolved Oxygen, Field N mg/l	Fluoride N mg/l	Hardness, Total or Dissolved CaCO3 D mg/l	Hardness, Total or Dissolved CaCO3 T mg/l	Hydrogen Peroxide N mg/l	Iron D mg/
12/7/2022	WL_LCI_SP02	N																12.77					
12/7/2022	WL_WLCI_SP01	N																11.43					
12/7/2022	WL_BFWB_OUT_SP21	N																22.39				0.289	
12/7/2022	WL_BFWB_OUT_SP21	N																					
12/8/2022	WL_LCI_SP02	N																11.11					
12/8/2022	WL_WLCI_SP01	N																10.53					
12/8/2022	WL_BFWB_OUT_SP21	N																20.44				0.278	
12/8/2022	WL_BFWB_OUT_SP21	N																					
12/9/2022	WL_LCI_SP02	N																11.49					
12/9/2022	WL_WLCI_SP01	N																10.67					
12/9/2022	WL_BFWB_OUT_SP21	N																20.8				0.282	
12/9/2022	WL_BFWB_OUT_SP21	N																					
12/10/2022	WL_LCI_SP02	N																10.79					
12/10/2022	WL_WLCI_SP01	N																10.87					
12/10/2022	WL_BFWB_OUT_SP21	N																21.26				0.222	
12/10/2022	WL_BFWB_OUT_SP21	N																					
12/11/2022	WL_LCI_SP02	N																11.11					
12/11/2022	WL_WLCI_SP01	N																11.08					
12/11/2022	WL_BFWB_OUT_SP21	N																21.18				0.257	
12/11/2022	WL_BFWB_OUT_SP21	N																					
12/12/2022	WL_LCI_SP02	N	< 0.250	0.301	0.288	127	< 0.50	< 0.50	10.3	0.12	0.12	< 0.10	< 0.10	1030	< 0.50	64.7		11.04	0.212	552	547		< 0.01
12/12/2022	WL_WLCI_SP01	N	< 0.250	0.369	0.338	276	0.83	0.86	4.29	< 0.20	< 0.20	< 0.20	< 0.20	2200	< 1.00	< 1.00		10.38	0.236	1500	1540		< 0.02
12/12/2022	WL_BFWB_OUT_SP21	N	< 0.250	< 0.0100	< 0.0100	187	0.63	0.75	77.4	0.17	0.10	0.72	0.67	1660	< 0.50	0.52		21.16	0.230	969	961	0.239	0.054
12/12/2022	WL_BFWB_OUT_SP21	N																					
12/13/2022	WL_LCI_SP02	N																11.04					
12/13/2022	WL_WLCI_SP01	N																10.57					
12/13/2022	WL_BFWB_OUT_SP21	N															0.030	19.95				0.223	
12/13/2022	WL_BFWB_OUT_SP21	N																					
12/14/2022	WL_LCI_SP02	N																11.07					
12/14/2022	WL_WLCI_SP01	N																11.08					
12/14/2022	WL_BFWB_OUT_SP21	N																19.91				0.311	
12/14/2022	WL_BFWB_OUT_SP21	N																					
12/15/2022	WL_LCI_SP02	N																11.05					
12/15/2022	WL_WLCI_SP01	N																10.91					
12/15/2022	WL_BFWB_OUT_SP21	N																20.38				0.318	
12/15/2022	WL_BFWB_OUT_SP21	N																					
12/16/2022	WL_LCI_SP02	N																12.61					
12/16/2022	WL_WLCI_SP01	N																12.33					
12/16/2022	WL_BFWB_OUT_SP21	N																21.61				0.337	
12/16/2022	WL_BFWB_OUT_SP21	N																					
12/17/2022	WL_LCI_SP02	N																12.19					
12/17/2022	WL_WLCI_SP01	N																11.8					
12/17/2022	WL_BFWB_OUT_SP21	N																20.45				0.335	
12/17/2022	WL_BFWB_OUT_SP21	N																					
12/18/2022	WL_LCI_SP02	N																11.33					
12/18/2022	WL_WLCI_SP01	N																12.38					
12/18/2022	WL_BFWB_OUT_SP21	N																20.06				0.361	
12/18/2022	WL_BFWB_OUT_SP21	N																					
12/19/2022	WL_LCI_SP02	N																12.68					
12/19/2022	WL_WLCI_SP01	N																11.69					
12/19/2022	WL_BFWB_OUT_SP21	N																21.82				0.353	
12/19/2022	WL_BFWB_OUT_SP21	N																					
12/20/2022	WL_LCI_SP02	N																12.39					
12/20/2022	WL_WLCI_SP01	N																12.28					
12/20/2022	WL_BFWB_OUT_SP21	N															0.011	22.26				0.359	
12/20/2022	WL_BFWB_OUT_SP21	N																					
12/21/2022	WL_LCI_SP02	N																12.57					
12/21/2022	WL_WLCI_SP01	N																11.49					
12/21/2022	WL_BFWB_OUT_SP21	N																23.3				0.356	
12/21/2022	WL_BFWB_OUT_SP21	N																					
12/22/2022	WL_LCI_SP02	N																12.33					
12/22/2022	WL_WLCI_SP01	N																12.02					
12/22/2022	WL_BFWB_OUT_SP21	N																22.58				0.352	
12/22/2022	WL_BFWB_OUT_SP21	N																					
12/23/2022	WL_LCI_SP02	N																12					
12/23/2022	WL_WLCI_SP01	N																11.7					

		CHEMICAL_NAME FRACTION REPORT_RESULT_UNIT	Bromide N mg/l	Cadmium D ug/l	Cadmium T ug/l	Calcium T mg/l	Carbon, Dissolved Organic D mg/l	Carbon, Total Organic T mg/l	Chloride D mg/l	Chromium D ug/l	Chromium T ug/l	Cobalt D ug/l	Cobalt T ug/l	Conductivity, Lab N us/cm	Copper D ug/l	Copper T ug/l	Dimethylseleneoxide D ug/l	Dissolved Oxygen, Field N mg/l	Fluoride N mg/l	Hardness, Total or Dissolved CaCO3 D mg/l	Hardness, Total or Dissolved CaCO3 T mg/l	Hydrogen Peroxide N mg/l	Iron D mg/
12/23/2022	WL_BFWB_OUT_SP21	N																22.1				0.3	
12/23/2022	WL_BFWB_OUT_SP21	N																22.08					
12/24/2022	WL_BFWB_OUT_SP21	N																22.98				0.27	
12/24/2022	WL_BFWB_OUT_SP21	N																					
12/24/2022	WL_LCI_SP02	N																12.59					
12/24/2022	WL_WLCI_SP01	N																12.26					
12/25/2022	WL_LCI_SP02	N																12.2					
12/25/2022	WL_WLCI_SP01	N																12.03					
12/25/2022	WL_BFWB_OUT_SP21	N																21.83				0.289	
12/25/2022	WL_BFWB_OUT_SP21	N																					
12/26/2022	WL_LCI_SP02	N																12.39					
12/26/2022	WL_WLCI_SP01	N																12.05					
12/26/2022	WL_BFWB_OUT_SP21	N															0.047	22.37				0.295	
12/26/2022	WL_BFWB_OUT_SP21	N																					
12/27/2022	WL_LCI_SP02	N		0.289	0.327	133				0.17	0.15	< 0.10	< 0.10		< 0.50	< 0.50		12.03					< 0.01
12/27/2022	WL_WLCI_SP01	N		0.215	0.256	302				< 0.20	< 0.20	< 0.20	< 0.20		< 1.00	< 1.00		11.5					< 0.02
12/27/2022	WL_BFWB_OUT_SP21	N	< 0.250	< 0.0100	< 0.0100	201	0.65	0.69	76.4	< 0.10	< 0.10	0.66	0.69	1630	< 0.50	< 0.50		20.79	0.255	984	1020	0.296	0.034
12/27/2022	WL_BFWB_OUT_SP21	N																					
12/28/2022	WL_LCI_SP02	N																11.08					
12/28/2022	WL_WLCI_SP01	N																10.97					
12/28/2022	WL_BFWB_OUT_SP21	N																21.37				0.3	
12/28/2022	WL_BFWB_OUT_SP21	N																					
12/29/2022	WL_LCI_SP02	N																11.72					
12/29/2022	WL_WLCI_SP01	N																11.56					
12/29/2022	WL_BFWB_OUT_SP21	N																20.61				0.272	
12/29/2022	WL_BFWB_OUT_SP21	N																					
12/30/2022	WL_LCI_SP02	N																11.68					
12/30/2022	WL_WLCI_SP01	N																11.43					
12/30/2022	WL_BFWB_OUT_SP21	N																21.57				0.284	
12/30/2022	WL_BFWB_OUT_SP21	N																					
12/31/2022	WL_LCI_SP02	N																12.07					
12/31/2022	WL_WLCI_SP01	N																11.89					
12/31/2022	WL_BFWB_OUT_SP21	N																24.64				0.271	
12/31/2022	WL_BFWB_OUT_SP21	N																					
1/1/2023	WL_LCI_SP02	N																11.34					
1/1/2023	WL_WLCI_SP01	N																12.48					
1/1/2023	WL_BFWB_OUT_SP21	N																18.93				0.275	
1/1/2023	WL_BFWB_OUT_SP21	N																					

			Iron	Lead	Lead	Lithium	Lithium	Magnesium	Manganese	Manganese	Mercury	Mercury	MeSe(IV) – methylseleninic acid CH3SeO2H	Methaneselenonic Acid	Molybdenum	Molybdenum	Nickel	Nickel	Nitrate Nitrogen (NO3), As N	Nitrite Nitrogen (NO2), As N	Nitrogen, Ammonia (As N)
		CHEMICAL_NAME	T	D	T	D	T	T	D	T	D	T	D	D	D	T	D	T	N	N	T
		FRACTION																			
		REPORT_RESULT_UNIT	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	ug/l	ug/l	ug/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l
SAMPLE_DATE	SYS_LOC_CODE	SAMPLE_TYPE_CODE	REPORT_RESULT_TEXT	REPORT_RESULT_TEXT	REPORT_RESULT_TEXT	REPORT_RESULT_TEXT	REPORT_RESULT_TEXT	REPORT_RESULT_TEXT	REPORT_RESULT_TEXT	REPORT_RESULT_TEXT	REPORT_RESULT_TEXT	REPORT_RESULT_TEXT	REPORT_RESULT_TEXT	REPORT_RESULT_TEXT	REPORT_RESULT_TEXT	REPORT_RESULT_TEXT	REPORT_RESULT_TEXT	REPORT_RESULT_TEXT	REPORT_RESULT_TEXT	REPORT_RESULT_TEXT	REPORT_RESULT_TEXT
1/1/2022	WL_LCI_SP02	N																			
1/1/2022	WL_WLCI_SP01	N																			
1/1/2022	WL_BFWB_OUT_SP21	N											< 0.010	0.366					< 0.23		
1/1/2022	WL_BFWB_OUT_SP21	N																			
1/1/2022	WL_WLCI_SP01	N																			
1/1/2022	WL_LCI_SP02	N																	16.4		
1/1/2022	WL_WLCI_SP01	N																	13.52		
1/2/2022	WL_LCI_SP02	N																	17.46		
1/2/2022	WL_WLCI_SP01	N																			
1/2/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
1/2/2022	WL_BFWB_OUT_SP21	N																			
1/2/2022	WL_LCI_SP02	N																	17.46		
1/2/2022	WL_WLCI_SP01	N																	15.54		
1/3/2022	WL_LCI_SP02	N											< 0.010	< 0.010					18.16		
1/3/2022	WL_WLCI_SP01	N											< 0.010	< 0.010					15.44		
1/3/2022	WL_BFWB_OUT_SP21	N											< 0.010	0.485					< 0.23		
1/3/2022	WL_BFWB_OUT_SP21	N																			
1/3/2022	WL_BFWB_OUT_SP21	N																			
1/4/2022	WL_BFWB_OUT_SP21	N																			
1/4/2022	WL_BFWB_OUT_SP21	N																			
1/4/2022	WL_LCI_SP02	N																	18.22		
1/4/2022	WL_WLCI_SP01	N																	15.06		
1/4/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
1/4/2022	WL_BFWB_OUT_SP21	N																			
1/5/2022	WL_LCI_SP02	N																	18.28		
1/5/2022	WL_WLCI_SP01	N																	15.06		
1/5/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
1/5/2022	WL_BFWB_OUT_SP21	N																			
1/6/2022	WL_LCI_SP02	N																	17.32		
1/6/2022	WL_WLCI_SP01	N																	14.3		
1/6/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
1/6/2022	WL_BFWB_OUT_SP21	N																			
1/6/2022	WL_BFWB_OUT_SP21	N																			
1/6/2022	WL_BFWB_OUT_SP21	N																			
1/6/2022	WL_BFWB_OUT_SP21	N																			
1/6/2022	WL_BFWB_OUT_SP21	N																			
1/7/2022	WL_LCI_SP02	N																	16.64		
1/7/2022	WL_WLCI_SP01	N																	13.56		
1/7/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
1/7/2022	WL_BFWB_OUT_SP21	N																			
1/8/2022	WL_LCI_SP02	N																	16.74		
1/8/2022	WL_WLCI_SP01	N																	13.94		
1/8/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
1/8/2022	WL_BFWB_OUT_SP21	N																			
1/9/2022	WL_LCI_SP02	N																	17.14		
1/9/2022	WL_WLCI_SP01	N																	15.08		
1/9/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
1/9/2022	WL_BFWB_OUT_SP21	N																			
1/10/2022	WL_LCI_SP02	N	< 0.010	< 0.050	< 0.050	0.0776	0.0699	65.6	< 0.00010	< 0.00010	< 0.0050	< 0.00050			0.00212	0.00210	11.3	11.3	17.8 18.3	< 0.0050	< 0.0050
1/10/2022	WL_WLCI_SP01	N	< 0.020	< 0.100	< 0.100	0.0361	0.0366	191	< 0.00020	< 0.00020	0.0074	0.00094			0.00431	0.00428	16.6	16.6	14.84 15.4	< 0.0050	< 0.0050
1/10/2022	WL_BFWB_OUT_SP21	N	0.272	< 0.050	< 0.050	0.0580	0.0537	118	0.153	0.153	< 0.0050	< 0.00050			0.0138	0.0139	6.27	6.18	< 0.23 0.0716	0.0193	< 0.0050
1/10/2022	WL_BFWB_OUT_SP21	N																			
1/10/2022	WL_BFWB_OUT_SP21	N																			
1/11/2022	WL_LCI_SP02	N																	18.76		
1/11/2022	WL_WLCI_SP01	N																	15.7		
1/11/2022	WL_BFWB_OUT_SP21	N											< 0.010	0.373					< 0.23		
1/12/2022	WL_LCI_SP02	N																	18.68		
1/12/2022	WL_WLCI_SP01	N																	15.34		
1/12/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
1/12/2022	WL_BFWB_OUT_SP21	N																			
1/13/2022	WL_LCI_SP02	N																	18.46		
1/13/2022	WL_WLCI_SP01	N																	15.14		

		CHEMICAL_NAME FRACTION REPORT_RESULT_UNIT	Iron T mg/l	Lead D ug/l	Lead T ug/l	Lithium D mg/l	Lithium T mg/l	Magnesium T mg/l	Manganese D mg/l	Manganese T mg/l	Mercury D ug/l	Mercury T ug/l	MeSe(IV) – methylseleninic acid CH3SeO2H D ug/l	Methaneselenonic Acid D ug/l	Molybdenum D mg/l	Molybdenum T mg/l	Nickel D ug/l	Nickel T ug/l	Nitrate Nitrogen (NO3), As N N mg/l	Nitrite Nitrogen (NO2), As N N mg/l	Nitrogen, Ammonia (As N) T mg/l
1/13/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
1/13/2022	WL_BFWB_OUT_SP21	N																			
1/14/2022	WL_LCI_SP02	N																	18.82		
1/14/2022	WL_WLCI_SP01	N																	15.2		
1/14/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
1/14/2022	WL_BFWB_OUT_SP21	N																			
1/15/2022	WL_LCI_SP02	N																	18.9		
1/15/2022	WL_WLCI_SP01	N																	15.46		
1/15/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
1/15/2022	WL_BFWB_OUT_SP21	N																			
1/16/2022	WL_LCI_SP02	N																	18.62		
1/16/2022	WL_WLCI_SP01	N																	15.28		
1/16/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
1/16/2022	WL_BFWB_OUT_SP21	N																			
1/17/2022	WL_LCI_SP02	N																	19.04		
1/17/2022	WL_WLCI_SP01	N																	15.12		
1/17/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
1/17/2022	WL_BFWB_OUT_SP21	N																			
1/18/2022	WL_LCI_SP02	N																	19.28		
1/18/2022	WL_WLCI_SP01	N																	15.22		
1/18/2022	WL_BFWB_OUT_SP21	N											< 0.010	0.351					< 0.23		
1/18/2022	WL_BFWB_OUT_SP21	N																			
1/19/2022	WL_LCI_SP02	N																	19.12		
1/19/2022	WL_WLCI_SP01	N																	15.8		
1/19/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
1/19/2022	WL_BFWB_OUT_SP21	N																			
1/20/2022	WL_LCI_SP02	N																	18.5		
1/20/2022	WL_WLCI_SP01	N																	15.06		
1/20/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
1/20/2022	WL_BFWB_OUT_SP21	N																			
1/21/2022	WL_LCI_SP02	N																	18.96		
1/21/2022	WL_WLCI_SP01	N																	15.34		
1/21/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
1/21/2022	WL_BFWB_OUT_SP21	N																			
1/22/2022	WL_LCI_SP02	N																	18.96		
1/22/2022	WL_WLCI_SP01	N																	15.46		
1/22/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
1/22/2022	WL_BFWB_OUT_SP21	N																			
1/23/2022	WL_LCI_SP02	N																	19.12		
1/23/2022	WL_WLCI_SP01	N																	15.5		
1/23/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
1/23/2022	WL_BFWB_OUT_SP21	N																			
1/24/2022	WL_LCI_SP02	N	< 0.010	< 0.050	0.093	0.0763	0.0740	64.8	< 0.00010	0.00011					0.00216	0.00208	11.6	11.5	19.18		
1/24/2022	WL_WLCI_SP01	N	< 0.020	< 0.050	< 0.100	0.0363	0.0331	198	< 0.00010	< 0.00020					0.00444	0.00441	16.1	17.2	15.46		
1/24/2022	WL_BFWB_OUT_SP21	N	0.267	< 0.050	< 0.050	0.0610	0.0576	119	0.140	0.149	< 0.0050	< 0.00050			0.0152	0.0143	7.34	7.48	< 0.23 0.126	< 0.0050	< 0.0050
1/24/2022	WL_BFWB_OUT_SP21	N																			
1/25/2022	WL_LCI_SP02	N																	18.98		
1/25/2022	WL_WLCI_SP01	N																	15.44		
1/25/2022	WL_BFWB_OUT_SP21	N											< 0.010	0.242					< 0.23		
1/25/2022	WL_BFWB_OUT_SP21	N																			
1/26/2022	WL_LCI_SP02	N																	19.36		
1/26/2022	WL_WLCI_SP01	N																	15.36		
1/26/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
1/26/2022	WL_BFWB_OUT_SP21	N																			
1/27/2022	WL_LCI_SP02	N																	19.5		
1/27/2022	WL_WLCI_SP01	N																	15.7		
1/27/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
1/27/2022	WL_BFWB_OUT_SP21	N																			
1/28/2022	WL_LCI_SP02	N																	19.86		
1/28/2022	WL_WLCI_SP01	N																	15.62		
1/28/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
1/28/2022	WL_BFWB_OUT_SP21	N																			
1/29/2022	WL_LCI_SP02	N																	19.74		
1/29/2022	WL_WLCI_SP01	N																	15.76		
1/29/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
1/29/2022	WL_BFWB_OUT_SP21	N																			

		CHEMICAL_NAME FRACTION REPORT_RESULT_UNIT	Iron T mg/l	Lead D ug/l	Lead T ug/l	Lithium D mg/l	Lithium T mg/l	Magnesium T mg/l	Manganese D mg/l	Manganese T mg/l	Mercury D ug/l	Mercury T ug/l	MeSe(IV) – methylseleninic acid CH3SeO2H D ug/l	Methaneselenonic Acid D ug/l	Molybdenum D mg/l	Molybdenum T mg/l	Nickel D ug/l	Nickel T ug/l	Nitrate Nitrogen (NO3), As N N mg/l	Nitrite Nitrogen (NO2), As N N mg/l	Nitrogen, Ammonia (As N) T mg/l
1/30/2022	WL_LCI_SP02	N																	19.4		
1/30/2022	WL_WLCI_SP01	N																	15.44		
1/30/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
1/30/2022	WL_BFWB_OUT_SP21	N																			
1/31/2022	WL_LCI_SP02	N																	20.2		
1/31/2022	WL_WLCI_SP01	N																	15.46		
1/31/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
1/31/2022	WL_BFWB_OUT_SP21	N																			
2/1/2022	WL_LCI_SP02	N		< 0.050		0.0806		78.0	< 0.00010						0.00210		11.8		19.12		
2/1/2022	WL_WLCI_SP01	N		< 0.100		0.0361		223	< 0.00020						0.00437		16.4		13.84		
2/1/2022	WL_BFWB_OUT_SP21	N											0.011	0.480					< 0.23		
2/2/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
2/2/2022	WL_LCI_SP02	N																	18.86		
2/2/2022	WL_WLCI_SP01	N																	15.28		
2/2/2022	WL_BFWB_OUT_SP21	N																			
2/2/2022	WL_BFWB_OUT_SP21	N																			
2/2/2022	WL_LCI_SP02	N																	19.02		
2/2/2022	WL_WLCI_SP01	N																	15.5		
2/3/2022	WL_LCI_SP02	N																	18.94		
2/3/2022	WL_WLCI_SP01	N																	14.42		
2/3/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
2/3/2022	WL_BFWB_OUT_SP21	N																			
2/4/2022	WL_LCI_SP02	N																	19.58		
2/4/2022	WL_WLCI_SP01	N																	15.34		
2/4/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
2/4/2022	WL_BFWB_OUT_SP21	N																			
2/5/2022	WL_LCI_SP02	N																	18.56		
2/5/2022	WL_WLCI_SP01	N																	15.58		
2/5/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
2/6/2022	WL_LCI_SP02	N																	18.46		
2/6/2022	WL_WLCI_SP01	N																	14.7		
2/6/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
2/6/2022	WL_BFWB_OUT_SP21	N																			
2/7/2022	WL_LCI_SP02	N	< 0.010	< 0.050	< 0.050	0.0821	0.0851	77.2	< 0.00010	< 0.00010	< 0.0050	< 0.00050			0.00223	0.00236	12.2	13.1	19.5 18.5	< 0.0050	< 0.0050
2/7/2022	WL_WLCI_SP01	N	< 0.020	< 0.100	< 0.100	0.0373	0.0385	211	< 0.00020	< 0.00020	< 0.0050	0.00080			0.00459	0.00494	16.6	17.2	15.68 15.0	0.0084	< 0.0050
2/7/2022	WL_BFWB_OUT_SP21	N	0.247	< 0.050	< 0.050	0.0642	0.0658	125	0.150	0.159	< 0.0050	< 0.00050			0.0149	0.0155	7.18	7.44	< 0.23 0.0561	< 0.0050	0.0055
2/8/2022	WL_LCI_SP02	N																	19.72		
2/8/2022	WL_WLCI_SP01	N																	15.8		
2/8/2022	WL_BFWB_OUT_SP21	N											< 0.010	0.355					< 0.23		
2/9/2022	WL_LCI_SP02	N																	19.38		
2/9/2022	WL_WLCI_SP01	N																	15.42		
2/9/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
2/9/2022	WL_BFWB_OUT_SP21	N																			
2/10/2022	WL_LCI_SP02	N																	19.26		
2/10/2022	WL_WLCI_SP01	N																	15.26		
2/10/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
2/10/2022	WL_BFWB_OUT_SP21	N																			
2/11/2022	WL_LCI_SP02	N																	19.64		
2/11/2022	WL_WLCI_SP01	N																	15.76		
2/11/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
2/11/2022	WL_BFWB_OUT_SP21	N																			
2/12/2022	WL_LCI_SP02	N																	19.74		
2/12/2022	WL_WLCI_SP01	N																	15.9		
2/12/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
2/12/2022	WL_BFWB_OUT_SP21	N																			
2/13/2022	WL_LCI_SP02	N																	19.62		
2/13/2022	WL_WLCI_SP01	N																	15.72		
2/13/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
2/13/2022	WL_BFWB_OUT_SP21	N																			
2/14/2022	WL_LCI_SP02	N																	19.32		
2/14/2022	WL_WLCI_SP01	N																	14.74		
2/14/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
2/14/2022	WL_BFWB_OUT_SP21	N																			
2/15/2022	WL_LCI_SP02	N																	20.2		

		CHEMICAL_NAME FRACTION REPORT_RESULT_UNIT	Iron T mg/l	Lead D ug/l	Lead T ug/l	Lithium D mg/l	Lithium T mg/l	Magnesium T mg/l	Manganese D mg/l	Manganese T mg/l	Mercury D ug/l	Mercury T ug/l	MeSe(IV) – methylseleninic acid CH3SeO2H D ug/l	Methaneselenonic Acid D ug/l	Molybdenum D mg/l	Molybdenum T mg/l	Nickel D ug/l	Nickel T ug/l	Nitrate Nitrogen (NO3), As N N mg/l	Nitrite Nitrogen (NO2), As N N mg/l	Nitrogen, Ammonia (As N) T mg/l
2/15/2022	WL_WLCI_SP01	N																	15.86		
2/15/2022	WL_BFWB_OUT_SP21	N											< 0.010	0.378					< 0.23		
2/15/2022	WL_BFWB_OUT_SP21	N																			
2/16/2022	WL_LCI_SP02	N																	19.84		
2/16/2022	WL_WLCI_SP01	N																	15.3		
2/16/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
2/16/2022	WL_BFWB_OUT_SP21	N																			
2/17/2022	WL_LCI_SP02	N																	19.9		
2/17/2022	WL_WLCI_SP01	N																	15.48		
2/17/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
2/17/2022	WL_BFWB_OUT_SP21	N																			
2/18/2022	WL_LCI_SP02	N																	19.88		
2/18/2022	WL_WLCI_SP01	N																	15.52		
2/18/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
2/18/2022	WL_BFWB_OUT_SP21	N																			
2/19/2022	WL_LCI_SP02	N																	20.2		
2/19/2022	WL_WLCI_SP01	N																	15.74		
2/19/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
2/19/2022	WL_BFWB_OUT_SP21	N																			
2/20/2022	WL_LCI_SP02	N																	19.82		
2/20/2022	WL_WLCI_SP01	N																	15.5		
2/20/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
2/20/2022	WL_BFWB_OUT_SP21	N																			
2/21/2022	WL_LCI_SP02	N	< 0.010	0.060	0.067	0.0817	0.0856	77.6	< 0.00010	< 0.00010					0.00213	0.00240	12.0	13.7	20.4		
2/21/2022	WL_WLCI_SP01	N	< 0.020	< 0.100	< 0.100	0.0371	0.0392	230	< 0.00020	< 0.00020					0.00422	0.00427	16.8	18.2	15.78		
2/21/2022	WL_BFWB_OUT_SP21	N	0.392	< 0.050	0.052	0.0665	0.0689	142	0.148	0.192	< 0.0050	< 0.00050			0.0137	0.0158	6.50	7.74	< 0.23 0.0651	< 0.0050	0.0053
2/21/2022	WL_BFWB_OUT_SP21	N																			
2/22/2022	WL_LCI_SP02	N																	20.4		
2/22/2022	WL_WLCI_SP01	N																	15.86		
2/22/2022	WL_BFWB_OUT_SP21	N											< 0.010	0.365					< 0.23		
2/22/2022	WL_BFWB_OUT_SP21	N																			
2/23/2022	WL_LCI_SP02	N																	20.6		
2/23/2022	WL_WLCI_SP01	N																	15.82		
2/23/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
2/23/2022	WL_BFWB_OUT_SP21	N																			
2/24/2022	WL_LCI_SP02	N																	21.2		
2/24/2022	WL_WLCI_SP01	N																	15.28		
2/24/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
2/24/2022	WL_BFWB_OUT_SP21	N																			
2/25/2022	WL_LCI_SP02	N																	20.4		
2/25/2022	WL_WLCI_SP01	N																	16.78		
2/25/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
2/25/2022	WL_BFWB_OUT_SP21	N																			
2/26/2022	WL_BFWB_OUT_SP21	N																			
2/26/2022	WL_LCI_SP02	N																	19.86		
2/26/2022	WL_WLCI_SP01	N																	14.82		
2/26/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
2/27/2022	WL_LCI_SP02	N																	18.3		
2/27/2022	WL_WLCI_SP01	N																	15.56		
2/27/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
2/27/2022	WL_BFWB_OUT_SP21	N																			
2/28/2022	WL_LCI_SP02	N																	21.2		
2/28/2022	WL_WLCI_SP01	N																	16.32		
2/28/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
2/28/2022	WL_BFWB_OUT_SP21	N																			
3/1/2022	WL_LCI_SP02	N																	20.6		
3/1/2022	WL_WLCI_SP01	N																	16.04		
3/1/2022	WL_BFWB_OUT_SP21	N											< 0.010	0.395					< 0.23		
3/1/2022	WL_BFWB_OUT_SP21	N																			
3/1/2022	WL_BFWB_OUT_SP21	N																			
3/1/2022	WL_BFWB_OUT_SP21	N																			
3/2/2022	WL_LCI_SP02	N																	20.4		
3/2/2022	WL_WLCI_SP01	N																	15.78		
3/2/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
3/2/2022	WL_BFWB_OUT_SP21	N																			
3/3/2022	WL_LCI_SP02	N																	13.08		

		CHEMICAL_NAME FRACTION REPORT_RESULT_UNIT	Iron T mg/l	Lead D ug/l	Lead T ug/l	Lithium D mg/l	Lithium T mg/l	Magnesium T mg/l	Manganese D mg/l	Manganese T mg/l	Mercury D ug/l	Mercury T ug/l	MeSe(IV) – methylseleninic acid CH3SeO2H D ug/l	Methaneselenonic Acid D ug/l	Molybdenum D mg/l	Molybdenum T mg/l	Nickel D ug/l	Nickel T ug/l	Nitrate Nitrogen (NO3), As N N mg/l	Nitrite Nitrogen (NO2), As N N mg/l	Nitrogen, Ammonia (As N) T mg/l
3/3/2022	WL_WLCI_SP01	N																	15.92		
3/3/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
3/3/2022	WL_BFWB_OUT_SP21	N																			
3/3/2022	WL_BFWB_OUT_SP21	N																			
3/3/2022	WL_BFWB_OUT_SP21	N																			
3/4/2022	WL_LCI_SP02	N																	20.4		
3/4/2022	WL_WLCI_SP01	N																	16.02		
3/4/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
3/4/2022	WL_BFWB_OUT_SP21	N																			
3/4/2022	WL_BFWB_OUT_SP21	N																			
3/4/2022	WL_BFWB_OUT_SP21	N																			
3/5/2022	WL_LCI_SP02	N																	19.82		
3/5/2022	WL_WLCI_SP01	N																	16.2		
3/5/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
3/5/2022	WL_BFWB_OUT_SP21	N																			
3/6/2022	WL_LCI_SP02	N																	20.4		
3/6/2022	WL_WLCI_SP01	N																	16.2		
3/6/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
3/6/2022	WL_BFWB_OUT_SP21	N																			
3/7/2022	WL_LCI_SP02	N	< 0.010	0.093	< 0.050	0.0774	0.0839	68.5	< 0.00010	< 0.00010	< 0.0050	< 0.00050			0.00229	0.00217	12.1	12.0	19.92 20.1	< 0.0050	< 0.0050
3/7/2022	WL_WLCI_SP01	N	< 0.020	< 0.100	< 0.100	0.0395	0.0433	199	< 0.00020	< 0.00020	< 0.0050	0.00089			0.00471	0.00441	17.6	15.9	15.84 15.9	< 0.0050	< 0.0050
3/7/2022	WL_BFWB_OUT_SP21	N	0.413	< 0.050	< 0.050	0.0636	0.0715	120	0.157	0.178	< 0.0050	< 0.00050			0.0145	0.0147	6.58	6.74	< 0.23		
3/7/2022	WL_BFWB_OUT_SP21	N																	0.123	< 0.0050	< 0.0050
3/8/2022	WL_LCI_SP02	N																	19.88		
3/8/2022	WL_WLCI_SP01	N																	15.74		
3/8/2022	WL_BFWB_OUT_SP21	N											< 0.010	0.565					< 0.23		
3/8/2022	WL_BFWB_OUT_SP21	N																			
3/8/2022	WL_BFWB_OUT_SP21	N																			
3/8/2022	WL_BFWB_OUT_SP21	N																			
3/9/2022	WL_LCI_SP02	N																	19.76		
3/9/2022	WL_WLCI_SP01	N																	15.58		
3/9/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
3/9/2022	WL_BFWB_OUT_SP21	N																			
3/9/2022	WL_BFWB_OUT_SP21	N																			
3/9/2022	WL_BFWB_OUT_SP21	N																			
3/9/2022	WL_LCI_SP02	N																			
3/9/2022	WL_LCI_SP02	N																			
3/10/2022	WL_LCI_SP02	N																			
3/10/2022	WL_LCI_SP02	N																	20		
3/10/2022	WL_WLCI_SP01	N																	15.82		
3/10/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
3/10/2022	WL_BFWB_OUT_SP21	N																			
3/11/2022	WL_LCI_SP02	N																	20.4		
3/11/2022	WL_WLCI_SP01	N																	16.08		
3/11/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
3/11/2022	WL_BFWB_OUT_SP21	N																			
3/11/2022	WL_BFWB_OUT_SP21	N																			
3/11/2022	WL_BFWB_OUT_SP21	N																			
3/12/2022	WL_LCI_SP02	N																	20.4		
3/12/2022	WL_WLCI_SP01	N																	16.16		
3/12/2022	WL_BFWB_OUT_SP21	N																			
3/12/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
3/13/2022	WL_LCI_SP02	N																	20.2		
3/13/2022	WL_WLCI_SP01	N																	15.88		
3/13/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
3/14/2022	WL_LCI_SP02	N																	20.6		
3/14/2022	WL_WLCI_SP01	N																	15.98		
3/14/2022	WL_BFWB_OUT_SP21	N																			
3/14/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
3/15/2022	WL_LCI_SP02	N																	19.82		
3/15/2022	WL_WLCI_SP01	N																	16.24		
3/15/2022	WL_BFWB_OUT_SP21	N																			
3/15/2022	WL_BFWB_OUT_SP21	N											0.165	0.616					< 0.23		
3/16/2022	WL_LCI_SP02	N																	20.4		
3/16/2022	WL_WLCI_SP01	N																	16.1		
3/16/2022	WL_BFWB_OUT_SP21	N																	< 0.23		

		CHEMICAL_NAME FRACTION REPORT_RESULT_UNIT	Iron T mg/l	Lead D ug/l	Lead T ug/l	Lithium D mg/l	Lithium T mg/l	Magnesium T mg/l	Manganese D mg/l	Manganese T mg/l	Mercury D ug/l	Mercury T ug/l	MeSe(IV) – methylseleninic acid CH3SeO2H D ug/l	Methaneselenonic Acid D ug/l	Molybdenum D mg/l	Molybdenum T mg/l	Nickel D ug/l	Nickel T ug/l	Nitrate Nitrogen (NO3), As N N mg/l	Nitrite Nitrogen (NO2), As N N mg/l	Nitrogen, Ammonia (As N) T mg/l
3/16/2022	WL_BFWB_OUT_SP21	N																				
3/16/2022	WL_BFWB_OUT_SP21	N																				
3/17/2022	WL_LCI_SP02	N																	19.78		
3/17/2022	WL_WLCI_SP01	N																	15.92		
3/17/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
3/17/2022	WL_BFWB_OUT_SP21	N																			
3/18/2022	WL_LCI_SP02	N																	20.2		
3/18/2022	WL_WLCI_SP01	N																	16		
3/18/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
3/18/2022	WL_BFWB_OUT_SP21	N																			
3/19/2022	WL_LCI_SP02	N																	20.4		
3/19/2022	WL_WLCI_SP01	N																	16		
3/19/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
3/19/2022	WL_BFWB_OUT_SP21	N																			
3/20/2022	WL_LCI_SP02	N																	20		
3/20/2022	WL_WLCI_SP01	N																	16.06		
3/20/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
3/20/2022	WL_BFWB_OUT_SP21	N																			
3/20/2022	WL_BFWB_OUT_SP21	N																			
3/20/2022	WL_BFWB_OUT_SP21	N																			
3/21/2022	WL_LCI_SP02	N	< 0.010	< 0.050	< 0.050	0.0740	0.0856	72.2	< 0.00010	0.00018					0.00227	0.00250	12.3	13.3	19.42		
3/21/2022	WL_WLCI_SP01	N	< 0.020	< 0.100	< 0.100	0.0368	0.0422	218	< 0.00020	< 0.00020					0.00446	0.00476	16.2	17.4	16.28		
3/21/2022	WL_BFWB_OUT_SP21	N	0.355	< 0.050	< 0.050	0.0642	0.0684	123	0.156	0.183	< 0.0050	< 0.00050			0.0146	0.0148	6.61	7.14	< 0.23 0.0844	< 0.0050	< 0.0050
3/21/2022	WL_BFWB_OUT_SP21	N																			
3/22/2022	WL_LCI_SP02	N																	19.64		
3/22/2022	WL_WLCI_SP01	N																	15.74		
3/22/2022	WL_BFWB_OUT_SP21	N											0.013	0.619					< 0.23		
3/22/2022	WL_BFWB_OUT_SP21	N																			
3/23/2022	WL_LCI_SP02	N																	20		
3/23/2022	WL_WLCI_SP01	N																	15.82		
3/23/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
3/23/2022	WL_BFWB_OUT_SP21	N																			
3/23/2022	WL_LCI_SP02	N																			
3/23/2022	WL_LCI_SP02	N																			
3/24/2022	WL_LCI_SP02	N																	19.24		
3/24/2022	WL_WLCI_SP01	N																	15.42		
3/24/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
3/24/2022	WL_BFWB_OUT_SP21	N																			
3/25/2022	WL_LCI_SP02	N																	18.7		
3/25/2022	WL_WLCI_SP01	N																	15.66		
3/25/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
3/25/2022	WL_BFWB_OUT_SP21	N																			
3/26/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
3/26/2022	WL_LCI_SP02	N																	19.18		
3/26/2022	WL_WLCI_SP01	N																	15.32		
3/26/2022	WL_BFWB_OUT_SP21	N																			
3/27/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
3/27/2022	WL_LCI_SP02	N																	20.6		
3/27/2022	WL_WLCI_SP01	N																	15.72		
3/27/2022	WL_BFWB_OUT_SP21	N																			
3/28/2022	WL_LCI_SP02	N																	20		
3/28/2022	WL_WLCI_SP01	N																	15.44		
3/28/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
3/28/2022	WL_BFWB_OUT_SP21	N																			
3/29/2022	WL_LCI_SP02	N																	22.4		
3/29/2022	WL_WLCI_SP01	N																	15.82		
3/29/2022	WL_BFWB_OUT_SP21	N											< 0.010	0.856					< 0.23		
3/29/2022	WL_BFWB_OUT_SP21	N																			
3/30/2022	WL_LCI_SP02	N																	23.4		
3/30/2022	WL_WLCI_SP01	N																	15.74		
3/30/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
3/30/2022	WL_BFWB_OUT_SP21	N																			
3/31/2022	WL_LCI_SP02	N																	25.2		
3/31/2022	WL_WLCI_SP01	N																	15.72		
3/31/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
3/31/2022	WL_BFWB_OUT_SP21	N																			

		CHEMICAL_NAME FRACTION REPORT_RESULT_UNIT	Iron T mg/l	Lead D ug/l	Lead T ug/l	Lithium D mg/l	Lithium T mg/l	Magnesium T mg/l	Manganese D mg/l	Manganese T mg/l	Mercury D ug/l	Mercury T ug/l	MeSe(IV) – methylseleninic acid CH3SeO2H D ug/l	Methaneselenonic Acid D ug/l	Molybdenum D mg/l	Molybdenum T mg/l	Nickel D ug/l	Nickel T ug/l	Nitrate Nitrogen (NO3), As N N mg/l	Nitrite Nitrogen (NO2), As N N mg/l	Nitrogen, Ammonia (As N) T mg/l
4/1/2022	WL_LCI_SP02	N																	24.2		
4/1/2022	WL_WLCI_SP01	N																	16.14		
4/1/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
4/1/2022	WL_BFWB_OUT_SP21	N																			
4/2/2022	WL_LCI_SP02	N																	23.4		
4/2/2022	WL_WLCI_SP01	N																	15.98		
4/2/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
4/2/2022	WL_BFWB_OUT_SP21	N																			
4/3/2022	WL_LCI_SP02	N																	22.6		
4/3/2022	WL_WLCI_SP01	N																	16.22		
4/3/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
4/3/2022	WL_BFWB_OUT_SP21	N																			
4/4/2022	WL_LCI_SP02	N	< 0.010	< 0.050	< 0.050	0.0755	0.0834	70.0	0.00011	0.00019	< 0.0050	< 0.00050			0.00224	0.00220	11.9	11.1	21 21.1	< 0.0050	< 0.0050
4/4/2022	WL_WLCI_SP01	N	< 0.020	< 0.100	< 0.100	0.0371	0.0419	234	< 0.00020	< 0.00020	< 0.0050	0.00084			0.00407	0.00428	17.0	17.6	16.26 16.6	< 0.0050	< 0.0050
4/4/2022	WL_BFWB_OUT_SP21	N	0.355	< 0.050	< 0.050	0.0626	0.0687	134	0.194	0.208	< 0.0050	< 0.00050			0.0144	0.0141	8.49	8.38	< 0.23 0.147	< 0.0050	0.0095
4/5/2022	WL_LCI_SP02	N																	19.72		
4/5/2022	WL_WLCI_SP01	N																	15.8		
4/5/2022	WL_BFWB_OUT_SP21	N											0.017	0.654					< 0.23		
4/5/2022	WL_BFWB_OUT_SP21	N																			
4/6/2022	WL_LCI_SP02	N																	19.16		
4/6/2022	WL_WLCI_SP01	N																	15.94		
4/6/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
4/6/2022	WL_BFWB_OUT_SP21	N																			
4/7/2022	WL_LCI_SP02	N																	18.42		
4/7/2022	WL_WLCI_SP01	N																	15.98		
4/7/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
4/7/2022	WL_BFWB_OUT_SP21	N																			
4/8/2022	WL_LCI_SP02	N																	18.18		
4/8/2022	WL_WLCI_SP01	N																	15.92		
4/8/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
4/8/2022	WL_BFWB_OUT_SP21	N																			
4/8/2022	WL_BFWB_OUT_SP21	N																			
4/9/2022	WL_LCI_SP02	N																	18.3		
4/9/2022	WL_WLCI_SP01	N																	16.3		
4/9/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
4/9/2022	WL_BFWB_OUT_SP21	N																			
4/10/2022	WL_LCI_SP02	N																	18.52		
4/10/2022	WL_WLCI_SP01	N																	16.26		
4/10/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
4/10/2022	WL_BFWB_OUT_SP21	N																			
4/11/2022	WL_LCI_SP02	N																	18.32		
4/11/2022	WL_WLCI_SP01	N																	16.02		
4/11/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
4/11/2022	WL_BFWB_OUT_SP21	N																			
4/12/2022	WL_LCI_SP02	N											< 0.010	< 0.010					18.32		
4/12/2022	WL_WLCI_SP01	N											< 0.010	< 0.010					16		
4/12/2022	WL_BFWB_OUT_SP21	N											0.021	0.564					< 0.23		
4/12/2022	WL_BFWB_OUT_SP21	N																			
4/13/2022	WL_LCI_SP02	N																	18.54		
4/13/2022	WL_WLCI_SP01	N																	16		
4/13/2022	WL_BFWB_OUT_SP21	N																	0.268		
4/13/2022	WL_BFWB_OUT_SP21	N																			
4/14/2022	WL_LCI_SP02	N																	17.82		
4/14/2022	WL_WLCI_SP01	N																	16.38		
4/14/2022	WL_BFWB_OUT_SP21	N																	0.25		
4/14/2022	WL_BFWB_OUT_SP21	N																			
4/15/2022	WL_LCI_SP02	N																	17.28		
4/15/2022	WL_WLCI_SP01	N																	16.24		
4/15/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
4/15/2022	WL_BFWB_OUT_SP21	N																			
4/16/2022	WL_LCI_SP02	N																	17.86		
4/16/2022	WL_WLCI_SP01	N																	16.46		
4/16/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
4/16/2022	WL_BFWB_OUT_SP21	N																			
4/17/2022	WL_LCI_SP02	N																	17.3		
4/17/2022	WL_WLCI_SP01	N																	16.26		

		CHEMICAL_NAME FRACTION REPORT_RESULT_UNIT	Iron T mg/l	Lead D ug/l	Lead T ug/l	Lithium D mg/l	Lithium T mg/l	Magnesium T mg/l	Manganese D mg/l	Manganese T mg/l	Mercury D ug/l	Mercury T ug/l	MeSe(IV) – methylseleninic acid CH3SeO2H D ug/l	Methaneselenonic Acid D ug/l	Molybdenum D mg/l	Molybdenum T mg/l	Nickel D ug/l	Nickel T ug/l	Nitrate Nitrogen (NO3), As N N mg/l	Nitrite Nitrogen (NO2), As N N mg/l	Nitrogen, Ammonia (As N) T mg/l
4/17/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
4/17/2022	WL_BFWB_OUT_SP21	N																			
4/18/2022	WL_LCI_SP02	N	< 0.010	< 0.050	< 0.050	0.0818	0.0754	65.8	< 0.00010	0.00012					0.00228	0.00203	11.3	10.3	17.5		
4/18/2022	WL_WLCI_SP01	N	< 0.020	< 0.100	< 0.100	0.0367	0.0410	198	< 0.00020	< 0.00020					0.00450	0.00442	16.4	15.8	16.44		
4/18/2022	WL_BFWB_OUT_SP21	N	0.308	< 0.050	< 0.050	0.0571	0.0605	121	0.183	0.176	< 0.0050	< 0.00050			0.0143	0.0132	6.61	6.42	< 0.23 0.166	< 0.0050	< 0.0050
4/18/2022	WL_BFWB_OUT_SP21	N																			
4/19/2022	WL_LCI_SP02	N																	17.48		
4/19/2022	WL_WLCI_SP01	N																	16.74		
4/19/2022	WL_BFWB_OUT_SP21	N											< 0.010	0.554					0.248		
4/19/2022	WL_BFWB_OUT_SP21	N																			
4/20/2022	WL_LCI_SP02	N																	17.56		
4/20/2022	WL_WLCI_SP01	N																	16.62		
4/20/2022	WL_BFWB_OUT_SP21	N																	0.301		
4/20/2022	WL_BFWB_OUT_SP21	N																			
4/21/2022	WL_LCI_SP02	N																	17.42		
4/21/2022	WL_WLCI_SP01	N																	15.92		
4/21/2022	WL_BFWB_OUT_SP21	N																	0.247		
4/21/2022	WL_BFWB_OUT_SP21	N																			
4/22/2022	WL_LCI_SP02	N																	17.34		
4/22/2022	WL_WLCI_SP01	N																	15.76		
4/22/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
4/22/2022	WL_BFWB_OUT_SP21	N																			
4/23/2022	WL_LCI_SP02	N																	17.92		
4/23/2022	WL_WLCI_SP01	N																	16.84		
4/23/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
4/23/2022	WL_BFWB_OUT_SP21	N																			
4/24/2022	WL_LCI_SP02	N																	18.36		
4/24/2022	WL_WLCI_SP01	N																	17.02		
4/24/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
4/24/2022	WL_BFWB_OUT_SP21	N																			
4/25/2022	WL_LCI_SP02	N																	17.86		
4/25/2022	WL_WLCI_SP01	N																	16.48		
4/25/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
4/25/2022	WL_BFWB_OUT_SP21	N																			
4/26/2022	WL_LCI_SP02	N																	18.02		
4/26/2022	WL_WLCI_SP01	N																	16.26		
4/26/2022	WL_BFWB_OUT_SP21	N											0.011	0.600					< 0.23		
4/27/2022	WL_LCI_SP02	N																	18.04		
4/27/2022	WL_WLCI_SP01	N																	16.12		
4/27/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
4/28/2022	WL_LCI_SP02	N																	17.54		
4/28/2022	WL_WLCI_SP01	N																	15.58		
4/28/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
4/29/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
4/29/2022	WL_LCI_SP02	N																	16.12		
4/29/2022	WL_WLCI_SP01	N																	17.88		
4/29/2022	WL_BFWB_OUT_SP21	N																			
4/29/2022	WL_BFWB_OUT_SP21	N																			
4/29/2022	WL_LCI_SP02	N																			
4/29/2022	WL_WLCI_SP01	N																			
4/29/2022	WL_LCI_SP02	N																			
4/29/2022	WL_WLCI_SP01	N																			
4/30/2022	WL_LCI_SP02	N																	16.16		
4/30/2022	WL_WLCI_SP01	N																	16.52		
4/30/2022	WL_BFWB_OUT_SP21	N																	0.303		
4/30/2022	WL_BFWB_OUT_SP21	N																			
5/1/2022	WL_LCI_SP02	N																	17.32		
5/1/2022	WL_WLCI_SP01	N																	16.66		
5/1/2022	WL_BFWB_OUT_SP21	N																	0.274		
5/1/2022	WL_BFWB_OUT_SP21	N																			
5/2/2022	WL_LCI_SP02	N	< 0.010	< 0.050	< 0.050	0.0769	0.0700	58.0	< 0.00010	0.00012	< 0.0050	< 0.00050			0.00213	0.00216	10.8	10.4	17.14 17.1	< 0.0050	< 0.0050
5/2/2022	WL_WLCI_SP01	N	< 0.020	< 0.100	< 0.100	0.0424	0.0381	193	< 0.00020	< 0.00020	< 0.0050	0.00107			0.00441	0.00480	16.3	16.9	16.28 16.2	< 0.0050	< 0.0050
5/2/2022	WL_BFWB_OUT_SP21	N	0.337	< 0.050	< 0.050	0.0569	0.0530	134	0.172	0.182	< 0.0050	< 0.00050			0.0140	0.0142	5.22	5.18	0.287 0.269	< 0.0050	0.0141

		CHEMICAL_NAME FRACTION REPORT_RESULT_UNIT	Iron T mg/l	Lead D ug/l	Lead T ug/l	Lithium D mg/l	Lithium T mg/l	Magnesium T mg/l	Manganese D mg/l	Manganese T mg/l	Mercury D ug/l	Mercury T ug/l	MeSe(IV) – methylseleninic acid CH3SeO2H D ug/l	Methaneselenonic Acid D ug/l	Molybdenum D mg/l	Molybdenum T mg/l	Nickel D ug/l	Nickel T ug/l	Nitrate Nitrogen (NO3), As N N mg/l	Nitrite Nitrogen (NO2), As N N mg/l	Nitrogen, Ammonia (As N) T mg/l
5/2/2022	WL_BFWB_OUT_SP21	N																			
5/3/2022	WL_LCI_SP02	N																	16.28		
5/3/2022	WL_WLCI_SP01	N																	15.62		
5/3/2022	WL_BFWB_OUT_SP21	N																			
5/3/2022	WL_BFWB_OUT_SP21	N											< 0.010	0.386					0.24		
5/3/2022	WL_BFWB_OUT_SP21	N																			
5/4/2022	WL_LCI_SP02	N																	16.12		
5/4/2022	WL_WLCI_SP01	N																	16.18		
5/4/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
5/4/2022	WL_BFWB_OUT_SP21	N																			
5/5/2022	WL_LCI_SP02	N																	15.28		
5/5/2022	WL_WLCI_SP01	N																	15.82		
5/5/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
5/5/2022	WL_BFWB_OUT_SP21	N																			
5/6/2022	WL_LCI_SP02	N																	13.56		
5/6/2022	WL_WLCI_SP01	N																	15.34		
5/6/2022	WL_BFWB_OUT_SP21	N																	0.239		
5/6/2022	WL_BFWB_OUT_SP21	N																			
5/6/2022	WL_LCI_SP02	N																			
5/7/2022	WL_LCI_SP02	N																	14.22		
5/7/2022	WL_WLCI_SP01	N																	16.46		
5/7/2022	WL_BFWB_OUT_SP21	N																	0.309		
5/7/2022	WL_BFWB_OUT_SP21	N																			
5/8/2022	WL_LCI_SP02	N																	12.6		
5/8/2022	WL_WLCI_SP01	N																	16.58		
5/8/2022	WL_BFWB_OUT_SP21	N																	0.231		
5/8/2022	WL_BFWB_OUT_SP21	N																			
5/9/2022	WL_LCI_SP02	N																	12.3		
5/9/2022	WL_WLCI_SP01	N																	16.2		
5/9/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
5/9/2022	WL_BFWB_OUT_SP21	N																			
5/10/2022	WL_LCI_SP02	N																	12.72		
5/10/2022	WL_WLCI_SP01	N																	16.22		
5/10/2022	WL_BFWB_OUT_SP21	N											0.020	0.539					< 0.23		
5/10/2022	WL_BFWB_OUT_SP21	N																			
5/11/2022	WL_LCI_SP02	N																	12.84		
5/11/2022	WL_WLCI_SP01	N																	15.62		
5/11/2022	WL_WLCI_SP01	N																			
5/11/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
5/11/2022	WL_BFWB_OUT_SP21	N																			
5/12/2022	WL_LCI_SP02	N																	13.62		
5/12/2022	WL_WLCI_SP01	N																	15.62		
5/12/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
5/12/2022	WL_BFWB_OUT_SP21	N																			
5/13/2022	WL_LCI_SP02	N																	13.58		
5/13/2022	WL_WLCI_SP01	N																	15.28		
5/13/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
5/13/2022	WL_BFWB_OUT_SP21	N																			
5/14/2022	WL_LCI_SP02	N																	13.9		
5/14/2022	WL_WLCI_SP01	N																	15.1		
5/14/2022	WL_BFWB_OUT_SP21	N											0.063	0.425					< 0.23		
5/14/2022	WL_BFWB_OUT_SP21	N																			
5/15/2022	WL_LCI_SP02	N																	14.02		
5/15/2022	WL_WLCI_SP01	N																	14.82		
5/15/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
5/15/2022	WL_BFWB_OUT_SP21	N																			
5/16/2022	WL_LCI_SP02	N	< 0.010	< 0.050	< 0.050	0.0734	0.0706	58.1	< 0.00010	0.00011					0.00207	0.00204	10.5	10.1	13.94		
5/16/2022	WL_WLCI_SP01	N	< 0.020	< 0.100	< 0.100	0.0381	0.0385	196	< 0.00020	< 0.00020					0.00395	0.00408	17.4	17.1	14.78		
5/16/2022	WL_BFWB_OUT_SP21	N	0.248	< 0.050	< 0.050	0.0495	0.0475	157	0.151	0.150	< 0.0050	< 0.00050			0.0150	0.0151	8.04	7.59	< 0.23 0.133	0.0074	< 0.0050
5/16/2022	WL_BFWB_OUT_SP21	N																			
5/17/2022	WL_LCI_SP02	N																	13.98		
5/17/2022	WL_WLCI_SP01	N																	14.12		
5/17/2022	WL_BFWB_OUT_SP21	N											0.011	0.372					< 0.23		
5/17/2022	WL_BFWB_OUT_SP21	N																			
5/18/2022	WL_LCI_SP02	N																	13.46		
5/18/2022	WL_WLCI_SP01	N																	13.92		

		CHEMICAL_NAME FRACTION REPORT_RESULT_UNIT	Iron T mg/l	Lead D ug/l	Lead T ug/l	Lithium D mg/l	Lithium T mg/l	Magnesium T mg/l	Manganese D mg/l	Manganese T mg/l	Mercury D ug/l	Mercury T ug/l	MeSe(IV) – methylseleninic acid CH3SeO2H D ug/l	Methaneselenonic Acid D ug/l	Molybdenum D mg/l	Molybdenum T mg/l	Nickel D ug/l	Nickel T ug/l	Nitrate Nitrogen (NO3), As N N mg/l	Nitrite Nitrogen (NO2), As N N mg/l	Nitrogen, Ammonia (As N) T mg/l
5/18/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
5/18/2022	WL_BFWB_OUT_SP21	N																			
5/19/2022	WL_LCI_SP02	N																	11.5		
5/19/2022	WL_WLCI_SP01	N																	14.54		
5/19/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
5/19/2022	WL_BFWB_OUT_SP21	N																			
5/20/2022	WL_LCI_SP02	N																	11.32		
5/20/2022	WL_WLCI_SP01	N																	14.08		
5/20/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
5/20/2022	WL_BFWB_OUT_SP21	N																			
5/21/2022	WL_LCI_SP02	N																	11.9		
5/21/2022	WL_WLCI_SP01	N																	14.04		
5/21/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
5/21/2022	WL_BFWB_OUT_SP21	N																			
5/22/2022	WL_LCI_SP02	N																	12.78		
5/22/2022	WL_WLCI_SP01	N																	13.92		
5/22/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
5/22/2022	WL_BFWB_OUT_SP21	N																			
5/23/2022	WL_LCI_SP02	N																	12.9		
5/23/2022	WL_WLCI_SP01	N																	13.08		
5/23/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
5/23/2022	WL_BFWB_OUT_SP21	N																			
5/24/2022	WL_LCI_SP02	N																	12.88		
5/24/2022	WL_WLCI_SP01	N																	13.28		
5/24/2022	WL_BFWB_OUT_SP21	N											< 0.010	0.173					< 0.23		
5/24/2022	WL_BFWB_OUT_SP21	N											0.012	0.186							
5/24/2022	WL_BFWB_OUT_SP21	N											< 0.010	0.186							
5/24/2022	WL_BFWB_OUT_SP21	N											0.013	0.186							
5/25/2022	WL_LCI_SP02	N																	12.48		
5/25/2022	WL_WLCI_SP01	N																	13.26		
5/25/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
5/25/2022	WL_BFWB_OUT_SP21	N																			
5/26/2022	WL_LCI_SP02	N																	12.3		
5/26/2022	WL_WLCI_SP01	N																	13.24		
5/26/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
5/26/2022	WL_BFWB_OUT_SP21	N																			
5/27/2022	WL_LCI_SP02	N																	11.34		
5/27/2022	WL_WLCI_SP01	N																	14.64		
5/27/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
5/27/2022	WL_BFWB_OUT_SP21	N																			
5/28/2022	WL_LCI_SP02	N																	11.62		
5/28/2022	WL_WLCI_SP01	N																	15.02		
5/28/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
5/28/2022	WL_BFWB_OUT_SP21	N																			
5/28/2022	WL_BFWB_OUT_SP21	N																			
5/28/2022	WL_BFWB_OUT_SP21	N																			
5/28/2022	WL_BFWB_OUT_SP21	N																			
5/28/2022	WL_BFWB_OUT_SP21	N																			
5/28/2022	WL_BFWB_OUT_SP21	N																			
5/29/2022	WL_LCI_SP02	N																	11.42		
5/29/2022	WL_WLCI_SP01	N																	13.54		
5/29/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
5/29/2022	WL_BFWB_OUT_SP21	N																			
5/30/2022	WL_LCI_SP02	N	< 0.010	0.070	0.071	0.0615	0.0595	49.2	0.00037	0.00045					0.00192	0.00177	9.94	10.1	11.92		
5/30/2022	WL_WLCI_SP01	N	< 0.010	< 0.050	< 0.050	0.0328	0.0357	139	< 0.00010	0.00013					0.00302	0.00310	15.4	15.5	11.56		
5/30/2022	WL_BFWB_OUT_SP21	N	0.311	< 0.050	< 0.050	0.0358	0.0366	164	0.156	0.163	< 0.0050	< 0.00050			0.0146	0.0147	5.81	6.01	< 0.23 0.0491	< 0.0050	0.0062
5/30/2022	WL_BFWB_OUT_SP21	N																			
5/31/2022	WL_LCI_SP02	N																	11.58		
5/31/2022	WL_WLCI_SP01	N																	9.98		
5/31/2022	WL_BFWB_OUT_SP21	N											< 0.010	0.187					< 0.23		
5/31/2022	WL_BFWB_OUT_SP21	N																			
6/1/2022	WL_LCI_SP02	N																	11.54		
6/1/2022	WL_WLCI_SP01	N																	9.4		
6/1/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
6/1/2022	WL_BFWB_OUT_SP21	N																			

		CHEMICAL_NAME FRACTION REPORT_RESULT_UNIT	Iron T mg/l	Lead D ug/l	Lead T ug/l	Lithium D mg/l	Lithium T mg/l	Magnesium T mg/l	Manganese D mg/l	Manganese T mg/l	Mercury D ug/l	Mercury T ug/l	MeSe(IV) – methylseleninic acid CH3SeO2H D ug/l	Methaneselenonic Acid D ug/l	Molybdenum D mg/l	Molybdenum T mg/l	Nickel D ug/l	Nickel T ug/l	Nitrate Nitrogen (NO3), As N N mg/l	Nitrite Nitrogen (NO2), As N N mg/l	Nitrogen, Ammonia (As N) T mg/l
6/2/2022	WL_LCI_SP02	N																	8.14		
6/2/2022	WL_WLCI_SP01	N																	8.8		
6/2/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
6/2/2022	WL_BFWB_OUT_SP21	N																			
6/3/2022	WL_LCI_SP02	N																	8.4		
6/3/2022	WL_WLCI_SP01	N																	8.26		
6/3/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
6/3/2022	WL_BFWB_OUT_SP21	N																			
6/4/2022	WL_LCI_SP02	N																	7.23		
6/4/2022	WL_WLCI_SP01	N																	8.38		
6/4/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
6/4/2022	WL_BFWB_OUT_SP21	N																			
6/5/2022	WL_LCI_SP02	N																	5.58		
6/5/2022	WL_WLCI_SP01	N																	7.93		
6/5/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
6/5/2022	WL_BFWB_OUT_SP21	N																			
6/6/2022	WL_LCI_SP02	N																	6.36		
6/6/2022	WL_WLCI_SP01	N																	8.21		
6/6/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
6/6/2022	WL_BFWB_OUT_SP21	N																			
6/7/2022	WL_LCI_SP02	N																			
6/7/2022	WL_WLCI_SP01	N																			
6/7/2022	WL_BFWB_OUT_SP21	N											0.056	0.169							
6/7/2022	WL_LCI_SP02	N																	5.95		
6/7/2022	WL_WLCI_SP01	N																	7.26		
6/7/2022	WL_BFWB_OUT_SP21	N																			
6/8/2022	WL_LCI_SP02	N																			
6/8/2022	WL_WLCI_SP01	N																			
6/9/2022	WL_LCI_SP02	N																			
6/9/2022	WL_WLCI_SP01	N																	6.38		
6/9/2022	WL_WLCI_SP01	N																	7.31		
6/9/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
6/9/2022	WL_BFWB_OUT_SP21	N																			
6/10/2022	WL_LCI_SP02	N																	5.03		
6/10/2022	WL_WLCI_SP01	N																	5.7		
6/10/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
6/10/2022	WL_BFWB_OUT_SP21	N																			
6/11/2022	WL_LCI_SP02	N																	4.96		
6/11/2022	WL_WLCI_SP01	N																	5.86		
6/11/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
6/11/2022	WL_BFWB_OUT_SP21	N																			
6/12/2022	WL_LCI_SP02	N																	4.92		
6/12/2022	WL_WLCI_SP01	N																	6.7		
6/12/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
6/12/2022	WL_BFWB_OUT_SP21	N																			
6/13/2022	WL_LCI_SP02	N	< 0.010	< 0.050	< 0.050	0.0275	0.0272	31.8	0.00014	0.00024	< 0.0050	0.00074			0.00137	0.00144	7.71	8.08	5.15 4.88	0.0016	< 0.0050
6/13/2022	WL_WLCI_SP01	N	< 0.010	< 0.050	< 0.050	0.0242	0.0203	88.1	0.00038	0.00036	< 0.0050	0.00082			0.00151	0.00146	20.7	20.5	6.05	< 0.0050	< 0.0050
6/13/2022	WL_BFWB_OUT_SP21	N	0.202	< 0.050	< 0.050	0.0266	0.0243	97.8	0.0889	0.0910	< 0.0050	< 0.00050			0.0131	0.0132	4.47	5.84	< 0.23 0.0260	< 0.0050	< 0.0050
6/13/2022	WL_BFWB_OUT_SP21	N																			
6/14/2022	WL_LCI_SP02	N																	4.82		
6/14/2022	WL_WLCI_SP01	N																	6.01		
6/14/2022	WL_BFWB_OUT_SP21	N											0.082	0.139					< 0.23		
6/14/2022	WL_BFWB_OUT_SP21	N																			
6/15/2022	WL_LCI_SP02	N																	5.57		
6/15/2022	WL_WLCI_SP01	N																	6.31		
6/15/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
6/15/2022	WL_BFWB_OUT_SP21	N																			
6/15/2022	WL_WLCI_SP01	N																			
6/16/2022	WL_BFWB_OUT_SP21	N																			
6/16/2022	WL_LCI_SP02	N																			
6/16/2022	WL_WLCI_SP01	N																			
6/16/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
6/16/2022	WL_LCI_SP02	N																			
6/16/2022	WL_BFWB_OUT_SP21	N																			
6/16/2022	WL_LCI_SP02	N																	11.3		
6/16/2022	WL_WLCI_SP01	N																	6.69		

		CHEMICAL_NAME FRACTION REPORT_RESULT_UNIT	Iron T mg/l	Lead D ug/l	Lead T ug/l	Lithium D mg/l	Lithium T mg/l	Magnesium T mg/l	Manganese D mg/l	Manganese T mg/l	Mercury D ug/l	Mercury T ug/l	MeSe(IV) – methylseleninic acid CH3SeO2H D ug/l	Methaneselenonic Acid D ug/l	Molybdenum D mg/l	Molybdenum T mg/l	Nickel D ug/l	Nickel T ug/l	Nitrate Nitrogen (NO3), As N N mg/l	Nitrite Nitrogen (NO2), As N N mg/l	Nitrogen, Ammonia (As N) T mg/l
6/17/2022	WL_LCI_SP02	N																	6.88		
6/17/2022	WL_WLCI_SP01	N																	6.86		
6/17/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
6/17/2022	WL_BFWB_OUT_SP21	N																			
6/18/2022	WL_LCI_SP02	N																	7.05		
6/18/2022	WL_WLCI_SP01	N																	6.63		
6/18/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
6/18/2022	WL_BFWB_OUT_SP21	N																			
6/19/2022	WL_LCI_SP02	N																	7.12		
6/19/2022	WL_WLCI_SP01	N																	6.95		
6/19/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
6/19/2022	WL_BFWB_OUT_SP21	N																			
6/20/2022	WL_WLCI_SP01	N																	5.4		
6/20/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
6/20/2022	WL_LCI_SP02	N																	7.27		
6/20/2022	WL_BFWB_OUT_SP21	N																			
6/21/2022	WL_LCI_SP02	N																	7.25		
6/21/2022	WL_WLCI_SP01	N																	5.57		
6/21/2022	WL_BFWB_OUT_SP21	N											0.032	0.100					< 0.23		
6/21/2022	WL_BFWB_OUT_SP21	N																			
6/22/2022	WL_LCI_SP02	N																	7.06		
6/22/2022	WL_WLCI_SP01	N																	6.17		
6/22/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
6/22/2022	WL_BFWB_OUT_SP21	N																			
6/23/2022	WL_LCI_SP02	N																	6.4		
6/23/2022	WL_WLCI_SP01	N																	6.05		
6/23/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
6/23/2022	WL_BFWB_OUT_SP21	N																			
6/24/2022	WL_LCI_SP02	N																	5.95		
6/24/2022	WL_WLCI_SP01	N																	6.41		
6/24/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
6/24/2022	WL_BFWB_OUT_SP21	N																			
6/25/2022	WL_LCI_SP02	N																	6.11		
6/25/2022	WL_WLCI_SP01	N																	6.55		
6/25/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
6/25/2022	WL_BFWB_OUT_SP21	N																			
6/26/2022	WL_LCI_SP02	N																	5.85		
6/26/2022	WL_WLCI_SP01	N																	6.85		
6/26/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
6/26/2022	WL_BFWB_OUT_SP21	N																			
6/27/2022	WL_LCI_SP02	N	< 0.010	< 0.050	< 0.050	0.0317	0.0320	33.8	0.00016	0.00022					0.00163	0.00168	9.33	9.20	6.24		
6/27/2022	WL_WLCI_SP01	N	< 0.010	0.076	< 0.050	0.0204	0.0209	86.9	0.00068	0.00048					0.00140	0.00148	22.4	21.9	7.05		
6/27/2022	WL_BFWB_OUT_SP21	N	0.207	< 0.050	0.077	0.0190	0.0198	81.6	0.0873	0.105	< 0.0050	< 0.00050			0.0129	0.0130	4.65	4.73	< 0.23 0.162	< 0.0050	< 0.0050
6/27/2022	WL_BFWB_OUT_SP21	N																			
6/27/2022	WL_BFWB_OUT_SP21	N																			
6/27/2022	WL_BFWB_OUT_SP21	N																			
6/28/2022	WL_LCI_SP02	N																	11.1		
6/28/2022	WL_WLCI_SP01	N																	7.61		
6/28/2022	WL_BFWB_OUT_SP21	N											0.058	0.081					< 0.23		
6/28/2022	WL_BFWB_OUT_SP21	N																			
6/29/2022	WL_LCI_SP02	N																	7.13		
6/29/2022	WL_WLCI_SP01	N																	7.5		
6/29/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
6/29/2022	WL_BFWB_OUT_SP21	N																			
6/30/2022	WL_LCI_SP02	N																			
6/30/2022	WL_WLCI_SP01	N																			
6/30/2022	WL_LCI_SP02	N																	6.93		
6/30/2022	WL_WLCI_SP01	N																	7.42		
6/30/2022	WL_BFWB_OUT_SP21	N																	0.28		
6/30/2022	WL_BFWB_OUT_SP21	N																			
7/1/2022	WL_LCI_SP02	N																			
7/1/2022	WL_WLCI_SP01	N																	7.34		
7/1/2022	WL_BFWB_OUT_SP21	N																	0.239		
7/1/2022	WL_LCI_SP02	N																	6.87		
7/1/2022	WL_BFWB_OUT_SP21	N																			
7/2/2022	WL_LCI_SP02	N																	7.43		

		CHEMICAL_NAME FRACTION REPORT_RESULT_UNIT	Iron T mg/l	Lead D ug/l	Lead T ug/l	Lithium D mg/l	Lithium T mg/l	Magnesium T mg/l	Manganese D mg/l	Manganese T mg/l	Mercury D ug/l	Mercury T ug/l	MeSe(IV) – methylseleninic acid CH3SeO2H D ug/l	Methaneselenonic Acid D ug/l	Molybdenum D mg/l	Molybdenum T mg/l	Nickel D ug/l	Nickel T ug/l	Nitrate Nitrogen (NO3), As N N mg/l	Nitrite Nitrogen (NO2), As N N mg/l	Nitrogen, Ammonia (As N) T mg/l
7/2/2022	WL_WLCI_SP01	N																				
7/2/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
7/2/2022	WL_WLCI_SP01	N																	7.98		
7/2/2022	WL_BFWB_OUT_SP21	N																			
7/3/2022	WL_LCI_SP02	N																			
7/3/2022	WL_WLCI_SP01	N																	7.72		
7/3/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
7/3/2022	WL_LCI_SP02	N																	8.23		
7/3/2022	WL_BFWB_OUT_SP21	N																			
7/4/2022	WL_LCI_SP02	N																	8.4		
7/4/2022	WL_WLCI_SP01	N																	7.95		
7/4/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
7/4/2022	WL_BFWB_OUT_SP21	N																			
7/5/2022	WL_LCI_SP02	N											< 0.010	< 0.010					8.62		
7/5/2022	WL_WLCI_SP01	N											< 0.010	< 0.010					7.87		
7/5/2022	WL_BFWB_OUT_SP21	N											< 0.010	0.066					< 0.23		
7/5/2022	WL_BFWB_OUT_SP21	N																			
7/6/2022	WL_LCI_SP02	N																	8.28		
7/6/2022	WL_WLCI_SP01	N																	8.08		
7/6/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
7/6/2022	WL_BFWB_OUT_SP21	N																			
7/7/2022	WL_LCI_SP02	N																			
7/7/2022	WL_WLCI_SP01	N																			
7/7/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
7/7/2022	WL_BFWB_OUT_SP21	N																			
7/7/2022	WL_BFWB_OUT_SP21	N																			
7/7/2022	WL_LCI_SP02	N																	11.2		
7/7/2022	WL_WLCI_SP01	N																	7.98		
7/7/2022	WL_LCI_SP02	N																			
7/8/2022	WL_LCI_SP02	N																	7.93		
7/8/2022	WL_WLCI_SP01	N																	8.24		
7/8/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
7/8/2022	WL_BFWB_OUT_SP21	N																			
7/9/2022	WL_LCI_SP02	N																	8.09		
7/9/2022	WL_WLCI_SP01	N																	8.07		
7/9/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
7/9/2022	WL_BFWB_OUT_SP21	N																			
7/10/2022	WL_LCI_SP02	N																	8.41		
7/10/2022	WL_WLCI_SP01	N																	8.31		
7/10/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
7/10/2022	WL_BFWB_OUT_SP21	N																			
7/11/2022	WL_LCI_SP02	N	< 0.010	0.072	< 0.050	0.0403	0.0410	37.2	0.00022	0.00021	< 0.0050	0.00088			0.00171	0.00158	11.2	10.1	4.05 8.60	< 0.0010	< 0.0050
7/11/2022	WL_WLCI_SP01	N	< 0.010	< 0.050	< 0.050	0.0239	0.0242	111	0.00077	0.00076	< 0.0050	0.00120			0.00160	0.00126	29.5	27.4	8.43 8.36	< 0.0050	< 0.0050
7/11/2022	WL_BFWB_OUT_SP21	N	0.256	< 0.050	< 0.050	0.0240	0.0233	109	0.127	0.122	< 0.0050	< 0.00050			0.0140	0.0127	6.18	5.60	< 0.23 0.191	< 0.0050	0.0127
7/11/2022	WL_BFWB_OUT_SP21	N																			
7/12/2022	WL_LCI_SP02	N																	8.37		
7/12/2022	WL_WLCI_SP01	N																	8.5		
7/12/2022	WL_BFWB_OUT_SP21	N											0.053	0.089					< 0.23		
7/12/2022	WL_BFWB_OUT_SP21	N																			
7/13/2022	WL_LCI_SP02	N																	9.08		
7/13/2022	WL_WLCI_SP01	N																	5.37		
7/13/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
7/13/2022	WL_BFWB_OUT_SP21	N																			
7/14/2022	WL_LCI_SP02	N																	9.92		
7/14/2022	WL_WLCI_SP01	N																	8.66		
7/14/2022	WL_BFWB_OUT_SP21	N																	0.609		
7/14/2022	WL_BFWB_OUT_SP21	N																			
7/15/2022	WL_LCI_SP02	N																	10.4		
7/15/2022	WL_WLCI_SP01	N																	8.61		
7/15/2022	WL_BFWB_OUT_SP21	N																	0.245		
7/15/2022	WL_BFWB_OUT_SP21	N																			
7/16/2022	WL_LCI_SP02	N																	9.41		
7/16/2022	WL_WLCI_SP01	N																	8.25		
7/16/2022	WL_BFWB_OUT_SP21	N																	0.244		
7/16/2022	WL_BFWB_OUT_SP21	N																			
7/17/2022	WL_LCI_SP02	N																	9.84		

		CHEMICAL_NAME FRACTION REPORT_RESULT_UNIT	Iron T mg/l	Lead D ug/l	Lead T ug/l	Lithium D mg/l	Lithium T mg/l	Magnesium T mg/l	Manganese D mg/l	Manganese T mg/l	Mercury D ug/l	Mercury T ug/l	MeSe(IV) – methylseleninic acid CH3SeO2H D ug/l	Methaneselenonic Acid D ug/l	Molybdenum D mg/l	Molybdenum T mg/l	Nickel D ug/l	Nickel T ug/l	Nitrate Nitrogen (NO3), As N N mg/l	Nitrite Nitrogen (NO2), As N N mg/l	Nitrogen, Ammonia (As N) T mg/l
7/17/2022	WL_WLCI_SP01	N																	8.84		
7/17/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
7/17/2022	WL_BFWB_OUT_SP21	N																			
7/18/2022	WL_LCI_SP02	N																	10.3		
7/18/2022	WL_WLCI_SP01	N																	8.96		
7/18/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
7/18/2022	WL_BFWB_OUT_SP21	N																			
7/19/2022	WL_LCI_SP02	N																	10.9		
7/19/2022	WL_WLCI_SP01	N																	9.08		
7/19/2022	WL_BFWB_OUT_SP21	N											0.030	0.132					< 0.23		
7/19/2022	WL_BFWB_OUT_SP21	N																			
7/20/2022	WL_LCI_SP02	N																	10.2		
7/20/2022	WL_WLCI_SP01	N																	8.98		
7/20/2022	WL_BFWB_OUT_SP21	N																	0.312		
7/20/2022	WL_BFWB_OUT_SP21	N																			
7/21/2022	WL_LCI_SP02	N																	11.8		
7/21/2022	WL_WLCI_SP01	N																	9.09		
7/21/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
7/21/2022	WL_BFWB_OUT_SP21	N																			
7/22/2022	WL_LCI_SP02	N																	12.1		
7/22/2022	WL_WLCI_SP01	N																	9.05		
7/22/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
7/22/2022	WL_BFWB_OUT_SP21	N																			
7/23/2022	WL_LCI_SP02	N																	12.6		
7/23/2022	WL_WLCI_SP01	N																	9.18		
7/23/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
7/23/2022	WL_BFWB_OUT_SP21	N																			
7/24/2022	WL_LCI_SP02	N																	12.9		
7/24/2022	WL_WLCI_SP01	N																	9.26		
7/24/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
7/24/2022	WL_BFWB_OUT_SP21	N																			
7/25/2022	WL_LCI_SP02	N	< 0.010	< 0.050	< 0.050	0.0737	0.0624	52.4	0.00019	0.00022					0.00256	0.00176	14.9	14.0	13.5		
7/25/2022	WL_WLCI_SP01	N	< 0.010	< 0.050	< 0.050	0.0307	0.0270	126	0.00125	0.00120					0.00123	0.00118	34.6	33.8	8.89		
7/25/2022	WL_BFWB_OUT_SP21	N	0.188	< 0.050	< 0.050	0.0303	0.0270	122	0.0984	0.0923	< 0.0050	< 0.00050			0.0136	0.0130	6.33	6.03	< 0.23 0.225	< 0.0050	0.0130
7/25/2022	WL_BFWB_OUT_SP21	N																			
7/26/2022	WL_BFWB_OUT_SP21	N											0.065	0.102					< 0.23		
7/26/2022	WL_LCI_SP02	N																			
7/26/2022	WL_WLCI_SP01	N																			
7/26/2022	WL_LCI_SP02	N																	12.2		
7/26/2022	WL_WLCI_SP01	N																	9.46		
7/26/2022	WL_BFWB_OUT_SP21	N																			
7/27/2022	WL_LCI_SP02	N																			
7/27/2022	WL_WLCI_SP01	N																			
7/28/2022	WL_LCI_SP02	N																			
7/28/2022	WL_WLCI_SP01	N																			
7/29/2022	WL_LCI_SP02	N																			
7/29/2022	WL_WLCI_SP01	N																			
7/29/2022	WL_WLCI_SP01	N																	7.92		
7/29/2022	WL_LCI_SP02	N																	13.62		
7/29/2022	WL_WLCI_SP01	N																	9.18		
7/29/2022	WL_BFWB_OUT_SP21	N																			
7/29/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
7/29/2022	WL_LCI_SP02	N																			
7/29/2022	WL_BFWB_OUT_SP21	N																			
7/30/2022	WL_LCI_SP02	N																	13.5		
7/30/2022	WL_WLCI_SP01	N																	9.6		
7/30/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
7/30/2022	WL_BFWB_OUT_SP21	N																			
7/31/2022	WL_LCI_SP02	N																	12.6		
7/31/2022	WL_WLCI_SP01	N																	9.65		
7/31/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
7/31/2022	WL_BFWB_OUT_SP21	N																			
8/1/2022	WL_LCI_SP02	N																	13.5		
8/1/2022	WL_WLCI_SP01	N																	9.72		
8/1/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
8/1/2022	WL_BFWB_OUT_SP21	N																			

		CHEMICAL_NAME FRACTION REPORT_RESULT_UNIT	Iron T mg/l	Lead D ug/l	Lead T ug/l	Lithium D mg/l	Lithium T mg/l	Magnesium T mg/l	Manganese D mg/l	Manganese T mg/l	Mercury D ug/l	Mercury T ug/l	MeSe(IV) – methylseleninic acid CH3SeO2H D ug/l	Methaneselenonic Acid D ug/l	Molybdenum D mg/l	Molybdenum T mg/l	Nickel D ug/l	Nickel T ug/l	Nitrate Nitrogen (NO3), As N N mg/l	Nitrite Nitrogen (NO2), As N N mg/l	Nitrogen, Ammonia (As N) T mg/l
8/2/2022	WL_LCI_SP02	N																	13.2		
8/2/2022	WL_WLCI_SP01	N																	9.7		
8/2/2022	WL_BFWB_OUT_SP21	N											0.050	0.074					< 0.23		
8/2/2022	WL_BFWB_OUT_SP21	N																			
8/3/2022	WL_LCI_SP02	N																	13.22		
8/3/2022	WL_WLCI_SP01	N																	9.79		
8/3/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
8/3/2022	WL_BFWB_OUT_SP21	N																			
8/4/2022	WL_LCI_SP02	N																	14.08		
8/4/2022	WL_WLCI_SP01	N																	9.67		
8/4/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
8/4/2022	WL_BFWB_OUT_SP21	N																			
8/5/2022	WL_LCI_SP02	N																	14		
8/5/2022	WL_WLCI_SP01	N																	9.68		
8/5/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
8/5/2022	WL_BFWB_OUT_SP21	N																			
8/6/2022	WL_LCI_SP02	N																	14.02		
8/6/2022	WL_WLCI_SP01	N																	9.79		
8/6/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
8/6/2022	WL_BFWB_OUT_SP21	N																			
8/7/2022	WL_LCI_SP02	N																	14.58		
8/7/2022	WL_WLCI_SP01	N																	9.86		
8/7/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
8/7/2022	WL_BFWB_OUT_SP21	N																			
8/8/2022	WL_LCI_SP02	N	< 0.010	< 0.050	< 0.050	0.0693	0.0772	56.5	0.00034	0.00032	< 0.0050	0.00658			0.00196	0.00198	12.9	13.3	14.36 13.9	0.0011	0.0159
8/8/2022	WL_WLCI_SP01	N	< 0.010	< 0.050	< 0.050	0.0275	0.0339	153	0.00154	0.00153	< 0.0050	< 0.0050			0.00161	0.00223	36.2	37.8	9.9 9.88	< 0.0050	< 0.0050
8/8/2022	WL_BFWB_OUT_SP21	N	0.241	< 0.050	< 0.050	0.0290	0.0335	146	0.130	0.136	< 0.0050	< 0.0050			0.0130	0.0136	10.6	11.1	< 0.23 0.112	< 0.0050	0.0088
8/8/2022	WL_BFWB_OUT_SP21	N																			
8/9/2022	WL_LCI_SP02	N																	14.28		
8/9/2022	WL_WLCI_SP01	N																	10.1		
8/9/2022	WL_BFWB_OUT_SP21	N											0.013	0.163					< 0.23		
8/9/2022	WL_BFWB_OUT_SP21	N																			
8/10/2022	WL_LCI_SP02	N																	14.3		
8/10/2022	WL_WLCI_SP01	N																	10.2		
8/10/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
8/10/2022	WL_BFWB_OUT_SP21	N																			
8/11/2022	WL_LCI_SP02	N																	14.1		
8/11/2022	WL_WLCI_SP01	N																	10.2		
8/11/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
8/11/2022	WL_BFWB_OUT_SP21	N																			
8/12/2022	WL_LCI_SP02	N																	14.34		
8/12/2022	WL_WLCI_SP01	N																	10.3		
8/12/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
8/12/2022	WL_BFWB_OUT_SP21	N																			
8/13/2022	WL_LCI_SP02	N																	14.16		
8/13/2022	WL_WLCI_SP01	N																	10.2		
8/13/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
8/13/2022	WL_BFWB_OUT_SP21	N																			
8/14/2022	WL_LCI_SP02	N																	14.36		
8/14/2022	WL_WLCI_SP01	N																	10.5		
8/14/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
8/14/2022	WL_BFWB_OUT_SP21	N																			
8/15/2022	WL_LCI_SP02	N																	13.98		
8/15/2022	WL_WLCI_SP01	N																	10.4		
8/15/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
8/15/2022	WL_BFWB_OUT_SP21	N																			
8/16/2022	WL_LCI_SP02	N																	13.9		
8/16/2022	WL_WLCI_SP01	N																	10.6		
8/16/2022	WL_BFWB_OUT_SP21	N											0.035	0.384					< 0.23		
8/16/2022	WL_BFWB_OUT_SP21	N																			
8/17/2022	WL_LCI_SP02	N																	14.16		
8/17/2022	WL_WLCI_SP01	N																	10.6		
8/17/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
8/17/2022	WL_BFWB_OUT_SP21	N																			
8/17/2022	WL_BFWB_OUT_SP21	N																			

		CHEMICAL_NAME FRACTION REPORT_RESULT_UNIT	Iron T mg/l	Lead D ug/l	Lead T ug/l	Lithium D mg/l	Lithium T mg/l	Magnesium T mg/l	Manganese D mg/l	Manganese T mg/l	Mercury D ug/l	Mercury T ug/l	MeSe(IV) – methylseleninic acid CH3SeO2H D ug/l	Methaneselenonic Acid D ug/l	Molybdenum D mg/l	Molybdenum T mg/l	Nickel D ug/l	Nickel T ug/l	Nitrate Nitrogen (NO3), As N N mg/l	Nitrite Nitrogen (NO2), As N N mg/l	Nitrogen, Ammonia (As N) T mg/l
8/17/2022	WL_BFWB_OUT_SP21	N	0.314	< 0.050	< 0.050	0.0394	0.0419	159	0.139	0.148	< 0.0050	< 0.0050	0.031	0.784	0.0124	0.0131	9.40	9.88	0.129	< 0.0050	0.0099
8/18/2022	WL_LCI_SP02	N																	14.36		
8/18/2022	WL_WLCI_SP01	N																	10.7		
8/18/2022	WL_BFWB_OUT_SP21	N	0.284	< 0.050	< 0.050	0.0393	0.0364	146	0.132	0.139	< 0.0050	< 0.00050			0.0136	0.0131	8.49	8.84	< 0.23 0.140	< 0.0050	0.0094
8/18/2022	WL_BFWB_OUT_SP21	N	0.284	< 0.050	< 0.050	0.0393	0.0364	146	0.132	0.139	< 0.0050	< 0.00050	0.033	0.771	0.0136	0.0131	8.49	8.84	0.140	< 0.0050	0.0094
8/19/2022	WL_LCI_SP02	N																	14		
8/19/2022	WL_WLCI_SP01	N										0.00161							10.6		
8/19/2022	WL_BFWB_OUT_SP21	N										< 0.00050							< 0.23		
8/19/2022	WL_BFWB_OUT_SP21	N																			
8/20/2022	WL_LCI_SP02	N																	13.96		
8/20/2022	WL_WLCI_SP01	N																	10.8		
8/20/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
8/20/2022	WL_BFWB_OUT_SP21	N																			
8/21/2022	WL_LCI_SP02	N																	13.76		
8/21/2022	WL_WLCI_SP01	N																	11		
8/21/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
8/21/2022	WL_BFWB_OUT_SP21	N																			
8/22/2022	WL_BFWB_OUT_SP21	N	0.256	< 0.050	< 0.050	0.0394	0.0384	143	0.137	0.140	< 0.0050	< 0.00050			0.0124	0.0123	9.14	9.32	< 0.23 0.240	< 0.0050	0.0091
8/22/2022	WL_LCI_SP02	N	< 0.010	< 0.050	< 0.050	0.0719	0.0667	57.5	0.00013	0.00020					0.00180	0.00179	13.1	13.2	14.48		
8/22/2022	WL_WLCI_SP01	N	< 0.010	< 0.100	< 0.050	0.0334	0.0312	168	0.00148	0.00144					0.00128	0.00137	42.1	41.6	10.9		
8/22/2022	WL_BFWB_OUT_SP21	N																			
8/23/2022	WL_LCI_SP02	N																	14.48		
8/23/2022	WL_WLCI_SP01	N																	11		
8/23/2022	WL_BFWB_OUT_SP21	N											0.015	0.284					< 0.23		
8/23/2022	WL_BFWB_OUT_SP21	N																			
8/24/2022	WL_LCI_SP02	N																	14.62		
8/24/2022	WL_WLCI_SP01	N																	11		
8/24/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
8/24/2022	WL_BFWB_OUT_SP21	N																			
8/25/2022	WL_LCI_SP02	N																	14.5		
8/25/2022	WL_WLCI_SP01	N																	11.3		
8/25/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
8/25/2022	WL_BFWB_OUT_SP21	N																			
8/26/2022	WL_LCI_SP02	N																	14.06		
8/26/2022	WL_WLCI_SP01	N																	11.2		
8/26/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
8/26/2022	WL_BFWB_OUT_SP21	N																			
8/27/2022	WL_LCI_SP02	N																	13.8		
8/27/2022	WL_WLCI_SP01	N																	11.1		
8/27/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
8/27/2022	WL_BFWB_OUT_SP21	N																			
8/28/2022	WL_LCI_SP02	N																	13.94		
8/28/2022	WL_WLCI_SP01	N																	11		
8/28/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
8/28/2022	WL_BFWB_OUT_SP21	N																			
8/29/2022	WL_BFWB_OUT_SP21	N																			
8/29/2022	WL_BFWB_OUT_SP21	N																			
8/29/2022	WL_BFWB_OUT_SP21	N																			
8/29/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
8/29/2022	WL_BFWB_OUT_SP21	N																			
8/29/2022	WL_LCI_SP02	N																	12.48		
8/29/2022	WL_WLCI_SP01	N																	11.6		
8/29/2022	WL_BFWB_OUT_SP21	N																			
8/30/2022	WL_BFWB_OUT_SP21	N																			
8/30/2022	WL_BFWB_OUT_SP21	N											0.272	0.526					< 0.23		
8/30/2022	WL_LCI_SP02	N																			
8/30/2022	WL_WLCI_SP01	N																			
8/30/2022	WL_BFWB_OUT_SP21	N																			
8/30/2022	WL_LCI_SP02	N																	11.64		
8/30/2022	WL_WLCI_SP01	N																	11.3		
8/31/2022	WL_LCI_SP02	N																	12.06		
8/31/2022	WL_WLCI_SP01	N																	11.5		
9/1/2022	WL_LCI_SP02	N																	11.6		

		CHEMICAL_NAME FRACTION REPORT_RESULT_UNIT	Iron T mg/l	Lead D ug/l	Lead T ug/l	Lithium D mg/l	Lithium T mg/l	Magnesium T mg/l	Manganese D mg/l	Manganese T mg/l	Mercury D ug/l	Mercury T ug/l	MeSe(IV) – methylseleninic acid CH3SeO2H D ug/l	Methaneselenonic Acid D ug/l	Molybdenum D mg/l	Molybdenum T mg/l	Nickel D ug/l	Nickel T ug/l	Nitrate Nitrogen (NO3), As N N mg/l	Nitrite Nitrogen (NO2), As N N mg/l	Nitrogen, Ammonia (As N) T mg/l
9/1/2022	WL_WLCI_SP01	N																	11		
9/1/2022	WL_LCI_SP02	N																	12.24		
9/1/2022	WL_WLCI_SP01	N																	11.4		
9/1/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
9/1/2022	WL_BFWB_OUT_SP21	N																			
9/2/2022	WL_LCI_SP02	N																	12.2		
9/2/2022	WL_WLCI_SP01	N																	11.4		
9/2/2022	WL_BFWB_OUT_SP21	N											0.318	0.304					< 0.23		
9/2/2022	WL_BFWB_OUT_SP21	N																			
9/3/2022	WL_LCI_SP02	N																	12.78		
9/3/2022	WL_WLCI_SP01	N																	11.4		
9/3/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
9/3/2022	WL_BFWB_OUT_SP21	N																			
9/4/2022	WL_LCI_SP02	N																	13		
9/4/2022	WL_WLCI_SP01	N																	11.6		
9/4/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
9/4/2022	WL_BFWB_OUT_SP21	N																			
9/5/2022	WL_LCI_SP02	N	0.011	< 0.050	< 0.050	0.0640	0.0611	50.1	0.00013	0.00058	< 0.0050	< 0.00050			0.00182	0.00176	12.1	12.2	13 12.8	< 0.0050	< 0.0050
9/5/2022	WL_WLCI_SP01	N	< 0.010	< 0.100	< 0.050	0.0360	0.0345	170	0.00151	0.00147	< 0.0050	0.00130			0.00160	0.00148	41.6	39.7	11.8 11.7	< 0.0050	< 0.0050
9/5/2022	WL_BFWB_OUT_SP21	N	0.263	< 0.050	< 0.050	0.0409	0.0386	150	0.134	0.142	< 0.0050	< 0.00050			0.0132	0.0131	6.78	6.72	< 0.23 < 0.0250	< 0.0050	0.0092
9/5/2022	WL_BFWB_OUT_SP21	N																			
9/6/2022	WL_LCI_SP02	N																	12.3		
9/6/2022	WL_WLCI_SP01	N																	11.5		
9/6/2022	WL_BFWB_OUT_SP21	N											0.012	0.190					< 0.23		
9/6/2022	WL_BFWB_OUT_SP21	N																			
9/6/2022	WL_BFWB_OUT_SP21	N																			
9/7/2022	WL_LCI_SP02	N																	12.6		
9/7/2022	WL_WLCI_SP01	N																	11.8		
9/7/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
9/7/2022	WL_BFWB_OUT_SP21	N																			
9/8/2022	WL_LCI_SP02	N																	13.22		
9/8/2022	WL_WLCI_SP01	N																	11.8		
9/8/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
9/8/2022	WL_BFWB_OUT_SP21	N																			
9/9/2022	WL_LCI_SP02	N																	13.1		
9/9/2022	WL_WLCI_SP01	N																	11.9		
9/9/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
9/9/2022	WL_BFWB_OUT_SP21	N																			
9/10/2022	WL_LCI_SP02	N																	13.4		
9/10/2022	WL_WLCI_SP01	N																	11.9		
9/10/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
9/10/2022	WL_BFWB_OUT_SP21	N																			
9/11/2022	WL_LCI_SP02	N																	13.44		
9/11/2022	WL_WLCI_SP01	N																	12		
9/11/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
9/11/2022	WL_BFWB_OUT_SP21	N																			
9/12/2022	WL_LCI_SP02	N																	13.28		
9/12/2022	WL_WLCI_SP01	N																	12.1		
9/12/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
9/12/2022	WL_BFWB_OUT_SP21	N																			
9/13/2022	WL_LCI_SP02	N																	13.6		
9/13/2022	WL_WLCI_SP01	N																	12.3		
9/13/2022	WL_BFWB_OUT_SP21	N											< 0.010	0.216					< 0.23		
9/13/2022	WL_BFWB_OUT_SP21	N																			
9/13/2022	WL_WLCI_SP01	N																			
9/14/2022	WL_LCI_SP02	N																	13.6		
9/14/2022	WL_WLCI_SP01	N																	12.1		
9/14/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
9/14/2022	WL_BFWB_OUT_SP21	N																			
9/15/2022	WL_LCI_SP02	N																	13.86		
9/15/2022	WL_WLCI_SP01	N																	12.2		
9/15/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
9/15/2022	WL_BFWB_OUT_SP21	N																			
9/16/2022	WL_LCI_SP02	N																	13.82		
9/16/2022	WL_WLCI_SP01	N																	12.3		
9/16/2022	WL_BFWB_OUT_SP21	N																	< 0.23		

		CHEMICAL_NAME FRACTION REPORT_RESULT_UNIT	Iron T mg/l	Lead D ug/l	Lead T ug/l	Lithium D mg/l	Lithium T mg/l	Magnesium T mg/l	Manganese D mg/l	Manganese T mg/l	Mercury D ug/l	Mercury T ug/l	MeSe(IV) – methylseleninic acid CH3SeO2H D ug/l	Methaneselenonic Acid D ug/l	Molybdenum D mg/l	Molybdenum T mg/l	Nickel D ug/l	Nickel T ug/l	Nitrate Nitrogen (NO3), As N N mg/l	Nitrite Nitrogen (NO2), As N N mg/l	Nitrogen, Ammonia (As N) T mg/l
9/16/2022	WL_BFWB_OUT_SP21	N																				
9/17/2022	WL_LCI_SP02	N																	14.92		
9/17/2022	WL_WLCI_SP01	N																	12		
9/17/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
9/18/2022	WL_LCI_SP02	N																	14.04		
9/18/2022	WL_WLCI_SP01	N																	12.2		
9/18/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
9/18/2022	WL_BFWB_OUT_SP21	N																			
9/19/2022	WL_LCI_SP02	N	< 0.010	< 0.050	< 0.050	0.0802	0.0717	60.7	< 0.00010	0.00018					0.00195	0.00194	12.3	13.1	14.52		
9/19/2022	WL_WLCI_SP01	N	< 0.020	< 0.100	< 0.100	0.0418	0.0373	194	0.00170	0.00200					0.00152	0.00164	43.0	45.0	11.7		
9/19/2022	WL_BFWB_OUT_SP21	N	0.361	< 0.050	< 0.050	0.0554	0.0502	147	0.130	0.152	< 0.0050	< 0.00050			0.0144	0.0154	6.58	6.77	< 0.23 0.0595	< 0.0050	0.0172
9/20/2022	WL_LCI_SP02	N																	14.48		
9/20/2022	WL_WLCI_SP01	N																	12.6		
9/20/2022	WL_BFWB_OUT_SP21	N											< 0.010	0.213					< 0.23		
9/20/2022	WL_BFWB_OUT_SP21	N																			
9/21/2022	WL_LCI_SP02	N																	13.78		
9/21/2022	WL_WLCI_SP01	N																	12.3		
9/21/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
9/21/2022	WL_BFWB_OUT_SP21	N																			
9/22/2022	WL_LCI_SP02	N																	14.84		
9/22/2022	WL_WLCI_SP01	N																	12.5		
9/22/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
9/22/2022	WL_BFWB_OUT_SP21	N																			
9/23/2022	WL_LCI_SP02	N																	15.08		
9/23/2022	WL_WLCI_SP01	N																	12.72		
9/23/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
9/23/2022	WL_BFWB_OUT_SP21	N																			
9/24/2022	WL_LCI_SP02	N																	15.02		
9/24/2022	WL_WLCI_SP01	N																	12.86		
9/24/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
9/24/2022	WL_BFWB_OUT_SP21	N																			
9/25/2022	WL_LCI_SP02	N																	15		
9/25/2022	WL_WLCI_SP01	N																	12.62		
9/25/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
9/25/2022	WL_BFWB_OUT_SP21	N																			
9/26/2022	WL_LCI_SP02	N																	15.16		
9/26/2022	WL_WLCI_SP01	N																	12.86		
9/26/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
9/26/2022	WL_BFWB_OUT_SP21	N																			
9/27/2022	WL_LCI_SP02	N																	15.32		
9/27/2022	WL_WLCI_SP01	N																	12.9		
9/27/2022	WL_BFWB_OUT_SP21	N											< 0.010	0.166					< 0.23		
9/27/2022	WL_BFWB_OUT_SP21	N																			
9/28/2022	WL_LCI_SP02	N																	15.06		
9/28/2022	WL_WLCI_SP01	N																	12.64		
9/28/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
9/28/2022	WL_BFWB_OUT_SP21	N																			
9/29/2022	WL_LCI_SP02	N																	14.02		
9/29/2022	WL_WLCI_SP01	N																	12.48		
9/29/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
9/29/2022	WL_BFWB_OUT_SP21	N																			
9/30/2022	WL_LCI_SP02	N																	13.54		
9/30/2022	WL_WLCI_SP01	N																	13.02		
9/30/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
9/30/2022	WL_BFWB_OUT_SP21	N																			
10/1/2022	WL_LCI_SP02	N																	13.72		
10/1/2022	WL_WLCI_SP01	N																	12.92		
10/1/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
10/1/2022	WL_BFWB_OUT_SP21	N																			
10/2/2022	WL_LCI_SP02	N																	14.18		
10/2/2022	WL_WLCI_SP01	N																	13.16		
10/2/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
10/2/2022	WL_BFWB_OUT_SP21	N																			
10/2/2022	WL_BFWB_OUT_SP21	N																			
10/3/2022	WL_LCI_SP02	N	< 0.010	< 0.050	< 0.050	0.0663	0.0700	61.2	0.00013	0.00012	< 0.0050	0.00052			0.00178	0.00176	12.7	12.7	13.68 13.3	< 0.0010	< 0.0050

		CHEMICAL_NAME FRACTION REPORT_RESULT_UNIT	Iron T mg/l	Lead D ug/l	Lead T ug/l	Lithium D mg/l	Lithium T mg/l	Magnesium T mg/l	Manganese D mg/l	Manganese T mg/l	Mercury D ug/l	Mercury T ug/l	MeSe(IV) – methylseleninic acid CH3SeO2H D ug/l	Methaneselenonic Acid D ug/l	Molybdenum D mg/l	Molybdenum T mg/l	Nickel D ug/l	Nickel T ug/l	Nitrate Nitrogen (NO3), As N N mg/l	Nitrite Nitrogen (NO2), As N N mg/l	Nitrogen, Ammonia (As N) T mg/l
10/3/2022	WL_WLCI_SP01	N	< 0.020	< 0.100	< 0.100	0.0395	0.0402	201	0.00160	0.00156	< 0.0050	0.00136			0.00148	0.00156	44.6	45.0	13.1 13.4	< 0.0050	< 0.0050
10/3/2022	WL_BFWB_OUT_SP21	N	0.318	< 0.050	< 0.100	0.0536	0.0616	161	0.141	0.167	< 0.0050	< 0.00050			0.0134	0.0151	6.98	8.52	< 0.23 < 0.0250	< 0.0050	0.0088
10/3/2022	WL_BFWB_OUT_SP21	N																			
10/4/2022	WL_LCI_SP02	N																	13.04		
10/4/2022	WL_WLCI_SP01	N																	13.1		
10/4/2022	WL_BFWB_OUT_SP21	N											< 0.010	0.128					< 0.23		
10/4/2022	WL_BFWB_OUT_SP21	N																			
10/5/2022	WL_LCI_SP02	N																	13.48		
10/5/2022	WL_WLCI_SP01	N																	13.48		
10/5/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
10/5/2022	WL_BFWB_OUT_SP21	N																			
10/6/2022	WL_LCI_SP02	N																	13.66		
10/6/2022	WL_WLCI_SP01	N																	13.48		
10/6/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
10/6/2022	WL_BFWB_OUT_SP21	N																			
10/7/2022	WL_LCI_SP02	N																	13.28		
10/7/2022	WL_WLCI_SP01	N																	13.28		
10/7/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
10/7/2022	WL_BFWB_OUT_SP21	N																			
10/8/2022	WL_LCI_SP02	N																	13.06		
10/8/2022	WL_WLCI_SP01	N																	13.28		
10/8/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
10/8/2022	WL_BFWB_OUT_SP21	N																			
10/9/2022	WL_LCI_SP02	N																	13.16		
10/9/2022	WL_WLCI_SP01	N																	13.64		
10/9/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
10/9/2022	WL_BFWB_OUT_SP21	N																			
10/10/2022	WL_LCI_SP02	N																	11.14		
10/10/2022	WL_WLCI_SP01	N																	12.66		
10/10/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
10/10/2022	WL_BFWB_OUT_SP21	N																			
10/11/2022	WL_LCI_SP02	N											< 0.010	< 0.010					13.02		
10/11/2022	WL_WLCI_SP01	N											0.017	< 0.010					13.54		
10/11/2022	WL_BFWB_OUT_SP21	N											< 0.010	0.135					< 0.23		
10/11/2022	WL_BFWB_OUT_SP21	N																			
10/12/2022	WL_LCI_SP02	N																	13.16		
10/12/2022	WL_WLCI_SP01	N																	13.58		
10/12/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
10/12/2022	WL_BFWB_OUT_SP21	N																			
10/13/2022	WL_LCI_SP02	N																	13.28		
10/13/2022	WL_WLCI_SP01	N																	13.4		
10/13/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
10/13/2022	WL_BFWB_OUT_SP21	N																			
10/14/2022	WL_LCI_SP02	N																	13.58		
10/14/2022	WL_WLCI_SP01	N																	13.16		
10/14/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
10/14/2022	WL_BFWB_OUT_SP21	N																			
10/15/2022	WL_LCI_SP02	N																	14.04		
10/15/2022	WL_WLCI_SP01	N																	13.48		
10/15/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
10/15/2022	WL_BFWB_OUT_SP21	N																			
10/16/2022	WL_LCI_SP02	N																	14.16		
10/16/2022	WL_WLCI_SP01	N																	13.3		
10/16/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
10/16/2022	WL_BFWB_OUT_SP21	N																			
10/17/2022	WL_LCI_SP02	N	< 0.010	< 0.050	< 0.050	0.0656	0.0598	56.5	< 0.00010	0.00012					0.00192	0.00174	11.6	11.3	12.52		
10/17/2022	WL_WLCI_SP01	N	< 0.020	< 0.100	< 0.100	0.0404	0.0373	218	0.00174	0.00182					0.00193	0.00169	45.4	47.0	13.08		
10/17/2022	WL_BFWB_OUT_SP21	N	0.258	< 0.050	< 0.050	0.0545	0.0479	142	0.135	0.148	< 0.0050	< 0.00050			0.0145	0.0131	12.6	12.8	< 0.23 < 0.0250	< 0.0050	0.0070
10/17/2022	WL_BFWB_OUT_SP21	N																			
10/18/2022	WL_LCI_SP02	N																	13.04		
10/18/2022	WL_WLCI_SP01	N																	13.72		
10/18/2022	WL_BFWB_OUT_SP21	N											< 0.010	0.135					< 0.23		
10/18/2022	WL_BFWB_OUT_SP21	N																			
10/19/2022	WL_LCI_SP02	N																	13.32		

		CHEMICAL_NAME FRACTION REPORT_RESULT_UNIT	Iron T mg/l	Lead D ug/l	Lead T ug/l	Lithium D mg/l	Lithium T mg/l	Magnesium T mg/l	Manganese D mg/l	Manganese T mg/l	Mercury D ug/l	Mercury T ug/l	MeSe(IV) – methylseleninic acid CH3SeO2H D ug/l	Methaneselenonic Acid D ug/l	Molybdenum D mg/l	Molybdenum T mg/l	Nickel D ug/l	Nickel T ug/l	Nitrate Nitrogen (NO3), As N N mg/l	Nitrite Nitrogen (NO2), As N N mg/l	Nitrogen, Ammonia (As N) T mg/l
10/19/2022	WL_WLCI_SP01	N																	13.64		
10/19/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
10/19/2022	WL_BFWB_OUT_SP21	N																			
10/20/2022	WL_LCI_SP02	N																	13.32		
10/20/2022	WL_WLCI_SP01	N																	14.08		
10/20/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
10/20/2022	WL_BFWB_OUT_SP21	N																			
10/21/2022	WL_LCI_SP02	N																	15.32		
10/21/2022	WL_WLCI_SP01	N																	15.82		
10/21/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
10/21/2022	WL_BFWB_OUT_SP21	N																			
10/22/2022	WL_LCI_SP02	N																	12.54		
10/22/2022	WL_WLCI_SP01	N																	13.02		
10/22/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
10/22/2022	WL_BFWB_OUT_SP21	N																			
10/23/2022	WL_LCI_SP02	N																	14.14		
10/23/2022	WL_WLCI_SP01	N																	13.86		
10/23/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
10/23/2022	WL_BFWB_OUT_SP21	N																			
10/24/2022	WL_LCI_SP02	N																	13.12		
10/24/2022	WL_WLCI_SP01	N																	14.12		
10/24/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
10/24/2022	WL_BFWB_OUT_SP21	N																			
10/25/2022	WL_LCI_SP02	N																	13.22		
10/25/2022	WL_WLCI_SP01	N																	14		
10/25/2022	WL_BFWB_OUT_SP21	N											< 0.010	0.216					< 0.23		
10/25/2022	WL_BFWB_OUT_SP21	N																			
10/26/2022	WL_LCI_SP02	N																	13.92		
10/26/2022	WL_WLCI_SP01	N																	14.18		
10/26/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
10/26/2022	WL_BFWB_OUT_SP21	N																			
10/27/2022	WL_LCI_SP02	N																	13.48		
10/27/2022	WL_WLCI_SP01	N																	14.16		
10/27/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
10/27/2022	WL_BFWB_OUT_SP21	N																			
10/27/2022	WL_WLCI_SP01	N																			
10/28/2022	WL_LCI_SP02	N																	13.08		
10/28/2022	WL_WLCI_SP01	N																	14.24		
10/28/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
10/28/2022	WL_BFWB_OUT_SP21	N																			
10/29/2022	WL_LCI_SP02	N																	12.94		
10/29/2022	WL_WLCI_SP01	N																	14.16		
10/29/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
10/29/2022	WL_BFWB_OUT_SP21	N																			
10/30/2022	WL_LCI_SP02	N																	13.08		
10/30/2022	WL_WLCI_SP01	N																	14.42		
10/30/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
10/30/2022	WL_BFWB_OUT_SP21	N																			
10/31/2022	WL_LCI_SP02	N	< 0.010	< 0.050	< 0.050	0.0665	0.0641	52.1	0.00010	< 0.00010					0.00171	0.00173	10.4	10.8	12.72		
10/31/2022	WL_WLCI_SP01	N	< 0.020	< 0.100	< 0.100	0.0427	0.0427	209	0.00029	0.00033					0.00265	0.00279	29.8	32.9	14.1		
10/31/2022	WL_BFWB_OUT_SP21	N	0.254	< 0.050	< 0.050	0.0539	0.0527	126	0.130	0.141	< 0.0050	< 0.00050			0.0130	0.0138	9.92	10.7	< 0.23 < 0.0250	0.0072	0.0161
10/31/2022	WL_BFWB_OUT_SP21	N																			
11/1/2022	WL_LCI_SP02	N																	12.82		
11/1/2022	WL_WLCI_SP01	N																	14.16		
11/1/2022	WL_BFWB_OUT_SP21	N											0.017	1.11					< 0.23		
11/1/2022	WL_BFWB_OUT_SP21	N																			
11/2/2022	WL_LCI_SP02	N																	13.68		
11/2/2022	WL_WLCI_SP01	N																	14.2		
11/2/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
11/2/2022	WL_BFWB_OUT_SP21	N																			
11/3/2022	WL_LCI_SP02	N																	12.44		
11/3/2022	WL_WLCI_SP01	N																	13.82		
11/3/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
11/3/2022	WL_BFWB_OUT_SP21	N																			
11/4/2022	WL_LCI_SP02	N																	12.98		
11/4/2022	WL_WLCI_SP01	N																	14.64		

		CHEMICAL_NAME FRACTION REPORT_RESULT_UNIT	Iron T mg/l	Lead D ug/l	Lead T ug/l	Lithium D mg/l	Lithium T mg/l	Magnesium T mg/l	Manganese D mg/l	Manganese T mg/l	Mercury D ug/l	Mercury T ug/l	MeSe(IV) – methylseleninic acid CH3SeO2H D ug/l	Methaneselenonic Acid D ug/l	Molybdenum D mg/l	Molybdenum T mg/l	Nickel D ug/l	Nickel T ug/l	Nitrate Nitrogen (NO3), As N N mg/l	Nitrite Nitrogen (NO2), As N N mg/l	Nitrogen, Ammonia (As N) T mg/l
11/4/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
11/4/2022	WL_BFWB_OUT_SP21	N																			
11/5/2022	WL_LCI_SP02	N																	15.3		
11/5/2022	WL_WLCI_SP01	N																	14.46		
11/5/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
11/5/2022	WL_BFWB_OUT_SP21	N																			
11/6/2022	WL_LCI_SP02	N																	13.1		
11/6/2022	WL_WLCI_SP01	N																	14.16		
11/6/2022	WL_BFWB_OUT_SP21	N																	0.341		
11/6/2022	WL_BFWB_OUT_SP21	N																			
11/7/2022	WL_LCI_SP02	N																	14.2		
11/7/2022	WL_WLCI_SP01	N																	14.8		
11/7/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
11/7/2022	WL_BFWB_OUT_SP21	N																			
11/8/2022	WL_LCI_SP02	N																	13.02		
11/8/2022	WL_WLCI_SP01	N																	14.14		
11/8/2022	WL_BFWB_OUT_SP21	N											0.011	0.280					< 0.23		
11/8/2022	WL_BFWB_OUT_SP21	N																			
11/9/2022	WL_LCI_SP02	N																	13.1		
11/9/2022	WL_WLCI_SP01	N																	13.92		
11/9/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
11/9/2022	WL_BFWB_OUT_SP21	N																			
11/10/2022	WL_LCI_SP02	N																	13.18		
11/10/2022	WL_WLCI_SP01	N																	14.42		
11/10/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
11/10/2022	WL_BFWB_OUT_SP21	N																			
11/11/2022	WL_LCI_SP02	N																	13.24		
11/11/2022	WL_WLCI_SP01	N																	14.46		
11/11/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
11/11/2022	WL_BFWB_OUT_SP21	N																			
11/12/2022	WL_LCI_SP02	N																	12.94		
11/12/2022	WL_WLCI_SP01	N																	14.28		
11/12/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
11/12/2022	WL_BFWB_OUT_SP21	N																			
11/13/2022	WL_LCI_SP02	N																	13.26		
11/13/2022	WL_WLCI_SP01	N																	14.46		
11/13/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
11/13/2022	WL_BFWB_OUT_SP21	N																			
11/14/2022	WL_BFWB_OUT_SP21	N																			
11/14/2022	WL_LCI_SP02	N	< 0.010	< 0.050	< 0.050	0.0718	0.0706	59.0	< 0.00010	< 0.00010	< 0.0050	0.00069			0.00194	0.00202	9.77	12.3	13.86 13.3	< 0.0010	< 0.0050
11/14/2022	WL_WLCI_SP01	N	< 0.020	< 0.100	< 0.100	0.0381	0.0409	205	< 0.00020	< 0.00020	< 0.0050	0.00116			0.00407	0.00399	22.5	22.3	14.6 14.4	< 0.0050	< 0.0050
11/14/2022	WL_BFWB_OUT_SP21	N	0.228	< 0.050	< 0.050	0.0558	0.0540	126	0.128	0.137	< 0.0050	< 0.00050			0.0148	0.0150	9.51	9.86	< 0.23 0.0431	< 0.0050	0.0181
11/14/2022	WL_BFWB_OUT_SP21	N																			
11/15/2022	WL_LCI_SP02	N																	14.44		
11/15/2022	WL_WLCI_SP01	N																	14.18		
11/15/2022	WL_BFWB_OUT_SP21	N											< 0.010	0.212					< 0.23		
11/15/2022	WL_BFWB_OUT_SP21	N																			
11/15/2022	WL_BFWB_OUT_SP21	N																			
11/16/2022	WL_LCI_SP02	N																	13.98		
11/16/2022	WL_WLCI_SP01	N																	14.78		
11/16/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
11/16/2022	WL_BFWB_OUT_SP21	N																			
11/17/2022	WL_LCI_SP02	N																	13.78		
11/17/2022	WL_WLCI_SP01	N																	14.7		
11/17/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
11/17/2022	WL_BFWB_OUT_SP21	N																			
11/18/2022	WL_LCI_SP02	N																	13.88		
11/18/2022	WL_WLCI_SP01	N																	14.88		
11/18/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
11/18/2022	WL_BFWB_OUT_SP21	N																			
11/19/2022	WL_LCI_SP02	N																	13.72		
11/19/2022	WL_WLCI_SP01	N																	15.16		
11/19/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
11/19/2022	WL_BFWB_OUT_SP21	N																			
11/20/2022	WL_LCI_SP02	N																	14.02		
11/20/2022	WL_WLCI_SP01	N																	14.78		

		CHEMICAL_NAME FRACTION REPORT_RESULT_UNIT	Iron T mg/l	Lead D ug/l	Lead T ug/l	Lithium D mg/l	Lithium T mg/l	Magnesium T mg/l	Manganese D mg/l	Manganese T mg/l	Mercury D ug/l	Mercury T ug/l	MeSe(IV) – methylseleninic acid CH3SeO2H D ug/l	Methaneselenonic Acid D ug/l	Molybdenum D mg/l	Molybdenum T mg/l	Nickel D ug/l	Nickel T ug/l	Nitrate Nitrogen (NO3), As N N mg/l	Nitrite Nitrogen (NO2), As N N mg/l	Nitrogen, Ammonia (As N) T mg/l
11/20/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
11/20/2022	WL_BFWB_OUT_SP21	N																			
11/21/2022	WL_LCI_SP02	N																	13.52		
11/21/2022	WL_WLCI_SP01	N																	14.98		
11/21/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
11/21/2022	WL_BFWB_OUT_SP21	N																			
11/22/2022	WL_LCI_SP02	N																	13.46		
11/22/2022	WL_WLCI_SP01	N																	15.18		
11/22/2022	WL_BFWB_OUT_SP21	N											< 0.010	0.280					< 0.23		
11/22/2022	WL_BFWB_OUT_SP21	N																			
11/23/2022	WL_LCI_SP02	N																	13.48		
11/23/2022	WL_WLCI_SP01	N																	15.06		
11/23/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
11/23/2022	WL_BFWB_OUT_SP21	N																			
11/24/2022	WL_LCI_SP02	N																	13.32		
11/24/2022	WL_WLCI_SP01	N																	14.88		
11/24/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
11/24/2022	WL_BFWB_OUT_SP21	N																			
11/25/2022	WL_LCI_SP02	N																	13.5		
11/25/2022	WL_WLCI_SP01	N																	14.94		
11/25/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
11/25/2022	WL_BFWB_OUT_SP21	N																			
11/26/2022	WL_LCI_SP02	N																	13.28		
11/26/2022	WL_WLCI_SP01	N																	15		
11/26/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
11/26/2022	WL_BFWB_OUT_SP21	N																			
11/27/2022	WL_LCI_SP02	N																	13.48		
11/27/2022	WL_WLCI_SP01	N																	15		
11/27/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
11/27/2022	WL_BFWB_OUT_SP21	N																			
11/28/2022	WL_LCI_SP02	N	< 0.010	< 0.050	< 0.050	0.0611	0.0665	57.1	< 0.00010	0.00010					0.00197	0.00203	10.0	10.0	13.56		
11/28/2022	WL_WLCI_SP01	N	< 0.020	< 0.100	< 0.100	0.0374	0.0379	205	< 0.00020	< 0.00020					0.00414	0.00514	19.8	19.0	15.18		
11/28/2022	WL_BFWB_OUT_SP21	N	0.236	< 0.050	< 0.050	0.0480	0.0572	133	0.132	0.139	< 0.0050	< 0.00050			0.0144	0.0157	8.23	8.58	< 0.23 0.601	< 0.0050	0.0179
11/28/2022	WL_BFWB_OUT_SP21	N																			
11/29/2022	WL_LCI_SP02	N																	13.34		
11/29/2022	WL_WLCI_SP01	N																	15.06		
11/29/2022	WL_BFWB_OUT_SP21	N											< 0.010	0.218					< 0.23		
11/29/2022	WL_BFWB_OUT_SP21	N																			
11/30/2022	WL_LCI_SP02	N																	13.54		
11/30/2022	WL_WLCI_SP01	N																	15.2		
11/30/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
11/30/2022	WL_BFWB_OUT_SP21	N																			
12/1/2022	WL_LCI_SP02	N																	13.44		
12/1/2022	WL_WLCI_SP01	N																	15.12		
12/1/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
12/1/2022	WL_BFWB_OUT_SP21	N																			
12/2/2022	WL_LCI_SP02	N																	13.34		
12/2/2022	WL_WLCI_SP01	N																	15.08		
12/2/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
12/2/2022	WL_BFWB_OUT_SP21	N																			
12/3/2022	WL_LCI_SP02	N																	13.44		
12/3/2022	WL_WLCI_SP01	N																	16.14		
12/3/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
12/3/2022	WL_BFWB_OUT_SP21	N																			
12/4/2022	WL_LCI_SP02	N																	13.1		
12/4/2022	WL_WLCI_SP01	N																	15.06		
12/4/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
12/4/2022	WL_BFWB_OUT_SP21	N																			
12/5/2022	WL_LCI_SP02	N																	13.78		
12/5/2022	WL_WLCI_SP01	N																	15.62		
12/5/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
12/5/2022	WL_BFWB_OUT_SP21	N																			
12/6/2022	WL_LCI_SP02	N																	13.42		
12/6/2022	WL_WLCI_SP01	N																	15.18		
12/6/2022	WL_BFWB_OUT_SP21	N											< 0.010	0.284					< 0.23		
12/6/2022	WL_BFWB_OUT_SP21	N																			

		CHEMICAL_NAME FRACTION REPORT_RESULT_UNIT	Iron T mg/l	Lead D ug/l	Lead T ug/l	Lithium D mg/l	Lithium T mg/l	Magnesium T mg/l	Manganese D mg/l	Manganese T mg/l	Mercury D ug/l	Mercury T ug/l	MeSe(IV) – methylseleninic acid CH3SeO2H D ug/l	Methaneselenonic Acid D ug/l	Molybdenum D mg/l	Molybdenum T mg/l	Nickel D ug/l	Nickel T ug/l	Nitrate Nitrogen (NO3), As N N mg/l	Nitrite Nitrogen (NO2), As N N mg/l	Nitrogen, Ammonia (As N) T mg/l
12/7/2022	WL_LCI_SP02	N																	14.94		
12/7/2022	WL_WLCI_SP01	N																	15.56		
12/7/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
12/7/2022	WL_BFWB_OUT_SP21	N																			
12/8/2022	WL_LCI_SP02	N																	13.92		
12/8/2022	WL_WLCI_SP01	N																	15.76		
12/8/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
12/8/2022	WL_BFWB_OUT_SP21	N																			
12/9/2022	WL_LCI_SP02	N																	13.64		
12/9/2022	WL_WLCI_SP01	N																	15.22		
12/9/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
12/9/2022	WL_BFWB_OUT_SP21	N																			
12/10/2022	WL_LCI_SP02	N																	13.5		
12/10/2022	WL_WLCI_SP01	N																	15.56		
12/10/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
12/10/2022	WL_BFWB_OUT_SP21	N																			
12/11/2022	WL_LCI_SP02	N																	13.9		
12/11/2022	WL_WLCI_SP01	N																	16		
12/11/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
12/11/2022	WL_BFWB_OUT_SP21	N																			
12/12/2022	WL_LCI_SP02	N	< 0.010	< 0.050	2.27	0.0709	0.0691	55.9	< 0.00010	< 0.00010	< 0.0050	< 0.00050			0.00195	0.00192	10.5	9.94	15 14.7	< 0.0050	< 0.0050
12/12/2022	WL_WLCI_SP01	N	< 0.020	< 0.100	< 0.100	0.0370	0.0374	206	< 0.00020	< 0.00020	< 0.0050	0.00105			0.00418	0.00415	19.0	17.8	15.68 15.3	< 0.0050	< 0.0050
12/12/2022	WL_BFWB_OUT_SP21	N	0.288	< 0.050	< 0.050	0.0544	0.0537	120	0.129	0.130	< 0.0050	< 0.00050			0.0151	0.0142	8.12	7.76	< 0.23 < 0.0250	< 0.0050	0.0192
12/12/2022	WL_BFWB_OUT_SP21	N																			
12/13/2022	WL_LCI_SP02	N																	14.16		
12/13/2022	WL_WLCI_SP01	N																	15.7		
12/13/2022	WL_BFWB_OUT_SP21	N											< 0.010	0.258					< 0.23		
12/13/2022	WL_BFWB_OUT_SP21	N																			
12/14/2022	WL_LCI_SP02	N																	14		
12/14/2022	WL_WLCI_SP01	N																	15.9		
12/14/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
12/14/2022	WL_BFWB_OUT_SP21	N																			
12/15/2022	WL_LCI_SP02	N																	14.2		
12/15/2022	WL_WLCI_SP01	N																	16.08		
12/15/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
12/15/2022	WL_BFWB_OUT_SP21	N																			
12/16/2022	WL_LCI_SP02	N																	14.02		
12/16/2022	WL_WLCI_SP01	N																	15.9		
12/16/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
12/16/2022	WL_BFWB_OUT_SP21	N																			
12/17/2022	WL_LCI_SP02	N																	13.96		
12/17/2022	WL_WLCI_SP01	N																	16.1		
12/17/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
12/17/2022	WL_BFWB_OUT_SP21	N																			
12/18/2022	WL_LCI_SP02	N																	14.06		
12/18/2022	WL_WLCI_SP01	N																	16.02		
12/18/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
12/18/2022	WL_BFWB_OUT_SP21	N																			
12/19/2022	WL_LCI_SP02	N																	14.14		
12/19/2022	WL_WLCI_SP01	N																	16.2		
12/19/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
12/19/2022	WL_BFWB_OUT_SP21	N																			
12/20/2022	WL_LCI_SP02	N																	14.64		
12/20/2022	WL_WLCI_SP01	N																	15.78		
12/20/2022	WL_BFWB_OUT_SP21	N											< 0.010	0.330					< 0.23		
12/20/2022	WL_BFWB_OUT_SP21	N																			
12/21/2022	WL_LCI_SP02	N																	14.08		
12/21/2022	WL_WLCI_SP01	N																	15.92		
12/21/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
12/21/2022	WL_BFWB_OUT_SP21	N																			
12/22/2022	WL_LCI_SP02	N																	13.74		
12/22/2022	WL_WLCI_SP01	N																	16.56		
12/22/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
12/22/2022	WL_BFWB_OUT_SP21	N																			
12/23/2022	WL_LCI_SP02	N																	14.26		
12/23/2022	WL_WLCI_SP01	N																	15.94		

		CHEMICAL_NAME FRACTION REPORT_RESULT_UNIT	Iron T mg/l	Lead D ug/l	Lead T ug/l	Lithium D mg/l	Lithium T mg/l	Magnesium T mg/l	Manganese D mg/l	Manganese T mg/l	Mercury D ug/l	Mercury T ug/l	MeSe(IV) – methylseleninic acid CH3SeO2H D ug/l	Methaneselenonic Acid D ug/l	Molybdenum D mg/l	Molybdenum T mg/l	Nickel D ug/l	Nickel T ug/l	Nitrate Nitrogen (NO3), As N N mg/l	Nitrite Nitrogen (NO2), As N N mg/l	Nitrogen, Ammonia (As N) T mg/l
12/23/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
12/23/2022	WL_BFWB_OUT_SP21	N																			
12/24/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
12/24/2022	WL_BFWB_OUT_SP21	N																			
12/24/2022	WL_LCI_SP02	N																	14.22		
12/24/2022	WL_WLCI_SP01	N																	16.24		
12/25/2022	WL_LCI_SP02	N																	14.1		
12/25/2022	WL_WLCI_SP01	N																	16.2		
12/25/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
12/25/2022	WL_BFWB_OUT_SP21	N																			
12/26/2022	WL_LCI_SP02	N																	14.76		
12/26/2022	WL_WLCI_SP01	N																	16.7		
12/26/2022	WL_BFWB_OUT_SP21	N											< 0.010	0.483					< 0.23		
12/26/2022	WL_BFWB_OUT_SP21	N																			
12/27/2022	WL_LCI_SP02	N	< 0.010	< 0.050	< 0.050	0.0643	0.0645	62.7	< 0.00010	< 0.00010					0.00199	0.00204	9.74	10.1	14.22		
12/27/2022	WL_WLCI_SP01	N	< 0.020	< 0.100	< 0.100	0.0363	0.0364	225	< 0.00020	< 0.00020					0.00451	0.00475	17.8	18.3	16.4		
12/27/2022	WL_BFWB_OUT_SP21	N	0.235	< 0.050	< 0.050	0.0515	0.0544	126	0.121	0.136	< 0.0050	< 0.00050			0.0150	0.0154	6.63	6.95	< 0.23 < 0.0250	< 0.0050	0.0155
12/27/2022	WL_BFWB_OUT_SP21	N																			
12/28/2022	WL_LCI_SP02	N																	14.26		
12/28/2022	WL_WLCI_SP01	N																	16.4		
12/28/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
12/28/2022	WL_BFWB_OUT_SP21	N																			
12/29/2022	WL_LCI_SP02	N																	14.2		
12/29/2022	WL_WLCI_SP01	N																	16.4		
12/29/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
12/29/2022	WL_BFWB_OUT_SP21	N																			
12/30/2022	WL_LCI_SP02	N																	14.08		
12/30/2022	WL_WLCI_SP01	N																	16.36		
12/30/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
12/30/2022	WL_BFWB_OUT_SP21	N																			
12/31/2022	WL_LCI_SP02	N																	14.2		
12/31/2022	WL_WLCI_SP01	N																	16.46		
12/31/2022	WL_BFWB_OUT_SP21	N																	< 0.23		
12/31/2022	WL_BFWB_OUT_SP21	N																			
1/1/2023	WL_LCI_SP02	N																	14.04		
1/1/2023	WL_WLCI_SP01	N																	16.46		
1/1/2023	WL_BFWB_OUT_SP21	N																	< 0.23		
1/1/2023	WL_BFWB_OUT_SP21	N																			

		CHEMICAL_NAME FRACTION REPORT_RESULT_UNIT	Ortho-Phosphate D mg/l	Ozone N mg/l	Ozone R mg/l	Ozone T mg/l	pH, Field N ph units	pH, LAB N ph units	Phosphorus T mg/l	Potassium T mg/l	Se(IV) – selenite SeO3(-2) D ug/l	Se(VI) – selenate SeO4(-2) D ug/l	SeCN – selenocyanate SeCN(-1) D ug/l	Selenium D ug/l	Selenium T ug/l	Selenosulfate, SeSO3 D ug/l	selenomethionine CH3SeCH2CH2CH(NH2)CO2H D ug/l	Silver D ug/l	Silver T ug/l	Sodium T mg/l
SAMPLE_DATE	SYS_LOC_CODE	SAMPLE_TYPE_CODE	REPORT_RESULT_TEXT	REPORT_RESULT_TEXT	REPORT_RESULT_TEXT	REPORT_RESULT_TEXT	REPORT_RESULT_TEXT	REPORT_RESULT_TEXT	REPORT_RESULT_TEXT	REPORT_RESULT_TEXT	REPORT_RESULT_TEXT	REPORT_RESULT_TEXT	REPORT_RESULT_TEXT	REPORT_RESULT_TEXT	REPORT_RESULT_TEXT	REPORT_RESULT_TEXT	REPORT_RESULT_TEXT	REPORT_RESULT_TEXT	REPORT_RESULT_TEXT	REPORT_RESULT_TEXT
1/1/2022	WL_LCI_SP02	N					8.34													
1/1/2022	WL_WLCI_SP01	N					8.4													
1/1/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.4				0.371	10.7	< 0.010		11.9	< 0.010	< 0.010			
1/1/2022	WL_BFWB_OUT_SP21	N													11.1					
1/1/2022	WL_WLCI_SP01	N																		
1/1/2022	WL_LCI_SP02	N																		
1/1/2022	WL_WLCI_SP01	N																		
1/2/2022	WL_LCI_SP02	N					8.2													
1/2/2022	WL_WLCI_SP01	N					8.17													
1/2/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.6								13.5					
1/2/2022	WL_BFWB_OUT_SP21	N													11.7					
1/2/2022	WL_LCI_SP02	N																		
1/2/2022	WL_WLCI_SP01	N																		
1/3/2022	WL_LCI_SP02	N					8.21				0.101	86.5	< 0.010		87.3	< 0.010	< 0.010			
1/3/2022	WL_WLCI_SP01	N					8.28				0.081	427	< 0.010		417	< 0.010	< 0.010			
1/3/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.48				0.608	11.1	< 0.010			< 0.010	< 0.010			
1/3/2022	WL_BFWB_OUT_SP21	N													13.0					
1/3/2022	WL_BFWB_OUT_SP21	N					7.41													
1/4/2022	WL_BFWB_OUT_SP21	N					7.48													
1/4/2022	WL_BFWB_OUT_SP21	N					7.75													
1/4/2022	WL_LCI_SP02	N					8.27													
1/4/2022	WL_WLCI_SP01	N					8.41													
1/4/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.51								12.7					
1/4/2022	WL_BFWB_OUT_SP21	N													13.3					
1/5/2022	WL_LCI_SP02	N					8.3													
1/5/2022	WL_WLCI_SP01	N					8.33													
1/5/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.45								12.6					
1/5/2022	WL_BFWB_OUT_SP21	N													11.0					
1/6/2022	WL_LCI_SP02	N					8.11													
1/6/2022	WL_WLCI_SP01	N					8.19													
1/6/2022	WL_BFWB_OUT_SP21	N		0.0116666666000000			7.3								12.5					
1/6/2022	WL_BFWB_OUT_SP21	N					7.32								10.6					
1/6/2022	WL_BFWB_OUT_SP21	N		< 0.01																
1/6/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.3													
1/6/2022	WL_BFWB_OUT_SP21	N		< 0.01																
1/6/2022	WL_BFWB_OUT_SP21	N					7.35													
1/7/2022	WL_LCI_SP02	N					8.12													
1/7/2022	WL_WLCI_SP01	N					8.18													
1/7/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.36								12.6					
1/7/2022	WL_BFWB_OUT_SP21	N													10.7					
1/8/2022	WL_LCI_SP02	N					8.1													
1/8/2022	WL_WLCI_SP01	N					8.2													
1/8/2022	WL_BFWB_OUT_SP21	N		0.01			7.26								12.6					
1/8/2022	WL_BFWB_OUT_SP21	N													13.2					
1/9/2022	WL_LCI_SP02	N					8.05													
1/9/2022	WL_WLCI_SP01	N					8.13													
1/9/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.2								13.2					
1/9/2022	WL_BFWB_OUT_SP21	N													13.4					
1/10/2022	WL_LCI_SP02	N	0.0017				8.03		0.0027 < 0.050	1.97				77.0	77.3			< 0.010	< 0.010	10.8
1/10/2022	WL_WLCI_SP01	N	0.0042				8.15		0.0046 < 0.100	2.46				429	428			< 0.020	< 0.020	2.60
1/10/2022	WL_BFWB_OUT_SP21	N	< 0.0010				7.15		0.0080 < 0.050	2.84				13.9	13.7			< 0.010	< 0.010	28.2
1/10/2022	WL_BFWB_OUT_SP21	N													13.4					
1/10/2022	WL_BFWB_OUT_SP21	N		< 0.01																
1/11/2022	WL_LCI_SP02	N					8.01								75.6					
1/11/2022	WL_WLCI_SP01	N					8.13								424					
1/11/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.16				0.552	11.4	< 0.010		14.0	< 0.010	< 0.010			
1/12/2022	WL_LCI_SP02	N					8													
1/12/2022	WL_WLCI_SP01	N					8.06													
1/12/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.15								13.4					
1/12/2022	WL_BFWB_OUT_SP21	N													13.9					
1/13/2022	WL_LCI_SP02	N					7.98													
1/13/2022	WL_WLCI_SP01	N					8.09													

		CHEMICAL_NAME FRACTION REPORT_RESULT_UNIT	Ortho-Phosphate D mg/l	Ozone N mg/l	Ozone R mg/l	Ozone T mg/l	pH, Field N ph units	pH, LAB N ph units	Phosphorus T mg/l	Potassium T mg/l	Se(IV) – selenite SeO3(-2) D ug/l	Se(VI) – selenate SeO4(-2) D ug/l	SeCN – selenocyanate SeCN(-1) D ug/l	Selenium D ug/l	Selenium T ug/l	Selenosulfate, SeSO3 D ug/l	selenomethionine CH3SeCH2CH2CH(NH2)CO2H D ug/l	Silver D ug/l	Silver T ug/l	Sodium T mg/l
1/13/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.13								12.8					
1/13/2022	WL_BFWB_OUT_SP21	N													13.1					
1/14/2022	WL_LCI_SP02	N					7.99													
1/14/2022	WL_WLCI_SP01	N					8.08													
1/14/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.15								12.8					
1/14/2022	WL_BFWB_OUT_SP21	N													12.6					
1/15/2022	WL_LCI_SP02	N					8													
1/15/2022	WL_WLCI_SP01	N					8.11													
1/15/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.2								12.9					
1/15/2022	WL_BFWB_OUT_SP21	N													12.1					
1/16/2022	WL_LCI_SP02	N					8.02													
1/16/2022	WL_WLCI_SP01	N					8.13													
1/16/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.17								12.8					
1/16/2022	WL_BFWB_OUT_SP21	N													12.0					
1/17/2022	WL_LCI_SP02	N					8.05													
1/17/2022	WL_WLCI_SP01	N					8.1													
1/17/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.18								13.0					
1/17/2022	WL_BFWB_OUT_SP21	N													11.8					
1/18/2022	WL_LCI_SP02	N					8.17								75.5					
1/18/2022	WL_WLCI_SP01	N					8.18								414					
1/18/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.27				0.413	10.7	< 0.010		13.8	< 0.010	< 0.010			
1/18/2022	WL_BFWB_OUT_SP21	N													13.4					
1/19/2022	WL_LCI_SP02	N					8.08													
1/19/2022	WL_WLCI_SP01	N					8.19													
1/19/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.29								13.2					
1/19/2022	WL_BFWB_OUT_SP21	N													13.9					
1/20/2022	WL_LCI_SP02	N					8.04													
1/20/2022	WL_WLCI_SP01	N					8.19													
1/20/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.25								14.2					
1/20/2022	WL_BFWB_OUT_SP21	N													14.0					
1/21/2022	WL_LCI_SP02	N					8.06													
1/21/2022	WL_WLCI_SP01	N					8.19													
1/21/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.24								11.6					
1/21/2022	WL_BFWB_OUT_SP21	N													14.1					
1/22/2022	WL_LCI_SP02	N					8.08													
1/22/2022	WL_WLCI_SP01	N					8.21													
1/22/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.25								12.8					
1/22/2022	WL_BFWB_OUT_SP21	N													13.2					
1/23/2022	WL_LCI_SP02	N					8.05													
1/23/2022	WL_WLCI_SP01	N					8.22													
1/23/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.29								13.2					
1/23/2022	WL_BFWB_OUT_SP21	N													14.4					
1/24/2022	WL_LCI_SP02	N					8.06		< 0.050	1.97				77.9	72.2			< 0.010	< 0.010	11.2
1/24/2022	WL_WLCI_SP01	N					8.21		< 0.100	2.54				438	413			< 0.010	< 0.020	2.51
1/24/2022	WL_BFWB_OUT_SP21	N	< 0.0010	< 0.01			7.27		0.0087 < 0.050	3.04				13.8	12.7			< 0.010	< 0.010	30.2
1/24/2022	WL_BFWB_OUT_SP21	N													14.0					
1/25/2022	WL_LCI_SP02	N					8.06								83.1					
1/25/2022	WL_WLCI_SP01	N					8.21								468					
1/25/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.3				0.373	7.77	< 0.010		14.1	< 0.010	< 0.010			
1/25/2022	WL_BFWB_OUT_SP21	N													13.3					
1/26/2022	WL_LCI_SP02	N					8.06													
1/26/2022	WL_WLCI_SP01	N					8.22													
1/26/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.28								13.6					
1/26/2022	WL_BFWB_OUT_SP21	N													13.8					
1/27/2022	WL_LCI_SP02	N					8.1													
1/27/2022	WL_WLCI_SP01	N					8.18													
1/27/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.38								11.4					
1/27/2022	WL_BFWB_OUT_SP21	N													12.3					
1/28/2022	WL_LCI_SP02	N					8.06													
1/28/2022	WL_WLCI_SP01	N					8.18													
1/28/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.33								11.5					
1/28/2022	WL_BFWB_OUT_SP21	N													12.4					
1/29/2022	WL_LCI_SP02	N					8.12													
1/29/2022	WL_WLCI_SP01	N					8.23													
1/29/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.3								12.6					
1/29/2022	WL_BFWB_OUT_SP21	N													14.2					

		CHEMICAL_NAME FRACTION REPORT_RESULT_UNIT	Ortho-Phosphate D mg/l	Ozone N mg/l	Ozone R mg/l	Ozone T mg/l	pH, Field N ph units	pH, LAB N ph units	Phosphorus T mg/l	Potassium T mg/l	Se(IV) – selenite SeO3(-2) D ug/l	Se(VI) – selenate SeO4(-2) D ug/l	SeCN – selenocyanate SeCN(-1) D ug/l	Selenium D ug/l	Selenium T ug/l	Selenosulfate, SeSO3 D ug/l	selenomethionine CH3SeCH2CH2CH(NH2)CO2H D ug/l	Silver D ug/l	Silver T ug/l	Sodium T mg/l
1/30/2022	WL_LCI_SP02	N					8.05													
1/30/2022	WL_WLCI_SP01	N					8.21													
1/30/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.28								14.5					
1/30/2022	WL_BFWB_OUT_SP21	N													15.2					
1/31/2022	WL_LCI_SP02	N					8.16													
1/31/2022	WL_WLCI_SP01	N					8.26													
1/31/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.34								15.0					
1/31/2022	WL_BFWB_OUT_SP21	N													15.7					
2/1/2022	WL_LCI_SP02	N					8.12							75.5	88.4			< 0.010		
2/1/2022	WL_WLCI_SP01	N					8.26							410	485			< 0.020		
2/1/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.38				0.714	12.8	< 0.010		16.2	< 0.010	< 0.010			
2/2/2022	WL_BFWB_OUT_SP21	N		< 0.01											17.4					
2/2/2022	WL_LCI_SP02	N					8.13													
2/2/2022	WL_WLCI_SP01	N					8.27													
2/2/2022	WL_BFWB_OUT_SP21	N													16.8					
2/2/2022	WL_BFWB_OUT_SP21	N					7.39													
2/2/2022	WL_LCI_SP02	N																		
2/2/2022	WL_WLCI_SP01	N																		
2/3/2022	WL_LCI_SP02	N					8.15													
2/3/2022	WL_WLCI_SP01	N					8.29													
2/3/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.37								18.5					
2/3/2022	WL_BFWB_OUT_SP21	N													18.4					
2/4/2022	WL_LCI_SP02	N					8.13													
2/4/2022	WL_WLCI_SP01	N					8.26													
2/4/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.31								16.6					
2/4/2022	WL_BFWB_OUT_SP21	N													18.8					
2/5/2022	WL_LCI_SP02	N					8.14													
2/5/2022	WL_WLCI_SP01	N					8.27													
2/5/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.3								18.0					
2/6/2022	WL_LCI_SP02	N					8.13													
2/6/2022	WL_WLCI_SP01	N					8.28													
2/6/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.18								15.4					
2/6/2022	WL_BFWB_OUT_SP21	N					7.23													
2/7/2022	WL_LCI_SP02	N	< 0.0010				8.13		0.0030 < 0.050	2.29				79.8	83.3			< 0.010	< 0.010	12.2
2/7/2022	WL_WLCI_SP01	N	0.0011				8.28		0.0043 < 0.100	2.66				441	479			< 0.020	< 0.020	2.65
2/7/2022	WL_BFWB_OUT_SP21	N	< 0.0010	< 0.01			7.3		0.0069 < 0.050	3.66				13.3	14.6			< 0.010	< 0.010	34.0
2/8/2022	WL_LCI_SP02	N					8.13								85.2					
2/8/2022	WL_WLCI_SP01	N					8.27								459					
2/8/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.31				0.446	10.4	< 0.010		13.2	< 0.010	< 0.010			
2/9/2022	WL_LCI_SP02	N					8.12													
2/9/2022	WL_WLCI_SP01	N					8.28													
2/9/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.31								13.1					
2/9/2022	WL_BFWB_OUT_SP21	N																		
2/10/2022	WL_LCI_SP02	N					8.13													
2/10/2022	WL_WLCI_SP01	N					8.22													
2/10/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.29								12.8					
2/10/2022	WL_BFWB_OUT_SP21	N													12.2					
2/11/2022	WL_LCI_SP02	N					8.14													
2/11/2022	WL_WLCI_SP01	N					8.27													
2/11/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.36								11.8					
2/11/2022	WL_BFWB_OUT_SP21	N													12.2					
2/12/2022	WL_LCI_SP02	N					8.14													
2/12/2022	WL_WLCI_SP01	N					8.28													
2/12/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.33								12.6					
2/12/2022	WL_BFWB_OUT_SP21	N													11.2					
2/13/2022	WL_LCI_SP02	N					8.12													
2/13/2022	WL_WLCI_SP01	N					8.26													
2/13/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.27								13.3					
2/13/2022	WL_BFWB_OUT_SP21	N													11.1					
2/14/2022	WL_LCI_SP02	N					8.12													
2/14/2022	WL_WLCI_SP01	N					8.27													
2/14/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.25								13.6					
2/14/2022	WL_BFWB_OUT_SP21	N													11.6					
2/15/2022	WL_LCI_SP02	N					8.16								85.2					

		CHEMICAL_NAME FRACTION REPORT_RESULT_UNIT	Ortho-Phosphate D mg/l	Ozone N mg/l	Ozone R mg/l	Ozone T mg/l	pH, Field N ph units	pH, LAB N ph units	Phosphorus T mg/l	Potassium T mg/l	Se(IV) – selenite SeO3(-2) D ug/l	Se(VI) – selenate SeO4(-2) D ug/l	SeCN – selenocyanate SeCN(-1) D ug/l	Selenium D ug/l	Selenium T ug/l	Selenosulfate, SeSO3 D ug/l	selenomethionine CH3SeCH2CH2CH(NH2)CO2H D ug/l	Silver D ug/l	Silver T ug/l	Sodium T mg/l
2/15/2022	WL_WLCI_SP01	N					8.28								467					
2/15/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.3				0.550	10.6	< 0.010		13.1	< 0.010	< 0.010			
2/15/2022	WL_BFWB_OUT_SP21	N													10.8					
2/16/2022	WL_LCI_SP02	N					8.15													
2/16/2022	WL_WLCI_SP01	N					8.29													
2/16/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.36								13.9					
2/16/2022	WL_BFWB_OUT_SP21	N													11.6					
2/17/2022	WL_LCI_SP02	N					8.22													
2/17/2022	WL_WLCI_SP01	N					8.25													
2/17/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.37								13.6					
2/17/2022	WL_BFWB_OUT_SP21	N													11.9					
2/18/2022	WL_LCI_SP02	N					8.12													
2/18/2022	WL_WLCI_SP01	N					8.24													
2/18/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.32								13.0					
2/18/2022	WL_BFWB_OUT_SP21	N													11.6					
2/19/2022	WL_LCI_SP02	N					8.13													
2/19/2022	WL_WLCI_SP01	N					8.23													
2/19/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.37								15.4					
2/19/2022	WL_BFWB_OUT_SP21	N													11.2					
2/20/2022	WL_LCI_SP02	N					8.14													
2/20/2022	WL_WLCI_SP01	N					8.27													
2/20/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.38								14.1					
2/20/2022	WL_BFWB_OUT_SP21	N													11.4					
2/21/2022	WL_LCI_SP02	N					8.17		< 0.050	2.17				79.5	87.7			< 0.010	< 0.010	11.7
2/21/2022	WL_WLCI_SP01	N					8.33		< 0.100	2.58				439	528			< 0.020	< 0.020	2.56
2/21/2022	WL_BFWB_OUT_SP21	N	< 0.0010	< 0.01			7.57		< 0.050 0.0105	3.82				13.7	16.8			< 0.010	< 0.010	36.9
2/21/2022	WL_BFWB_OUT_SP21	N													13.7					
2/22/2022	WL_LCI_SP02	N					8.15								83.8					
2/22/2022	WL_WLCI_SP01	N					8.1								458					
2/22/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.5				0.678	11.7	< 0.010		14.4	< 0.010	< 0.010			
2/22/2022	WL_BFWB_OUT_SP21	N													11.9					
2/23/2022	WL_LCI_SP02	N					8.21													
2/23/2022	WL_WLCI_SP01	N					8.32													
2/23/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.45								12.3					
2/23/2022	WL_BFWB_OUT_SP21	N													10.8					
2/24/2022	WL_LCI_SP02	N					8.2													
2/24/2022	WL_WLCI_SP01	N					8.32													
2/24/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.45								13.0					
2/24/2022	WL_BFWB_OUT_SP21	N													12.0					
2/25/2022	WL_LCI_SP02	N					8.2													
2/25/2022	WL_WLCI_SP01	N					8.31													
2/25/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.39								14.3					
2/25/2022	WL_BFWB_OUT_SP21	N													11.9					
2/26/2022	WL_BFWB_OUT_SP21	N													12.1					
2/26/2022	WL_LCI_SP02	N					8.22													
2/26/2022	WL_WLCI_SP01	N					8.35													
2/26/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.35								14.4					
2/27/2022	WL_LCI_SP02	N					8.24													
2/27/2022	WL_WLCI_SP01	N					8.34													
2/27/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.39								14.3					
2/27/2022	WL_BFWB_OUT_SP21	N													12.2					
2/28/2022	WL_LCI_SP02	N					8.2													
2/28/2022	WL_WLCI_SP01	N					8.33													
2/28/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.39								14.9					
2/28/2022	WL_BFWB_OUT_SP21	N													13.1					
3/1/2022	WL_LCI_SP02	N					8.14								84.0					
3/1/2022	WL_WLCI_SP01	N					8.25								457					
3/1/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.35				0.604	10.9	< 0.010		15.2	< 0.010	< 0.010			
3/1/2022	WL_BFWB_OUT_SP21	N													12.7					
3/1/2022	WL_BFWB_OUT_SP21	N													14.4					
3/1/2022	WL_BFWB_OUT_SP21	N													14.0					
3/2/2022	WL_LCI_SP02	N					8.2													
3/2/2022	WL_WLCI_SP01	N					8.32													
3/2/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.3								14.2					
3/2/2022	WL_BFWB_OUT_SP21	N													13.2					
3/3/2022	WL_LCI_SP02	N					8.21													

		CHEMICAL_NAME FRACTION REPORT_RESULT_UNIT	Ortho-Phosphate D mg/l	Ozone N mg/l	Ozone R mg/l	Ozone T mg/l	pH, Field N ph units	pH, LAB N ph units	Phosphorus T mg/l	Potassium T mg/l	Se(IV) – selenite SeO3(-2) D ug/l	Se(VI) – selenate SeO4(-2) D ug/l	SeCN – selenocyanate SeCN(-1) D ug/l	Selenium D ug/l	Selenium T ug/l	Selenosulfate, SeSO3 D ug/l	selenomethionine CH3SeCH2CH2CH(NH2)CO2H D ug/l	Silver D ug/l	Silver T ug/l	Sodium T mg/l
3/3/2022	WL_WLCI_SP01	N					8.35													
3/3/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.42								16.8					
3/3/2022	WL_BFWB_OUT_SP21	N													12.6					
3/3/2022	WL_BFWB_OUT_SP21	N													13.9					
3/3/2022	WL_BFWB_OUT_SP21	N													12.7					
3/4/2022	WL_LCI_SP02	N					8.24													
3/4/2022	WL_WLCI_SP01	N					8.35													
3/4/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.41								16.5					
3/4/2022	WL_BFWB_OUT_SP21	N													13.4					
3/4/2022	WL_BFWB_OUT_SP21	N													14.4					
3/4/2022	WL_BFWB_OUT_SP21	N													14.1					
3/5/2022	WL_LCI_SP02	N					8.21													
3/5/2022	WL_WLCI_SP01	N					8.38													
3/5/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.38								17.9					
3/5/2022	WL_BFWB_OUT_SP21	N													15.7					
3/6/2022	WL_LCI_SP02	N					8.22													
3/6/2022	WL_WLCI_SP01	N					8.37													
3/6/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.41								16.6					
3/6/2022	WL_BFWB_OUT_SP21	N													17.5					
3/7/2022	WL_LCI_SP02	N	0.0019				8.09		< 0.050 0.0025	2.18				86.2	84.0			< 0.010	< 0.010	11.7
3/7/2022	WL_WLCI_SP01	N	0.0028				8.24		< 0.100 0.0038	2.72				495	463			< 0.020	< 0.020	2.55
3/7/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.23		< 0.050	4.13				17.3	18.1			< 0.010	< 0.010	39.1
3/7/2022	WL_BFWB_OUT_SP21	N	< 0.0010						0.0083						17.4					
3/8/2022	WL_LCI_SP02	N					8.09								76.7					
3/8/2022	WL_WLCI_SP01	N					8.23								457					
3/8/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.3				0.929	13.9	< 0.010		18.0	< 0.010	< 0.010			
3/8/2022	WL_BFWB_OUT_SP21	N													15.3					
3/8/2022	WL_BFWB_OUT_SP21	N													17.9					
3/8/2022	WL_BFWB_OUT_SP21	N													17.2					
3/9/2022	WL_LCI_SP02	N					8.08													
3/9/2022	WL_WLCI_SP01	N					8.24													
3/9/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.27								22.1					
3/9/2022	WL_BFWB_OUT_SP21	N													17.2					
3/9/2022	WL_BFWB_OUT_SP21	N													19.3					
3/9/2022	WL_BFWB_OUT_SP21	N													20.0					
3/9/2022	WL_LCI_SP02	N																		
3/9/2022	WL_LCI_SP02	N																		
3/10/2022	WL_LCI_SP02	N																		
3/10/2022	WL_LCI_SP02	N					8.08													
3/10/2022	WL_WLCI_SP01	N					8.19													
3/10/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.27								24.5					
3/10/2022	WL_BFWB_OUT_SP21	N													22.9					
3/11/2022	WL_LCI_SP02	N					8.06													
3/11/2022	WL_WLCI_SP01	N					8.2													
3/11/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.27								31.9					
3/11/2022	WL_BFWB_OUT_SP21	N													26.1					
3/11/2022	WL_BFWB_OUT_SP21	N													28.9					
3/11/2022	WL_BFWB_OUT_SP21	N													29.6					
3/12/2022	WL_LCI_SP02	N					8.07													
3/12/2022	WL_WLCI_SP01	N					8.18													
3/12/2022	WL_BFWB_OUT_SP21	N													26.8					
3/12/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.28								28.2					
3/13/2022	WL_LCI_SP02	N					8.05													
3/13/2022	WL_WLCI_SP01	N					8.21													
3/13/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.24								23.1					
3/14/2022	WL_LCI_SP02	N					8.07													
3/14/2022	WL_WLCI_SP01	N					8.19													
3/14/2022	WL_BFWB_OUT_SP21	N													21.8					
3/14/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.25								23.0					
3/15/2022	WL_LCI_SP02	N					8.06								83.4					
3/15/2022	WL_WLCI_SP01	N					8.22								442					
3/15/2022	WL_BFWB_OUT_SP21	N													20.2					
3/15/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.24				2.73	14.8	< 0.010		23.1	< 0.010	< 0.010			
3/16/2022	WL_LCI_SP02	N					8.06													
3/16/2022	WL_WLCI_SP01	N					8.18													
3/16/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.21								23.8					

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3/16/2022	WL_BFWB_OUT_SP21	N													22.1					
3/16/2022	WL_BFWB_OUT_SP21	N																		
3/17/2022	WL_LCI_SP02	N					8.09													
3/17/2022	WL_WLCI_SP01	N					8.21													
3/17/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.24								22.6					
3/17/2022	WL_BFWB_OUT_SP21	N													20.0					
3/18/2022	WL_LCI_SP02	N					8.07													
3/18/2022	WL_WLCI_SP01	N					8.24													
3/18/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.2								22.7					
3/18/2022	WL_BFWB_OUT_SP21	N													20.6					
3/19/2022	WL_LCI_SP02	N					8.06													
3/19/2022	WL_WLCI_SP01	N					8.25													
3/19/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.22								21.2					
3/19/2022	WL_BFWB_OUT_SP21	N													19.1					
3/20/2022	WL_LCI_SP02	N					8.08													
3/20/2022	WL_WLCI_SP01	N					8.25													
3/20/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.24								21.5					
3/20/2022	WL_BFWB_OUT_SP21	N													18.5					
3/20/2022	WL_BFWB_OUT_SP21	N													20.2					
3/20/2022	WL_BFWB_OUT_SP21	N													19.2					
3/21/2022	WL_LCI_SP02	N					8.11		< 0.050	2.27				80.2	88.1			< 0.010	< 0.010	12.2
3/21/2022	WL_WLCI_SP01	N					8.21		< 0.100	2.78				445	491			< 0.020	< 0.020	2.80
3/21/2022	WL_BFWB_OUT_SP21	N	< 0.0010	< 0.01			7.23		< 0.050 0.0113	3.98				17.8	19.5			< 0.010	< 0.010	37.8
3/21/2022	WL_BFWB_OUT_SP21	N													17.9					
3/22/2022	WL_LCI_SP02	N					8.09								84.2					
3/22/2022	WL_WLCI_SP01	N					8.24								475					
3/22/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.3				1.05	15.9	< 0.010		20.0	< 0.010	< 0.010			
3/22/2022	WL_BFWB_OUT_SP21	N													18.0					
3/23/2022	WL_LCI_SP02	N					8.1													
3/23/2022	WL_WLCI_SP01	N					8.26													
3/23/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.23								24.2					
3/23/2022	WL_BFWB_OUT_SP21	N													22.7					
3/23/2022	WL_LCI_SP02	N																		
3/23/2022	WL_LCI_SP02	N																		
3/24/2022	WL_LCI_SP02	N					8.08													
3/24/2022	WL_WLCI_SP01	N					8.1													
3/24/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.36								24.7					
3/24/2022	WL_BFWB_OUT_SP21	N													25.7					
3/25/2022	WL_LCI_SP02	N					8.07													
3/25/2022	WL_WLCI_SP01	N					8.22													
3/25/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.2								25.5					
3/25/2022	WL_BFWB_OUT_SP21	N													26.6					
3/26/2022	WL_BFWB_OUT_SP21	N													24.8					
3/26/2022	WL_LCI_SP02	N					8.1													
3/26/2022	WL_WLCI_SP01	N					8.2													
3/26/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.22								25.7					
3/27/2022	WL_BFWB_OUT_SP21	N		< 0.01											20.8					
3/27/2022	WL_LCI_SP02	N					8.15													
3/27/2022	WL_WLCI_SP01	N					8.24													
3/27/2022	WL_BFWB_OUT_SP21	N					7.19								24.6					
3/28/2022	WL_LCI_SP02	N					8.03													
3/28/2022	WL_WLCI_SP01	N					8.19													
3/28/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.2								22.9					
3/28/2022	WL_BFWB_OUT_SP21	N													24.2					
3/29/2022	WL_LCI_SP02	N					8.09								89.3					
3/29/2022	WL_WLCI_SP01	N					8.21								440					
3/29/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.23				1.23	15.6	< 0.010		24.6	< 0.010	< 0.010			
3/29/2022	WL_BFWB_OUT_SP21	N													20.8					
3/30/2022	WL_LCI_SP02	N					8													
3/30/2022	WL_WLCI_SP01	N					8.21													
3/30/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.2								22.7					
3/30/2022	WL_BFWB_OUT_SP21	N													19.4					
3/31/2022	WL_LCI_SP02	N					8.05													
3/31/2022	WL_WLCI_SP01	N					8.23													
3/31/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.23								22.3					
3/31/2022	WL_BFWB_OUT_SP21	N													18.2					

		CHEMICAL_NAME FRACTION REPORT_RESULT_UNIT	Ortho-Phosphate D mg/l	Ozone N mg/l	Ozone R mg/l	Ozone T mg/l	pH, Field N ph units	pH, LAB N ph units	Phosphorus T mg/l	Potassium T mg/l	Se(IV) – selenite SeO3(-2) D ug/l	Se(VI) – selenate SeO4(-2) D ug/l	SeCN – selenocyanate SeCN(-1) D ug/l	Selenium D ug/l	Selenium T ug/l	Selenosulfate, SeSO3 D ug/l	selenomethionine CH3SeCH2CH2CH(NH2)CO2H D ug/l	Silver D ug/l	Silver T ug/l	Sodium T mg/l
4/1/2022	WL_LCI_SP02	N					8.08													
4/1/2022	WL_WLCI_SP01	N					8.24													
4/1/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.23								19.0					
4/1/2022	WL_BFWB_OUT_SP21	N													18.8					
4/2/2022	WL_LCI_SP02	N					8.09													
4/2/2022	WL_WLCI_SP01	N					8.25													
4/2/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.24								20.2					
4/2/2022	WL_BFWB_OUT_SP21	N													15.9					
4/3/2022	WL_LCI_SP02	N					8.13													
4/3/2022	WL_WLCI_SP01	N					8.28													
4/3/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.26								28.2					
4/3/2022	WL_BFWB_OUT_SP21	N													23.3					
4/4/2022	WL_LCI_SP02	N	0.0027				8.14		0.0043 < 0.050	2.15				84.6	81.5			< 0.010	< 0.010	10.8
4/4/2022	WL_WLCI_SP01	N	0.0034				8.28		0.0045 < 0.100	2.73				462	525			< 0.020	< 0.020	2.80
4/4/2022	WL_BFWB_OUT_SP21	N	< 0.0010	< 0.01			7.23		0.0061 < 0.050	3.64				22.0	25.1			< 0.010	< 0.010	35.3
4/5/2022	WL_LCI_SP02	N					8.11								96.1					
4/5/2022	WL_WLCI_SP01	N					8.29								469					
4/5/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.22				1.35	12.3	< 0.010		20.3	< 0.010	< 0.010			
4/5/2022	WL_BFWB_OUT_SP21	N													14.1					
4/6/2022	WL_LCI_SP02	N					8.14													
4/6/2022	WL_WLCI_SP01	N					8.32													
4/6/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.269								21.6					
4/6/2022	WL_BFWB_OUT_SP21	N													19.8					
4/7/2022	WL_LCI_SP02	N					8.13													
4/7/2022	WL_WLCI_SP01	N					8.24													
4/7/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.23								21.3					
4/7/2022	WL_BFWB_OUT_SP21	N													22.0					
4/8/2022	WL_LCI_SP02	N					8.14													
4/8/2022	WL_WLCI_SP01	N					8.23													
4/8/2022	WL_BFWB_OUT_SP21	N					7.23								20.7					
4/8/2022	WL_BFWB_OUT_SP21	N													16.2					
4/8/2022	WL_BFWB_OUT_SP21	N		< 0.01																
4/9/2022	WL_LCI_SP02	N					8.13													
4/9/2022	WL_WLCI_SP01	N					8.3													
4/9/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.28								19.0					
4/9/2022	WL_BFWB_OUT_SP21	N													13.8					
4/10/2022	WL_LCI_SP02	N					8.12													
4/10/2022	WL_WLCI_SP01	N					8.25													
4/10/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.29								14.5					
4/10/2022	WL_BFWB_OUT_SP21	N													10.5					
4/11/2022	WL_LCI_SP02	N					8.21													
4/11/2022	WL_WLCI_SP01	N					8.32													
4/11/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.3								14.0					
4/11/2022	WL_BFWB_OUT_SP21	N													9.63					
4/12/2022	WL_LCI_SP02	N					8.24				0.099	69.5	< 0.010		78.1	< 0.010	< 0.010			
4/12/2022	WL_WLCI_SP01	N					8.37				0.114	413	< 0.010		473	< 0.010	< 0.010			
4/12/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.46				0.896	9.77	< 0.010		13.2	< 0.010	< 0.010			
4/12/2022	WL_BFWB_OUT_SP21	N													11.8					
4/13/2022	WL_LCI_SP02	N					8.23													
4/13/2022	WL_WLCI_SP01	N					8.39													
4/13/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.42								16.8					
4/13/2022	WL_BFWB_OUT_SP21	N													13.1					
4/14/2022	WL_LCI_SP02	N					8.18													
4/14/2022	WL_WLCI_SP01	N					8.37													
4/14/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.38								21.7					
4/14/2022	WL_BFWB_OUT_SP21	N													18.6					
4/15/2022	WL_LCI_SP02	N					8.26													
4/15/2022	WL_WLCI_SP01	N					8.36													
4/15/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.38								24.7					
4/15/2022	WL_BFWB_OUT_SP21	N													18.2					
4/16/2022	WL_LCI_SP02	N					8.24													
4/16/2022	WL_WLCI_SP01	N					8.38													
4/16/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.37								20.4					
4/16/2022	WL_BFWB_OUT_SP21	N													20.1					
4/17/2022	WL_LCI_SP02	N					8.26													
4/17/2022	WL_WLCI_SP01	N					8.5													

		CHEMICAL_NAME FRACTION REPORT_RESULT_UNIT	Ortho-Phosphate D mg/l	Ozone N mg/l	Ozone R mg/l	Ozone T mg/l	pH, Field N ph units	pH, LAB N ph units	Phosphorus T mg/l	Potassium T mg/l	Se(IV) – selenite SeO3(-2) D ug/l	Se(VI) – selenate SeO4(-2) D ug/l	SeCN – selenocyanate SeCN(-1) D ug/l	Selenium D ug/l	Selenium T ug/l	Selenosulfate, SeSO3 D ug/l	selenomethionine CH3SeCH2CH2CH(NH2)CO2H D ug/l	Silver D ug/l	Silver T ug/l	Sodium T mg/l
4/17/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.38								16.5					
4/17/2022	WL_BFWB_OUT_SP21	N													15.0					
4/18/2022	WL_LCI_SP02	N					8.29		< 0.050	1.88				85.5	74.4			< 0.010	< 0.010	10.2
4/18/2022	WL_WLCI_SP01	N					8.41		< 0.100	2.58				452	457			< 0.020	< 0.020	2.50
4/18/2022	WL_BFWB_OUT_SP21	N	< 0.0010	< 0.01			7.37		0.0074 < 0.050	3.09				14.2	14.0			< 0.010	< 0.010	29.2
4/18/2022	WL_BFWB_OUT_SP21	N													13.5					
4/19/2022	WL_LCI_SP02	N					8.26								80.9					
4/19/2022	WL_WLCI_SP01	N					8.38								471					
4/19/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.42				0.958	9.97	< 0.010		12.9	< 0.010	< 0.010			
4/19/2022	WL_BFWB_OUT_SP21	N													9.94					
4/20/2022	WL_LCI_SP02	N					8.06													
4/20/2022	WL_WLCI_SP01	N					8.21													
4/20/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.09								11.5					
4/20/2022	WL_BFWB_OUT_SP21	N													9.97					
4/21/2022	WL_LCI_SP02	N					7.96													
4/21/2022	WL_WLCI_SP01	N					8.14													
4/21/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.07								9.12					
4/21/2022	WL_BFWB_OUT_SP21	N													7.96					
4/22/2022	WL_LCI_SP02	N					8.04													
4/22/2022	WL_WLCI_SP01	N					8.18													
4/22/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.03								11.0					
4/22/2022	WL_BFWB_OUT_SP21	N													9.87					
4/23/2022	WL_LCI_SP02	N					8													
4/23/2022	WL_WLCI_SP01	N					8.11													
4/23/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.05								13.0					
4/23/2022	WL_BFWB_OUT_SP21	N													11.7					
4/24/2022	WL_LCI_SP02	N					8.06													
4/24/2022	WL_WLCI_SP01	N					8.17													
4/24/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.08								9.71					
4/24/2022	WL_BFWB_OUT_SP21	N													11.9					
4/25/2022	WL_LCI_SP02	N					8.08													
4/25/2022	WL_WLCI_SP01	N					8.22													
4/25/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.12								11.8					
4/25/2022	WL_BFWB_OUT_SP21	N													10.3					
4/26/2022	WL_LCI_SP02	N					8								79.5					
4/26/2022	WL_WLCI_SP01	N					8.2								488					
4/26/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.11				0.871	10.7	< 0.010		15.0	< 0.010	< 0.010			
4/27/2022	WL_LCI_SP02	N					8.09													
4/27/2022	WL_WLCI_SP01	N					8.19													
4/27/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.13								15.8					
4/28/2022	WL_LCI_SP02	N					8.04													
4/28/2022	WL_WLCI_SP01	N					8.18													
4/28/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.12								15.0					
4/29/2022	WL_BFWB_OUT_SP21	N		< 0.01											14.6					
4/29/2022	WL_LCI_SP02	N																		
4/29/2022	WL_WLCI_SP01	N																		
4/29/2022	WL_BFWB_OUT_SP21	N													12.5					
4/29/2022	WL_BFWB_OUT_SP21	N					7.39													
4/29/2022	WL_LCI_SP02	N					8.26													
4/29/2022	WL_WLCI_SP01	N					8.08													
4/29/2022	WL_LCI_SP02	N					8.49													
4/29/2022	WL_WLCI_SP01	N					8.34													
4/30/2022	WL_LCI_SP02	N					8.05													
4/30/2022	WL_WLCI_SP01	N					8.21													
4/30/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.27								18.9					
4/30/2022	WL_BFWB_OUT_SP21	N													16.4					
5/1/2022	WL_LCI_SP02	N					8.03													
5/1/2022	WL_WLCI_SP01	N					8.18													
5/1/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.3								20.0					
5/1/2022	WL_BFWB_OUT_SP21	N													16.2					
5/2/2022	WL_LCI_SP02	N	0.0026				8		< 0.050 0.0031	1.88				76.3	75.5			< 0.010	< 0.010	10.1
5/2/2022	WL_WLCI_SP01	N	0.0044				8.22		< 0.100 0.0042	2.70				458	463			< 0.020	< 0.020	2.47
5/2/2022	WL_BFWB_OUT_SP21	N	0.0012	< 0.01			7.21		< 0.050 0.0110	2.92				18.7	19.2			< 0.010	< 0.010	20.9

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5/2/2022	WL_BFWB_OUT_SP21	N													16.7					
5/3/2022	WL_LCI_SP02	N					8								74.7					
5/3/2022	WL_WLCI_SP01	N					8.21								447					
5/3/2022	WL_BFWB_OUT_SP21	N												19.8						
5/3/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.25				0.858	8.73	< 0.010		20.8	< 0.010	< 0.010			
5/3/2022	WL_BFWB_OUT_SP21	N													18.8					
5/4/2022	WL_LCI_SP02	N					8													
5/4/2022	WL_WLCI_SP01	N					8.21													
5/4/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.27								19.4					
5/4/2022	WL_BFWB_OUT_SP21	N													17.6					
5/5/2022	WL_LCI_SP02	N					8.02													
5/5/2022	WL_WLCI_SP01	N					8.19													
5/5/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.33								20.4					
5/5/2022	WL_BFWB_OUT_SP21	N													17.8					
5/6/2022	WL_LCI_SP02	N					8.15													
5/6/2022	WL_WLCI_SP01	N					8.3													
5/6/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.51								17.5					
5/6/2022	WL_BFWB_OUT_SP21	N													19.8					
5/6/2022	WL_LCI_SP02	N																		
5/7/2022	WL_LCI_SP02	N					8.13													
5/7/2022	WL_WLCI_SP01	N					8.35													
5/7/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.55								18.7					
5/7/2022	WL_BFWB_OUT_SP21	N													16.9					
5/8/2022	WL_LCI_SP02	N					7.94													
5/8/2022	WL_WLCI_SP01	N					8.16													
5/8/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.33								17.6					
5/8/2022	WL_BFWB_OUT_SP21	N													15.3					
5/9/2022	WL_LCI_SP02	N					7.93													
5/9/2022	WL_WLCI_SP01	N					8.19													
5/9/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.39								17.0					
5/9/2022	WL_BFWB_OUT_SP21	N													15.2					
5/10/2022	WL_LCI_SP02	N					7.95								49.9					
5/10/2022	WL_WLCI_SP01	N					8.16								404					
5/10/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.3				1.15	12.7	< 0.010		15.7	< 0.010	< 0.010			
5/10/2022	WL_BFWB_OUT_SP21	N													16.0					
5/11/2022	WL_LCI_SP02	N					7.96													
5/11/2022	WL_WLCI_SP01	N					8.12													
5/11/2022	WL_WLCI_SP01	N																		
5/11/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.27								16.1					
5/11/2022	WL_BFWB_OUT_SP21	N													16.0					
5/12/2022	WL_LCI_SP02	N					7.96													
5/12/2022	WL_WLCI_SP01	N					8.17													
5/12/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.25								13.9					
5/12/2022	WL_BFWB_OUT_SP21	N													12.6					
5/13/2022	WL_LCI_SP02	N					7.96													
5/13/2022	WL_WLCI_SP01	N					8.19													
5/13/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.24								13.0					
5/13/2022	WL_BFWB_OUT_SP21	N													11.8					
5/14/2022	WL_LCI_SP02	N					7.98													
5/14/2022	WL_WLCI_SP01	N					8.13													
5/14/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.46				1.28	8.65	< 0.010		12.4	< 0.010	< 0.010			
5/14/2022	WL_BFWB_OUT_SP21	N													13.5					
5/15/2022	WL_LCI_SP02	N					7.99													
5/15/2022	WL_WLCI_SP01	N					8.2													
5/15/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.24								15.0					
5/15/2022	WL_BFWB_OUT_SP21	N													15.4					
5/16/2022	WL_LCI_SP02	N					7.96		< 0.050	1.76				62.7	56.2			< 0.010	< 0.010	10.7
5/16/2022	WL_WLCI_SP01	N					8.17		< 0.100	2.52				416	419			< 0.020	< 0.020	2.47
5/16/2022	WL_BFWB_OUT_SP21	N	< 0.0010	< 0.01			7.31		0.0086 < 0.050	2.76				14.8	13.0			< 0.010	< 0.010	22.3
5/16/2022	WL_BFWB_OUT_SP21	N													14.0					
5/17/2022	WL_LCI_SP02	N					7.97								55.8					
5/17/2022	WL_WLCI_SP01	N					8.11								413					
5/17/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.33				0.971	8.68	< 0.010		12.2	< 0.010	< 0.010			
5/17/2022	WL_BFWB_OUT_SP21	N													12.7					
5/18/2022	WL_LCI_SP02	N					7.97													
5/18/2022	WL_WLCI_SP01	N					8.14													

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5/18/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.28								11.7					
5/18/2022	WL_BFWB_OUT_SP21	N													10.7					
5/19/2022	WL_LCI_SP02	N					7.97													
5/19/2022	WL_WLCI_SP01	N					8.18													
5/19/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.29								10.0					
5/19/2022	WL_BFWB_OUT_SP21	N													10.1					
5/20/2022	WL_LCI_SP02	N					7.97													
5/20/2022	WL_WLCI_SP01	N					8.17													
5/20/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.29								10.8					
5/20/2022	WL_BFWB_OUT_SP21	N													11.2					
5/21/2022	WL_LCI_SP02	N					7.54													
5/21/2022	WL_WLCI_SP01	N					8.05													
5/21/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.3								9.66					
5/21/2022	WL_BFWB_OUT_SP21	N													10.2					
5/22/2022	WL_LCI_SP02	N					8.08													
5/22/2022	WL_WLCI_SP01	N					8.21													
5/22/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.27								8.92					
5/22/2022	WL_BFWB_OUT_SP21	N													8.42					
5/23/2022	WL_LCI_SP02	N					7.98													
5/23/2022	WL_WLCI_SP01	N					8.18													
5/23/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.3								8.46					
5/23/2022	WL_BFWB_OUT_SP21	N													7.69					
5/24/2022	WL_LCI_SP02	N					7.92								56.8					
5/24/2022	WL_WLCI_SP01	N					8.11								432					
5/24/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.3				0.307	4.84	< 0.010		7.02	< 0.010	< 0.010			
5/24/2022	WL_BFWB_OUT_SP21	N									0.442	5.17	< 0.010		6.94	< 0.010	< 0.010			
5/24/2022	WL_BFWB_OUT_SP21	N									0.362	5.18	< 0.010			< 0.010	< 0.010			
5/24/2022	WL_BFWB_OUT_SP21	N									0.379	5.21	< 0.010			< 0.010	< 0.010			
5/25/2022	WL_LCI_SP02	N					7.94													
5/25/2022	WL_WLCI_SP01	N					8.04													
5/25/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.08								7.38					
5/25/2022	WL_BFWB_OUT_SP21	N													6.75					
5/26/2022	WL_LCI_SP02	N					7.95													
5/26/2022	WL_WLCI_SP01	N					8.15													
5/26/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.35								7.71					
5/26/2022	WL_BFWB_OUT_SP21	N													8.19					
5/27/2022	WL_LCI_SP02	N					7.91													
5/27/2022	WL_WLCI_SP01	N					8													
5/27/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.36								7.35					
5/27/2022	WL_BFWB_OUT_SP21	N													7.69					
5/28/2022	WL_LCI_SP02	N					7.86													
5/28/2022	WL_WLCI_SP01	N					8.05													
5/28/2022	WL_BFWB_OUT_SP21	N		0.0166666666000000			7.38								7.84					
5/28/2022	WL_BFWB_OUT_SP21	N													8.07					
5/28/2022	WL_BFWB_OUT_SP21	N		0.018																
5/28/2022	WL_BFWB_OUT_SP21	N		< 0.01																
5/28/2022	WL_BFWB_OUT_SP21	N			< 0.01	< 0.01														
5/28/2022	WL_BFWB_OUT_SP21	N			< 0.01	< 0.01														
5/28/2022	WL_BFWB_OUT_SP21	N			< 0.01	< 0.01														
5/29/2022	WL_LCI_SP02	N					7.84													
5/29/2022	WL_WLCI_SP01	N					8.15													
5/29/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.35								8.27					
5/29/2022	WL_BFWB_OUT_SP21	N													8.44					
5/30/2022	WL_LCI_SP02	N					7.78		< 0.050	1.64				49.2	53.3			< 0.010	< 0.010	8.92
5/30/2022	WL_WLCI_SP01	N					8		< 0.050	2.22				304	322			< 0.010	< 0.010	2.02
5/30/2022	WL_BFWB_OUT_SP21	N	< 0.0010	< 0.01			7.33		< 0.050 0.0090	2.83				7.59	9.14			< 0.010	< 0.010	17.6
5/30/2022	WL_BFWB_OUT_SP21	N													8.48					
5/31/2022	WL_LCI_SP02	N					7.81								54.1					
5/31/2022	WL_WLCI_SP01	N					8.08								326					
5/31/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.34				0.448	5.32	< 0.010		7.64	< 0.010	< 0.010			
5/31/2022	WL_BFWB_OUT_SP21	N													7.83					
6/1/2022	WL_LCI_SP02	N					7.8													
6/1/2022	WL_WLCI_SP01	N					8.07													
6/1/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.33								6.62					
6/1/2022	WL_BFWB_OUT_SP21	N													6.60					

		CHEMICAL_NAME FRACTION REPORT_RESULT_UNIT	Ortho-Phosphate D mg/l	Ozone N mg/l	Ozone R mg/l	Ozone T mg/l	pH, Field N ph units	pH, LAB N ph units	Phosphorus T mg/l	Potassium T mg/l	Se(IV) – selenite SeO3(-2) D ug/l	Se(VI) – selenate SeO4(-2) D ug/l	SeCN – selenocyanate SeCN(-1) D ug/l	Selenium D ug/l	Selenium T ug/l	Selenosulfate, SeSO3 D ug/l	selenomethionine CH3SeCH2CH2CH(NH2)CO2H D ug/l	Silver D ug/l	Silver T ug/l	Sodium T mg/l
6/2/2022	WL_LCI_SP02	N					7.93													
6/2/2022	WL_WLCI_SP01	N					7.85													
6/2/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.34								6.24					
6/2/2022	WL_BFWB_OUT_SP21	N													5.39					
6/3/2022	WL_LCI_SP02	N					7.87													
6/3/2022	WL_WLCI_SP01	N					7.92													
6/3/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.39								5.79					
6/3/2022	WL_BFWB_OUT_SP21	N													5.40					
6/4/2022	WL_LCI_SP02	N					7.88													
6/4/2022	WL_WLCI_SP01	N					7.9													
6/4/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.5								6.09					
6/4/2022	WL_BFWB_OUT_SP21	N													5.86					
6/5/2022	WL_LCI_SP02	N					7.86													
6/5/2022	WL_WLCI_SP01	N					7.91													
6/5/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.55								6.84					
6/5/2022	WL_BFWB_OUT_SP21	N													6.82					
6/6/2022	WL_LCI_SP02	N					7.88													
6/6/2022	WL_WLCI_SP01	N					7.88													
6/6/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.56								8.39					
6/6/2022	WL_BFWB_OUT_SP21	N													7.91					
6/7/2022	WL_LCI_SP02	N													43.5					
6/7/2022	WL_WLCI_SP01	N													212					
6/7/2022	WL_BFWB_OUT_SP21	N									0.863	6.57	< 0.010		8.81	< 0.010	< 0.010			
6/7/2022	WL_LCI_SP02	N					7.89													
6/7/2022	WL_WLCI_SP01	N					7.821													
6/7/2022	WL_BFWB_OUT_SP21	N													8.76					
6/8/2022	WL_LCI_SP02	N					7.87													
6/8/2022	WL_WLCI_SP01	N					7.7													
6/9/2022	WL_LCI_SP02	N					7.88													
6/9/2022	WL_WLCI_SP01	N					7.71													
6/9/2022	WL_WLCI_SP01	N					7.84													
6/9/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.68								8.86					
6/9/2022	WL_BFWB_OUT_SP21	N													8.45					
6/10/2022	WL_LCI_SP02	N					7.89													
6/10/2022	WL_WLCI_SP01	N					7.83													
6/10/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.61								13.3					
6/10/2022	WL_BFWB_OUT_SP21	N													13.1					
6/11/2022	WL_LCI_SP02	N					7.84													
6/11/2022	WL_WLCI_SP01	N					7.79													
6/11/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.76								13.8					
6/11/2022	WL_BFWB_OUT_SP21	N													14.4					
6/12/2022	WL_LCI_SP02	N					7.87													
6/12/2022	WL_WLCI_SP01	N					7.75													
6/12/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.528								13.0					
6/12/2022	WL_BFWB_OUT_SP21	N													12.2					
6/13/2022	WL_LCI_SP02	N	< 0.0010				7.84		0.0025 < 0.050	1.24				31.0	33.2			< 0.010	0.011	4.04
6/13/2022	WL_WLCI_SP01	N	0.0014				7.69		0.0041 < 0.050	1.97				175	173			< 0.010	< 0.010	1.37
6/13/2022	WL_BFWB_OUT_SP21	N	< 0.0010	< 0.01			7.49		0.0078 < 0.050	2.87				10.8	11.4			< 0.010	0.012	20.4
6/13/2022	WL_BFWB_OUT_SP21	N													10.3					
6/14/2022	WL_LCI_SP02	N					7.11								30.3					
6/14/2022	WL_WLCI_SP01	N					7.65								176					
6/14/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.47				1.08	4.49	< 0.010		7.34	< 0.010	< 0.010			
6/14/2022	WL_BFWB_OUT_SP21	N													7.45					
6/15/2022	WL_LCI_SP02	N					7.86													
6/15/2022	WL_WLCI_SP01	N					7.74													
6/15/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.29								6.66					
6/15/2022	WL_BFWB_OUT_SP21	N													6.34					
6/15/2022	WL_WLCI_SP01	N																		
6/16/2022	WL_BFWB_OUT_SP21	N					7.28													
6/16/2022	WL_LCI_SP02	N					7.84													
6/16/2022	WL_WLCI_SP01	N					7.78													
6/16/2022	WL_BFWB_OUT_SP21	N		< 0.01											6.16					
6/16/2022	WL_LCI_SP02	N																		
6/16/2022	WL_BFWB_OUT_SP21	N													6.00					
6/16/2022	WL_LCI_SP02	N																		
6/16/2022	WL_WLCI_SP01	N																		

		CHEMICAL_NAME FRACTION REPORT_RESULT_UNIT	Ortho-Phosphate D mg/l	Ozone N mg/l	Ozone R mg/l	Ozone T mg/l	pH, Field N ph units	pH, LAB N ph units	Phosphorus T mg/l	Potassium T mg/l	Se(IV) – selenite SeO3(-2) D ug/l	Se(VI) – selenate SeO4(-2) D ug/l	SeCN – selenocyanate SeCN(-1) D ug/l	Selenium D ug/l	Selenium T ug/l	Selenosulfate, SeSO3 D ug/l	selenomethionine CH3SeCH2CH2CH(NH2)CO2H D ug/l	Silver D ug/l	Silver T ug/l	Sodium T mg/l
6/17/2022	WL_LCI_SP02	N					7.8													
6/17/2022	WL_WLCI_SP01	N					7.83													
6/17/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.24								6.69					
6/17/2022	WL_BFWB_OUT_SP21	N													6.38					
6/18/2022	WL_LCI_SP02	N					7.84													
6/18/2022	WL_WLCI_SP01	N					7.79													
6/18/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.46								5.56					
6/18/2022	WL_BFWB_OUT_SP21	N													6.15					
6/19/2022	WL_LCI_SP02	N					7.85													
6/19/2022	WL_WLCI_SP01	N					7.77													
6/19/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.52								5.56					
6/19/2022	WL_BFWB_OUT_SP21	N													5.79					
6/20/2022	WL_WLCI_SP01	N					7.79													
6/20/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.54								4.94					
6/20/2022	WL_LCI_SP02	N					7.85													
6/20/2022	WL_BFWB_OUT_SP21	N													5.22					
6/21/2022	WL_LCI_SP02	N					7.86								45.0					
6/21/2022	WL_WLCI_SP01	N					7.73								159					
6/21/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.5				0.455	3.56	< 0.010		4.63	< 0.010	< 0.010			
6/21/2022	WL_BFWB_OUT_SP21	N													4.17					
6/22/2022	WL_LCI_SP02	N					7.88													
6/22/2022	WL_WLCI_SP01	N					7.83													
6/22/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.5								4.64					
6/22/2022	WL_BFWB_OUT_SP21	N													4.48					
6/23/2022	WL_LCI_SP02	N					7.86													
6/23/2022	WL_WLCI_SP01	N					7.75													
6/23/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.3								4.37					
6/23/2022	WL_BFWB_OUT_SP21	N													4.38					
6/24/2022	WL_LCI_SP02	N					7.58													
6/24/2022	WL_WLCI_SP01	N					7.68													
6/24/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.56								4.80					
6/24/2022	WL_BFWB_OUT_SP21	N													4.52					
6/25/2022	WL_LCI_SP02	N					7.79													
6/25/2022	WL_WLCI_SP01	N					7.71													
6/25/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.54								4.46					
6/25/2022	WL_BFWB_OUT_SP21	N													4.61					
6/26/2022	WL_LCI_SP02	N					7.89													
6/26/2022	WL_WLCI_SP01	N					7.7													
6/26/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.54								4.76					
6/26/2022	WL_BFWB_OUT_SP21	N													4.45					
6/27/2022	WL_LCI_SP02	N					7.85		< 0.050	1.46				33.6	31.1			< 0.010	< 0.010	4.63
6/27/2022	WL_WLCI_SP01	N					7.75		< 0.050	2.04				176	168			< 0.010	< 0.010	1.44
6/27/2022	WL_BFWB_OUT_SP21	N	< 0.0010	< 0.01			7.56		0.0066 0.052	2.61				4.95	4.53			< 0.010	< 0.010	15.6
6/27/2022	WL_BFWB_OUT_SP21	N													4.50					
6/27/2022	WL_BFWB_OUT_SP21	N					7.58													
6/27/2022	WL_BFWB_OUT_SP21	N					7.6													
6/28/2022	WL_LCI_SP02	N					7.86								33.1					
6/28/2022	WL_WLCI_SP01	N					7.79								188					
6/28/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.53				0.422	3.41	< 0.010		5.41	< 0.010	< 0.010			
6/28/2022	WL_BFWB_OUT_SP21	N													4.63					
6/29/2022	WL_LCI_SP02	N					7.9													
6/29/2022	WL_WLCI_SP01	N					7.87													
6/29/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.54								5.33					
6/29/2022	WL_BFWB_OUT_SP21	N													4.69					
6/30/2022	WL_LCI_SP02	N					7.67													
6/30/2022	WL_WLCI_SP01	N					7.73													
6/30/2022	WL_LCI_SP02	N																		
6/30/2022	WL_WLCI_SP01	N																		
6/30/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.77								6.48					
6/30/2022	WL_BFWB_OUT_SP21	N													6.08					
7/1/2022	WL_LCI_SP02	N																		
7/1/2022	WL_WLCI_SP01	N					7.76													
7/1/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.68								7.19					
7/1/2022	WL_LCI_SP02	N					7.86													
7/1/2022	WL_BFWB_OUT_SP21	N													6.44					
7/2/2022	WL_LCI_SP02	N					7.87													

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7/2/2022	WL_WLCI_SP01	N					7.8													
7/2/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.59								5.99					
7/2/2022	WL_WLCI_SP01	N																		
7/2/2022	WL_BFWB_OUT_SP21	N													5.40					
7/3/2022	WL_LCI_SP02	N					7.86													
7/3/2022	WL_WLCI_SP01	N					7.87													
7/3/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.58								5.42					
7/3/2022	WL_LCI_SP02	N																		
7/3/2022	WL_BFWB_OUT_SP21	N													4.81					
7/4/2022	WL_LCI_SP02	N					7.84													
7/4/2022	WL_WLCI_SP01	N					7.74													
7/4/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.56								4.76					
7/4/2022	WL_BFWB_OUT_SP21	N													4.61					
7/5/2022	WL_LCI_SP02	N					7.38				0.117	41.5	< 0.010		38.9	< 0.010	< 0.010			
7/5/2022	WL_WLCI_SP01	N					7.78				0.131	213	< 0.010		205	< 0.010	< 0.010			
7/5/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.6				0.314	3.03	< 0.010		4.58	< 0.010	< 0.010			
7/5/2022	WL_BFWB_OUT_SP21	N													4.77					
7/6/2022	WL_LCI_SP02	N					7.87													
7/6/2022	WL_WLCI_SP01	N					7.8													
7/6/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.61								4.84					
7/6/2022	WL_BFWB_OUT_SP21	N													5.00					
7/7/2022	WL_LCI_SP02	N					7.85													
7/7/2022	WL_WLCI_SP01	N					7.83													
7/7/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.73													
7/7/2022	WL_BFWB_OUT_SP21	N													4.86					
7/7/2022	WL_BFWB_OUT_SP21	N													4.59					
7/7/2022	WL_LCI_SP02	N					7.84													
7/7/2022	WL_WLCI_SP01	N					7.95													
7/7/2022	WL_LCI_SP02	N																		
7/8/2022	WL_LCI_SP02	N					7.85													
7/8/2022	WL_WLCI_SP01	N					7.83													
7/8/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.76								5.32					
7/8/2022	WL_BFWB_OUT_SP21	N													5.20					
7/9/2022	WL_LCI_SP02	N					7.85													
7/9/2022	WL_WLCI_SP01	N					7.89													
7/9/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.63								5.29					
7/9/2022	WL_BFWB_OUT_SP21	N													4.66					
7/10/2022	WL_LCI_SP02	N					7.85													
7/10/2022	WL_WLCI_SP01	N					7.81													
7/10/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.63								4.86					
7/10/2022	WL_BFWB_OUT_SP21	N													4.81					
7/11/2022	WL_LCI_SP02	N	< 0.0010				7.87		< 0.050 0.0027	1.35				44.0	35.7			< 0.010	< 0.010	5.66
7/11/2022	WL_WLCI_SP01	N	0.0011				7.87		< 0.050 0.0022	2.02				256	210			< 0.010	< 0.010	1.58
7/11/2022	WL_BFWB_OUT_SP21	N	< 0.0010	< 0.01			7.66		< 0.050 0.0168	2.41				5.77	4.53			< 0.010	< 0.010	14.7
7/11/2022	WL_BFWB_OUT_SP21	N													5.08					
7/12/2022	WL_LCI_SP02	N					7.7								41.7					
7/12/2022	WL_WLCI_SP01	N					7.72								224					
7/12/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.47				0.391	3.56	< 0.010		4.98	< 0.010	< 0.010			
7/12/2022	WL_BFWB_OUT_SP21	N													4.86					
7/13/2022	WL_LCI_SP02	N					7.71													
7/13/2022	WL_WLCI_SP01	N					7.78													
7/13/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.59								5.06					
7/13/2022	WL_BFWB_OUT_SP21	N													5.36					
7/14/2022	WL_LCI_SP02	N					7.71													
7/14/2022	WL_WLCI_SP01	N					7.7													
7/14/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.31								5.44					
7/14/2022	WL_BFWB_OUT_SP21	N													5.72					
7/15/2022	WL_LCI_SP02	N					7.74													
7/15/2022	WL_WLCI_SP01	N					7.73													
7/15/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.48								7.65					
7/15/2022	WL_BFWB_OUT_SP21	N													4.98					
7/16/2022	WL_LCI_SP02	N					7.8													
7/16/2022	WL_WLCI_SP01	N					7.8													
7/16/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.5								5.16					
7/16/2022	WL_BFWB_OUT_SP21	N													5.26					
7/17/2022	WL_LCI_SP02	N					7.72													

		CHEMICAL_NAME FRACTION REPORT_RESULT_UNIT	Ortho-Phosphate D mg/l	Ozone N mg/l	Ozone R mg/l	Ozone T mg/l	pH, Field N ph units	pH, LAB N ph units	Phosphorus T mg/l	Potassium T mg/l	Se(IV) – selenite SeO3(-2) D ug/l	Se(VI) – selenate SeO4(-2) D ug/l	SeCN – selenocyanate SeCN(-1) D ug/l	Selenium D ug/l	Selenium T ug/l	Selenosulfate, SeSO3 D ug/l	selenomethionine CH3SeCH2CH2CH(NH2)CO2H D ug/l	Silver D ug/l	Silver T ug/l	Sodium T mg/l
7/17/2022	WL_WLCI_SP01	N					7.71													
7/17/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.46								4.74					
7/17/2022	WL_BFWB_OUT_SP21	N													4.73					
7/18/2022	WL_LCI_SP02	N					7.72													
7/18/2022	WL_WLCI_SP01	N					7.74													
7/18/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.5								4.91					
7/18/2022	WL_BFWB_OUT_SP21	N													5.03					
7/19/2022	WL_LCI_SP02	N					7.73								56.5					
7/19/2022	WL_WLCI_SP01	N					7.6								258					
7/19/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.46				0.418	3.71	< 0.010		5.04	< 0.010	< 0.010			
7/19/2022	WL_BFWB_OUT_SP21	N													4.78					
7/20/2022	WL_LCI_SP02	N					7.74													
7/20/2022	WL_WLCI_SP01	N					7.64													
7/20/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.5								5.34					
7/20/2022	WL_BFWB_OUT_SP21	N													5.33					
7/21/2022	WL_LCI_SP02	N					7.78													
7/21/2022	WL_WLCI_SP01	N					7.68													
7/21/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.51								4.94					
7/21/2022	WL_BFWB_OUT_SP21	N													4.86					
7/22/2022	WL_LCI_SP02	N					7.7													
7/22/2022	WL_WLCI_SP01	N					7.7													
7/22/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.5								4.66					
7/22/2022	WL_BFWB_OUT_SP21	N													4.92					
7/23/2022	WL_LCI_SP02	N					7.74													
7/23/2022	WL_WLCI_SP01	N					7.63													
7/23/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.37								4.61					
7/23/2022	WL_BFWB_OUT_SP21	N													5.33					
7/24/2022	WL_LCI_SP02	N					7.77													
7/24/2022	WL_WLCI_SP01	N					7.67													
7/24/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.5								4.79					
7/24/2022	WL_BFWB_OUT_SP21	N													5.41					
7/25/2022	WL_LCI_SP02	N					7.76		< 0.050	1.73				72.1	63.0			< 0.010	< 0.010	8.85
7/25/2022	WL_WLCI_SP01	N					7.76		< 0.050	2.19				275	251			< 0.010	< 0.010	1.86
7/25/2022	WL_BFWB_OUT_SP21	N	< 0.0010	< 0.01			7.52		0.0106 < 0.050	2.60				4.96	4.42			< 0.010	< 0.010	13.8
7/25/2022	WL_BFWB_OUT_SP21	N													4.83					
7/26/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.33				0.447	4.03	< 0.010		4.60	< 0.010	< 0.010			
7/26/2022	WL_LCI_SP02	N													60.3					
7/26/2022	WL_WLCI_SP01	N													271					
7/26/2022	WL_LCI_SP02	N					7.98													
7/26/2022	WL_WLCI_SP01	N					7.79													
7/26/2022	WL_BFWB_OUT_SP21	N													4.20					
7/27/2022	WL_LCI_SP02	N					7.75													
7/27/2022	WL_WLCI_SP01	N					7.65													
7/28/2022	WL_LCI_SP02	N					7.78													
7/28/2022	WL_WLCI_SP01	N					7.68													
7/29/2022	WL_LCI_SP02	N					7.77													
7/29/2022	WL_WLCI_SP01	N					7.72													
7/29/2022	WL_WLCI_SP01	N																		
7/29/2022	WL_LCI_SP02	N																		
7/29/2022	WL_WLCI_SP01	N					7.8													
7/29/2022	WL_BFWB_OUT_SP21	N													4.52					
7/29/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.83													
7/29/2022	WL_LCI_SP02	N					7.77													
7/29/2022	WL_BFWB_OUT_SP21	N													4.44					
7/30/2022	WL_LCI_SP02	N					7.86													
7/30/2022	WL_WLCI_SP01	N					7.74													
7/30/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.57								6.46					
7/30/2022	WL_BFWB_OUT_SP21	N													6.10					
7/31/2022	WL_LCI_SP02	N					7.96													
7/31/2022	WL_WLCI_SP01	N					7.88													
7/31/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.67								5.65					
7/31/2022	WL_BFWB_OUT_SP21	N													5.81					
8/1/2022	WL_LCI_SP02	N					7.97													
8/1/2022	WL_WLCI_SP01	N					7.87													
8/1/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.64								5.00					
8/1/2022	WL_BFWB_OUT_SP21	N													4.80					

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8/2/2022	WL_LCI_SP02	N					7.98								65.9					
8/2/2022	WL_WLCI_SP01	N					8.01								289					
8/2/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.61				0.321	3.09	< 0.010		4.92	< 0.010	< 0.010			
8/2/2022	WL_BFWB_OUT_SP21	N													4.46					
8/3/2022	WL_LCI_SP02	N					7.71													
8/3/2022	WL_WLCI_SP01	N					7.6													
8/3/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.32								4.79					
8/3/2022	WL_BFWB_OUT_SP21	N													5.33					
8/4/2022	WL_LCI_SP02	N					7.74													
8/4/2022	WL_WLCI_SP01	N					7.82													
8/4/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.36								4.58					
8/4/2022	WL_BFWB_OUT_SP21	N													4.98					
8/5/2022	WL_LCI_SP02	N					7.73													
8/5/2022	WL_WLCI_SP01	N					7.33													
8/5/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.37								4.67					
8/5/2022	WL_BFWB_OUT_SP21	N													3.78					
8/6/2022	WL_LCI_SP02	N					7.72													
8/6/2022	WL_WLCI_SP01	N					7.48													
8/6/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.32								4.32					
8/6/2022	WL_BFWB_OUT_SP21	N													4.90					
8/7/2022	WL_LCI_SP02	N					7.71													
8/7/2022	WL_WLCI_SP01	N					7.58													
8/7/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.29								4.85					
8/7/2022	WL_BFWB_OUT_SP21	N													5.61					
8/8/2022	WL_LCI_SP02	N	0.0011				7.77		0.0028 < 0.050	1.89				64.3	61.6			< 0.010	< 0.010	10.6
8/8/2022	WL_WLCI_SP01	N	< 0.0010				7.67		0.0037 < 0.050	2.31				316	297			< 0.010	< 0.010	2.19
8/8/2022	WL_BFWB_OUT_SP21	N	< 0.0010	< 0.01			7.27		0.0080 < 0.050	2.51				5.61	5.24			< 0.010	< 0.010	15.5
8/8/2022	WL_BFWB_OUT_SP21	N													5.54					
8/9/2022	WL_LCI_SP02	N					7.81								64.3					
8/9/2022	WL_WLCI_SP01	N					7.69								323					
8/9/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.28				0.569	5.00	< 0.010		6.12	< 0.010	< 0.010			
8/9/2022	WL_BFWB_OUT_SP21	N													6.34					
8/10/2022	WL_LCI_SP02	N					7.78													
8/10/2022	WL_WLCI_SP01	N					7.71													
8/10/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.25								6.83					
8/10/2022	WL_BFWB_OUT_SP21	N													6.16					
8/11/2022	WL_LCI_SP02	N					7.8													
8/11/2022	WL_WLCI_SP01	N					7.71													
8/11/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.25								7.00					
8/11/2022	WL_BFWB_OUT_SP21	N													6.26					
8/12/2022	WL_LCI_SP02	N					7.79													
8/12/2022	WL_WLCI_SP01	N					7.67													
8/12/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.28								6.16					
8/12/2022	WL_BFWB_OUT_SP21	N													5.92					
8/13/2022	WL_LCI_SP02	N					7.82													
8/13/2022	WL_WLCI_SP01	N					7.71													
8/13/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.27								9.65					
8/13/2022	WL_BFWB_OUT_SP21	N													9.28					
8/14/2022	WL_LCI_SP02	N					7.85													
8/14/2022	WL_WLCI_SP01	N					7.69													
8/14/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.29								18.5					
8/14/2022	WL_BFWB_OUT_SP21	N													16.6					
8/15/2022	WL_LCI_SP02	N					7.86													
8/15/2022	WL_WLCI_SP01	N					7.61													
8/15/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.28								16.8					
8/15/2022	WL_BFWB_OUT_SP21	N													15.5					
8/16/2022	WL_LCI_SP02	N					7.85								62.5					
8/16/2022	WL_WLCI_SP01	N					7.67								318					
8/16/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.27				1.48	9.99	< 0.010		15.2	< 0.010	< 0.010			
8/16/2022	WL_BFWB_OUT_SP21	N													13.9					
8/17/2022	WL_LCI_SP02	N					7.8													
8/17/2022	WL_WLCI_SP01	N					7.7													
8/17/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.2								17.8					
8/17/2022	WL_BFWB_OUT_SP21	N													19.5					
8/17/2022	WL_BFWB_OUT_SP21	N					7.27													

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8/17/2022	WL_BFWB_OUT_SP21	N	< 0.0010					8.07	0.0110	2.67	1.24	14.8	< 0.010	20.2	17.4	< 0.010	< 0.010	< 0.010	< 0.010	18.2
8/18/2022	WL_LCI_SP02	N					7.77													
8/18/2022	WL_WLCI_SP01	N					7.68													
8/18/2022	WL_BFWB_OUT_SP21	N	< 0.0010	< 0.01			7.25	8.18	0.0089	2.56				18.7	20.2			< 0.010	< 0.010	16.9
8/18/2022	WL_BFWB_OUT_SP21	N	< 0.0010					8.18	0.0089	2.56	1.50	14.5	< 0.010	18.7	17.6	< 0.010	< 0.010	< 0.010	< 0.010	16.9
8/19/2022	WL_LCI_SP02	N					7.79													
8/19/2022	WL_WLCI_SP01	N					7.73													
8/19/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.25								15.0					
8/19/2022	WL_BFWB_OUT_SP21	N													13.6					
8/20/2022	WL_LCI_SP02	N					7.78													
8/20/2022	WL_WLCI_SP01	N					7.74													
8/20/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.25								13.2					
8/20/2022	WL_BFWB_OUT_SP21	N													12.3					
8/21/2022	WL_LCI_SP02	N					7.82													
8/21/2022	WL_WLCI_SP01	N					7.68													
8/21/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.25								10.2					
8/21/2022	WL_BFWB_OUT_SP21	N													9.79					
8/22/2022	WL_BFWB_OUT_SP21	N	< 0.0010	< 0.01			7.28		0.0103 < 0.050	2.57				9.07	9.52			< 0.010	< 0.010	18.2
8/22/2022	WL_LCI_SP02	N					7.82		< 0.050	1.88				61.3	64.2			< 0.010	< 0.010	10.4
8/22/2022	WL_WLCI_SP01	N					7.69		< 0.050	2.37				335	352			< 0.020	< 0.010	2.26
8/22/2022	WL_BFWB_OUT_SP21	N													8.72					
8/23/2022	WL_LCI_SP02	N					7.89								62.9					
8/23/2022	WL_WLCI_SP01	N					7.84								343					
8/23/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.27				0.653	6.25	< 0.010		8.68	< 0.010	< 0.010			
8/23/2022	WL_BFWB_OUT_SP21	N													8.29					
8/24/2022	WL_LCI_SP02	N					7.88													
8/24/2022	WL_WLCI_SP01	N					7.74													
8/24/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.33								9.11					
8/24/2022	WL_BFWB_OUT_SP21	N													8.13					
8/25/2022	WL_LCI_SP02	N					7.81													
8/25/2022	WL_WLCI_SP01	N					7.8													
8/25/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.33								8.80					
8/25/2022	WL_BFWB_OUT_SP21	N													8.76					
8/26/2022	WL_LCI_SP02	N					7.8													
8/26/2022	WL_WLCI_SP01	N					7.7													
8/26/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.41								9.56					
8/26/2022	WL_BFWB_OUT_SP21	N													9.60					
8/27/2022	WL_LCI_SP02	N					7.82													
8/27/2022	WL_WLCI_SP01	N					7.58													
8/27/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.48								17.5					
8/27/2022	WL_BFWB_OUT_SP21	N													16.3					
8/28/2022	WL_LCI_SP02	N					7.8													
8/28/2022	WL_WLCI_SP01	N					7.43													
8/28/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.55								21.0					
8/28/2022	WL_BFWB_OUT_SP21	N													20.8					
8/29/2022	WL_BFWB_OUT_SP21	N																		
8/29/2022	WL_BFWB_OUT_SP21	N					7.59								21.5					
8/29/2022	WL_BFWB_OUT_SP21	N													20.2					
8/29/2022	WL_BFWB_OUT_SP21	N		< 0.01																
8/29/2022	WL_BFWB_OUT_SP21	N																		
8/29/2022	WL_LCI_SP02	N					7.84													
8/29/2022	WL_WLCI_SP01	N					7.61													
8/29/2022	WL_BFWB_OUT_SP21	N																		
8/30/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.6													
8/30/2022	WL_BFWB_OUT_SP21	N									2.42	14.9	< 0.010		18.8	< 0.010	< 0.010			
8/30/2022	WL_LCI_SP02	N													57.0					
8/30/2022	WL_WLCI_SP01	N													369					
8/30/2022	WL_BFWB_OUT_SP21	N													20.6					
8/30/2022	WL_LCI_SP02	N					7.74													
8/30/2022	WL_WLCI_SP01	N					7.74													
8/31/2022	WL_LCI_SP02	N					7.8													
8/31/2022	WL_WLCI_SP01	N					7.56													
9/1/2022	WL_LCI_SP02	N					7.86													

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9/1/2022	WL_WLCI_SP01	N					7.68													
9/1/2022	WL_LCI_SP02	N					7.83													
9/1/2022	WL_WLCI_SP01	N					7.86													
9/1/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.98								18.9					
9/1/2022	WL_BFWB_OUT_SP21	N													19.0					
9/2/2022	WL_LCI_SP02	N					7.83								58.2					
9/2/2022	WL_WLCI_SP01	N					7.82								356					
9/2/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.82				2.33	12.6	< 0.010		16.7	< 0.010	< 0.010			
9/2/2022	WL_BFWB_OUT_SP21	N													17.4					
9/3/2022	WL_LCI_SP02	N					7.8													
9/3/2022	WL_WLCI_SP01	N					7.72													
9/3/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.62								12.2					
9/3/2022	WL_BFWB_OUT_SP21	N													12.2					
9/4/2022	WL_LCI_SP02	N					7.94													
9/4/2022	WL_WLCI_SP01	N					7.86													
9/4/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.51								8.10					
9/4/2022	WL_BFWB_OUT_SP21	N													8.05					
9/5/2022	WL_LCI_SP02	N	< 0.0010				7.88		< 0.050 0.0029	1.77				56.1	54.5			< 0.010	< 0.010	8.94
9/5/2022	WL_WLCI_SP01	N	0.0014				7.82		< 0.050 0.0030	2.41				359	344			< 0.020	< 0.010	2.24
9/5/2022	WL_BFWB_OUT_SP21	N	< 0.0010	< 0.01			7.36		< 0.050 0.0124	2.88				5.91	5.94			< 0.010	< 0.010	17.5
9/5/2022	WL_BFWB_OUT_SP21	N													6.35					
9/6/2022	WL_LCI_SP02	N					7.88								56.7					
9/6/2022	WL_WLCI_SP01	N					7.69								353					
9/6/2022	WL_BFWB_OUT_SP21	N					7.31				0.331	3.99	< 0.010		5.28	< 0.010	< 0.010			
9/6/2022	WL_BFWB_OUT_SP21	N													5.03					
9/6/2022	WL_BFWB_OUT_SP21	N		< 0.01																
9/7/2022	WL_LCI_SP02	N					7.86													
9/7/2022	WL_WLCI_SP01	N					7.62													
9/7/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.31								5.35					
9/7/2022	WL_BFWB_OUT_SP21	N													5.54					
9/8/2022	WL_LCI_SP02	N					7.93													
9/8/2022	WL_WLCI_SP01	N					7.8													
9/8/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.34								5.79					
9/8/2022	WL_BFWB_OUT_SP21	N													5.83					
9/9/2022	WL_LCI_SP02	N					7.84													
9/9/2022	WL_WLCI_SP01	N					7.4													
9/9/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.34								5.98					
9/9/2022	WL_BFWB_OUT_SP21	N													6.85					
9/10/2022	WL_LCI_SP02	N					7.94													
9/10/2022	WL_WLCI_SP01	N					8.07													
9/10/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.31								5.97					
9/10/2022	WL_BFWB_OUT_SP21	N													5.94					
9/11/2022	WL_LCI_SP02	N					7.91													
9/11/2022	WL_WLCI_SP01	N					7.49													
9/11/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.33								6.38					
9/11/2022	WL_BFWB_OUT_SP21	N													6.35					
9/12/2022	WL_LCI_SP02	N					7.93													
9/12/2022	WL_WLCI_SP01	N					7.75													
9/12/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.35								6.70					
9/12/2022	WL_BFWB_OUT_SP21	N													6.83					
9/13/2022	WL_LCI_SP02	N					7.97								58.7					
9/13/2022	WL_WLCI_SP01	N					7.79								372					
9/13/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.37				0.326	4.69	< 0.010		6.03	< 0.010	< 0.010			
9/13/2022	WL_BFWB_OUT_SP21	N													7.00					
9/13/2022	WL_WLCI_SP01	N																		
9/14/2022	WL_LCI_SP02	N					8.03													
9/14/2022	WL_WLCI_SP01	N					7.8													
9/14/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.4								6.06					
9/14/2022	WL_BFWB_OUT_SP21	N													6.12					
9/15/2022	WL_LCI_SP02	N					7.95													
9/15/2022	WL_WLCI_SP01	N					7.75													
9/15/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.39								7.86					
9/15/2022	WL_BFWB_OUT_SP21	N													7.22					
9/16/2022	WL_LCI_SP02	N					7.96													
9/16/2022	WL_WLCI_SP01	N					7.6													
9/16/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.36								7.40					

		CHEMICAL_NAME FRACTION REPORT_RESULT_UNIT	Ortho-Phosphate D mg/l	Ozone N mg/l	Ozone R mg/l	Ozone T mg/l	pH, Field N ph units	pH, LAB N ph units	Phosphorus T mg/l	Potassium T mg/l	Se(IV) – selenite SeO3(-2) D ug/l	Se(VI) – selenate SeO4(-2) D ug/l	SeCN – selenocyanate SeCN(-1) D ug/l	Selenium D ug/l	Selenium T ug/l	Selenosulfate, SeSO3 D ug/l	selenomethionine CH3SeCH2CH2CH(NH2)CO2H D ug/l	Silver D ug/l	Silver T ug/l	Sodium T mg/l
9/16/2022	WL_BFWB_OUT_SP21	N													6.38					
9/17/2022	WL_LCI_SP02	N					7.93													
9/17/2022	WL_WLCI_SP01	N					7.96													
9/17/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.4								7.34					
9/18/2022	WL_LCI_SP02	N					7.99													
9/18/2022	WL_WLCI_SP01	N					8.14													
9/18/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.38								7.26					
9/18/2022	WL_BFWB_OUT_SP21	N													7.67					
9/19/2022	WL_LCI_SP02	N					7.96		< 0.050	1.94				65.9	66.3			< 0.010	< 0.010	11.0
9/19/2022	WL_WLCI_SP01	N					7.67		< 0.100	2.56				393	385			< 0.020	< 0.020	2.47
9/19/2022	WL_BFWB_OUT_SP21	N	0.0011	< 0.01			7.38		0.0108 < 0.050	2.72				6.16	6.37			< 0.010	< 0.010	20.0
9/20/2022	WL_LCI_SP02	N					8.05								61.5					
9/20/2022	WL_WLCI_SP01	N					8.13								362					
9/20/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.42				0.435	4.41	< 0.010		5.56	< 0.010	< 0.010			
9/20/2022	WL_BFWB_OUT_SP21	N													6.23					
9/21/2022	WL_LCI_SP02	N					8.04													
9/21/2022	WL_WLCI_SP01	N					8.14													
9/21/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.42								6.18					
9/21/2022	WL_BFWB_OUT_SP21	N													6.52					
9/22/2022	WL_LCI_SP02	N					7.98													
9/22/2022	WL_WLCI_SP01	N					7.64													
9/22/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.41								7.55					
9/22/2022	WL_BFWB_OUT_SP21	N													6.96					
9/23/2022	WL_LCI_SP02	N					8.01													
9/23/2022	WL_WLCI_SP01	N					7.7													
9/23/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.39								6.88					
9/23/2022	WL_BFWB_OUT_SP21	N													7.12					
9/24/2022	WL_LCI_SP02	N					7.98													
9/24/2022	WL_WLCI_SP01	N					7.7													
9/24/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.35								7.21					
9/24/2022	WL_BFWB_OUT_SP21	N													8.16					
9/25/2022	WL_LCI_SP02	N					8.08													
9/25/2022	WL_WLCI_SP01	N					8.01													
9/25/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.4								7.82					
9/25/2022	WL_BFWB_OUT_SP21	N													7.52					
9/26/2022	WL_LCI_SP02	N					8.01													
9/26/2022	WL_WLCI_SP01	N					7.81													
9/26/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.39								6.80					
9/26/2022	WL_BFWB_OUT_SP21	N													6.06					
9/27/2022	WL_LCI_SP02	N					7.99								70.1					
9/27/2022	WL_WLCI_SP01	N					7.75								399					
9/27/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.37				0.310	4.99	< 0.010		7.23	< 0.010	< 0.010			
9/27/2022	WL_BFWB_OUT_SP21	N													6.18					
9/28/2022	WL_LCI_SP02	N					8.02													
9/28/2022	WL_WLCI_SP01	N					7.87													
9/28/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.39								9.11					
9/28/2022	WL_BFWB_OUT_SP21	N													7.38					
9/29/2022	WL_LCI_SP02	N					7.96													
9/29/2022	WL_WLCI_SP01	N					7.84													
9/29/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.37								8.49					
9/29/2022	WL_BFWB_OUT_SP21	N													8.81					
9/30/2022	WL_LCI_SP02	N					7.95													
9/30/2022	WL_WLCI_SP01	N					7.86													
9/30/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.44								7.66					
9/30/2022	WL_BFWB_OUT_SP21	N													8.16					
10/1/2022	WL_LCI_SP02	N					8.01													
10/1/2022	WL_WLCI_SP01	N					7.68													
10/1/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.4								6.32					
10/1/2022	WL_BFWB_OUT_SP21	N													6.76					
10/2/2022	WL_LCI_SP02	N					7.95													
10/2/2022	WL_WLCI_SP01	N					7.6													
10/2/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.29								5.71					
10/2/2022	WL_BFWB_OUT_SP21	N													5.91					
10/2/2022	WL_BFWB_OUT_SP21	N					7.29													
10/3/2022	WL_LCI_SP02	N	0.0015				7.95		< 0.050 0.0021	2.08				61.2	63.7			< 0.010	< 0.010	9.90

		CHEMICAL_NAME FRACTION REPORT_RESULT_UNIT	Ortho-Phosphate D mg/l	Ozone N mg/l	Ozone R mg/l	Ozone T mg/l	pH, Field N ph units	pH, LAB N ph units	Phosphorus T mg/l	Potassium T mg/l	Se(IV) – selenite SeO3(-2) D ug/l	Se(VI) – selenate SeO4(-2) D ug/l	SeCN – selenocyanate SeCN(-1) D ug/l	Selenium D ug/l	Selenium T ug/l	Selenosulfate, SeSO3 D ug/l	selenomethionine CH3SeCH2CH2CH(NH2)CO2H D ug/l	Silver D ug/l	Silver T ug/l	Sodium T mg/l
10/3/2022	WL_WLCI_SP01	N	0.0036				7.59		< 0.100 0.0035	2.64				392	406			< 0.020	< 0.020	2.42
10/3/2022	WL_BFWB_OUT_SP21	N	< 0.0010	< 0.01			7.29		< 0.100 0.0116	3.12				5.61	6.61			< 0.010	< 0.020	22.3
10/3/2022	WL_BFWB_OUT_SP21	N													6.11					
10/4/2022	WL_LCI_SP02	N					7.89								64.9					
10/4/2022	WL_WLCI_SP01	N					7.59								423					
10/4/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.3				0.253	4.14	< 0.010		5.65	< 0.010	< 0.010			
10/4/2022	WL_BFWB_OUT_SP21	N													5.18					
10/5/2022	WL_LCI_SP02	N					7.96													
10/5/2022	WL_WLCI_SP01	N					7.79													
10/5/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.31								5.70					
10/5/2022	WL_BFWB_OUT_SP21	N													5.53					
10/6/2022	WL_LCI_SP02	N					7.92													
10/6/2022	WL_WLCI_SP01	N					7.67													
10/6/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.36								5.40					
10/6/2022	WL_BFWB_OUT_SP21	N													5.58					
10/7/2022	WL_LCI_SP02	N					7.83													
10/7/2022	WL_WLCI_SP01	N					7.38													
10/7/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.36								5.74					
10/7/2022	WL_BFWB_OUT_SP21	N													5.63					
10/8/2022	WL_LCI_SP02	N					7.7													
10/8/2022	WL_WLCI_SP01	N					7.7													
10/8/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.23								5.69					
10/8/2022	WL_BFWB_OUT_SP21	N													6.04					
10/9/2022	WL_LCI_SP02	N					7.98													
10/9/2022	WL_WLCI_SP01	N					8.02													
10/9/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.33								5.28					
10/9/2022	WL_BFWB_OUT_SP21	N													5.74					
10/10/2022	WL_LCI_SP02	N					7.89													
10/10/2022	WL_WLCI_SP01	N					7.78													
10/10/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.2								5.80					
10/10/2022	WL_BFWB_OUT_SP21	N													6.17					
10/11/2022	WL_LCI_SP02	N					7.7				0.083	49.8	< 0.010		62.2	< 0.010	< 0.010			
10/11/2022	WL_WLCI_SP01	N					8.02				0.116	348	< 0.010		413	< 0.010	< 0.010			
10/11/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.35				0.236	4.76	< 0.010		6.19	< 0.010	< 0.010			
10/11/2022	WL_BFWB_OUT_SP21	N													6.74					
10/12/2022	WL_LCI_SP02	N					8.12													
10/12/2022	WL_WLCI_SP01	N					8.22													
10/12/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.37								6.41					
10/12/2022	WL_BFWB_OUT_SP21	N													6.18					
10/13/2022	WL_LCI_SP02	N					8.04													
10/13/2022	WL_WLCI_SP01	N					8.2													
10/13/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.35								6.16					
10/13/2022	WL_BFWB_OUT_SP21	N													5.76					
10/14/2022	WL_LCI_SP02	N					7.92													
10/14/2022	WL_WLCI_SP01	N					7.95													
10/14/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.31								7.04					
10/14/2022	WL_BFWB_OUT_SP21	N													6.43					
10/15/2022	WL_LCI_SP02	N					7.96													
10/15/2022	WL_WLCI_SP01	N					8.17													
10/15/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.32								6.51					
10/15/2022	WL_BFWB_OUT_SP21	N													6.61					
10/16/2022	WL_LCI_SP02	N					8.04													
10/16/2022	WL_WLCI_SP01	N					8.11													
10/16/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.35								5.74					
10/16/2022	WL_BFWB_OUT_SP21	N													5.98					
10/17/2022	WL_LCI_SP02	N					8.05		< 0.050	1.84				62.6	59.9			< 0.010	< 0.010	9.23
10/17/2022	WL_WLCI_SP01	N					8.21		< 0.100	2.75				443	434			< 0.020	< 0.020	2.48
10/17/2022	WL_BFWB_OUT_SP21	N	< 0.0010	< 0.01			7.33		< 0.050 0.0067	2.60				5.37	5.78			< 0.010	< 0.010	19.6
10/17/2022	WL_BFWB_OUT_SP21	N													5.79					
10/18/2022	WL_LCI_SP02	N					8.07								61.8					
10/18/2022	WL_WLCI_SP01	N					8.25								448					
10/18/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.35				0.248	4.29	< 0.010		5.81	< 0.010	< 0.010			
10/18/2022	WL_BFWB_OUT_SP21	N													5.39					
10/19/2022	WL_LCI_SP02	N					8.05													

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10/19/2022	WL_WLCI_SP01	N					8.22													
10/19/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.36								6.03					
10/19/2022	WL_BFWB_OUT_SP21	N													5.95					
10/20/2022	WL_LCI_SP02	N					8.22													
10/20/2022	WL_WLCI_SP01	N					8.14													
10/20/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.35								6.45					
10/20/2022	WL_BFWB_OUT_SP21	N													6.23					
10/21/2022	WL_LCI_SP02	N					8.04													
10/21/2022	WL_WLCI_SP01	N					7.97													
10/21/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.35								6.80					
10/21/2022	WL_BFWB_OUT_SP21	N													6.38					
10/22/2022	WL_LCI_SP02	N					8.18													
10/22/2022	WL_WLCI_SP01	N					8.28													
10/22/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.4								7.45					
10/22/2022	WL_BFWB_OUT_SP21	N													8.01					
10/23/2022	WL_LCI_SP02	N					7.7													
10/23/2022	WL_WLCI_SP01	N					8.04													
10/23/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.4								8.14					
10/23/2022	WL_BFWB_OUT_SP21	N													7.81					
10/24/2022	WL_LCI_SP02	N					8.07													
10/24/2022	WL_WLCI_SP01	N					8.21													
10/24/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.37								7.90					
10/24/2022	WL_BFWB_OUT_SP21	N													7.88					
10/25/2022	WL_LCI_SP02	N					8.11								60.9					
10/25/2022	WL_WLCI_SP01	N					8.29								436					
10/25/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.38				0.327	5.59	< 0.010		7.37	< 0.010	< 0.010			
10/25/2022	WL_BFWB_OUT_SP21	N													7.80					
10/26/2022	WL_LCI_SP02	N					8.1													
10/26/2022	WL_WLCI_SP01	N					8.31													
10/26/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.31								7.78					
10/26/2022	WL_BFWB_OUT_SP21	N													7.02					
10/27/2022	WL_LCI_SP02	N					8.23													
10/27/2022	WL_WLCI_SP01	N					8.3													
10/27/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.38								15.9					
10/27/2022	WL_BFWB_OUT_SP21	N													14.0					
10/27/2022	WL_WLCI_SP01	N																		
10/28/2022	WL_LCI_SP02	N					8.1													
10/28/2022	WL_WLCI_SP01	N					8.3													
10/28/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.34								23.6					
10/28/2022	WL_BFWB_OUT_SP21	N													20.6					
10/29/2022	WL_LCI_SP02	N					7.85													
10/29/2022	WL_WLCI_SP01	N					8.15													
10/29/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.62								27.3					
10/29/2022	WL_BFWB_OUT_SP21	N													27.0					
10/30/2022	WL_LCI_SP02	N					8.13													
10/30/2022	WL_WLCI_SP01	N					8.15													
10/30/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.38								28.7					
10/30/2022	WL_BFWB_OUT_SP21	N													28.7					
10/31/2022	WL_LCI_SP02	N					8.17		< 0.050	1.83				57.8	58.1			< 0.010	< 0.010	9.01
10/31/2022	WL_WLCI_SP01	N					8.11		< 0.100	2.78				432	444			< 0.020	< 0.020	2.47
10/31/2022	WL_BFWB_OUT_SP21	N	< 0.0010	< 0.01			7.4		< 0.050 0.0078	2.65				29.1	29.6			< 0.010	< 0.010	18.9
10/31/2022	WL_BFWB_OUT_SP21	N													28.9					
11/1/2022	WL_LCI_SP02	N					8.24								57.8					
11/1/2022	WL_WLCI_SP01	N					8.41								436					
11/1/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.39				1.55	21.3	< 0.010		26.0	< 0.010	< 0.010			
11/1/2022	WL_BFWB_OUT_SP21	N													25.1					
11/2/2022	WL_LCI_SP02	N					8.1													
11/2/2022	WL_WLCI_SP01	N					8.29													
11/2/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.5								21.4					
11/2/2022	WL_BFWB_OUT_SP21	N													22.5					
11/3/2022	WL_LCI_SP02	N					8.11													
11/3/2022	WL_WLCI_SP01	N					8.25													
11/3/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.46								20.5					
11/3/2022	WL_BFWB_OUT_SP21	N													17.6					
11/4/2022	WL_LCI_SP02	N					8.2													
11/4/2022	WL_WLCI_SP01	N					8.23													

		CHEMICAL_NAME FRACTION REPORT_RESULT_UNIT	Ortho-Phosphate D mg/l	Ozone N mg/l	Ozone R mg/l	Ozone T mg/l	pH, Field N ph units	pH, LAB N ph units	Phosphorus T mg/l	Potassium T mg/l	Se(IV) – selenite SeO3(-2) D ug/l	Se(VI) – selenate SeO4(-2) D ug/l	SeCN – selenocyanate SeCN(-1) D ug/l	Selenium D ug/l	Selenium T ug/l	Selenosulfate, SeSO3 D ug/l	selenomethionine CH3SeCH2CH2CH(NH2)CO2H D ug/l	Silver D ug/l	Silver T ug/l	Sodium T mg/l
11/4/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.42								17.6					
11/4/2022	WL_BFWB_OUT_SP21	N													15.1					
11/5/2022	WL_LCI_SP02	N					7.94													
11/5/2022	WL_WLCI_SP01	N					7.98													
11/5/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.3								15.3					
11/5/2022	WL_BFWB_OUT_SP21	N													13.2					
11/6/2022	WL_LCI_SP02	N					7.97													
11/6/2022	WL_WLCI_SP01	N					8.13													
11/6/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.4								15.0					
11/6/2022	WL_BFWB_OUT_SP21	N													13.5					
11/7/2022	WL_LCI_SP02	N					7.8													
11/7/2022	WL_WLCI_SP01	N					8.1													
11/7/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.5								13.8					
11/7/2022	WL_BFWB_OUT_SP21	N													12.6					
11/8/2022	WL_LCI_SP02	N					8.05								60.5					
11/8/2022	WL_WLCI_SP01	N					8.25								466					
11/8/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.38				0.467	5.73	< 0.010		13.4	< 0.010	< 0.010			
11/8/2022	WL_BFWB_OUT_SP21	N													12.8					
11/9/2022	WL_LCI_SP02	N					8.06													
11/9/2022	WL_WLCI_SP01	N					8.23													
11/9/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.34								11.9					
11/9/2022	WL_BFWB_OUT_SP21	N													12.0					
11/10/2022	WL_LCI_SP02	N					8.08													
11/10/2022	WL_WLCI_SP01	N					8.28													
11/10/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.28								9.79					
11/10/2022	WL_BFWB_OUT_SP21	N													9.38					
11/11/2022	WL_LCI_SP02	N					8.05													
11/11/2022	WL_WLCI_SP01	N					8.26													
11/11/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.24								9.44					
11/11/2022	WL_BFWB_OUT_SP21	N													9.10					
11/12/2022	WL_LCI_SP02	N					7.97													
11/12/2022	WL_WLCI_SP01	N					7.99													
11/12/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.36								8.81					
11/12/2022	WL_BFWB_OUT_SP21	N													9.35					
11/13/2022	WL_LCI_SP02	N					8.08													
11/13/2022	WL_WLCI_SP01	N					8.29													
11/13/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.3								8.63					
11/13/2022	WL_BFWB_OUT_SP21	N													8.75					
11/14/2022	WL_BFWB_OUT_SP21	N													8.57					
11/14/2022	WL_LCI_SP02	N	0.0016				8.1		< 0.0020 < 0.050	1.94				60.7	62.0			< 0.010	< 0.010	10.2
11/14/2022	WL_WLCI_SP01	N	0.0044				8.3		0.0048 < 0.100	2.58				450	461			< 0.020	< 0.020	2.53
11/14/2022	WL_BFWB_OUT_SP21	N	< 0.0010	< 0.01			7.3		0.0094 < 0.050	2.49				7.47	7.96			< 0.010	< 0.010	19.2
11/14/2022	WL_BFWB_OUT_SP21	N					7.28													
11/15/2022	WL_LCI_SP02	N					8.12								67.2					
11/15/2022	WL_WLCI_SP01	N					8.3								468					
11/15/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.33				0.220	5.34	< 0.010		7.86	< 0.010	< 0.010			
11/15/2022	WL_BFWB_OUT_SP21	N													7.57					
11/15/2022	WL_BFWB_OUT_SP21	N					7.33													
11/16/2022	WL_LCI_SP02	N					8.14													
11/16/2022	WL_WLCI_SP01	N					8.31													
11/16/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.34								9.21					
11/16/2022	WL_BFWB_OUT_SP21	N													9.13					
11/17/2022	WL_LCI_SP02	N					8.22													
11/17/2022	WL_WLCI_SP01	N					8.31													
11/17/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.34								11.7					
11/17/2022	WL_BFWB_OUT_SP21	N													10.9					
11/18/2022	WL_LCI_SP02	N					8.04													
11/18/2022	WL_WLCI_SP01	N					8.17													
11/18/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.31								11.9					
11/18/2022	WL_BFWB_OUT_SP21	N													11.4					
11/19/2022	WL_LCI_SP02	N					8.08													
11/19/2022	WL_WLCI_SP01	N					8.17													
11/19/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.35								10.4					
11/19/2022	WL_BFWB_OUT_SP21	N													10.0					
11/20/2022	WL_LCI_SP02	N					8.09													
11/20/2022	WL_WLCI_SP01	N					8.29													

		CHEMICAL_NAME FRACTION REPORT_RESULT_UNIT	Ortho-Phosphate D mg/l	Ozone N mg/l	Ozone R mg/l	Ozone T mg/l	pH, Field N ph units	pH, LAB N ph units	Phosphorus T mg/l	Potassium T mg/l	Se(IV) – selenite SeO3(-2) D ug/l	Se(VI) – selenate SeO4(-2) D ug/l	SeCN – selenocyanate SeCN(-1) D ug/l	Selenium D ug/l	Selenium T ug/l	Selenosulfate, SeSO3 D ug/l	selenomethionine CH3SeCH2CH2CH(NH2)CO2H D ug/l	Silver D ug/l	Silver T ug/l	Sodium T mg/l
11/20/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.29								9.48					
11/20/2022	WL_BFWB_OUT_SP21	N													8.85					
11/21/2022	WL_LCI_SP02	N					8.09													
11/21/2022	WL_WLCI_SP01	N					8.19													
11/21/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.3								8.57					
11/21/2022	WL_BFWB_OUT_SP21	N													7.93					
11/22/2022	WL_LCI_SP02	N					8.13								61.3					
11/22/2022	WL_WLCI_SP01	N					8.13								448					
11/22/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.28				0.335	6.44	< 0.010		8.68	< 0.010	< 0.010			
11/22/2022	WL_BFWB_OUT_SP21	N													8.22					
11/23/2022	WL_LCI_SP02	N					8.12													
11/23/2022	WL_WLCI_SP01	N					8.28													
11/23/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.25								8.04					
11/23/2022	WL_BFWB_OUT_SP21	N													8.51					
11/24/2022	WL_LCI_SP02	N					8.1													
11/24/2022	WL_WLCI_SP01	N					8.25													
11/24/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.26								8.24					
11/24/2022	WL_BFWB_OUT_SP21	N													7.53					
11/25/2022	WL_LCI_SP02	N					8.07													
11/25/2022	WL_WLCI_SP01	N					8													
11/25/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.32								7.88					
11/25/2022	WL_BFWB_OUT_SP21	N													7.08					
11/26/2022	WL_LCI_SP02	N					8.17													
11/26/2022	WL_WLCI_SP01	N					8.2													
11/26/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.28								7.89					
11/26/2022	WL_BFWB_OUT_SP21	N													8.70					
11/27/2022	WL_LCI_SP02	N					8.07													
11/27/2022	WL_WLCI_SP01	N					8.07													
11/27/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.34								7.65					
11/27/2022	WL_BFWB_OUT_SP21	N													8.47					
11/28/2022	WL_LCI_SP02	N					8.16		< 0.050	1.87				63.9	62.6			< 0.010	< 0.010	9.50
11/28/2022	WL_WLCI_SP01	N					8.32		< 0.100	2.52				458	451			< 0.020	< 0.020	2.26
11/28/2022	WL_BFWB_OUT_SP21	N	< 0.0010	< 0.01			7.35		0.0174 < 0.050	2.63				7.36	8.09			< 0.010	< 0.010	20.0
11/28/2022	WL_BFWB_OUT_SP21	N													8.46					
11/29/2022	WL_LCI_SP02	N					8.17								59.7					
11/29/2022	WL_WLCI_SP01	N					8.31								451					
11/29/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.37				0.221	5.66	< 0.010		7.02	< 0.010	< 0.010			
11/29/2022	WL_BFWB_OUT_SP21	N													7.93					
11/30/2022	WL_LCI_SP02	N					8.14													
11/30/2022	WL_WLCI_SP01	N					8.24													
11/30/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.38								7.76					
11/30/2022	WL_BFWB_OUT_SP21	N													8.21					
12/1/2022	WL_LCI_SP02	N					8.13													
12/1/2022	WL_WLCI_SP01	N					8.24													
12/1/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.27								8.42					
12/1/2022	WL_BFWB_OUT_SP21	N													9.32					
12/2/2022	WL_LCI_SP02	N					8.06													
12/2/2022	WL_WLCI_SP01	N					8.09													
12/2/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.31								10.8					
12/2/2022	WL_BFWB_OUT_SP21	N													11.1					
12/3/2022	WL_LCI_SP02	N					8.19													
12/3/2022	WL_WLCI_SP01	N					8.25													
12/3/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.39								10.2					
12/3/2022	WL_BFWB_OUT_SP21	N													11.7					
12/4/2022	WL_LCI_SP02	N					8.17													
12/4/2022	WL_WLCI_SP01	N					8.26													
12/4/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.39								8.63					
12/4/2022	WL_BFWB_OUT_SP21	N													9.61					
12/5/2022	WL_LCI_SP02	N					8.1													
12/5/2022	WL_WLCI_SP01	N					8.24													
12/5/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.3								7.45					
12/5/2022	WL_BFWB_OUT_SP21	N													8.50					
12/6/2022	WL_LCI_SP02	N					8.14								65.5					
12/6/2022	WL_WLCI_SP01	N					8.3								501					
12/6/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.3				0.358	6.60	< 0.010		9.27	< 0.010	< 0.010			
12/6/2022	WL_BFWB_OUT_SP21	N													8.23					

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12/7/2022	WL_LCI_SP02	N					8.1													
12/7/2022	WL_WLCI_SP01	N					8.3													
12/7/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.3								9.50					
12/7/2022	WL_BFWB_OUT_SP21	N													9.45					
12/8/2022	WL_LCI_SP02	N					8.14													
12/8/2022	WL_WLCI_SP01	N					8.31													
12/8/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.31								8.58					
12/8/2022	WL_BFWB_OUT_SP21	N													8.94					
12/9/2022	WL_LCI_SP02	N					8.15													
12/9/2022	WL_WLCI_SP01	N					8.32													
12/9/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.32								7.37					
12/9/2022	WL_BFWB_OUT_SP21	N													8.93					
12/10/2022	WL_LCI_SP02	N					8.2													
12/10/2022	WL_WLCI_SP01	N					8.34													
12/10/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.34								6.84					
12/10/2022	WL_BFWB_OUT_SP21	N													8.44					
12/11/2022	WL_LCI_SP02	N					8.15													
12/11/2022	WL_WLCI_SP01	N					8.3													
12/11/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.34								6.34					
12/11/2022	WL_BFWB_OUT_SP21	N													6.83					
12/12/2022	WL_LCI_SP02	N	0.0012				8.19		0.0023 < 0.050	1.85				66.0	64.5			< 0.010	0.012	9.44
12/12/2022	WL_WLCI_SP01	N	0.0048				8.34		0.0042 < 0.100	2.57				469	466			< 0.020	< 0.020	2.32
12/12/2022	WL_BFWB_OUT_SP21	N	< 0.0010	< 0.01			7.34		0.0051 < 0.050	2.46				6.79	6.65			< 0.010	0.011	18.5
12/12/2022	WL_BFWB_OUT_SP21	N													7.31					
12/13/2022	WL_LCI_SP02	N					8.2								60.8					
12/13/2022	WL_WLCI_SP01	N					8.36								449					
12/13/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.39				0.247	5.55	< 0.010		6.73	< 0.010	< 0.010			
12/13/2022	WL_BFWB_OUT_SP21	N													7.26					
12/14/2022	WL_LCI_SP02	N					8.22													
12/14/2022	WL_WLCI_SP01	N					8.37													
12/14/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.42								8.84					
12/14/2022	WL_BFWB_OUT_SP21	N													9.65					
12/15/2022	WL_LCI_SP02	N					8.21													
12/15/2022	WL_WLCI_SP01	N					8.37													
12/15/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.39								10.6					
12/15/2022	WL_BFWB_OUT_SP21	N													9.83					
12/16/2022	WL_LCI_SP02	N					8.26													
12/16/2022	WL_WLCI_SP01	N					8.34													
12/16/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.42								9.86					
12/16/2022	WL_BFWB_OUT_SP21	N													9.48					
12/17/2022	WL_LCI_SP02	N					8.24													
12/17/2022	WL_WLCI_SP01	N					8.38													
12/17/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.44								10.2					
12/17/2022	WL_BFWB_OUT_SP21	N													9.48					
12/18/2022	WL_LCI_SP02	N					8.26													
12/18/2022	WL_WLCI_SP01	N					8.29													
12/18/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.49								8.17					
12/18/2022	WL_BFWB_OUT_SP21	N													7.98					
12/19/2022	WL_LCI_SP02	N					8.25													
12/19/2022	WL_WLCI_SP01	N					8.39													
12/19/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.49								6.74					
12/19/2022	WL_BFWB_OUT_SP21	N													7.28					
12/20/2022	WL_LCI_SP02	N					8.25								62.1					
12/20/2022	WL_WLCI_SP01	N					8.28								444					
12/20/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.5				0.330	7.06	< 0.010		8.70	< 0.010	< 0.010			
12/20/2022	WL_BFWB_OUT_SP21	N													9.46					
12/21/2022	WL_LCI_SP02	N					8.28													
12/21/2022	WL_WLCI_SP01	N					8.39													
12/21/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.45								10.4					
12/21/2022	WL_BFWB_OUT_SP21	N													12.8					
12/22/2022	WL_LCI_SP02	N					8.35													
12/22/2022	WL_WLCI_SP01	N					8.39													
12/22/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.45								14.2					
12/22/2022	WL_BFWB_OUT_SP21	N													11.3					
12/23/2022	WL_LCI_SP02	N					8.27													
12/23/2022	WL_WLCI_SP01	N					8.4													

		CHEMICAL_NAME FRACTION REPORT_RESULT_UNIT	Ortho-Phosphate D mg/l	Ozone N mg/l	Ozone R mg/l	Ozone T mg/l	pH, Field N ph units	pH, LAB N ph units	Phosphorus T mg/l	Potassium T mg/l	Se(IV) – selenite SeO3(-2) D ug/l	Se(VI) – selenate SeO4(-2) D ug/l	SeCN – selenocyanate SeCN(-1) D ug/l	Selenium D ug/l	Selenium T ug/l	Selenosulfate, SeSO3 D ug/l	selenomethionine CH3SeCH2CH2CH(NH2)CO2H D ug/l	Silver D ug/l	Silver T ug/l	Sodium T mg/l
12/23/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.47								13.1					
12/23/2022	WL_BFWB_OUT_SP21	N					7.5								12.6					
12/24/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.4								14.1					
12/24/2022	WL_BFWB_OUT_SP21	N													13.4					
12/24/2022	WL_LCI_SP02	N					8.29													
12/24/2022	WL_WLCI_SP01	N					8.4													
12/25/2022	WL_LCI_SP02	N					8.27													
12/25/2022	WL_WLCI_SP01	N					8.37													
12/25/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.39								13.0					
12/25/2022	WL_BFWB_OUT_SP21	N													11.7					
12/26/2022	WL_LCI_SP02	N					8.25								64.1					
12/26/2022	WL_WLCI_SP01	N					8.37								482					
12/26/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.36				0.550	9.17	< 0.010		13.4	< 0.010	< 0.010			
12/26/2022	WL_BFWB_OUT_SP21	N													11.5					
12/27/2022	WL_LCI_SP02	N					8.26		< 0.050	1.91				63.2	68.1			< 0.010	< 0.010	10.5
12/27/2022	WL_WLCI_SP01	N					8.38		< 0.100	2.63				491	538			< 0.020	< 0.020	2.44
12/27/2022	WL_BFWB_OUT_SP21	N	< 0.0010	< 0.01			7.39		0.0071 < 0.050	2.49				13.4	14.0			< 0.010	< 0.010	20.3
12/27/2022	WL_BFWB_OUT_SP21	N													13.1					
12/28/2022	WL_LCI_SP02	N					8.24													
12/28/2022	WL_WLCI_SP01	N					8.36													
12/28/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.36								15.3					
12/28/2022	WL_BFWB_OUT_SP21	N													13.2					
12/29/2022	WL_LCI_SP02	N					8.28													
12/29/2022	WL_WLCI_SP01	N					8.39													
12/29/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.39								15.3					
12/29/2022	WL_BFWB_OUT_SP21	N													15.5					
12/30/2022	WL_LCI_SP02	N					8.22													
12/30/2022	WL_WLCI_SP01	N					8.36													
12/30/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.37								14.6					
12/30/2022	WL_BFWB_OUT_SP21	N													15.6					
12/31/2022	WL_LCI_SP02	N					8.27													
12/31/2022	WL_WLCI_SP01	N					8.35													
12/31/2022	WL_BFWB_OUT_SP21	N		< 0.01			7.36								13.9					
12/31/2022	WL_BFWB_OUT_SP21	N													13.8					
1/1/2023	WL_LCI_SP02	N					8.08													
1/1/2023	WL_WLCI_SP01	N					8.15													
1/1/2023	WL_BFWB_OUT_SP21	N		< 0.01			7.22								13.9					
1/1/2023	WL_BFWB_OUT_SP21	N													14.5					

		CHEMICAL_NAME FRACTION REPORT_RESULT_UNIT	Specific conductivity, temperature corrected value (25 C) N us/cm	Specific conductivity, temperature corrected value (25 C) N uS/cm at 25 C	Strontium D mg/l	Strontium T mg/l	SULFIDE (as S) T mg/l	Sulphate (As SO4) D mg/l	Temperature, Field N deg c	Thallium D ug/l	Thallium T ug/l	Tin D mg/l	Tin T mg/l	Titanium D ug/l	Titanium T ug/l	Total Dissolved Solids (Residue, Filterable) N mg/l	Total Kjeldahl Nitrogen N mg/l	Total Suspend Solids, Lab N mg/l
SAMPLE_DATE	SYS_LOC_CODE	SAMPLE_TYPE_CODE	REPORT_RESULT_TEXT	REPORT_RESULT_TEXT	REPORT_RESULT_TEXT	REPORT_RESULT_TEXT	REPORT_RESULT_TEXT	REPORT_RESULT_TEXT	REPORT_RESULT_TEXT	REPORT_RESULT_TEXT	REPORT_RESULT_TEXT	REPORT_RESULT_TEXT	REPORT_RESULT_TEXT	REPORT_RESULT_TEXT	REPORT_RESULT_TEXT	REPORT_RESULT_TEXT	REPORT_RESULT_TEXT	REPORT_RESULT_TEXT	REPORT_RESULT_TEXT
1/1/2022	WL_LCI_SP02	N		1137					2.8										
1/1/2022	WL_WLCI_SP01	N		1925					3.5										
1/1/2022	WL_BFWB_OUT_SP21	N		1684					5.3										
1/1/2022	WL_BFWB_OUT_SP21	N																	
1/1/2022	WL_WLCI_SP01	N																	
1/1/2022	WL_LCI_SP02	N																	
1/1/2022	WL_WLCI_SP01	N																	
1/2/2022	WL_LCI_SP02	N		1251					2.7										
1/2/2022	WL_WLCI_SP01	N		1847					3.6										
1/2/2022	WL_BFWB_OUT_SP21	N		1639					4.1										
1/2/2022	WL_BFWB_OUT_SP21	N																	
1/2/2022	WL_LCI_SP02	N																	
1/2/2022	WL_WLCI_SP01	N																	
1/3/2022	WL_LCI_SP02	N		1122					4										
1/3/2022	WL_WLCI_SP01	N		1988					5										
1/3/2022	WL_BFWB_OUT_SP21	N		1708					6.5										
1/3/2022	WL_BFWB_OUT_SP21	N																	
1/3/2022	WL_BFWB_OUT_SP21	N		1700					7.3										
1/4/2022	WL_BFWB_OUT_SP21	N		1687					7										
1/4/2022	WL_BFWB_OUT_SP21	N		1675					6.6										
1/4/2022	WL_LCI_SP02	N		1092					3.5										
1/4/2022	WL_WLCI_SP01	N		1954					5.3										
1/4/2022	WL_BFWB_OUT_SP21	N		1651					6.5										
1/4/2022	WL_BFWB_OUT_SP21	N																	
1/5/2022	WL_LCI_SP02	N		1147					3										
1/5/2022	WL_WLCI_SP01	N		2050					4.4										
1/5/2022	WL_BFWB_OUT_SP21	N		1713					6.2										
1/5/2022	WL_BFWB_OUT_SP21	N																	
1/6/2022	WL_LCI_SP02	N		1104					2.5										
1/6/2022	WL_WLCI_SP01	N		1944					3.8										
1/6/2022	WL_BFWB_OUT_SP21	N		1631					6.1										
1/6/2022	WL_BFWB_OUT_SP21	N		1670					6.1										
1/6/2022	WL_BFWB_OUT_SP21	N																	
1/6/2022	WL_BFWB_OUT_SP21	N		1666					6.3										
1/6/2022	WL_BFWB_OUT_SP21	N																	
1/6/2022	WL_BFWB_OUT_SP21	N																	
1/7/2022	WL_LCI_SP02	N		1077					2.7										
1/7/2022	WL_WLCI_SP01	N		1962					4.1										
1/7/2022	WL_BFWB_OUT_SP21	N		1633					7										
1/7/2022	WL_BFWB_OUT_SP21	N																	
1/8/2022	WL_LCI_SP02	N		1106					3.7										
1/8/2022	WL_WLCI_SP01	N		2006					4.4										
1/8/2022	WL_BFWB_OUT_SP21	N		1676					8.1										
1/8/2022	WL_BFWB_OUT_SP21	N																	
1/9/2022	WL_LCI_SP02	N		1100					3										
1/9/2022	WL_WLCI_SP01	N		1962					4.3										
1/9/2022	WL_BFWB_OUT_SP21	N		1703					8										
1/9/2022	WL_BFWB_OUT_SP21	N																	
1/10/2022	WL_LCI_SP02	N		1091	0.280	0.265		393	2.8	0.014	0.015	< 0.00010	< 0.00010	< 10.0	< 10.0	885	0.174	1.4	
1/10/2022	WL_WLCI_SP01	N		1904	0.186	0.180		1120	4	< 0.020	0.026	< 0.00020	< 0.00020	< 10.0	< 20.0	1950	0.408	1.4	
1/10/2022	WL_BFWB_OUT_SP21	N		1672	0.227	0.223	< 0.0015	734	7.9	< 0.010	< 0.010	< 0.00010	< 0.00010	< 10.0	< 10.0	1410	0.088	1.5	
1/10/2022	WL_BFWB_OUT_SP21	N																	
1/10/2022	WL_BFWB_OUT_SP21	N																	
1/11/2022	WL_LCI_SP02	N		1121					3.3										
1/11/2022	WL_WLCI_SP01	N		2009					4.4										
1/11/2022	WL_BFWB_OUT_SP21	N		1692					8.7										
1/12/2022	WL_LCI_SP02	N		1118					3.5										
1/12/2022	WL_WLCI_SP01	N		1996					4.7										
1/12/2022	WL_BFWB_OUT_SP21	N		1686					9.4										
1/12/2022	WL_BFWB_OUT_SP21	N																	
1/13/2022	WL_LCI_SP02	N		1128					3.3										
1/13/2022	WL_WLCI_SP01	N		2026					6										

		CHEMICAL_NAME FRACTION REPORT_RESULT_UNIT	Specific conductivity, temperature corrected value (25 C) N us/cm	Specific conductivity, temperature corrected value (25 C) N uS/cm at 25 C	Strontium D mg/l	Strontium T mg/l	SULFIDE (as S) T mg/l	Sulphate (As SO4) D mg/l	Temperature, Field N deg c	Thallium D ug/l	Thallium T ug/l	Tin D mg/l	Tin T mg/l	Titanium D ug/l	Titanium T ug/l	Total Dissolved Solids (Residue, Filterable) N mg/l	Total Kjeldahl Nitrogen N mg/l	Total Suspend Solids, Lab N mg/l
1/13/2022	WL_BFWB_OUT_SP21	N		1683					9.6									
1/13/2022	WL_BFWB_OUT_SP21	N																
1/14/2022	WL_LCI_SP02	N		1101					4.1									
1/14/2022	WL_WLCI_SP01	N		1970					5.2									
1/14/2022	WL_BFWB_OUT_SP21	N		1672					9.6									
1/14/2022	WL_BFWB_OUT_SP21	N																
1/15/2022	WL_LCI_SP02	N		1109					3.5									
1/15/2022	WL_WLCI_SP01	N		1986					5.4									
1/15/2022	WL_BFWB_OUT_SP21	N		1664					9.4									
1/15/2022	WL_BFWB_OUT_SP21	N																
1/16/2022	WL_LCI_SP02	N		1123					3.1									
1/16/2022	WL_WLCI_SP01	N		2011					4.9									
1/16/2022	WL_BFWB_OUT_SP21	N		1673					9									
1/16/2022	WL_BFWB_OUT_SP21	N																
1/17/2022	WL_LCI_SP02	N		1134					3.4									
1/17/2022	WL_WLCI_SP01	N		2042					4.8									
1/17/2022	WL_BFWB_OUT_SP21	N		1679					9.2									
1/17/2022	WL_BFWB_OUT_SP21	N																
1/18/2022	WL_LCI_SP02	N		1096					3.3									
1/18/2022	WL_WLCI_SP01	N		1898					5									
1/18/2022	WL_BFWB_OUT_SP21	N		1653					8.9									
1/18/2022	WL_BFWB_OUT_SP21	N																
1/19/2022	WL_LCI_SP02	N		1114					3.5									
1/19/2022	WL_WLCI_SP01	N		1984					4.4									
1/19/2022	WL_BFWB_OUT_SP21	N		1663					7.5									
1/19/2022	WL_BFWB_OUT_SP21	N																
1/20/2022	WL_LCI_SP02	N		1121					3									
1/20/2022	WL_WLCI_SP01	N		1965					4.6									
1/20/2022	WL_BFWB_OUT_SP21	N		1681					8									
1/20/2022	WL_BFWB_OUT_SP21	N																
1/21/2022	WL_LCI_SP02	N		1117					3.2									
1/21/2022	WL_WLCI_SP01	N		1965					4.1									
1/21/2022	WL_BFWB_OUT_SP21	N		1681					8.7									
1/21/2022	WL_BFWB_OUT_SP21	N																
1/22/2022	WL_LCI_SP02	N		1115					3									
1/22/2022	WL_WLCI_SP01	N		1928					4.2									
1/22/2022	WL_BFWB_OUT_SP21	N		1691					8.7									
1/22/2022	WL_BFWB_OUT_SP21	N																
1/23/2022	WL_LCI_SP02	N		868					3.4									
1/23/2022	WL_WLCI_SP01	N		1911					4.5									
1/23/2022	WL_BFWB_OUT_SP21	N		1677					9.2									
1/23/2022	WL_BFWB_OUT_SP21	N																
1/24/2022	WL_LCI_SP02	N		1102	0.293	0.275			3	0.013	0.013	< 0.00010	< 0.00010	< 10.0	< 10.0			
1/24/2022	WL_WLCI_SP01	N		1904	0.197	0.203			4.5	0.025	0.024	< 0.00010	< 0.00020	< 10.0	< 20.0			
1/24/2022	WL_BFWB_OUT_SP21	N		1660	0.251	0.241	< 0.0015	756	8.7	< 0.010	< 0.010	< 0.00010	< 0.00010	< 10.0	< 10.0	1260	0.128	< 1.0
1/24/2022	WL_BFWB_OUT_SP21	N																
1/25/2022	WL_LCI_SP02	N		1104					3.2									
1/25/2022	WL_WLCI_SP01	N		1914					4.5									
1/25/2022	WL_BFWB_OUT_SP21	N		1688					9.2									
1/25/2022	WL_BFWB_OUT_SP21	N																
1/26/2022	WL_LCI_SP02	N		1158					2.9									
1/26/2022	WL_WLCI_SP01	N		2264					4.4									
1/26/2022	WL_BFWB_OUT_SP21	N		1769					8.6									
1/26/2022	WL_BFWB_OUT_SP21	N																
1/27/2022	WL_LCI_SP02	N		1206					4.7									
1/27/2022	WL_WLCI_SP01	N		2255					5.1									
1/27/2022	WL_BFWB_OUT_SP21	N		1760					8.3									
1/27/2022	WL_BFWB_OUT_SP21	N																
1/28/2022	WL_LCI_SP02	N		1073					3.9									
1/28/2022	WL_WLCI_SP01	N		2053					5.8									
1/28/2022	WL_BFWB_OUT_SP21	N		1687					8.3									
1/28/2022	WL_BFWB_OUT_SP21	N																
1/29/2022	WL_LCI_SP02	N		1112					3.5									
1/29/2022	WL_WLCI_SP01	N		1965					4.7									
1/29/2022	WL_BFWB_OUT_SP21	N		1650					8.4									
1/29/2022	WL_BFWB_OUT_SP21	N																

		CHEMICAL_NAME FRACTION REPORT_RESULT_UNIT	Specific conductivity, temperature corrected value (25 C) N us/cm	Specific conductivity, temperature corrected value (25 C) N uS/cm at 25 C	Strontium D mg/l	Strontium T mg/l	SULFIDE (as S) T mg/l	Sulphate (As SO4) D mg/l	Temperature, Field N deg c	Thallium D ug/l	Thallium T ug/l	Tin D mg/l	Tin T mg/l	Titanium D ug/l	Titanium T ug/l	Total Dissolved Solids (Residue, Filterable) N mg/l	Total Kjeldahl Nitrogen N mg/l	Total Suspend Solids, Lab N mg/l
1/30/2022	WL_LCI_SP02	N		1039					4									
1/30/2022	WL_WLCI_SP01	N		2041					5									
1/30/2022	WL_BFWB_OUT_SP21	N		1673					8.7									
1/30/2022	WL_BFWB_OUT_SP21	N																
1/31/2022	WL_LCI_SP02	N		1129					3.4									
1/31/2022	WL_WLCI_SP01	N		1988					4.8									
1/31/2022	WL_BFWB_OUT_SP21	N		1661					9.4									
1/31/2022	WL_BFWB_OUT_SP21	N																
2/1/2022	WL_LCI_SP02	N		1135	0.284				2.7	0.014		< 0.00010		< 10.0				
2/1/2022	WL_WLCI_SP01	N		2079	0.193				4.6	0.022		< 0.00020		< 20.0				
2/1/2022	WL_BFWB_OUT_SP21	N		1697					8									
2/2/2022	WL_BFWB_OUT_SP21	N																
2/2/2022	WL_LCI_SP02	N		1157					3.6									
2/2/2022	WL_WLCI_SP01	N		2077					4.1									
2/2/2022	WL_BFWB_OUT_SP21	N																
2/2/2022	WL_BFWB_OUT_SP21	N		1657					6.1									
2/2/2022	WL_LCI_SP02	N																
2/2/2022	WL_WLCI_SP01	N																
2/3/2022	WL_LCI_SP02	N		1142					2.8									
2/3/2022	WL_WLCI_SP01	N		2021					3.8									
2/3/2022	WL_BFWB_OUT_SP21	N		1694					6.5									
2/3/2022	WL_BFWB_OUT_SP21	N																
2/4/2022	WL_LCI_SP02	N		1145					3									
2/4/2022	WL_WLCI_SP01	N		2054					4.6									
2/4/2022	WL_BFWB_OUT_SP21	N		1701					8.3									
2/4/2022	WL_BFWB_OUT_SP21	N																
2/5/2022	WL_LCI_SP02	N		1160					3.2									
2/5/2022	WL_WLCI_SP01	N		2083					4.7									
2/5/2022	WL_BFWB_OUT_SP21	N		1700					8.1									
2/6/2022	WL_LCI_SP02	N		1158					3.6									
2/6/2022	WL_WLCI_SP01	N		2084					4.6									
2/6/2022	WL_BFWB_OUT_SP21	N		1791					7.4									
2/6/2022	WL_BFWB_OUT_SP21	N		1791					7.5									
2/7/2022	WL_LCI_SP02	N		1101	0.291	0.320		387	3.1	0.014	0.016	< 0.00010	< 0.00010	< 10.0	< 10.0	763	< 0.050	< 1.0
2/7/2022	WL_WLCI_SP01	N		1893	0.198	0.215		1130	4.4	0.024	0.028	< 0.00020	< 0.00020	< 20.0	< 10.0	1930	0.145	1.3
2/7/2022	WL_BFWB_OUT_SP21	N		1643	0.248	0.263	< 0.0015	700	7.3	< 0.010	< 0.010	< 0.00010	< 0.00010	< 10.0	< 10.0	1320	0.107	1.7
2/8/2022	WL_LCI_SP02	N		1121					3.8									
2/8/2022	WL_WLCI_SP01	N		1954					4.5									
2/8/2022	WL_BFWB_OUT_SP21	N		1656					7.2									
2/9/2022	WL_LCI_SP02	N		1117					3.7									
2/9/2022	WL_WLCI_SP01	N		1937					4.7									
2/9/2022	WL_BFWB_OUT_SP21	N		1649					7.5									
2/9/2022	WL_BFWB_OUT_SP21	N																
2/10/2022	WL_LCI_SP02	N		1156					5									
2/10/2022	WL_WLCI_SP01	N		2127					5.1									
2/10/2022	WL_BFWB_OUT_SP21	N		1697					8									
2/10/2022	WL_BFWB_OUT_SP21	N																
2/11/2022	WL_LCI_SP02	N		1165					3.2									
2/11/2022	WL_WLCI_SP01	N		2096					5									
2/11/2022	WL_BFWB_OUT_SP21	N		1691					7.4									
2/11/2022	WL_BFWB_OUT_SP21	N																
2/12/2022	WL_LCI_SP02	N		1148					3.9									
2/12/2022	WL_WLCI_SP01	N		2027					4.4									
2/12/2022	WL_BFWB_OUT_SP21	N		1683					7.2									
2/12/2022	WL_BFWB_OUT_SP21	N																
2/13/2022	WL_LCI_SP02	N		1185					3.2									
2/13/2022	WL_WLCI_SP01	N		2160					5.2									
2/13/2022	WL_BFWB_OUT_SP21	N		1712					7.6									
2/13/2022	WL_BFWB_OUT_SP21	N																
2/14/2022	WL_LCI_SP02	N		1133					3.1									
2/14/2022	WL_WLCI_SP01	N		1981					4.6									
2/14/2022	WL_BFWB_OUT_SP21	N		1685					7.8									
2/14/2022	WL_BFWB_OUT_SP21	N																
2/15/2022	WL_LCI_SP02	N		1164					3.5									

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2/15/2022	WL_WLCI_SP01	N		2038					4.4									
2/15/2022	WL_BFWB_OUT_SP21	N		1720					8.2									
2/15/2022	WL_BFWB_OUT_SP21	N																
2/16/2022	WL_LCI_SP02	N		1183					4.5									
2/16/2022	WL_WLCI_SP01	N		2081					4.6									
2/16/2022	WL_BFWB_OUT_SP21	N		1765					7.9									
2/16/2022	WL_BFWB_OUT_SP21	N																
2/17/2022	WL_LCI_SP02	N		1181					4.3									
2/17/2022	WL_WLCI_SP01	N		2094					5.7									
2/17/2022	WL_BFWB_OUT_SP21	N		1698					7.6									
2/17/2022	WL_BFWB_OUT_SP21	N																
2/18/2022	WL_LCI_SP02	N		1152					3.8									
2/18/2022	WL_WLCI_SP01	N		2330					6.2									
2/18/2022	WL_BFWB_OUT_SP21	N		1828					8.2									
2/18/2022	WL_BFWB_OUT_SP21	N																
2/19/2022	WL_LCI_SP02	N		1253					4.1									
2/19/2022	WL_WLCI_SP01	N		2330					5.4									
2/19/2022	WL_BFWB_OUT_SP21	N		1828					8.5									
2/19/2022	WL_BFWB_OUT_SP21	N																
2/20/2022	WL_LCI_SP02	N		1252					3.7									
2/20/2022	WL_WLCI_SP01	N		2333					5.1									
2/20/2022	WL_BFWB_OUT_SP21	N		1826					8.5									
2/20/2022	WL_BFWB_OUT_SP21	N																
2/21/2022	WL_LCI_SP02	N		1260	0.301	0.317			2.7	0.012	0.016	< 0.00010	< 0.00010	< 10.0	< 10.0			
2/21/2022	WL_WLCI_SP01	N		2337	0.209	0.207			4.2	0.024	0.027	< 0.00020	< 0.00020	< 20.0	< 20.0			
2/21/2022	WL_BFWB_OUT_SP21	N		1827	0.250	0.274	< 0.0015	698	5.6	< 0.010	< 0.010	< 0.00010	0.00011	< 10.0	< 10.0	1430	0.113	2.6
2/21/2022	WL_BFWB_OUT_SP21	N																
2/22/2022	WL_LCI_SP02	N		1258					3.6									
2/22/2022	WL_WLCI_SP01	N		2333					5.1									
2/22/2022	WL_BFWB_OUT_SP21	N		1808					5									
2/22/2022	WL_BFWB_OUT_SP21	N																
2/23/2022	WL_LCI_SP02	N		1257					2.9									
2/23/2022	WL_WLCI_SP01	N		2335					4.5									
2/23/2022	WL_BFWB_OUT_SP21	N		1798					5.1									
2/23/2022	WL_BFWB_OUT_SP21	N																
2/24/2022	WL_LCI_SP02	N		1167					3.7									
2/24/2022	WL_WLCI_SP01	N		2072					5.1									
2/24/2022	WL_BFWB_OUT_SP21	N		1779					6.1									
2/24/2022	WL_BFWB_OUT_SP21	N																
2/25/2022	WL_LCI_SP02	N		1164					3.6									
2/25/2022	WL_WLCI_SP01	N		2031					5.1									
2/25/2022	WL_BFWB_OUT_SP21	N		1651					6.3									
2/25/2022	WL_BFWB_OUT_SP21	N																
2/26/2022	WL_BFWB_OUT_SP21	N																
2/26/2022	WL_LCI_SP02	N		1196					2.7									
2/26/2022	WL_WLCI_SP01	N		2127					4.3									
2/26/2022	WL_BFWB_OUT_SP21	N		1718					6.7									
2/27/2022	WL_LCI_SP02	N		1147					3.4									
2/27/2022	WL_WLCI_SP01	N		1972					4.7									
2/27/2022	WL_BFWB_OUT_SP21	N		1700					7.7									
2/27/2022	WL_BFWB_OUT_SP21	N																
2/28/2022	WL_LCI_SP02	N		1189					3.4									
2/28/2022	WL_WLCI_SP01	N		2006					4.6									
2/28/2022	WL_BFWB_OUT_SP21	N		1722					8.1									
2/28/2022	WL_BFWB_OUT_SP21	N																
3/1/2022	WL_LCI_SP02	N		1147					5.5									
3/1/2022	WL_WLCI_SP01	N		1895					7.4									
3/1/2022	WL_BFWB_OUT_SP21	N		1653					9									
3/1/2022	WL_BFWB_OUT_SP21	N																
3/1/2022	WL_BFWB_OUT_SP21	N																
3/1/2022	WL_BFWB_OUT_SP21	N																
3/2/2022	WL_LCI_SP02	N		1180					3.6									
3/2/2022	WL_WLCI_SP01	N		2091					5.4									
3/2/2022	WL_BFWB_OUT_SP21	N		1696					9.4									
3/2/2022	WL_BFWB_OUT_SP21	N																
3/3/2022	WL_LCI_SP02	N		1148					3.4									

		CHEMICAL_NAME FRACTION REPORT_RESULT_UNIT	Specific conductivity, temperature corrected value (25 C) N us/cm	Specific conductivity, temperature corrected value (25 C) N uS/cm at 25 C	Strontium D mg/l	Strontium T mg/l	SULFIDE (as S) T mg/l	Sulphate (As SO4) D mg/l	Temperature, Field N deg c	Thallium D ug/l	Thallium T ug/l	Tin D mg/l	Tin T mg/l	Titanium D ug/l	Titanium T ug/l	Total Dissolved Solids (Residue, Filterable) N mg/l	Total Kjeldahl Nitrogen N mg/l	Total Suspend Solids, Lab N mg/l
3/3/2022	WL_WLCI_SP01	N		1916					4.6									
3/3/2022	WL_BFWB_OUT_SP21	N		1649					9.1									
3/3/2022	WL_BFWB_OUT_SP21	N																
3/3/2022	WL_BFWB_OUT_SP21	N																
3/3/2022	WL_BFWB_OUT_SP21	N																
3/4/2022	WL_LCI_SP02	N		1147					4.4									
3/4/2022	WL_WLCI_SP01	N		1962					4.6									
3/4/2022	WL_BFWB_OUT_SP21	N		1646					8.7									
3/4/2022	WL_BFWB_OUT_SP21	N																
3/4/2022	WL_BFWB_OUT_SP21	N																
3/4/2022	WL_BFWB_OUT_SP21	N																
3/5/2022	WL_LCI_SP02	N		1087					3.3									
3/5/2022	WL_WLCI_SP01	N		1809					4.2									
3/5/2022	WL_BFWB_OUT_SP21	N		1623					8.4									
3/5/2022	WL_BFWB_OUT_SP21	N																
3/6/2022	WL_LCI_SP02	N		1127					4									
3/6/2022	WL_WLCI_SP01	N		1920					4.1									
3/6/2022	WL_BFWB_OUT_SP21	N		1671					8.4									
3/6/2022	WL_BFWB_OUT_SP21	N																
3/7/2022	WL_LCI_SP02	N		1201	0.289	0.275		413	3	0.013	0.010	< 0.00010	< 0.00010	< 10.0	< 10.0	936	< 0.050	< 1.0
3/7/2022	WL_WLCI_SP01	N		2171	0.206	0.198		1210	4.1	0.026	0.024	< 0.00020	< 0.00020	< 20.0	< 10.0	2060	0.125	1.7
3/7/2022	WL_BFWB_OUT_SP21	N		1743	0.244	0.254			8.4	< 0.010	< 0.010	< 0.00010	< 0.00010	< 10.0	< 10.0			
3/7/2022	WL_BFWB_OUT_SP21	N					< 0.0015	731								1420	0.114	3.3
3/8/2022	WL_LCI_SP02	N		1187					3.6									
3/8/2022	WL_WLCI_SP01	N		2050					4.4									
3/8/2022	WL_BFWB_OUT_SP21	N		1675					8.2									
3/8/2022	WL_BFWB_OUT_SP21	N																
3/8/2022	WL_BFWB_OUT_SP21	N																
3/8/2022	WL_BFWB_OUT_SP21	N																
3/9/2022	WL_LCI_SP02	N		1132					2.6									
3/9/2022	WL_WLCI_SP01	N		1956					3.8									
3/9/2022	WL_BFWB_OUT_SP21	N		1653					7.5									
3/9/2022	WL_BFWB_OUT_SP21	N																
3/9/2022	WL_BFWB_OUT_SP21	N																
3/9/2022	WL_BFWB_OUT_SP21	N																
3/9/2022	WL_LCI_SP02	N																
3/9/2022	WL_LCI_SP02	N																
3/10/2022	WL_LCI_SP02	N																
3/10/2022	WL_LCI_SP02	N		1202					4									
3/10/2022	WL_WLCI_SP01	N		2132					4.6									
3/10/2022	WL_BFWB_OUT_SP21	N		1686					7.2									
3/10/2022	WL_BFWB_OUT_SP21	N																
3/11/2022	WL_LCI_SP02	N		1106					2.7									
3/11/2022	WL_WLCI_SP01	N		1911					5.8									
3/11/2022	WL_BFWB_OUT_SP21	N		1643					7.7									
3/11/2022	WL_BFWB_OUT_SP21	N																
3/11/2022	WL_BFWB_OUT_SP21	N																
3/11/2022	WL_BFWB_OUT_SP21	N																
3/12/2022	WL_LCI_SP02	N		1167					3.9									
3/12/2022	WL_WLCI_SP01	N		2099					4.2									
3/12/2022	WL_BFWB_OUT_SP21	N																
3/12/2022	WL_BFWB_OUT_SP21	N		1690					8.8									
3/13/2022	WL_LCI_SP02	N		1142					3.2									
3/13/2022	WL_WLCI_SP01	N		2017					5.1									
3/13/2022	WL_BFWB_OUT_SP21	N		1694					9.2									
3/14/2022	WL_LCI_SP02	N		1142					4.2									
3/14/2022	WL_WLCI_SP01	N		1951					5									
3/14/2022	WL_BFWB_OUT_SP21	N																
3/14/2022	WL_BFWB_OUT_SP21	N		1687					9.8									
3/15/2022	WL_LCI_SP02	N		1155					3.3									
3/15/2022	WL_WLCI_SP01	N		2008					5									
3/15/2022	WL_BFWB_OUT_SP21	N																
3/15/2022	WL_BFWB_OUT_SP21	N		1728					9.5									
3/16/2022	WL_LCI_SP02	N		1171					5.7									
3/16/2022	WL_WLCI_SP01	N		2011					5.7									
3/16/2022	WL_BFWB_OUT_SP21	N		1696					9.4									

		CHEMICAL_NAME FRACTION REPORT_RESULT_UNIT	Specific conductivity, temperature corrected value (25 C) N us/cm	Specific conductivity, temperature corrected value (25 C) N uS/cm at 25 C	Strontium D mg/l	Strontium T mg/l	SULFIDE (as S) T mg/l	Sulphate (As SO4) D mg/l	Temperature, Field N deg c	Thallium D ug/l	Thallium T ug/l	Tin D mg/l	Tin T mg/l	Titanium D ug/l	Titanium T ug/l	Total Dissolved Solids (Residue, Filterable) N mg/l	Total Kjeldahl Nitrogen N mg/l	Total Suspend Solids, Lab N mg/l
3/16/2022	WL_BFWB_OUT_SP21	N																
3/16/2022	WL_BFWB_OUT_SP21	N																
3/17/2022	WL_LCI_SP02	N		1181					4.4									
3/17/2022	WL_WLCI_SP01	N		1946					5.3									
3/17/2022	WL_BFWB_OUT_SP21	N		1641					9									
3/17/2022	WL_BFWB_OUT_SP21	N																
3/18/2022	WL_LCI_SP02	N		1197					3.5									
3/18/2022	WL_WLCI_SP01	N		2120					4.8									
3/18/2022	WL_BFWB_OUT_SP21	N		1732					9.9									
3/18/2022	WL_BFWB_OUT_SP21	N																
3/19/2022	WL_LCI_SP02	N		1257					3.4									
3/19/2022	WL_WLCI_SP01	N		2345					4.4									
3/19/2022	WL_BFWB_OUT_SP21	N		1802					9.9									
3/19/2022	WL_BFWB_OUT_SP21	N																
3/20/2022	WL_LCI_SP02	N		1225					3.5									
3/20/2022	WL_WLCI_SP01	N		2209					4.7									
3/20/2022	WL_BFWB_OUT_SP21	N		1770					10									
3/20/2022	WL_BFWB_OUT_SP21	N																
3/20/2022	WL_BFWB_OUT_SP21	N																
3/20/2022	WL_BFWB_OUT_SP21	N																
3/21/2022	WL_LCI_SP02	N		1237	0.282	0.300			3.1	0.014	0.016	< 0.00010	< 0.00010	< 10.0	< 0.30			
3/21/2022	WL_WLCI_SP01	N		2329	0.203	0.213			4.1	0.027	0.026	< 0.00020	< 0.00020	< 20.0	< 0.60			
3/21/2022	WL_BFWB_OUT_SP21	N		1810	0.249	0.255	< 0.0015	740	9.3	< 0.010	< 0.010	< 0.00010	< 0.00010	< 10.0	< 0.30	1370	0.117	2.9
3/21/2022	WL_BFWB_OUT_SP21	N																
3/22/2022	WL_LCI_SP02	N		1264					3.2									
3/22/2022	WL_WLCI_SP01	N		2217					4.6									
3/22/2022	WL_BFWB_OUT_SP21	N		1802					9.6									
3/22/2022	WL_BFWB_OUT_SP21	N																
3/23/2022	WL_LCI_SP02	N		1259					3.5									
3/23/2022	WL_WLCI_SP01	N		2341					4.4									
3/23/2022	WL_BFWB_OUT_SP21	N		1819					10.1									
3/23/2022	WL_BFWB_OUT_SP21	N																
3/23/2022	WL_LCI_SP02	N																
3/23/2022	WL_LCI_SP02	N																
3/24/2022	WL_LCI_SP02	N		1229					4.2									
3/24/2022	WL_WLCI_SP01	N		2309					4.8									
3/24/2022	WL_BFWB_OUT_SP21	N		1806					7.28									
3/24/2022	WL_BFWB_OUT_SP21	N																
3/25/2022	WL_LCI_SP02	N		1165					4.6									
3/25/2022	WL_WLCI_SP01	N		2086					4.8									
3/25/2022	WL_BFWB_OUT_SP21	N		1727					10.3									
3/25/2022	WL_BFWB_OUT_SP21	N																
3/26/2022	WL_BFWB_OUT_SP21	N																
3/26/2022	WL_LCI_SP02	N		1176					3.8									
3/26/2022	WL_WLCI_SP01	N		2057					5.2									
3/26/2022	WL_BFWB_OUT_SP21	N		1689					10.7									
3/27/2022	WL_BFWB_OUT_SP21	N																
3/27/2022	WL_LCI_SP02	N		1197					4.3									
3/27/2022	WL_WLCI_SP01	N		2082					5.5									
3/27/2022	WL_BFWB_OUT_SP21	N		1737					10.4									
3/28/2022	WL_LCI_SP02	N		1176					5.1									
3/28/2022	WL_WLCI_SP01	N		2022					5.6									
3/28/2022	WL_BFWB_OUT_SP21	N		1726					10.7									
3/28/2022	WL_BFWB_OUT_SP21	N																
3/29/2022	WL_LCI_SP02	N		1185					4.2									
3/29/2022	WL_WLCI_SP01	N		1813					4.7									
3/29/2022	WL_BFWB_OUT_SP21	N		1731					10.5									
3/29/2022	WL_BFWB_OUT_SP21	N																
3/30/2022	WL_LCI_SP02	N		1197					4.6									
3/30/2022	WL_WLCI_SP01	N		2044					5.3									
3/30/2022	WL_BFWB_OUT_SP21	N		1745					10.5									
3/30/2022	WL_BFWB_OUT_SP21	N																
3/31/2022	WL_LCI_SP02	N		1202					3.7									
3/31/2022	WL_WLCI_SP01	N		2059					5.1									
3/31/2022	WL_BFWB_OUT_SP21	N		1774					10.4									
3/31/2022	WL_BFWB_OUT_SP21	N																

		CHEMICAL_NAME FRACTION REPORT_RESULT_UNIT	Specific conductivity, temperature corrected value (25 C) N us/cm	Specific conductivity, temperature corrected value (25 C) N uS/cm at 25 C	Strontium D mg/l	Strontium T mg/l	SULFIDE (as S) T mg/l	Sulphate (As SO4) D mg/l	Temperature, Field N deg c	Thallium D ug/l	Thallium T ug/l	Tin D mg/l	Tin T mg/l	Titanium D ug/l	Titanium T ug/l	Total Dissolved Solids (Residue, Filterable) N mg/l	Total Kjeldahl Nitrogen N mg/l	Total Suspend Solids, Lab N mg/l
4/1/2022	WL_LCI_SP02	N		1215					3.7									
4/1/2022	WL_WLCI_SP01	N		2158					4.9									
4/1/2022	WL_BFWB_OUT_SP21	N		1758					10.1									
4/1/2022	WL_BFWB_OUT_SP21	N																
4/2/2022	WL_LCI_SP02	N		1204					3.8									
4/2/2022	WL_WLCI_SP01	N		2187					5									
4/2/2022	WL_BFWB_OUT_SP21	N		1762					10.4									
4/2/2022	WL_BFWB_OUT_SP21	N																
4/3/2022	WL_LCI_SP02	N		1118					4.6									
4/3/2022	WL_WLCI_SP01	N		1945					4.6									
4/3/2022	WL_BFWB_OUT_SP21	N		1686					9.6									
4/3/2022	WL_BFWB_OUT_SP21	N																
4/4/2022	WL_LCI_SP02	N		1117	0.270	0.277		397	3.9	0.018	0.016	< 0.00010	< 0.00010	< 10.0	< 10.0	841	0.363	< 1.0
4/4/2022	WL_WLCI_SP01	N		1978	0.196	0.212		1250	4.4	0.025	0.023	< 0.00020	< 0.00020	< 20.0	< 10.0	1910	0.384	2.0
4/4/2022	WL_BFWB_OUT_SP21	N		1674	0.245	0.243	< 0.0015	729	10.2	< 0.010	< 0.010	< 0.00010	< 0.00010	< 10.0	< 10.0	1330	0.120	1.8
4/5/2022	WL_LCI_SP02	N		1202					3.7									
4/5/2022	WL_WLCI_SP01	N		2350					4.4									
4/5/2022	WL_BFWB_OUT_SP21	N		1831					9.8									
4/5/2022	WL_BFWB_OUT_SP21	N																
4/6/2022	WL_LCI_SP02	N		1114					3.7									
4/6/2022	WL_WLCI_SP01	N		2032					4.4									
4/6/2022	WL_BFWB_OUT_SP21	N		1749					9.7									
4/6/2022	WL_BFWB_OUT_SP21	N																
4/7/2022	WL_LCI_SP02	N		1080					5.1									
4/7/2022	WL_WLCI_SP01	N		1939					4.3									
4/7/2022	WL_BFWB_OUT_SP21	N		1696					10									
4/7/2022	WL_BFWB_OUT_SP21	N																
4/8/2022	WL_LCI_SP02	N		1111					4.1									
4/8/2022	WL_WLCI_SP01	N		2114					5.3									
4/8/2022	WL_BFWB_OUT_SP21	N		1717					10.7									
4/8/2022	WL_BFWB_OUT_SP21	N																
4/8/2022	WL_BFWB_OUT_SP21	N																
4/9/2022	WL_LCI_SP02	N		1067					3.8									
4/9/2022	WL_WLCI_SP01	N		1932					4.8									
4/9/2022	WL_BFWB_OUT_SP21	N		1665					10.4									
4/9/2022	WL_BFWB_OUT_SP21	N																
4/10/2022	WL_LCI_SP02	N		1083					3.6									
4/10/2022	WL_WLCI_SP01	N		2010					5.3									
4/10/2022	WL_BFWB_OUT_SP21	N		1675					9.8									
4/10/2022	WL_BFWB_OUT_SP21	N																
4/11/2022	WL_LCI_SP02	N		1090					3.4									
4/11/2022	WL_WLCI_SP01	N		2090					4.3									
4/11/2022	WL_BFWB_OUT_SP21	N		1729					9.5									
4/11/2022	WL_BFWB_OUT_SP21	N																
4/12/2022	WL_LCI_SP02	N		1126					3.7									
4/12/2022	WL_WLCI_SP01	N		2112					4.8									
4/12/2022	WL_BFWB_OUT_SP21	N		1768					9									
4/12/2022	WL_BFWB_OUT_SP21	N																
4/13/2022	WL_LCI_SP02	N		1126					3.3									
4/13/2022	WL_WLCI_SP01	N		2097					4.5									
4/13/2022	WL_BFWB_OUT_SP21	N		1768					8.8									
4/13/2022	WL_BFWB_OUT_SP21	N																
4/14/2022	WL_LCI_SP02	N		1030					3.2									
4/14/2022	WL_WLCI_SP01	N		2280					5.6									
4/14/2022	WL_BFWB_OUT_SP21	N		1779					9.1									
4/14/2022	WL_BFWB_OUT_SP21	N																
4/15/2022	WL_LCI_SP02	N		1183					3.7									
4/15/2022	WL_WLCI_SP01	N		2360					4.5									
4/15/2022	WL_BFWB_OUT_SP21	N		1779					8.9									
4/15/2022	WL_BFWB_OUT_SP21	N																
4/16/2022	WL_LCI_SP02	N		1165					3.6									
4/16/2022	WL_WLCI_SP01	N		2240					4.6									
4/16/2022	WL_BFWB_OUT_SP21	N		1763					9.5									
4/16/2022	WL_BFWB_OUT_SP21	N																
4/17/2022	WL_LCI_SP02	N		1151					4.1									
4/17/2022	WL_WLCI_SP01	N		2318					4.9									

		CHEMICAL_NAME FRACTION REPORT_RESULT_UNIT	Specific conductivity, temperature corrected value (25 C) N us/cm	Specific conductivity, temperature corrected value (25 C) N uS/cm at 25 C	Strontium D mg/l	Strontium T mg/l	SULFIDE (as S) T mg/l	Sulphate (As SO4) D mg/l	Temperature, Field N deg c	Thallium D ug/l	Thallium T ug/l	Tin D mg/l	Tin T mg/l	Titanium D ug/l	Titanium T ug/l	Total Dissolved Solids (Residue, Filterable) N mg/l	Total Kjeldahl Nitrogen N mg/l	Total Suspend Solids, Lab N mg/l
4/17/2022	WL_BFWB_OUT_SP21	N		1737					9.8									
4/17/2022	WL_BFWB_OUT_SP21	N																
4/18/2022	WL_LCI_SP02	N		1164	0.284	0.254			3.5	0.016	0.014	< 0.00010	< 0.00010	< 10.0	< 10.0			
4/18/2022	WL_WLCI_SP01	N		2261	0.207	0.197			4.8	0.024	0.024	< 0.00020	< 0.00020	< 20.0	< 20.0			
4/18/2022	WL_BFWB_OUT_SP21	N		1743	0.239	0.223	< 0.0015	691	10.3	< 0.010	< 0.010	< 0.00010	< 0.00010	< 10.0	< 10.0	1280	0.168	2.3
4/18/2022	WL_BFWB_OUT_SP21	N																
4/19/2022	WL_LCI_SP02	N		1154					3.9									
4/19/2022	WL_WLCI_SP01	N		2217					5.2									
4/19/2022	WL_BFWB_OUT_SP21	N		1714					10.8									
4/19/2022	WL_BFWB_OUT_SP21	N																
4/20/2022	WL_LCI_SP02	N	1173						3.7									
4/20/2022	WL_WLCI_SP01	N	2271						4.7									
4/20/2022	WL_BFWB_OUT_SP21	N	1743						9.3									
4/20/2022	WL_BFWB_OUT_SP21	N																
4/21/2022	WL_LCI_SP02	N	1113						5.7									
4/21/2022	WL_WLCI_SP01	N	1970						5.8									
4/21/2022	WL_BFWB_OUT_SP21	N	1690						9									
4/21/2022	WL_BFWB_OUT_SP21	N																
4/22/2022	WL_LCI_SP02	N	1066						3.9									
4/22/2022	WL_WLCI_SP01	N	1865						5.4									
4/22/2022	WL_BFWB_OUT_SP21	N	1688						9.8									
4/22/2022	WL_BFWB_OUT_SP21	N																
4/23/2022	WL_LCI_SP02	N	1129						4.4									
4/23/2022	WL_WLCI_SP01	N	1972						5									
4/23/2022	WL_BFWB_OUT_SP21	N	1730						10.1									
4/23/2022	WL_BFWB_OUT_SP21	N																
4/24/2022	WL_LCI_SP02	N	1049						4.7									
4/24/2022	WL_WLCI_SP01	N	1763						5									
4/24/2022	WL_BFWB_OUT_SP21	N	1701						10									
4/24/2022	WL_BFWB_OUT_SP21	N																
4/25/2022	WL_LCI_SP02	N	1088						3.9									
4/25/2022	WL_WLCI_SP01	N	1830						4.8									
4/25/2022	WL_BFWB_OUT_SP21	N	1698						10.2									
4/25/2022	WL_BFWB_OUT_SP21	N																
4/26/2022	WL_LCI_SP02	N	1077						5.1									
4/26/2022	WL_WLCI_SP01	N	1795						5.2									
4/26/2022	WL_BFWB_OUT_SP21	N	1674						10.3									
4/27/2022	WL_LCI_SP02	N	1101						3.7									
4/27/2022	WL_WLCI_SP01	N	1879						4.8									
4/27/2022	WL_BFWB_OUT_SP21	N	1705						10.1									
4/28/2022	WL_LCI_SP02	N	1135						3.9									
4/28/2022	WL_WLCI_SP01	N	2174						5.5									
4/28/2022	WL_BFWB_OUT_SP21	N	1754						9.7									
4/29/2022	WL_BFWB_OUT_SP21	N																
4/29/2022	WL_LCI_SP02	N																
4/29/2022	WL_WLCI_SP01	N																
4/29/2022	WL_BFWB_OUT_SP21	N																
4/29/2022	WL_BFWB_OUT_SP21	N	1682						10.1									
4/29/2022	WL_LCI_SP02	N	1783						4.4									
4/29/2022	WL_WLCI_SP01	N	1105						3.9									
4/29/2022	WL_LCI_SP02	N	918						5.3									
4/29/2022	WL_WLCI_SP01	N	2335						5.6									
4/30/2022	WL_LCI_SP02	N	1184						5.3									
4/30/2022	WL_WLCI_SP01	N	2325						4.9									
4/30/2022	WL_BFWB_OUT_SP21	N	1892						10.1									
4/30/2022	WL_BFWB_OUT_SP21	N																
5/1/2022	WL_LCI_SP02	N	1077						4.6									
5/1/2022	WL_WLCI_SP01	N	1973						5.7									
5/1/2022	WL_BFWB_OUT_SP21	N	1804						10.3									
5/1/2022	WL_BFWB_OUT_SP21	N																
5/2/2022	WL_LCI_SP02	N	980		0.261	0.256		374	4	0.015	0.016	< 0.00010	< 0.00010	< 10.0	< 10.0	870	0.392	1.6
5/2/2022	WL_WLCI_SP01	N	1668		0.202	0.213		1160	5.6	0.025	0.026	< 0.00020	< 0.00020	< 20.0	< 20.0	1940	0.057	2.8
5/2/2022	WL_BFWB_OUT_SP21	N	1771		0.226	0.222	< 0.0015	848	10	< 0.010	< 0.010	< 0.00010	< 0.00010	< 10.0	< 10.0	1570	0.168	3.1

		CHEMICAL_NAME FRACTION REPORT_RESULT_UNIT	Specific conductivity, temperature corrected value (25 C) N us/cm	Specific conductivity, temperature corrected value (25 C) N uS/cm at 25 C	Strontium D mg/l	Strontium T mg/l	SULFIDE (as S) T mg/l	Sulphate (As SO4) D mg/l	Temperature, Field N deg c	Thallium D ug/l	Thallium T ug/l	Tin D mg/l	Tin T mg/l	Titanium D ug/l	Titanium T ug/l	Total Dissolved Solids (Residue, Filterable) N mg/l	Total Kjeldahl Nitrogen N mg/l	Total Suspend Solids, Lab N mg/l
5/2/2022	WL_BFWB_OUT_SP21	N																
5/3/2022	WL_LCI_SP02	N	1135						4.1									
5/3/2022	WL_WLCI_SP01	N	2311						5.6									
5/3/2022	WL_BFWB_OUT_SP21	N																
5/3/2022	WL_BFWB_OUT_SP21	N	1907						10.3									
5/3/2022	WL_BFWB_OUT_SP21	N																
5/4/2022	WL_LCI_SP02	N	958						4.7									
5/4/2022	WL_WLCI_SP01	N	1618						5									
5/4/2022	WL_BFWB_OUT_SP21	N	1729						10.7									
5/4/2022	WL_BFWB_OUT_SP21	N																
5/5/2022	WL_LCI_SP02	N	1006						4.6									
5/5/2022	WL_WLCI_SP01	N	1940						5.5									
5/5/2022	WL_BFWB_OUT_SP21	N	1747						10.6									
5/5/2022	WL_BFWB_OUT_SP21	N																
5/6/2022	WL_LCI_SP02	N	912						4.5									
5/6/2022	WL_WLCI_SP01	N	2040						5.2									
5/6/2022	WL_BFWB_OUT_SP21	N	1734						10.5									
5/6/2022	WL_BFWB_OUT_SP21	N																
5/6/2022	WL_LCI_SP02	N	908															
5/7/2022	WL_LCI_SP02	N	883						4.2									
5/7/2022	WL_WLCI_SP01	N	2015						5.1									
5/7/2022	WL_BFWB_OUT_SP21	N	1742						9.9									
5/7/2022	WL_BFWB_OUT_SP21	N																
5/8/2022	WL_LCI_SP02	N	824						4.6									
5/8/2022	WL_WLCI_SP01	N	2007						5.6									
5/8/2022	WL_BFWB_OUT_SP21	N	1743						10.2									
5/8/2022	WL_BFWB_OUT_SP21	N																
5/9/2022	WL_LCI_SP02	N	819.3						4.2									
5/9/2022	WL_WLCI_SP01	N	1979						4.4									
5/9/2022	WL_BFWB_OUT_SP21	N	1750						9.9									
5/9/2022	WL_BFWB_OUT_SP21	N																
5/10/2022	WL_LCI_SP02	N	810.2						4.7									
5/10/2022	WL_WLCI_SP01	N	1927						5.5									
5/10/2022	WL_BFWB_OUT_SP21	N	1764						10.1									
5/10/2022	WL_BFWB_OUT_SP21	N																
5/11/2022	WL_LCI_SP02	N	846						5									
5/11/2022	WL_WLCI_SP01	N	1960						5.3									
5/11/2022	WL_WLCI_SP01	N																
5/11/2022	WL_BFWB_OUT_SP21	N	1763						10									
5/11/2022	WL_BFWB_OUT_SP21	N																
5/12/2022	WL_LCI_SP02	N	840						4.1									
5/12/2022	WL_WLCI_SP01	N	1900						5.3									
5/12/2022	WL_BFWB_OUT_SP21	N	1716						10.2									
5/12/2022	WL_BFWB_OUT_SP21	N																
5/13/2022	WL_LCI_SP02	N	865						4									
5/13/2022	WL_WLCI_SP01	N	1898						5									
5/13/2022	WL_BFWB_OUT_SP21	N	1715						10.4									
5/13/2022	WL_BFWB_OUT_SP21	N																
5/14/2022	WL_LCI_SP02	N	859						6.4									
5/14/2022	WL_WLCI_SP01	N	1877						7									
5/14/2022	WL_BFWB_OUT_SP21	N	1714						9.9									
5/14/2022	WL_BFWB_OUT_SP21	N																
5/15/2022	WL_LCI_SP02	N	865						4.2									
5/15/2022	WL_WLCI_SP01	N	1879						4.7									
5/15/2022	WL_BFWB_OUT_SP21	N	1747						10.9									
5/15/2022	WL_BFWB_OUT_SP21	N																
5/16/2022	WL_LCI_SP02	N	840		0.243	0.255			4.1	0.015	0.015	< 0.00010	< 0.00010	< 10.0	< 10.0			
5/16/2022	WL_WLCI_SP01	N	1900		0.200	0.206			5.8	0.027	0.025	< 0.00020	< 0.00020	< 20.0	< 20.0			
5/16/2022	WL_BFWB_OUT_SP21	N	1730		0.195	0.206	< 0.0015	850	11.7	< 0.010	< 0.010	< 0.00010	< 0.00010	< 10.0	< 10.0	1410	0.118	2.4
5/16/2022	WL_BFWB_OUT_SP21	N																
5/17/2022	WL_LCI_SP02	N	899						5									
5/17/2022	WL_WLCI_SP01	N	1836						5.3									
5/17/2022	WL_BFWB_OUT_SP21	N	1717						11.4									
5/17/2022	WL_BFWB_OUT_SP21	N																
5/18/2022	WL_LCI_SP02	N	449.8						4.4									
5/18/2022	WL_WLCI_SP01	N	1856						5.6									

		CHEMICAL_NAME FRACTION REPORT_RESULT_UNIT	Specific conductivity, temperature corrected value (25 C) N us/cm	Specific conductivity, temperature corrected value (25 C) N uS/cm at 25 C	Strontium D mg/l	Strontium T mg/l	SULFIDE (as S) T mg/l	Sulphate (As SO4) D mg/l	Temperature, Field N deg c	Thallium D ug/l	Thallium T ug/l	Tin D mg/l	Tin T mg/l	Titanium D ug/l	Titanium T ug/l	Total Dissolved Solids (Residue, Filterable) N mg/l	Total Kjeldahl Nitrogen N mg/l	Total Suspend Solids, Lab N mg/l
5/18/2022	WL_BFWB_OUT_SP21	N	1707						10.6									
5/18/2022	WL_BFWB_OUT_SP21	N																
5/19/2022	WL_LCI_SP02	N	789.9						5.2									
5/19/2022	WL_WLCI_SP01	N	1818						5									
5/19/2022	WL_BFWB_OUT_SP21	N	1696						10.1									
5/19/2022	WL_BFWB_OUT_SP21	N																
5/20/2022	WL_LCI_SP02	N	804						4.5									
5/20/2022	WL_WLCI_SP01	N	1792						4.6									
5/20/2022	WL_BFWB_OUT_SP21	N	1689						10.3									
5/20/2022	WL_BFWB_OUT_SP21	N																
5/21/2022	WL_LCI_SP02	N	904						8.3									
5/21/2022	WL_WLCI_SP01	N	2105						7									
5/21/2022	WL_BFWB_OUT_SP21	N	1956						10.3									
5/21/2022	WL_BFWB_OUT_SP21	N																
5/22/2022	WL_LCI_SP02	N	915						6									
5/22/2022	WL_WLCI_SP01	N	1948						4.3									
5/22/2022	WL_BFWB_OUT_SP21	N	1895						10.3									
5/22/2022	WL_BFWB_OUT_SP21	N																
5/23/2022	WL_LCI_SP02	N	898						5.1									
5/23/2022	WL_WLCI_SP01	N	1949						5.4									
5/23/2022	WL_BFWB_OUT_SP21	N	1888						10.6									
5/23/2022	WL_BFWB_OUT_SP21	N																
5/24/2022	WL_LCI_SP02	N	898						6									
5/24/2022	WL_WLCI_SP01	N	1951						6.3									
5/24/2022	WL_BFWB_OUT_SP21	N	1875						11									
5/24/2022	WL_BFWB_OUT_SP21	N																
5/24/2022	WL_BFWB_OUT_SP21	N																
5/24/2022	WL_BFWB_OUT_SP21	N																
5/25/2022	WL_LCI_SP02	N	937						5.7									
5/25/2022	WL_WLCI_SP01	N	2030						7.2									
5/25/2022	WL_BFWB_OUT_SP21	N	1877						11.6									
5/25/2022	WL_BFWB_OUT_SP21	N																
5/26/2022	WL_LCI_SP02	N	918						4.5									
5/26/2022	WL_WLCI_SP01	N	1995						5.4									
5/26/2022	WL_BFWB_OUT_SP21	N	1929						11.2									
5/26/2022	WL_BFWB_OUT_SP21	N																
5/27/2022	WL_LCI_SP02	N	730						8.5									
5/27/2022	WL_WLCI_SP01	N	1968						5.4									
5/27/2022	WL_BFWB_OUT_SP21	N	1984						11.7									
5/27/2022	WL_BFWB_OUT_SP21	N																
5/28/2022	WL_LCI_SP02	N	893						14.6									
5/28/2022	WL_WLCI_SP01	N	1879						14.6									
5/28/2022	WL_BFWB_OUT_SP21	N	2054						11.7									
5/28/2022	WL_BFWB_OUT_SP21	N																
5/28/2022	WL_BFWB_OUT_SP21	N																
5/28/2022	WL_BFWB_OUT_SP21	N																
5/28/2022	WL_BFWB_OUT_SP21	N																
5/28/2022	WL_BFWB_OUT_SP21	N																
5/28/2022	WL_BFWB_OUT_SP21	N																
5/29/2022	WL_LCI_SP02	N	893						15.5									
5/29/2022	WL_WLCI_SP01	N	1754						5.1									
5/29/2022	WL_BFWB_OUT_SP21	N	2010						11									
5/29/2022	WL_BFWB_OUT_SP21	N																
5/30/2022	WL_LCI_SP02	N	888		0.213	0.200			15.8	0.026	0.026	< 0.00010	< 0.00010	< 10.0	< 10.0			
5/30/2022	WL_WLCI_SP01	N	1642		0.143	0.146			5.4	0.027	0.026	< 0.00010	< 0.00010	< 10.0	< 10.0			
5/30/2022	WL_BFWB_OUT_SP21	N	1899		0.161	0.160	< 0.0015	816	10.9	< 0.010	< 0.010	< 0.00010	< 0.00010	< 10.0	< 10.0	1390	0.086	6.3
5/30/2022	WL_BFWB_OUT_SP21	N																
5/31/2022	WL_LCI_SP02	N	903						15.7									
5/31/2022	WL_WLCI_SP01	N	1638						6.1									
5/31/2022	WL_BFWB_OUT_SP21	N	1800						11									
5/31/2022	WL_BFWB_OUT_SP21	N																
6/1/2022	WL_LCI_SP02	N	900						15.8									
6/1/2022	WL_WLCI_SP01	N	1652						5.1									
6/1/2022	WL_BFWB_OUT_SP21	N	1794						10.9									
6/1/2022	WL_BFWB_OUT_SP21	N																

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6/2/2022	WL_LCI_SP02	N	762.3						4.2									
6/2/2022	WL_WLCI_SP01	N	1744						6.2									
6/2/2022	WL_BFWB_OUT_SP21	N	1881						11.2									
6/2/2022	WL_BFWB_OUT_SP21	N																
6/3/2022	WL_LCI_SP02	N	793						4.2									
6/3/2022	WL_WLCI_SP01	N	1694						5.5									
6/3/2022	WL_BFWB_OUT_SP21	N	1847						11.4									
6/3/2022	WL_BFWB_OUT_SP21	N																
6/4/2022	WL_LCI_SP02	N	775						4.1									
6/4/2022	WL_WLCI_SP01	N	1641						7.7									
6/4/2022	WL_BFWB_OUT_SP21	N	1816						11.6									
6/4/2022	WL_BFWB_OUT_SP21	N																
6/5/2022	WL_LCI_SP02	N	738.5						4.1									
6/5/2022	WL_WLCI_SP01	N	1552						4.9									
6/5/2022	WL_BFWB_OUT_SP21	N	1764						12.1									
6/5/2022	WL_BFWB_OUT_SP21	N																
6/6/2022	WL_LCI_SP02	N	714.2						4.1									
6/6/2022	WL_WLCI_SP01	N	1530						5.4									
6/6/2022	WL_BFWB_OUT_SP21	N	1703						11.6									
6/6/2022	WL_BFWB_OUT_SP21	N																
6/7/2022	WL_LCI_SP02	N																
6/7/2022	WL_WLCI_SP01	N																
6/7/2022	WL_BFWB_OUT_SP21	N																
6/7/2022	WL_LCI_SP02	N	662.7						4.1									
6/7/2022	WL_WLCI_SP01	N	1450						4.4									
6/7/2022	WL_BFWB_OUT_SP21	N																
6/8/2022	WL_LCI_SP02	N	644.2						4.3									
6/8/2022	WL_WLCI_SP01	N	1423						4.4									
6/9/2022	WL_LCI_SP02	N	637.2						4.2									
6/9/2022	WL_WLCI_SP01	N	1357						4.4									
6/9/2022	WL_WLCI_SP01	N	1439						6.9									
6/9/2022	WL_BFWB_OUT_SP21	N	1636						13.2									
6/9/2022	WL_BFWB_OUT_SP21	N																
6/10/2022	WL_LCI_SP02	N	603.6						4.2									
6/10/2022	WL_WLCI_SP01	N	1347						6.2									
6/10/2022	WL_BFWB_OUT_SP21	N	1645						12.9									
6/10/2022	WL_BFWB_OUT_SP21	N																
6/11/2022	WL_LCI_SP02	N	602.6						4.1									
6/11/2022	WL_WLCI_SP01	N	1296						6.1									
6/11/2022	WL_BFWB_OUT_SP21	N	1564						13.9									
6/11/2022	WL_BFWB_OUT_SP21	N																
6/12/2022	WL_LCI_SP02	N	567						4.1									
6/12/2022	WL_WLCI_SP01	N	1237						6.4									
6/12/2022	WL_BFWB_OUT_SP21	N	1514						12.9									
6/12/2022	WL_BFWB_OUT_SP21	N																
6/13/2022	WL_LCI_SP02	N	592		0.123	0.124		131	4.2	0.011	0.013	< 0.00010	< 0.00010	< 10.0	< 10.0	361	0.262	1.6
6/13/2022	WL_WLCI_SP01	N	1252		0.0888	0.0890		424	5.5	0.025	0.023	< 0.00010	< 0.00010	< 10.0	< 10.0	903	< 0.050	< 1.0
6/13/2022	WL_BFWB_OUT_SP21	N	1416		0.0929	0.0942	< 0.0015	453	13.3	< 0.010	< 0.010	0.00012	< 0.00010	< 10.0	< 10.0	983	0.095	1.8
6/13/2022	WL_BFWB_OUT_SP21	N																
6/14/2022	WL_LCI_SP02	N	566.1						4.3									
6/14/2022	WL_WLCI_SP01	N	1397						5.9									
6/14/2022	WL_BFWB_OUT_SP21	N	1337						8.8									
6/14/2022	WL_BFWB_OUT_SP21	N																
6/15/2022	WL_LCI_SP02	N	608.8						4.3									
6/15/2022	WL_WLCI_SP01	N	1293						5.8									
6/15/2022	WL_BFWB_OUT_SP21	N	1366						10.1									
6/15/2022	WL_BFWB_OUT_SP21	N																
6/15/2022	WL_WLCI_SP01	N																
6/16/2022	WL_BFWB_OUT_SP21	N	1373						11.6									
6/16/2022	WL_LCI_SP02	N	6073						4.4									
6/16/2022	WL_WLCI_SP01	N	1323						4.3									
6/16/2022	WL_BFWB_OUT_SP21	N																
6/16/2022	WL_LCI_SP02	N	648															
6/16/2022	WL_BFWB_OUT_SP21	N																
6/16/2022	WL_LCI_SP02	N																
6/16/2022	WL_WLCI_SP01	N																

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6/17/2022	WL_LCI_SP02	N	683						4									
6/17/2022	WL_WLCI_SP01	N	1308						8									
6/17/2022	WL_BFWB_OUT_SP21	N	1434						12.5									
6/17/2022	WL_BFWB_OUT_SP21	N																
6/18/2022	WL_LCI_SP02	N	701.6						3.7									
6/18/2022	WL_WLCI_SP01	N	1315						5.6									
6/18/2022	WL_BFWB_OUT_SP21	N	1422						13.2									
6/18/2022	WL_BFWB_OUT_SP21	N																
6/19/2022	WL_LCI_SP02	N	707.6						3.8									
6/19/2022	WL_WLCI_SP01	N	1153						5.1									
6/19/2022	WL_BFWB_OUT_SP21	N	1404						13.6									
6/19/2022	WL_BFWB_OUT_SP21	N																
6/20/2022	WL_WLCI_SP01	N	1091						7.2									
6/20/2022	WL_BFWB_OUT_SP21	N	1323						13.5									
6/20/2022	WL_LCI_SP02	N	662						4									
6/20/2022	WL_BFWB_OUT_SP21	N																
6/21/2022	WL_LCI_SP02	N	695.5						4.3									
6/21/2022	WL_WLCI_SP01	N	1187						6									
6/21/2022	WL_BFWB_OUT_SP21	N	1257						12.8									
6/21/2022	WL_BFWB_OUT_SP21	N																
6/22/2022	WL_LCI_SP02	N	688						4.3									
6/22/2022	WL_WLCI_SP01	N	1213						6.9									
6/22/2022	WL_BFWB_OUT_SP21	N	1290						13.5									
6/22/2022	WL_BFWB_OUT_SP21	N																
6/23/2022	WL_LCI_SP02	N	675.9						4.4									
6/23/2022	WL_WLCI_SP01	N	1193						6.6									
6/23/2022	WL_BFWB_OUT_SP21	N	1303						13									
6/23/2022	WL_BFWB_OUT_SP21	N																
6/24/2022	WL_LCI_SP02	N	1292						11.5									
6/24/2022	WL_WLCI_SP01	N	1194						5.5									
6/24/2022	WL_BFWB_OUT_SP21	N	1295						11.6									
6/24/2022	WL_BFWB_OUT_SP21	N																
6/25/2022	WL_LCI_SP02	N	624.2						4.6									
6/25/2022	WL_WLCI_SP01	N	1210						5.2									
6/25/2022	WL_BFWB_OUT_SP21	N	1293						11.8									
6/25/2022	WL_BFWB_OUT_SP21	N																
6/26/2022	WL_LCI_SP02	N	629.6						4.7									
6/26/2022	WL_WLCI_SP01	N	1256						5.2									
6/26/2022	WL_BFWB_OUT_SP21	N	1306						12.6									
6/26/2022	WL_BFWB_OUT_SP21	N																
6/27/2022	WL_LCI_SP02	N	651		0.144	0.158			4.7	0.017	0.013	< 0.00010	< 0.00010	< 10.0	< 10.0			
6/27/2022	WL_WLCI_SP01	N	1289		0.101	0.113			5.1	0.025	0.023	< 0.00010	< 0.00010	< 10.0	< 10.0			
6/27/2022	WL_BFWB_OUT_SP21	N	9.9		0.0934	0.0994	< 0.0015	402	12.7	< 0.010	< 0.010	< 0.00010	< 0.00010	< 10.0	< 10.0	926	0.057	< 1.0
6/27/2022	WL_BFWB_OUT_SP21	N																
6/27/2022	WL_BFWB_OUT_SP21	N	1343						14.5									
6/27/2022	WL_BFWB_OUT_SP21	N	1346						15.1									
6/28/2022	WL_LCI_SP02	N	652.5						4.6									
6/28/2022	WL_WLCI_SP01	N	1311						5.1									
6/28/2022	WL_BFWB_OUT_SP21	N	1364						13.9									
6/28/2022	WL_BFWB_OUT_SP21	N																
6/29/2022	WL_LCI_SP02	N	658.6						4.7									
6/29/2022	WL_WLCI_SP01	N	1329						4.8									
6/29/2022	WL_BFWB_OUT_SP21	N	1385						13.5									
6/29/2022	WL_BFWB_OUT_SP21	N																
6/30/2022	WL_LCI_SP02	N	644						5.1									
6/30/2022	WL_WLCI_SP01	N	1344						4.4									
6/30/2022	WL_LCI_SP02	N																
6/30/2022	WL_WLCI_SP01	N																
6/30/2022	WL_BFWB_OUT_SP21	N	1400						14.6									
6/30/2022	WL_BFWB_OUT_SP21	N																
7/1/2022	WL_LCI_SP02	N																
7/1/2022	WL_WLCI_SP01	N	1342						5.8									
7/1/2022	WL_BFWB_OUT_SP21	N	1438						13.5									
7/1/2022	WL_LCI_SP02	N	656.3						5.3									
7/1/2022	WL_BFWB_OUT_SP21	N																
7/2/2022	WL_LCI_SP02	N	670.1						5.3									

		CHEMICAL_NAME FRACTION REPORT_RESULT_UNIT	Specific conductivity, temperature corrected value (25 C) N us/cm	Specific conductivity, temperature corrected value (25 C) N uS/cm at 25 C	Strontium D mg/l	Strontium T mg/l	SULFIDE (as S) T mg/l	Sulphate (As SO4) D mg/l	Temperature, Field N deg c	Thallium D ug/l	Thallium T ug/l	Tin D mg/l	Tin T mg/l	Titanium D ug/l	Titanium T ug/l	Total Dissolved Solids (Residue, Filterable) N mg/l	Total Kjeldahl Nitrogen N mg/l	Total Suspend Solids, Lab N mg/l
7/2/2022	WL_WLCI_SP01	N	1396						5.5									
7/2/2022	WL_BFWB_OUT_SP21	N	1451						13.8									
7/2/2022	WL_WLCI_SP01	N																
7/2/2022	WL_BFWB_OUT_SP21	N																
7/3/2022	WL_LCI_SP02	N	712.8						5.1									
7/3/2022	WL_WLCI_SP01	N	1416						6.5									
7/3/2022	WL_BFWB_OUT_SP21	N	1467						14									
7/3/2022	WL_LCI_SP02	N																
7/3/2022	WL_BFWB_OUT_SP21	N																
7/4/2022	WL_LCI_SP02	N	658.6						5.1									
7/4/2022	WL_WLCI_SP01	N	1344						5									
7/4/2022	WL_BFWB_OUT_SP21	N	1380						12.6									
7/4/2022	WL_BFWB_OUT_SP21	N																
7/5/2022	WL_LCI_SP02	N	651.5						5.1									
7/5/2022	WL_WLCI_SP01	N	1358						5.5									
7/5/2022	WL_BFWB_OUT_SP21	N	1390						12.5									
7/5/2022	WL_BFWB_OUT_SP21	N																
7/6/2022	WL_LCI_SP02	N	619.8						5.3									
7/6/2022	WL_WLCI_SP01	N	1377						5.7									
7/6/2022	WL_BFWB_OUT_SP21	N	1419						13.1									
7/6/2022	WL_BFWB_OUT_SP21	N																
7/7/2022	WL_LCI_SP02	N	628.6						5.1									
7/7/2022	WL_WLCI_SP01	N	1378						4.4									
7/7/2022	WL_BFWB_OUT_SP21	N	1426						13.5									
7/7/2022	WL_BFWB_OUT_SP21	N																
7/7/2022	WL_BFWB_OUT_SP21	N																
7/7/2022	WL_LCI_SP02	N	875						15.5									
7/7/2022	WL_WLCI_SP01	N	1374						6.2									
7/7/2022	WL_LCI_SP02	N																
7/8/2022	WL_LCI_SP02	N	632.4						5									
7/8/2022	WL_WLCI_SP01	N	1397						5.6									
7/8/2022	WL_BFWB_OUT_SP21	N	1459						14.8									
7/8/2022	WL_BFWB_OUT_SP21	N																
7/9/2022	WL_LCI_SP02	N	645.1						5									
7/9/2022	WL_WLCI_SP01	N	1417						5.9									
7/9/2022	WL_BFWB_OUT_SP21	N	1478						14.3									
7/9/2022	WL_BFWB_OUT_SP21	N																
7/10/2022	WL_LCI_SP02	N	646.7						5									
7/10/2022	WL_WLCI_SP01	N	1435						5.4									
7/10/2022	WL_BFWB_OUT_SP21	N	1487						13.8									
7/10/2022	WL_BFWB_OUT_SP21	N																
7/11/2022	WL_LCI_SP02	N	652.3		0.172	0.166		180	5.2	0.016	0.014	< 0.00010	< 0.00010	< 10.0	< 10.0	429	0.146	< 1.0
7/11/2022	WL_WLCI_SP01	N	1454		0.127	0.124		601	6.8	0.026	0.025	< 0.00010	< 0.00010	< 10.0	< 10.0	1220	0.226	1.3
7/11/2022	WL_BFWB_OUT_SP21	N	1504		0.127	0.117	0.0026	609	13.5	< 0.010	< 0.010	< 0.00010	< 0.00010	< 10.0	< 10.0	1160	0.164	3.8
7/11/2022	WL_BFWB_OUT_SP21	N																
7/12/2022	WL_LCI_SP02	N	699.9						5.4									
7/12/2022	WL_WLCI_SP01	N	1469						6									
7/12/2022	WL_BFWB_OUT_SP21	N	1520						14.3									
7/12/2022	WL_BFWB_OUT_SP21	N																
7/13/2022	WL_LCI_SP02	N	716.1						5.5									
7/13/2022	WL_WLCI_SP01	N	1486						5.9									
7/13/2022	WL_BFWB_OUT_SP21	N	1531						15.4									
7/13/2022	WL_BFWB_OUT_SP21	N																
7/14/2022	WL_LCI_SP02	N	730						5.5									
7/14/2022	WL_WLCI_SP01	N	1416						5.8									
7/14/2022	WL_BFWB_OUT_SP21	N	1566						15									
7/14/2022	WL_BFWB_OUT_SP21	N																
7/15/2022	WL_LCI_SP02	N	753.3						5.8									
7/15/2022	WL_WLCI_SP01	N	1518						6									
7/15/2022	WL_BFWB_OUT_SP21	N	1573						14.8									
7/15/2022	WL_BFWB_OUT_SP21	N																
7/16/2022	WL_LCI_SP02	N		731					5.9									
7/16/2022	WL_WLCI_SP01	N		1530					8.1									
7/16/2022	WL_BFWB_OUT_SP21	N		1585					14.9									
7/16/2022	WL_BFWB_OUT_SP21	N																
7/17/2022	WL_LCI_SP02	N		865					5.7									

		CHEMICAL_NAME FRACTION REPORT_RESULT_UNIT	Specific conductivity, temperature corrected value (25 C) N us/cm	Specific conductivity, temperature corrected value (25 C) N uS/cm at 25 C	Strontium D mg/l	Strontium T mg/l	SULFIDE (as S) T mg/l	Sulphate (As SO4) D mg/l	Temperature, Field N deg c	Thallium D ug/l	Thallium T ug/l	Tin D mg/l	Tin T mg/l	Titanium D ug/l	Titanium T ug/l	Total Dissolved Solids (Residue, Filterable) N mg/l	Total Kjeldahl Nitrogen N mg/l	Total Suspend Solids, Lab N mg/l
7/17/2022	WL_WLCI_SP01	N		1631					6									
7/17/2022	WL_BFWB_OUT_SP21	N		1692					14.6									
7/17/2022	WL_BFWB_OUT_SP21	N																
7/18/2022	WL_LCI_SP02	N		818					5.8									
7/18/2022	WL_WLCI_SP01	N		1636					8.2									
7/18/2022	WL_BFWB_OUT_SP21	N		1706					14.9									
7/18/2022	WL_BFWB_OUT_SP21	N																
7/19/2022	WL_LCI_SP02	N	862						6									
7/19/2022	WL_WLCI_SP01	N	1660						7.9									
7/19/2022	WL_BFWB_OUT_SP21	N	1715						13.1									
7/19/2022	WL_BFWB_OUT_SP21	N																
7/20/2022	WL_LCI_SP02	N	849						6.1									
7/20/2022	WL_WLCI_SP01	N	1662						6.4									
7/20/2022	WL_BFWB_OUT_SP21	N	1740						14.5									
7/20/2022	WL_BFWB_OUT_SP21	N																
7/21/2022	WL_LCI_SP02	N	878						6.2									
7/21/2022	WL_WLCI_SP01	N	1677						6.1									
7/21/2022	WL_BFWB_OUT_SP21	N	1745						14.3									
7/21/2022	WL_BFWB_OUT_SP21	N																
7/22/2022	WL_LCI_SP02	N	901						6.2									
7/22/2022	WL_WLCI_SP01	N	1687						6.4									
7/22/2022	WL_BFWB_OUT_SP21	N	1755						14.5									
7/22/2022	WL_BFWB_OUT_SP21	N																
7/23/2022	WL_LCI_SP02	N	903						6									
7/23/2022	WL_WLCI_SP01	N	1716						5.7									
7/23/2022	WL_BFWB_OUT_SP21	N	1765						13.9									
7/23/2022	WL_BFWB_OUT_SP21	N																
7/24/2022	WL_LCI_SP02	N	933						6.1									
7/24/2022	WL_WLCI_SP01	N	1718						5.4									
7/24/2022	WL_BFWB_OUT_SP21	N	1776						14.3									
7/24/2022	WL_BFWB_OUT_SP21	N																
7/25/2022	WL_LCI_SP02	N	952		0.244	0.220			6	0.021	0.018	< 0.00010	< 0.00010	< 10.0	< 10.0			
7/25/2022	WL_WLCI_SP01	N	1726		0.152	0.141			7.1	0.027	0.027	< 0.00010	< 0.00010	< 10.0	< 10.0			
7/25/2022	WL_BFWB_OUT_SP21	N	1786		0.149	0.137	< 0.0015	718	15	< 0.010	< 0.010	< 0.00010	< 0.00010	< 10.0	< 10.0	1460	0.156	4.9
7/25/2022	WL_BFWB_OUT_SP21	N																
7/26/2022	WL_BFWB_OUT_SP21	N	1795						15.3									
7/26/2022	WL_LCI_SP02	N																
7/26/2022	WL_WLCI_SP01	N																
7/26/2022	WL_LCI_SP02	N	990						6									
7/26/2022	WL_WLCI_SP01	N	1747						4.5									
7/26/2022	WL_BFWB_OUT_SP21	N																
7/27/2022	WL_LCI_SP02	N	1005						5.7									
7/27/2022	WL_WLCI_SP01	N	1757						4.4									
7/28/2022	WL_LCI_SP02	N	1018						5.9									
7/28/2022	WL_WLCI_SP01	N	1758						4.7									
7/29/2022	WL_LCI_SP02	N	1028						5.9									
7/29/2022	WL_WLCI_SP01	N	1774						4.5									
7/29/2022	WL_WLCI_SP01	N																
7/29/2022	WL_LCI_SP02	N																
7/29/2022	WL_WLCI_SP01	N	1740						7.1									
7/29/2022	WL_BFWB_OUT_SP21	N																
7/29/2022	WL_BFWB_OUT_SP21	N	1796						20.9									
7/29/2022	WL_LCI_SP02	N	988						6.1									
7/29/2022	WL_BFWB_OUT_SP21	N																
7/30/2022	WL_LCI_SP02	N	996						6.4									
7/30/2022	WL_WLCI_SP01	N	1773						8.2									
7/30/2022	WL_BFWB_OUT_SP21	N	1916						16.8									
7/30/2022	WL_BFWB_OUT_SP21	N																
7/31/2022	WL_LCI_SP02	N	997						6.2									
7/31/2022	WL_WLCI_SP01	N	1780						7.4									
7/31/2022	WL_BFWB_OUT_SP21	N	1906						14.7									
7/31/2022	WL_BFWB_OUT_SP21	N																
8/1/2022	WL_LCI_SP02	N	971						6.3									
8/1/2022	WL_WLCI_SP01	N	1799						5.1									
8/1/2022	WL_BFWB_OUT_SP21	N	1891						13.5									
8/1/2022	WL_BFWB_OUT_SP21	N																

		CHEMICAL_NAME FRACTION REPORT_RESULT_UNIT	Specific conductivity, temperature corrected value (25 C) N us/cm	Specific conductivity, temperature corrected value (25 C) N uS/cm at 25 C	Strontium D mg/l	Strontium T mg/l	SULFIDE (as S) T mg/l	Sulphate (As SO4) D mg/l	Temperature, Field N deg c	Thallium D ug/l	Thallium T ug/l	Tin D mg/l	Tin T mg/l	Titanium D ug/l	Titanium T ug/l	Total Dissolved Solids (Residue, Filterable) N mg/l	Total Kjeldahl Nitrogen N mg/l	Total Suspend Solids, Lab N mg/l
8/2/2022	WL_LCI_SP02	N	993						6.4									
8/2/2022	WL_WLCI_SP01	N	1806						6.6									
8/2/2022	WL_BFWB_OUT_SP21	N	1885						13.2									
8/2/2022	WL_BFWB_OUT_SP21	N																
8/3/2022	WL_LCI_SP02	N	996						6.3									
8/3/2022	WL_WLCI_SP01	N	1818						5.6									
8/3/2022	WL_BFWB_OUT_SP21	N	1887						12.3									
8/3/2022	WL_BFWB_OUT_SP21	N																
8/4/2022	WL_LCI_SP02	N	999						6.4									
8/4/2022	WL_WLCI_SP01	N	1821						6.9									
8/4/2022	WL_BFWB_OUT_SP21	N	1904						12.1									
8/4/2022	WL_BFWB_OUT_SP21	N																
8/5/2022	WL_LCI_SP02	N	975						6.2									
8/5/2022	WL_WLCI_SP01	N	1851						6.1									
8/5/2022	WL_BFWB_OUT_SP21	N	1906						11.1									
8/5/2022	WL_BFWB_OUT_SP21	N																
8/6/2022	WL_LCI_SP02	N	993						6.4									
8/6/2022	WL_WLCI_SP01	N	1852						5.9									
8/6/2022	WL_BFWB_OUT_SP21	N	1921						11.5									
8/6/2022	WL_BFWB_OUT_SP21	N																
8/7/2022	WL_LCI_SP02	N	995						6.4									
8/7/2022	WL_WLCI_SP01	N	1861						5.6									
8/7/2022	WL_BFWB_OUT_SP21	N	1918						11.8									
8/7/2022	WL_BFWB_OUT_SP21	N																
8/8/2022	WL_LCI_SP02	N	991		0.243	0.266		263	7.6	0.022	0.020	< 0.00010	< 0.00010	< 10.0	< 10.0	696	< 0.050	< 1.0
8/8/2022	WL_WLCI_SP01	N	1869		0.158	0.172		797	6.2	0.028	0.027	< 0.00010	< 0.00010	< 10.0	< 10.0	1500	0.322	1.4
8/8/2022	WL_BFWB_OUT_SP21	N	1909		0.154	0.172	0.0038	795	13.3	< 0.010	< 0.010	< 0.00010	0.00011	< 10.0	< 10.0	1500	0.151	3.9
8/8/2022	WL_BFWB_OUT_SP21	N																
8/9/2022	WL_LCI_SP02	N	991						7.4									
8/9/2022	WL_WLCI_SP01	N	1880						6.3									
8/9/2022	WL_BFWB_OUT_SP21	N	1903						12.6									
8/9/2022	WL_BFWB_OUT_SP21	N																
8/10/2022	WL_LCI_SP02	N	994						7.3									
8/10/2022	WL_WLCI_SP01	N	1886						6.9									
8/10/2022	WL_BFWB_OUT_SP21	N	1901						12.9									
8/10/2022	WL_BFWB_OUT_SP21	N																
8/11/2022	WL_LCI_SP02	N	522.1						7.8									
8/11/2022	WL_WLCI_SP01	N	1870						7.3									
8/11/2022	WL_BFWB_OUT_SP21	N	1902						12.1									
8/11/2022	WL_BFWB_OUT_SP21	N																
8/12/2022	WL_LCI_SP02	N	985						8.3									
8/12/2022	WL_WLCI_SP01	N	1898						9.4									
8/12/2022	WL_BFWB_OUT_SP21	N	1903						12.8									
8/12/2022	WL_BFWB_OUT_SP21	N																
8/13/2022	WL_LCI_SP02	N	998						7.3									
8/13/2022	WL_WLCI_SP01	N	1923						5.8									
8/13/2022	WL_BFWB_OUT_SP21	N	1901						12.6									
8/13/2022	WL_BFWB_OUT_SP21	N																
8/14/2022	WL_LCI_SP02	N	999						7.3									
8/14/2022	WL_WLCI_SP01	N	1928						5.9									
8/14/2022	WL_BFWB_OUT_SP21	N	1896						12.4									
8/14/2022	WL_BFWB_OUT_SP21	N																
8/15/2022	WL_LCI_SP02	N	999						7.6									
8/15/2022	WL_WLCI_SP01	N	1941						7.5									
8/15/2022	WL_BFWB_OUT_SP21	N	1901						12.4									
8/15/2022	WL_BFWB_OUT_SP21	N																
8/16/2022	WL_LCI_SP02	N	1000						7.2									
8/16/2022	WL_WLCI_SP01	N	1953						5.8									
8/16/2022	WL_BFWB_OUT_SP21	N	1902						12.4									
8/16/2022	WL_BFWB_OUT_SP21	N																
8/17/2022	WL_LCI_SP02	N	995						6.9									
8/17/2022	WL_WLCI_SP01	N	1964						6.4									
8/17/2022	WL_BFWB_OUT_SP21	N	1900						12.7									
8/17/2022	WL_BFWB_OUT_SP21	N																
8/17/2022	WL_BFWB_OUT_SP21	N		1961					12.7									

		CHEMICAL_NAME FRACTION REPORT_RESULT_UNIT	Specific conductivity, temperature corrected value (25 C) N us/cm	Specific conductivity, temperature corrected value (25 C) N uS/cm at 25 C	Strontium D mg/l	Strontium T mg/l	SULFIDE (as S) T mg/l	Sulphate (As SO4) D mg/l	Temperature, Field N deg c	Thallium D ug/l	Thallium T ug/l	Tin D mg/l	Tin T mg/l	Titanium D ug/l	Titanium T ug/l	Total Dissolved Solids (Residue, Filterable) N mg/l	Total Kjeldahl Nitrogen N mg/l	Total Suspend Solids, Lab N mg/l
8/17/2022	WL_BFWB_OUT_SP21	N			0.176	0.184		766		< 0.010	0.017	< 0.00010	0.00011	< 0.30	< 0.30	1280	0.174	2.1
8/18/2022	WL_LCI_SP02	N	806						7									
8/18/2022	WL_WLCI_SP01	N	1978						5.7									
8/18/2022	WL_BFWB_OUT_SP21	N	1898		0.178	0.174		769	12.6	< 0.010	< 0.010	< 0.00010	< 0.00010	< 0.30	< 0.30	1490	0.120	2.2
8/18/2022	WL_BFWB_OUT_SP21	N			0.178	0.174		769		< 0.010	< 0.010	< 0.00010	< 0.00010	< 0.30	< 0.30	1490	0.120	2.2
8/19/2022	WL_LCI_SP02	N	1006						7.1									
8/19/2022	WL_WLCI_SP01	N	1947						6.8									
8/19/2022	WL_BFWB_OUT_SP21	N	1897						13									
8/19/2022	WL_BFWB_OUT_SP21	N																
8/20/2022	WL_LCI_SP02	N	1001						7.1									
8/20/2022	WL_WLCI_SP01	N	1995						6.4									
8/20/2022	WL_BFWB_OUT_SP21	N	1895						12.9									
8/20/2022	WL_BFWB_OUT_SP21	N																
8/21/2022	WL_LCI_SP02	N	857						7.3									
8/21/2022	WL_WLCI_SP01	N	1922						5.6									
8/21/2022	WL_BFWB_OUT_SP21	N	1810						12.6									
8/21/2022	WL_BFWB_OUT_SP21	N																
8/22/2022	WL_BFWB_OUT_SP21	N	1812		0.186	0.178	< 0.0015	772	12.6	< 0.010	< 0.010	< 0.00010	< 0.00010	< 10.0	< 0.30	1560	0.117	1.7
8/22/2022	WL_LCI_SP02	N	969		0.251	0.245			7.1	0.022	0.021	< 0.00010	< 0.00010	< 10.0	< 0.30			
8/22/2022	WL_WLCI_SP01	N	1929		0.175	0.169			6.2	0.030	0.027	< 0.00020	< 0.00010	< 10.0	< 0.30			
8/22/2022	WL_BFWB_OUT_SP21	N																
8/23/2022	WL_LCI_SP02	N	1040						7.5									
8/23/2022	WL_WLCI_SP01	N	2031						7.4									
8/23/2022	WL_BFWB_OUT_SP21	N	1815						13.4									
8/23/2022	WL_BFWB_OUT_SP21	N																
8/24/2022	WL_LCI_SP02	N	1484						7.1									
8/24/2022	WL_WLCI_SP01	N	2921						6.8									
8/24/2022	WL_BFWB_OUT_SP21	N	2713						12.6									
8/24/2022	WL_BFWB_OUT_SP21	N																
8/25/2022	WL_LCI_SP02	N	1011						8									
8/25/2022	WL_WLCI_SP01	N	1991						8									
8/25/2022	WL_BFWB_OUT_SP21	N	1868						12.4									
8/25/2022	WL_BFWB_OUT_SP21	N																
8/26/2022	WL_LCI_SP02	N	1001						6.6									
8/26/2022	WL_WLCI_SP01	N	2018						6.6									
8/26/2022	WL_BFWB_OUT_SP21	N	1950						12.2									
8/26/2022	WL_BFWB_OUT_SP21	N																
8/27/2022	WL_LCI_SP02	N	1029						6.4									
8/27/2022	WL_WLCI_SP01	N	2028						6.1									
8/27/2022	WL_BFWB_OUT_SP21	N	2012						12.5									
8/27/2022	WL_BFWB_OUT_SP21	N																
8/28/2022	WL_LCI_SP02	N	1006						6.3									
8/28/2022	WL_WLCI_SP01	N	2031						6.5									
8/28/2022	WL_BFWB_OUT_SP21	N	2045						11									
8/28/2022	WL_BFWB_OUT_SP21	N																
8/29/2022	WL_BFWB_OUT_SP21	N																
8/29/2022	WL_BFWB_OUT_SP21	N	2074						11.9									
8/29/2022	WL_BFWB_OUT_SP21	N																
8/29/2022	WL_BFWB_OUT_SP21	N																
8/29/2022	WL_BFWB_OUT_SP21	N																
8/29/2022	WL_LCI_SP02	N	1016						6.3									
8/29/2022	WL_WLCI_SP01	N	2046						4.7									
8/29/2022	WL_BFWB_OUT_SP21	N																
8/30/2022	WL_BFWB_OUT_SP21	N	2120						14									
8/30/2022	WL_BFWB_OUT_SP21	N																
8/30/2022	WL_LCI_SP02	N																
8/30/2022	WL_WLCI_SP01	N																
8/30/2022	WL_BFWB_OUT_SP21	N																
8/30/2022	WL_LCI_SP02	N	986						6									
8/30/2022	WL_WLCI_SP01	N	2052						4.6									
8/31/2022	WL_LCI_SP02	N	1001						6									
8/31/2022	WL_WLCI_SP01	N	2055						4.5									
9/1/2022	WL_LCI_SP02	N	1024						6									

		CHEMICAL_NAME FRACTION REPORT_RESULT_UNIT	Specific conductivity, temperature corrected value (25 C) N us/cm	Specific conductivity, temperature corrected value (25 C) N uS/cm at 25 C	Strontium D mg/l	Strontium T mg/l	SULFIDE (as S) T mg/l	Sulphate (As SO4) D mg/l	Temperature, Field N deg c	Thallium D ug/l	Thallium T ug/l	Tin D mg/l	Tin T mg/l	Titanium D ug/l	Titanium T ug/l	Total Dissolved Solids (Residue, Filterable) N mg/l	Total Kjeldahl Nitrogen N mg/l	Total Suspend Solids, Lab N mg/l
9/1/2022	WL_WLCI_SP01	N	2056						4.6									
9/1/2022	WL_LCI_SP02	N	931						6.2									
9/1/2022	WL_WLCI_SP01	N	2048						6.9									
9/1/2022	WL_BFWB_OUT_SP21	N	2114						17.6									
9/1/2022	WL_BFWB_OUT_SP21	N																
9/2/2022	WL_LCI_SP02	N	942						6.1									
9/2/2022	WL_WLCI_SP01	N	2052						7									
9/2/2022	WL_BFWB_OUT_SP21	N	2192						15.5									
9/2/2022	WL_BFWB_OUT_SP21	N																
9/3/2022	WL_LCI_SP02	N	929						6.1									
9/3/2022	WL_WLCI_SP01	N	1827						7.3									
9/3/2022	WL_BFWB_OUT_SP21	N	2180						13.4									
9/3/2022	WL_BFWB_OUT_SP21	N																
9/4/2022	WL_LCI_SP02	N	935						7.3									
9/4/2022	WL_WLCI_SP01	N	2050						6.7									
9/4/2022	WL_BFWB_OUT_SP21	N	2140						12.7									
9/4/2022	WL_BFWB_OUT_SP21	N																
9/5/2022	WL_LCI_SP02	N	920		0.231	0.230		288	7.2	0.018	0.020	< 0.00010	< 0.00010	< 10.0	< 10.0	693	0.439	2.4
9/5/2022	WL_WLCI_SP01	N	2080		0.175	0.174		1020	5.3	0.030	0.032	< 0.00020	< 0.00010	< 10.0	< 10.0	1780	< 0.050	1.2
9/5/2022	WL_BFWB_OUT_SP21	N	1992		0.172	0.178	0.0024	915	12.4	< 0.010	< 0.010	< 0.00010	< 0.00010	< 10.0	< 10.0	1630	0.142	2.8
9/5/2022	WL_BFWB_OUT_SP21	N																
9/6/2022	WL_LCI_SP02	N	975						7.1									
9/6/2022	WL_WLCI_SP01	N	2087						7.9									
9/6/2022	WL_BFWB_OUT_SP21	N	1824						12.1									
9/6/2022	WL_BFWB_OUT_SP21	N																
9/6/2022	WL_BFWB_OUT_SP21	N																
9/7/2022	WL_LCI_SP02	N	944						6.4									
9/7/2022	WL_WLCI_SP01	N	2090						6.5									
9/7/2022	WL_BFWB_OUT_SP21	N	1862						12.2									
9/7/2022	WL_BFWB_OUT_SP21	N																
9/8/2022	WL_LCI_SP02	N	940						6.5									
9/8/2022	WL_WLCI_SP01	N	2069						5.9									
9/8/2022	WL_BFWB_OUT_SP21	N	1818						12.2									
9/8/2022	WL_BFWB_OUT_SP21	N																
9/9/2022	WL_LCI_SP02	N	941						7.2									
9/9/2022	WL_WLCI_SP01	N	2055						7.3									
9/9/2022	WL_BFWB_OUT_SP21	N	1810						11.7									
9/9/2022	WL_BFWB_OUT_SP21	N																
9/10/2022	WL_LCI_SP02	N	922						6.3									
9/10/2022	WL_WLCI_SP01	N	2078						6.1									
9/10/2022	WL_BFWB_OUT_SP21	N	1814						11.3									
9/10/2022	WL_BFWB_OUT_SP21	N																
9/11/2022	WL_LCI_SP02	N	955						6.7									
9/11/2022	WL_WLCI_SP01	N	2086						6.9									
9/11/2022	WL_BFWB_OUT_SP21	N	1812						11.2									
9/11/2022	WL_BFWB_OUT_SP21	N																
9/12/2022	WL_LCI_SP02	N	959						6.7									
9/12/2022	WL_WLCI_SP01	N	2002						6.1									
9/12/2022	WL_BFWB_OUT_SP21	N	1811						11.3									
9/12/2022	WL_BFWB_OUT_SP21	N																
9/13/2022	WL_LCI_SP02	N	962						6.8									
9/13/2022	WL_WLCI_SP01	N	2102						5.9									
9/13/2022	WL_BFWB_OUT_SP21	N	1807						11.5									
9/13/2022	WL_BFWB_OUT_SP21	N																
9/13/2022	WL_WLCI_SP01	N																
9/14/2022	WL_LCI_SP02	N	974						7									
9/14/2022	WL_WLCI_SP01	N	2113						5									
9/14/2022	WL_BFWB_OUT_SP21	N	1801						11.8									
9/14/2022	WL_BFWB_OUT_SP21	N																
9/15/2022	WL_LCI_SP02	N	981						9.4									
9/15/2022	WL_WLCI_SP01	N	2123						6									
9/15/2022	WL_BFWB_OUT_SP21	N	1815						11.6									
9/15/2022	WL_BFWB_OUT_SP21	N																
9/16/2022	WL_LCI_SP02	N	999						6.4									
9/16/2022	WL_WLCI_SP01	N	2104						6.2									
9/16/2022	WL_BFWB_OUT_SP21	N	1815						11.6									

		CHEMICAL_NAME FRACTION REPORT_RESULT_UNIT	Specific conductivity, temperature corrected value (25 C) N us/cm	Specific conductivity, temperature corrected value (25 C) N uS/cm at 25 C	Strontium D mg/l	Strontium T mg/l	SULFIDE (as S) T mg/l	Sulphate (As SO4) D mg/l	Temperature, Field N deg c	Thallium D ug/l	Thallium T ug/l	Tin D mg/l	Tin T mg/l	Titanium D ug/l	Titanium T ug/l	Total Dissolved Solids (Residue, Filterable) N mg/l	Total Kjeldahl Nitrogen N mg/l	Total Suspend Solids, Lab N mg/l
9/16/2022	WL_BFWB_OUT_SP21	N																
9/17/2022	WL_LCI_SP02	N	997						6.4									
9/17/2022	WL_WLCI_SP01	N	2136						6.3									
9/17/2022	WL_BFWB_OUT_SP21	N	1818						11.5									
9/18/2022	WL_LCI_SP02	N	1005						6.3									
9/18/2022	WL_WLCI_SP01	N	2138						6									
9/18/2022	WL_BFWB_OUT_SP21	N	1821						11.2									
9/18/2022	WL_BFWB_OUT_SP21	N																
9/19/2022	WL_LCI_SP02	N	1017		0.249	0.289			6.7	0.019	0.019	< 0.00010	< 0.00010	< 10.0	< 10.0			
9/19/2022	WL_WLCI_SP01	N	2145		0.190	0.219			5.9	0.031	0.033	< 0.00020	< 0.00020	< 10.0	< 10.0			
9/19/2022	WL_BFWB_OUT_SP21	N	1822		0.222	0.238	0.0030	764	11.3	< 0.010	< 0.010	< 0.00010	< 0.00010	< 10.0	< 10.0	1460	0.100	2.6
9/20/2022	WL_LCI_SP02	N	1014						6.1									
9/20/2022	WL_WLCI_SP01	N	2150						5.6									
9/20/2022	WL_BFWB_OUT_SP21	N	1810						10.9									
9/20/2022	WL_BFWB_OUT_SP21	N																
9/21/2022	WL_LCI_SP02	N	1009						5.8									
9/21/2022	WL_WLCI_SP01	N	2145						6.2									
9/21/2022	WL_BFWB_OUT_SP21	N	1812						10.7									
9/21/2022	WL_BFWB_OUT_SP21	N																
9/22/2022	WL_LCI_SP02	N	1026						6.3									
9/22/2022	WL_WLCI_SP01	N	2153						6.2									
9/22/2022	WL_BFWB_OUT_SP21	N	1810						11.3									
9/22/2022	WL_BFWB_OUT_SP21	N																
9/23/2022	WL_LCI_SP02	N	1034						6.3									
9/23/2022	WL_WLCI_SP01	N	2162						6.2									
9/23/2022	WL_BFWB_OUT_SP21	N	1812						11.2									
9/23/2022	WL_BFWB_OUT_SP21	N																
9/24/2022	WL_LCI_SP02	N	1033						6.2									
9/24/2022	WL_WLCI_SP01	N	2170						5.7									
9/24/2022	WL_BFWB_OUT_SP21	N	1815						11.3									
9/24/2022	WL_BFWB_OUT_SP21	N																
9/25/2022	WL_LCI_SP02	N	1044						5.8									
9/25/2022	WL_WLCI_SP01	N	2169						5									
9/25/2022	WL_BFWB_OUT_SP21	N	1816						11.2									
9/25/2022	WL_BFWB_OUT_SP21	N																
9/26/2022	WL_LCI_SP02	N	1033						5.8									
9/26/2022	WL_WLCI_SP01	N	2176						6									
9/26/2022	WL_BFWB_OUT_SP21	N	1816						11.6									
9/26/2022	WL_BFWB_OUT_SP21	N																
9/27/2022	WL_LCI_SP02	N	1036						6.5									
9/27/2022	WL_WLCI_SP01	N	2183						6.7									
9/27/2022	WL_BFWB_OUT_SP21	N	1816						11.7									
9/27/2022	WL_BFWB_OUT_SP21	N																
9/28/2022	WL_LCI_SP02	N	1047						6.2									
9/28/2022	WL_WLCI_SP01	N	2188						6.1									
9/28/2022	WL_BFWB_OUT_SP21	N	1827						11.7									
9/28/2022	WL_BFWB_OUT_SP21	N																
9/29/2022	WL_LCI_SP02	N	1018						6.2									
9/29/2022	WL_WLCI_SP01	N	2200						6.1									
9/29/2022	WL_BFWB_OUT_SP21	N	1818						12.4									
9/29/2022	WL_BFWB_OUT_SP21	N																
9/30/2022	WL_LCI_SP02	N	1007						6.4									
9/30/2022	WL_WLCI_SP01	N	2200						6.9									
9/30/2022	WL_BFWB_OUT_SP21	N	1808						12.4									
9/30/2022	WL_BFWB_OUT_SP21	N																
10/1/2022	WL_LCI_SP02	N	991						6.5									
10/1/2022	WL_WLCI_SP01	N	2210						6.2									
10/1/2022	WL_BFWB_OUT_SP21	N	1814						11.3									
10/1/2022	WL_BFWB_OUT_SP21	N																
10/2/2022	WL_LCI_SP02	N	989						6.5									
10/2/2022	WL_WLCI_SP01	N	2216						6									
10/2/2022	WL_BFWB_OUT_SP21	N	1807						11.5									
10/2/2022	WL_BFWB_OUT_SP21	N																
10/2/2022	WL_BFWB_OUT_SP21	N																
10/3/2022	WL_LCI_SP02	N	982		0.234	0.256		291	6.2	0.020	0.018	< 0.00010	< 0.00010	< 10.0	< 10.0	701	1.30	< 1.0

		CHEMICAL_NAME FRACTION REPORT_RESULT_UNIT	Specific conductivity, temperature corrected value (25 C) N us/cm	Specific conductivity, temperature corrected value (25 C) N uS/cm at 25 C	Strontium D mg/l	Strontium T mg/l	SULFIDE (as S) T mg/l	Sulphate (As SO4) D mg/l	Temperature, Field N deg c	Thallium D ug/l	Thallium T ug/l	Tin D mg/l	Tin T mg/l	Titanium D ug/l	Titanium T ug/l	Total Dissolved Solids (Residue, Filterable) N mg/l	Total Kjeldahl Nitrogen N mg/l	Total Suspend Solids, Lab N mg/l
10/3/2022	WL_WLCI_SP01	N	2234		0.188	0.195		1080	5.6	0.031	0.033	< 0.00020	< 0.00020	< 20.0	< 10.0	1910	< 0.050	1.6
10/3/2022	WL_BFWB_OUT_SP21	N	1805		0.229	0.242	0.0030	762	11.6	< 0.010	< 0.020	< 0.00010	< 0.00020	< 10.0	< 10.0	1440	0.106	1.8
10/3/2022	WL_BFWB_OUT_SP21	N																
10/4/2022	WL_LCI_SP02	N	971						6.5									
10/4/2022	WL_WLCI_SP01	N	2217						7.4									
10/4/2022	WL_BFWB_OUT_SP21	N	1797						11.7									
10/4/2022	WL_BFWB_OUT_SP21	N																
10/5/2022	WL_LCI_SP02	N	966						6.6									
10/5/2022	WL_WLCI_SP01	N	2225						6.8									
10/5/2022	WL_BFWB_OUT_SP21	N	1795						11.7									
10/5/2022	WL_BFWB_OUT_SP21	N																
10/6/2022	WL_LCI_SP02	N	946						6.9									
10/6/2022	WL_WLCI_SP01	N	2237						5.8									
10/6/2022	WL_BFWB_OUT_SP21	N	1792						11.7									
10/6/2022	WL_BFWB_OUT_SP21	N																
10/7/2022	WL_LCI_SP02	N	947						8.5									
10/7/2022	WL_WLCI_SP01	N	2201						7.3									
10/7/2022	WL_BFWB_OUT_SP21	N	1793						11.5									
10/7/2022	WL_BFWB_OUT_SP21	N																
10/8/2022	WL_LCI_SP02	N	931						8.8									
10/8/2022	WL_WLCI_SP01	N	2211						8.1									
10/8/2022	WL_BFWB_OUT_SP21	N	1796						11.4									
10/8/2022	WL_BFWB_OUT_SP21	N																
10/9/2022	WL_LCI_SP02	N	1030						6.4									
10/9/2022	WL_WLCI_SP01	N	2249						5									
10/9/2022	WL_BFWB_OUT_SP21	N	1705						11.2									
10/9/2022	WL_BFWB_OUT_SP21	N																
10/10/2022	WL_LCI_SP02	N	956						7.1									
10/10/2022	WL_WLCI_SP01	N	2238						7.4									
10/10/2022	WL_BFWB_OUT_SP21	N	1604						11.3									
10/10/2022	WL_BFWB_OUT_SP21	N																
10/11/2022	WL_LCI_SP02	N	927						9.7									
10/11/2022	WL_WLCI_SP01	N	2244						7.5									
10/11/2022	WL_BFWB_OUT_SP21	N	1773						11.2									
10/11/2022	WL_BFWB_OUT_SP21	N																
10/12/2022	WL_LCI_SP02	N	968						7.5									
10/12/2022	WL_WLCI_SP01	N	2261						4.9									
10/12/2022	WL_BFWB_OUT_SP21	N	1799						10.9									
10/12/2022	WL_BFWB_OUT_SP21	N																
10/13/2022	WL_LCI_SP02	N	974						6.5									
10/13/2022	WL_WLCI_SP01	N	2261						5.3									
10/13/2022	WL_BFWB_OUT_SP21	N	1798						11									
10/13/2022	WL_BFWB_OUT_SP21	N																
10/14/2022	WL_LCI_SP02	N	992						6.9									
10/14/2022	WL_WLCI_SP01	N	2252						6.3									
10/14/2022	WL_BFWB_OUT_SP21	N	1815						11									
10/14/2022	WL_BFWB_OUT_SP21	N																
10/15/2022	WL_LCI_SP02	N	981						6									
10/15/2022	WL_WLCI_SP01	N	2265						5.1									
10/15/2022	WL_BFWB_OUT_SP21	N	1806						10.9									
10/15/2022	WL_BFWB_OUT_SP21	N																
10/16/2022	WL_LCI_SP02	N	979						6.1									
10/16/2022	WL_WLCI_SP01	N	2268						5.8									
10/16/2022	WL_BFWB_OUT_SP21	N	1803						11									
10/16/2022	WL_BFWB_OUT_SP21	N																
10/17/2022	WL_LCI_SP02	N	975		0.244	0.232			6	0.018	0.016	< 0.00010	< 0.00010	< 10.0	< 10.0			
10/17/2022	WL_WLCI_SP01	N	2274		0.208	0.198			4.9	0.032	0.031	< 0.00020	< 0.00020	< 10.0	< 10.0			
10/17/2022	WL_BFWB_OUT_SP21	N	1797		0.213	0.209	0.0022	750	10.9	< 0.010	< 0.010	< 0.00010	< 0.00010	< 10.0	< 10.0	1410	0.110	1.3
10/17/2022	WL_BFWB_OUT_SP21	N																
10/18/2022	WL_LCI_SP02	N	969						5.8									
10/18/2022	WL_WLCI_SP01	N	2284						4.9									
10/18/2022	WL_BFWB_OUT_SP21	N	1787						10.8									
10/18/2022	WL_BFWB_OUT_SP21	N																
10/19/2022	WL_LCI_SP02	N	740						5.7									

		CHEMICAL_NAME FRACTION REPORT_RESULT_UNIT	Specific conductivity, temperature corrected value (25 C) N us/cm	Specific conductivity, temperature corrected value (25 C) N uS/cm at 25 C	Strontium D mg/l	Strontium T mg/l	SULFIDE (as S) T mg/l	Sulphate (As SO4) D mg/l	Temperature, Field N deg c	Thallium D ug/l	Thallium T ug/l	Tin D mg/l	Tin T mg/l	Titanium D ug/l	Titanium T ug/l	Total Dissolved Solids (Residue, Filterable) N mg/l	Total Kjeldahl Nitrogen N mg/l	Total Suspend Solids, Lab N mg/l
10/19/2022	WL_WLCI_SP01	N	2284						5.3									
10/19/2022	WL_BFWB_OUT_SP21	N	1792						10.8									
10/19/2022	WL_BFWB_OUT_SP21	N																
10/20/2022	WL_LCI_SP02	N	990						6.4									
10/20/2022	WL_WLCI_SP01	N	2244						6.7									
10/20/2022	WL_BFWB_OUT_SP21	N	1791						10.9									
10/20/2022	WL_BFWB_OUT_SP21	N																
10/21/2022	WL_LCI_SP02	N	984						6.2									
10/21/2022	WL_WLCI_SP01	N	2303						4.9									
10/21/2022	WL_BFWB_OUT_SP21	N	1792						11.2									
10/21/2022	WL_BFWB_OUT_SP21	N																
10/22/2022	WL_LCI_SP02	N	996						6.2									
10/22/2022	WL_WLCI_SP01	N	2301						4.9									
10/22/2022	WL_BFWB_OUT_SP21	N	1789						10.3									
10/22/2022	WL_BFWB_OUT_SP21	N																
10/23/2022	WL_LCI_SP02	N	1003						8.8									
10/23/2022	WL_WLCI_SP01	N	2252						7.3									
10/23/2022	WL_BFWB_OUT_SP21	N	1797						10.3									
10/23/2022	WL_BFWB_OUT_SP21	N																
10/24/2022	WL_LCI_SP02	N	963						5.9									
10/24/2022	WL_WLCI_SP01	N	2273						4.8									
10/24/2022	WL_BFWB_OUT_SP21	N	1790						1.02									
10/24/2022	WL_BFWB_OUT_SP21	N																
10/25/2022	WL_LCI_SP02	N	963						5.6									
10/25/2022	WL_WLCI_SP01	N	2263						5									
10/25/2022	WL_BFWB_OUT_SP21	N	1776						10.1									
10/25/2022	WL_BFWB_OUT_SP21	N																
10/26/2022	WL_LCI_SP02	N	982						5.5									
10/26/2022	WL_WLCI_SP01	N	2270						4.8									
10/26/2022	WL_BFWB_OUT_SP21	N	1775						10.4									
10/26/2022	WL_BFWB_OUT_SP21	N																
10/27/2022	WL_LCI_SP02	N	1117						5.4									
10/27/2022	WL_WLCI_SP01	N	2272						5.1									
10/27/2022	WL_BFWB_OUT_SP21	N	1675						10.1									
10/27/2022	WL_BFWB_OUT_SP21	N																
10/27/2022	WL_WLCI_SP01	N																
10/28/2022	WL_LCI_SP02	N	976						5.6									
10/28/2022	WL_WLCI_SP01	N	2276						4.9									
10/28/2022	WL_BFWB_OUT_SP21	N	1617						10.5									
10/28/2022	WL_BFWB_OUT_SP21	N																
10/29/2022	WL_LCI_SP02	N	979						7									
10/29/2022	WL_WLCI_SP01	N	2274						5.2									
10/29/2022	WL_BFWB_OUT_SP21	N	1709						8.3									
10/29/2022	WL_BFWB_OUT_SP21	N																
10/30/2022	WL_LCI_SP02	N	975						5.8									
10/30/2022	WL_WLCI_SP01	N	2267						6									
10/30/2022	WL_BFWB_OUT_SP21	N	1745						10.1									
10/30/2022	WL_BFWB_OUT_SP21	N																
10/31/2022	WL_LCI_SP02	N	970		0.231	0.240			5.7	0.016	0.016	< 0.00010	< 0.00010	< 10.0	< 10.0			
10/31/2022	WL_WLCI_SP01	N	2229		0.192	0.198			5.2	0.029	0.032	< 0.00020	< 0.00020	< 10.0	< 10.0			
10/31/2022	WL_BFWB_OUT_SP21	N	1733		0.207	0.220	< 0.0015	726	10.6	< 0.010	< 0.010	< 0.00010	< 0.00010	< 10.0	< 10.0	1550	0.106	1.8
10/31/2022	WL_BFWB_OUT_SP21	N																
11/1/2022	WL_LCI_SP02	N	971						5.5									
11/1/2022	WL_WLCI_SP01	N	2274						4.9									
11/1/2022	WL_BFWB_OUT_SP21	N	1749						10.7									
11/1/2022	WL_BFWB_OUT_SP21	N																
11/2/2022	WL_LCI_SP02	N	1007						5.1									
11/2/2022	WL_WLCI_SP01	N	2288						4.8									
11/2/2022	WL_BFWB_OUT_SP21	N	1755						9.5									
11/2/2022	WL_BFWB_OUT_SP21	N																
11/3/2022	WL_LCI_SP02	N	968						5.2									
11/3/2022	WL_WLCI_SP01	N	2268						5.5									
11/3/2022	WL_BFWB_OUT_SP21	N	1765						9.1									
11/3/2022	WL_BFWB_OUT_SP21	N																
11/4/2022	WL_LCI_SP02	N	973						5.1									
11/4/2022	WL_WLCI_SP01	N	2278						4.6									

		CHEMICAL_NAME FRACTION REPORT_RESULT_UNIT	Specific conductivity, temperature corrected value (25 C) N us/cm	Specific conductivity, temperature corrected value (25 C) N uS/cm at 25 C	Strontium D mg/l	Strontium T mg/l	SULFIDE (as S) T mg/l	Sulphate (As SO4) D mg/l	Temperature, Field N deg c	Thallium D ug/l	Thallium T ug/l	Tin D mg/l	Tin T mg/l	Titanium D ug/l	Titanium T ug/l	Total Dissolved Solids (Residue, Filterable) N mg/l	Total Kjeldahl Nitrogen N mg/l	Total Suspend Solids, Lab N mg/l
11/4/2022	WL_BFWB_OUT_SP21	N	1765						9.6									
11/4/2022	WL_BFWB_OUT_SP21	N																
11/5/2022	WL_LCI_SP02	N	1042						6.8									
11/5/2022	WL_WLCI_SP01	N	2270						6.8									
11/5/2022	WL_BFWB_OUT_SP21	N	1763						9.8									
11/5/2022	WL_BFWB_OUT_SP21	N																
11/6/2022	WL_LCI_SP02	N	988						5.5									
11/6/2022	WL_WLCI_SP01	N	2261						5.2									
11/6/2022	WL_BFWB_OUT_SP21	N	1773						8.9									
11/6/2022	WL_BFWB_OUT_SP21	N																
11/7/2022	WL_LCI_SP02	N	962						5.5									
11/7/2022	WL_WLCI_SP01	N	2268						6									
11/7/2022	WL_BFWB_OUT_SP21	N	1767						7									
11/7/2022	WL_BFWB_OUT_SP21	N																
11/8/2022	WL_LCI_SP02	N	986						4.5									
11/8/2022	WL_WLCI_SP01	N	2274						4.3									
11/8/2022	WL_BFWB_OUT_SP21	N	1756						7.4									
11/8/2022	WL_BFWB_OUT_SP21	N																
11/9/2022	WL_LCI_SP02	N	987						4.2									
11/9/2022	WL_WLCI_SP01	N	2269						4.3									
11/9/2022	WL_BFWB_OUT_SP21	N	1748						7.5									
11/9/2022	WL_BFWB_OUT_SP21	N																
11/10/2022	WL_LCI_SP02	N	982						4.2									
11/10/2022	WL_WLCI_SP01	N	2270						4.2									
11/10/2022	WL_BFWB_OUT_SP21	N	1742						8									
11/10/2022	WL_BFWB_OUT_SP21	N																
11/11/2022	WL_LCI_SP02	N	979						4.4									
11/11/2022	WL_WLCI_SP01	N	2268						4.4									
11/11/2022	WL_BFWB_OUT_SP21	N	1737						8.6									
11/11/2022	WL_BFWB_OUT_SP21	N																
11/12/2022	WL_LCI_SP02	N	983						4.3									
11/12/2022	WL_WLCI_SP01	N	2273						5.1									
11/12/2022	WL_BFWB_OUT_SP21	N	1733						8.6									
11/12/2022	WL_BFWB_OUT_SP21	N																
11/13/2022	WL_LCI_SP02	N	999						3.9									
11/13/2022	WL_WLCI_SP01	N	2272						4.2									
11/13/2022	WL_BFWB_OUT_SP21	N	1733						8.2									
11/13/2022	WL_BFWB_OUT_SP21	N																
11/14/2022	WL_BFWB_OUT_SP21	N																
11/14/2022	WL_LCI_SP02	N	1003		0.230	0.243		293	4.1	0.018	0.020	< 0.00010	< 0.00010	< 10.0	< 10.0	733	0.399	< 1.0
11/14/2022	WL_WLCI_SP01	N	2272		0.201	0.192		1120	4.3	0.030	0.030	< 0.00020	< 0.00020	< 10.0	< 10.0	1990	0.236	< 1.0
11/14/2022	WL_BFWB_OUT_SP21	N	1732		0.202	0.210	< 0.0038	714	8.3	< 0.010	< 0.010	< 0.00010	< 0.00010	< 10.0	< 10.0	1370	< 0.500	1.6
11/14/2022	WL_BFWB_OUT_SP21	N							8.4									
11/15/2022	WL_LCI_SP02	N	1037						4									
11/15/2022	WL_WLCI_SP01	N	2269						4.3									
11/15/2022	WL_BFWB_OUT_SP21	N	1735						8.6									
11/15/2022	WL_BFWB_OUT_SP21	N																
11/15/2022	WL_BFWB_OUT_SP21	N	1736						8.5									
11/16/2022	WL_LCI_SP02	N	1002						4									
11/16/2022	WL_WLCI_SP01	N	2269						4.3									
11/16/2022	WL_BFWB_OUT_SP21	N	1739						8.4									
11/16/2022	WL_BFWB_OUT_SP21	N																
11/17/2022	WL_LCI_SP02	N	974						3.5									
11/17/2022	WL_WLCI_SP01	N	2274						4.1									
11/17/2022	WL_BFWB_OUT_SP21	N	1729						7.7									
11/17/2022	WL_BFWB_OUT_SP21	N																
11/18/2022	WL_LCI_SP02	N	926						4.4									
11/18/2022	WL_WLCI_SP01	N	2272						4.8									
11/18/2022	WL_BFWB_OUT_SP21	N	1725						7.5									
11/18/2022	WL_BFWB_OUT_SP21	N																
11/19/2022	WL_LCI_SP02	N	995						5									
11/19/2022	WL_WLCI_SP01	N	2274						4.9									
11/19/2022	WL_BFWB_OUT_SP21	N	1722						7.4									
11/19/2022	WL_BFWB_OUT_SP21	N																
11/20/2022	WL_LCI_SP02	N	998						3.9									
11/20/2022	WL_WLCI_SP01	N	2265						4									

		CHEMICAL_NAME FRACTION REPORT_RESULT_UNIT	Specific conductivity, temperature corrected value (25 C) N us/cm	Specific conductivity, temperature corrected value (25 C) N uS/cm at 25 C	Strontium D mg/l	Strontium T mg/l	SULFIDE (as S) T mg/l	Sulphate (As SO4) D mg/l	Temperature, Field N deg c	Thallium D ug/l	Thallium T ug/l	Tin D mg/l	Tin T mg/l	Titanium D ug/l	Titanium T ug/l	Total Dissolved Solids (Residue, Filterable) N mg/l	Total Kjeldahl Nitrogen N mg/l	Total Suspend Solids, Lab N mg/l
11/20/2022	WL_BFWB_OUT_SP21	N	1720						7.6									
11/20/2022	WL_BFWB_OUT_SP21	N																
11/21/2022	WL_LCI_SP02	N	999						4									
11/21/2022	WL_WLCI_SP01	N	2278						4.2									
11/21/2022	WL_BFWB_OUT_SP21	N	1717						8									
11/21/2022	WL_BFWB_OUT_SP21	N																
11/22/2022	WL_LCI_SP02	N	1009						4.9									
11/22/2022	WL_WLCI_SP01	N	2277						5									
11/22/2022	WL_BFWB_OUT_SP21	N	1723						8.8									
11/22/2022	WL_BFWB_OUT_SP21	N																
11/23/2022	WL_LCI_SP02	N	995						4.2									
11/23/2022	WL_WLCI_SP01	N	2284						4.5									
11/23/2022	WL_BFWB_OUT_SP21	N	1714						9.8									
11/23/2022	WL_BFWB_OUT_SP21	N																
11/24/2022	WL_LCI_SP02	N	998						4.2									
11/24/2022	WL_WLCI_SP01	N	2284						4.4									
11/24/2022	WL_BFWB_OUT_SP21	N	1712						9.6									
11/24/2022	WL_BFWB_OUT_SP21	N																
11/25/2022	WL_LCI_SP02	N	1000						5.4									
11/25/2022	WL_WLCI_SP01	N	2279						6									
11/25/2022	WL_BFWB_OUT_SP21	N	1713						9.5									
11/25/2022	WL_BFWB_OUT_SP21	N																
11/26/2022	WL_LCI_SP02	N	1030						5.5									
11/26/2022	WL_WLCI_SP01	N	2293						4.9									
11/26/2022	WL_BFWB_OUT_SP21	N	1711						19.34									
11/26/2022	WL_BFWB_OUT_SP21	N																
11/27/2022	WL_LCI_SP02	N	995						6.7									
11/27/2022	WL_WLCI_SP01	N	2299						6									
11/27/2022	WL_BFWB_OUT_SP21	N	1709						8									
11/27/2022	WL_BFWB_OUT_SP21	N																
11/28/2022	WL_LCI_SP02	N	1012		0.230	0.243			3.5	0.016	0.016	< 0.00010	< 0.00010	< 10.0	< 10.0			
11/28/2022	WL_WLCI_SP01	N	2304		0.189	0.199			4.1	0.034	0.025	< 0.00020	< 0.00020	< 10.0	< 10.0			
11/28/2022	WL_BFWB_OUT_SP21	N	1712		0.203	0.225	0.0018	739	7	< 0.010	< 0.010	< 0.00010	< 0.00010	< 10.0	< 10.0	1350	0.095	< 1.0
11/28/2022	WL_BFWB_OUT_SP21	N																
11/29/2022	WL_LCI_SP02	N	1025						3.4									
11/29/2022	WL_WLCI_SP01	N	2307						3.9									
11/29/2022	WL_BFWB_OUT_SP21	N	1724						5.8									
11/29/2022	WL_BFWB_OUT_SP21	N																
11/30/2022	WL_LCI_SP02	N	1009						3.7									
11/30/2022	WL_WLCI_SP01	N	2301						4.5									
11/30/2022	WL_BFWB_OUT_SP21	N	1719						6									
11/30/2022	WL_BFWB_OUT_SP21	N																
12/1/2022	WL_LCI_SP02	N	1012						3.9									
12/1/2022	WL_WLCI_SP01	N	2305						4.2									
12/1/2022	WL_BFWB_OUT_SP21	N	1714						6.4									
12/1/2022	WL_BFWB_OUT_SP21	N																
12/2/2022	WL_LCI_SP02	N	1010						4.2									
12/2/2022	WL_WLCI_SP01	N	2357						5									
12/2/2022	WL_BFWB_OUT_SP21	N	1761						5.6									
12/2/2022	WL_BFWB_OUT_SP21	N																
12/3/2022	WL_LCI_SP02	N	1019						4.2									
12/3/2022	WL_WLCI_SP01	N	2356						4.5									
12/3/2022	WL_BFWB_OUT_SP21	N	1760						6.5									
12/3/2022	WL_BFWB_OUT_SP21	N																
12/4/2022	WL_LCI_SP02	N	1026						4.2									
12/4/2022	WL_WLCI_SP01	N	2344						4.3									
12/4/2022	WL_BFWB_OUT_SP21	N	1753						6.6									
12/4/2022	WL_BFWB_OUT_SP21	N																
12/5/2022	WL_LCI_SP02	N	958						4.5									
12/5/2022	WL_WLCI_SP01	N	2335						5.9									
12/5/2022	WL_BFWB_OUT_SP21	N	1740						6.9									
12/5/2022	WL_BFWB_OUT_SP21	N																
12/6/2022	WL_LCI_SP02	N	997						3.7									
12/6/2022	WL_WLCI_SP01	N	2355						4.2									
12/6/2022	WL_BFWB_OUT_SP21	N	1745						7.2									
12/6/2022	WL_BFWB_OUT_SP21	N																

		CHEMICAL_NAME FRACTION REPORT_RESULT_UNIT	Specific conductivity, temperature corrected value (25 C) N us/cm	Specific conductivity, temperature corrected value (25 C) N uS/cm at 25 C	Strontium D mg/l	Strontium T mg/l	SULFIDE (as S) T mg/l	Sulphate (As SO4) D mg/l	Temperature, Field N deg c	Thallium D ug/l	Thallium T ug/l	Tin D mg/l	Tin T mg/l	Titanium D ug/l	Titanium T ug/l	Total Dissolved Solids (Residue, Filterable) N mg/l	Total Kjeldahl Nitrogen N mg/l	Total Suspend Solids, Lab N mg/l
12/7/2022	WL_LCI_SP02	N	1061						4.3									
12/7/2022	WL_WLCI_SP01	N	1760						5.4									
12/7/2022	WL_BFWB_OUT_SP21	N	1716						7.4									
12/7/2022	WL_BFWB_OUT_SP21	N																
12/8/2022	WL_LCI_SP02	N	1036						3.6									
12/8/2022	WL_WLCI_SP01	N	2360						4.4									
12/8/2022	WL_BFWB_OUT_SP21	N	1742						7.7									
12/8/2022	WL_BFWB_OUT_SP21	N																
12/9/2022	WL_LCI_SP02	N	747.1						3.7									
12/9/2022	WL_WLCI_SP01	N	2361						4.4									
12/9/2022	WL_BFWB_OUT_SP21	N	1744						8									
12/9/2022	WL_BFWB_OUT_SP21	N																
12/10/2022	WL_LCI_SP02	N	1039						3.6									
12/10/2022	WL_WLCI_SP01	N	2365						4.2									
12/10/2022	WL_BFWB_OUT_SP21	N	1746						7.7									
12/10/2022	WL_BFWB_OUT_SP21	N																
12/11/2022	WL_LCI_SP02	N	1046						3.8									
12/11/2022	WL_WLCI_SP01	N	2366						4.7									
12/11/2022	WL_BFWB_OUT_SP21	N	1741						8									
12/11/2022	WL_BFWB_OUT_SP21	N																
12/12/2022	WL_LCI_SP02	N	1086		0.239	0.238		343	3.6	0.016	0.016	< 0.00010	< 0.00010	< 10.0	< 10.0	754	< 0.050	< 1.0
12/12/2022	WL_WLCI_SP01	N	2372		0.185	0.191		1200	4.5	0.027	0.027	< 0.00020	< 0.00020	< 10.0	< 10.0	2200	< 0.050	1.2
12/12/2022	WL_BFWB_OUT_SP21	N	1745		0.210	0.207	0.0022	736	8.1	< 0.010	< 0.010	< 0.00010	< 0.00010	< 10.0	< 10.0	1230	0.109	2.7
12/12/2022	WL_BFWB_OUT_SP21	N																
12/13/2022	WL_LCI_SP02	N	1048						3.2									
12/13/2022	WL_WLCI_SP01	N	2374						4									
12/13/2022	WL_BFWB_OUT_SP21	N	1754						6.4									
12/13/2022	WL_BFWB_OUT_SP21	N																
12/14/2022	WL_LCI_SP02	N	1047						3.7									
12/14/2022	WL_WLCI_SP01	N	2364						4.2									
12/14/2022	WL_BFWB_OUT_SP21	N	1744						7.5									
12/14/2022	WL_BFWB_OUT_SP21	N																
12/15/2022	WL_LCI_SP02	N	1040						3.6									
12/15/2022	WL_WLCI_SP01	N	2375						4.2									
12/15/2022	WL_BFWB_OUT_SP21	N	1738						7.7									
12/15/2022	WL_BFWB_OUT_SP21	N																
12/16/2022	WL_LCI_SP02	N	1038						4									
12/16/2022	WL_WLCI_SP01	N	2370						4.4									
12/16/2022	WL_BFWB_OUT_SP21	N	1736						7.2									
12/16/2022	WL_BFWB_OUT_SP21	N																
12/17/2022	WL_LCI_SP02	N	1023						3.7									
12/17/2022	WL_WLCI_SP01	N	2374						4.2									
12/17/2022	WL_BFWB_OUT_SP21	N	1740						7.4									
12/17/2022	WL_BFWB_OUT_SP21	N																
12/18/2022	WL_LCI_SP02	N	1037						4.7									
12/18/2022	WL_WLCI_SP01	N	2377						4									
12/18/2022	WL_BFWB_OUT_SP21	N	1741						5.8									
12/18/2022	WL_BFWB_OUT_SP21	N																
12/19/2022	WL_LCI_SP02	N	1043						3									
12/19/2022	WL_WLCI_SP01	N	2377						3.6									
12/19/2022	WL_BFWB_OUT_SP21	N	1743						4.8									
12/19/2022	WL_BFWB_OUT_SP21	N																
12/20/2022	WL_LCI_SP02	N	1072						2.8									
12/20/2022	WL_WLCI_SP01	N	2372						3.6									
12/20/2022	WL_BFWB_OUT_SP21	N	1750						4.6									
12/20/2022	WL_BFWB_OUT_SP21	N																
12/21/2022	WL_LCI_SP02	N	1059						2.7									
12/21/2022	WL_WLCI_SP01	N	2375						3.5									
12/21/2022	WL_BFWB_OUT_SP21	N	1751						4.7									
12/21/2022	WL_BFWB_OUT_SP21	N																
12/22/2022	WL_LCI_SP02	N	1056						2.7									
12/22/2022	WL_WLCI_SP01	N	2372						3.5									
12/22/2022	WL_BFWB_OUT_SP21	N	1745						4.6									
12/22/2022	WL_BFWB_OUT_SP21	N																
12/23/2022	WL_LCI_SP02	N	1060						3.9									
12/23/2022	WL_WLCI_SP01	N	2370						4.1									

		CHEMICAL_NAME FRACTION REPORT_RESULT_UNIT	Specific conductivity, temperature corrected value (25 C) N us/cm	Specific conductivity, temperature corrected value (25 C) N uS/cm at 25 C	Strontium D mg/l	Strontium T mg/l	SULFIDE (as S) T mg/l	Sulphate (As SO4) D mg/l	Temperature, Field N deg c	Thallium D ug/l	Thallium T ug/l	Tin D mg/l	Tin T mg/l	Titanium D ug/l	Titanium T ug/l	Total Dissolved Solids (Residue, Filterable) N mg/l	Total Kjeldahl Nitrogen N mg/l	Total Suspend Solids, Lab N mg/l
12/23/2022	WL_BFWB_OUT_SP21	N	1734						4.7									
12/23/2022	WL_BFWB_OUT_SP21	N	1732						4.7									
12/24/2022	WL_BFWB_OUT_SP21	N	1724						5.6									
12/24/2022	WL_BFWB_OUT_SP21	N																
12/24/2022	WL_LCI_SP02	N	862						2.9									
12/24/2022	WL_WLCI_SP01	N	2369						3.7									
12/25/2022	WL_LCI_SP02	N	1057						3.1									
12/25/2022	WL_WLCI_SP01	N	2371						4.1									
12/25/2022	WL_BFWB_OUT_SP21	N	1718						6.8									
12/25/2022	WL_BFWB_OUT_SP21	N																
12/26/2022	WL_LCI_SP02	N	1054						3.3									
12/26/2022	WL_WLCI_SP01	N	2371						4.3									
12/26/2022	WL_BFWB_OUT_SP21	N	1720						7.9									
12/26/2022	WL_BFWB_OUT_SP21	N																
12/27/2022	WL_LCI_SP02	N	1030		0.243	0.250			3.4	0.015	0.014	< 0.00010	< 0.00010	< 10.0	< 10.0			
12/27/2022	WL_WLCI_SP01	N	2373		0.200	0.206			4.3	0.027	0.026	< 0.00020	< 0.00020	< 10.0	< 10.0			
12/27/2022	WL_BFWB_OUT_SP21	N	1718		0.230	0.230	< 0.0015	722	8.6	< 0.010	< 0.010	< 0.00010	< 0.00010	< 10.0	< 10.0	1330	0.112	2.2
12/27/2022	WL_BFWB_OUT_SP21	N																
12/28/2022	WL_LCI_SP02	N	1058						3.4									
12/28/2022	WL_WLCI_SP01	N	2388						4.4									
12/28/2022	WL_BFWB_OUT_SP21	N	1725						8.9									
12/28/2022	WL_BFWB_OUT_SP21	N																
12/29/2022	WL_LCI_SP02	N	1089						3.4									
12/29/2022	WL_WLCI_SP01	N	2392						4.2									
12/29/2022	WL_BFWB_OUT_SP21	N	1731						8.7									
12/29/2022	WL_BFWB_OUT_SP21	N																
12/30/2022	WL_LCI_SP02	N	1023						3.4									
12/30/2022	WL_WLCI_SP01	N	2388						4.7									
12/30/2022	WL_BFWB_OUT_SP21	N	1737						8.3									
12/30/2022	WL_BFWB_OUT_SP21	N																
12/31/2022	WL_LCI_SP02	N	1016						3.8									
12/31/2022	WL_WLCI_SP01	N	2394						4.6									
12/31/2022	WL_BFWB_OUT_SP21	N	1730						8									
12/31/2022	WL_BFWB_OUT_SP21	N																
1/1/2023	WL_LCI_SP02	N	1052						4.5									
1/1/2023	WL_WLCI_SP01	N	2384						4.7									
1/1/2023	WL_BFWB_OUT_SP21	N	1734						8.3									
1/1/2023	WL_BFWB_OUT_SP21	N																

		CHEMICAL_NAME FRACTION REPORT_RESULT_UNIT	TURBIDITY, FIELD N ntu	Turbidity, Lab N ntu	Unknown selenium species – all other selenium species which elute from the applied chromatographic column and are not identified through retention time matching with known standards D ug/l	Uranium D ug/l	Uranium T ug/l	Vanadium D ug/l	Vanadium T ug/l	Zinc D ug/l	Zinc T ug/l
SAMPLE_DATE	SYS_LOC_CODE	SAMPLE_TYPE_CODE	REPORT_RESULT_TEXT	REPORT_RESULT_TEXT	REPORT_RESULT_TEXT	REPORT_RESULT_TEXT	REPORT_RESULT_TEXT	REPORT_RESULT_TEXT	REPORT_RESULT_TEXT	REPORT_RESULT_TEXT	REPORT_RESULT_TEXT
1/1/2022	WL_LCI_SP02	N	0.354								
1/1/2022	WL_WLCI_SP01	N	0.243								
1/1/2022	WL_BFWB_OUT_SP21	N	0.692		< 0.010						
1/1/2022	WL_BFWB_OUT_SP21	N									
1/1/2022	WL_WLCI_SP01	N									
1/1/2022	WL_LCI_SP02	N									
1/1/2022	WL_WLCI_SP01	N									
1/2/2022	WL_LCI_SP02	N	0.355								
1/2/2022	WL_WLCI_SP01	N	0.384								
1/2/2022	WL_BFWB_OUT_SP21	N	0.532								
1/2/2022	WL_BFWB_OUT_SP21	N									
1/2/2022	WL_LCI_SP02	N	0.355								
1/2/2022	WL_WLCI_SP01	N	0.384								
1/3/2022	WL_LCI_SP02	N	0.187		< 0.010						
1/3/2022	WL_WLCI_SP01	N	0.206		< 0.010						
1/3/2022	WL_BFWB_OUT_SP21	N	0.767		< 0.010						
1/3/2022	WL_BFWB_OUT_SP21	N									
1/3/2022	WL_BFWB_OUT_SP21	N									
1/4/2022	WL_BFWB_OUT_SP21	N									
1/4/2022	WL_BFWB_OUT_SP21	N									
1/4/2022	WL_LCI_SP02	N	0.379								
1/4/2022	WL_WLCI_SP01	N	0.315								
1/4/2022	WL_BFWB_OUT_SP21	N	0.614								
1/4/2022	WL_BFWB_OUT_SP21	N									
1/5/2022	WL_LCI_SP02	N	0.196								
1/5/2022	WL_WLCI_SP01	N	0.141								
1/5/2022	WL_BFWB_OUT_SP21	N	0.663								
1/5/2022	WL_BFWB_OUT_SP21	N									
1/6/2022	WL_LCI_SP02	N	0.181								
1/6/2022	WL_WLCI_SP01	N	0.161								
1/6/2022	WL_BFWB_OUT_SP21	N	0.772								
1/6/2022	WL_BFWB_OUT_SP21	N									
1/6/2022	WL_BFWB_OUT_SP21	N									
1/6/2022	WL_BFWB_OUT_SP21	N									
1/6/2022	WL_BFWB_OUT_SP21	N									
1/6/2022	WL_BFWB_OUT_SP21	N									
1/7/2022	WL_LCI_SP02	N	0.183								
1/7/2022	WL_WLCI_SP01	N	0.103								
1/7/2022	WL_BFWB_OUT_SP21	N	0.815								
1/7/2022	WL_BFWB_OUT_SP21	N									
1/8/2022	WL_LCI_SP02	N	0.156								
1/8/2022	WL_WLCI_SP01	N	0.268								
1/8/2022	WL_BFWB_OUT_SP21	N	0.584								
1/8/2022	WL_BFWB_OUT_SP21	N									
1/9/2022	WL_LCI_SP02	N	0.237								
1/9/2022	WL_WLCI_SP01	N	0.06								
1/9/2022	WL_BFWB_OUT_SP21	N	1.33								
1/9/2022	WL_BFWB_OUT_SP21	N									
1/10/2022	WL_LCI_SP02	N	0.369	< 0.10		5.28	5.11	< 0.50	< 0.50	10.8	11.6
1/10/2022	WL_WLCI_SP01	N	0.058	< 0.10		18.2	18.9	< 1.00	< 1.00	8.1	9.7
1/10/2022	WL_BFWB_OUT_SP21	N	0.611	0.47		6.51	6.62	< 0.50	< 0.50	< 3.0	< 3.0
1/10/2022	WL_BFWB_OUT_SP21	N									
1/10/2022	WL_BFWB_OUT_SP21	N									
1/11/2022	WL_LCI_SP02	N	0.356								
1/11/2022	WL_WLCI_SP01	N	0.264								
1/11/2022	WL_BFWB_OUT_SP21	N	0.647		< 0.010						
1/12/2022	WL_LCI_SP02	N	0.335								
1/12/2022	WL_WLCI_SP01	N	0.464								
1/12/2022	WL_BFWB_OUT_SP21	N	1.17								
1/12/2022	WL_BFWB_OUT_SP21	N									
1/13/2022	WL_LCI_SP02	N	0.23								
1/13/2022	WL_WLCI_SP01	N	0.337								

		CHEMICAL_NAME FRACTION REPORT_RESULT_UNIT	TURBIDITY, FIELD N ntu	Turbidity, Lab N ntu	Unknown selenium species – all other selenium species which elute from the applied chromatographic column and are not identified through retention time matching with known standards D ug/l	Uranium D ug/l	Uranium T ug/l	Vanadium D ug/l	Vanadium T ug/l	Zinc D ug/l	Zinc T ug/l
1/13/2022	WL_BFWB_OUT_SP21	N	0.691								
1/13/2022	WL_BFWB_OUT_SP21	N									
1/14/2022	WL_LCI_SP02	N	0.223								
1/14/2022	WL_WLCI_SP01	N	0.199								
1/14/2022	WL_BFWB_OUT_SP21	N	0.612								
1/14/2022	WL_BFWB_OUT_SP21	N									
1/15/2022	WL_LCI_SP02	N	0.201								
1/15/2022	WL_WLCI_SP01	N	0.165								
1/15/2022	WL_BFWB_OUT_SP21	N	0.636								
1/15/2022	WL_BFWB_OUT_SP21	N									
1/16/2022	WL_LCI_SP02	N	0.226								
1/16/2022	WL_WLCI_SP01	N	0.118								
1/16/2022	WL_BFWB_OUT_SP21	N	0.663								
1/16/2022	WL_BFWB_OUT_SP21	N									
1/17/2022	WL_LCI_SP02	N	0.23								
1/17/2022	WL_WLCI_SP01	N	0.145								
1/17/2022	WL_BFWB_OUT_SP21	N	0.62								
1/17/2022	WL_BFWB_OUT_SP21	N									
1/18/2022	WL_LCI_SP02	N	1.15								
1/18/2022	WL_WLCI_SP01	N	0.199								
1/18/2022	WL_BFWB_OUT_SP21	N	0.868		< 0.010						
1/18/2022	WL_BFWB_OUT_SP21	N									
1/19/2022	WL_LCI_SP02	N	0.323								
1/19/2022	WL_WLCI_SP01	N	0.121								
1/19/2022	WL_BFWB_OUT_SP21	N	0.888								
1/19/2022	WL_BFWB_OUT_SP21	N									
1/20/2022	WL_LCI_SP02	N	0.273								
1/20/2022	WL_WLCI_SP01	N	0.172								
1/20/2022	WL_BFWB_OUT_SP21	N	1.01								
1/20/2022	WL_BFWB_OUT_SP21	N									
1/21/2022	WL_LCI_SP02	N	0.142								
1/21/2022	WL_WLCI_SP01	N	0.055								
1/21/2022	WL_BFWB_OUT_SP21	N	0.579								
1/21/2022	WL_BFWB_OUT_SP21	N									
1/22/2022	WL_LCI_SP02	N	0.171								
1/22/2022	WL_WLCI_SP01	N	0.112								
1/22/2022	WL_BFWB_OUT_SP21	N	0.662								
1/22/2022	WL_BFWB_OUT_SP21	N									
1/23/2022	WL_LCI_SP02	N	0.6								
1/23/2022	WL_WLCI_SP01	N	0.168								
1/23/2022	WL_BFWB_OUT_SP21	N	0.782								
1/23/2022	WL_BFWB_OUT_SP21	N									
1/24/2022	WL_LCI_SP02	N	0.319			5.32	4.87	< 0.50	< 0.50	12.0	10.3
1/24/2022	WL_WLCI_SP01	N	0.053			19.3	17.5	< 0.50	< 1.00	5.5	< 6.0
1/24/2022	WL_BFWB_OUT_SP21	N	0.638	0.46		7.17	6.46	< 0.50	< 0.50	< 3.0	< 3.0
1/24/2022	WL_BFWB_OUT_SP21	N									
1/25/2022	WL_LCI_SP02	N	0.246								
1/25/2022	WL_WLCI_SP01	N	0.153								
1/25/2022	WL_BFWB_OUT_SP21	N	0.796		< 0.010						
1/25/2022	WL_BFWB_OUT_SP21	N									
1/26/2022	WL_LCI_SP02	N	0.201								
1/26/2022	WL_WLCI_SP01	N	0.112								
1/26/2022	WL_BFWB_OUT_SP21	N	0.736								
1/26/2022	WL_BFWB_OUT_SP21	N									
1/27/2022	WL_LCI_SP02	N	0.218								
1/27/2022	WL_WLCI_SP01	N	0.153								
1/27/2022	WL_BFWB_OUT_SP21	N	0.733								
1/27/2022	WL_BFWB_OUT_SP21	N									
1/28/2022	WL_LCI_SP02	N	0.45								
1/28/2022	WL_WLCI_SP01	N	0.08								
1/28/2022	WL_BFWB_OUT_SP21	N	1.16								
1/28/2022	WL_BFWB_OUT_SP21	N									
1/29/2022	WL_LCI_SP02	N	2.87								
1/29/2022	WL_WLCI_SP01	N	0.087								
1/29/2022	WL_BFWB_OUT_SP21	N	0.861								
1/29/2022	WL_BFWB_OUT_SP21	N									

		CHEMICAL_NAME FRACTION REPORT_RESULT_UNIT	TURBIDITY, FIELD N ntu	Turbidity, Lab N ntu	Unknown selenium species – all other selenium species which elute from the applied chromatographic column and are not identified through retention time matching with known standards D ug/l	Uranium D ug/l	Uranium T ug/l	Vanadium D ug/l	Vanadium T ug/l	Zinc D ug/l	Zinc T ug/l
1/30/2022	WL_LCI_SP02	N	0.375								
1/30/2022	WL_WLCI_SP01	N	0.132								
1/30/2022	WL_BFWB_OUT_SP21	N	0.836								
1/30/2022	WL_BFWB_OUT_SP21	N									
1/31/2022	WL_LCI_SP02	N	0.224								
1/31/2022	WL_WLCI_SP01	N	0.297								
1/31/2022	WL_BFWB_OUT_SP21	N	0.956								
1/31/2022	WL_BFWB_OUT_SP21	N									
2/1/2022	WL_LCI_SP02	N	0.188			5.28		< 0.50		11.0	
2/1/2022	WL_WLCI_SP01	N	0.183			18.1		< 1.00		< 6.0	
2/1/2022	WL_BFWB_OUT_SP21	N	0.71		< 0.010						
2/2/2022	WL_BFWB_OUT_SP21	N	0.938								
2/2/2022	WL_LCI_SP02	N	0.277								
2/2/2022	WL_WLCI_SP01	N	0.07								
2/2/2022	WL_BFWB_OUT_SP21	N									
2/2/2022	WL_BFWB_OUT_SP21	N									
2/2/2022	WL_LCI_SP02	N									
2/2/2022	WL_WLCI_SP01	N									
2/3/2022	WL_LCI_SP02	N	0.177								
2/3/2022	WL_WLCI_SP01	N	0.069								
2/3/2022	WL_BFWB_OUT_SP21	N	0.816								
2/3/2022	WL_BFWB_OUT_SP21	N									
2/4/2022	WL_LCI_SP02	N	0.226								
2/4/2022	WL_WLCI_SP01	N	0.098								
2/4/2022	WL_BFWB_OUT_SP21	N	0.777								
2/4/2022	WL_BFWB_OUT_SP21	N									
2/5/2022	WL_LCI_SP02	N	0.212								
2/5/2022	WL_WLCI_SP01	N	0.076								
2/5/2022	WL_BFWB_OUT_SP21	N	0.651								
2/6/2022	WL_LCI_SP02	N	0.204								
2/6/2022	WL_WLCI_SP01	N	0.087								
2/6/2022	WL_BFWB_OUT_SP21	N	0.67								
2/6/2022	WL_BFWB_OUT_SP21	N									
2/7/2022	WL_LCI_SP02	N	0.268	< 0.10		5.56	5.83	< 0.50	< 0.50	10.9	12.7
2/7/2022	WL_WLCI_SP01	N	0.295	< 0.10		18.8	19.7	< 1.00	< 1.00	< 6.0	< 6.0
2/7/2022	WL_BFWB_OUT_SP21	N	0.608	0.42		7.19	7.39	< 0.50	< 0.50	< 3.0	< 3.0
2/8/2022	WL_LCI_SP02	N	0.244								
2/8/2022	WL_WLCI_SP01	N	0.301								
2/8/2022	WL_BFWB_OUT_SP21	N	0.641		< 0.010						
2/9/2022	WL_LCI_SP02	N	0.202								
2/9/2022	WL_WLCI_SP01	N	0.21								
2/9/2022	WL_BFWB_OUT_SP21	N	0.906								
2/9/2022	WL_BFWB_OUT_SP21	N									
2/10/2022	WL_LCI_SP02	N	0.201								
2/10/2022	WL_WLCI_SP01	N	0.116								
2/10/2022	WL_BFWB_OUT_SP21	N	0.851								
2/10/2022	WL_BFWB_OUT_SP21	N									
2/11/2022	WL_LCI_SP02	N	0.379								
2/11/2022	WL_WLCI_SP01	N	0.134								
2/11/2022	WL_BFWB_OUT_SP21	N	0.934								
2/11/2022	WL_BFWB_OUT_SP21	N									
2/12/2022	WL_LCI_SP02	N	0.191								
2/12/2022	WL_WLCI_SP01	N	0.216								
2/12/2022	WL_BFWB_OUT_SP21	N	0.748								
2/12/2022	WL_BFWB_OUT_SP21	N									
2/13/2022	WL_LCI_SP02	N	0.419								
2/13/2022	WL_WLCI_SP01	N	< 0.1								
2/13/2022	WL_BFWB_OUT_SP21	N	0.953								
2/13/2022	WL_BFWB_OUT_SP21	N									
2/14/2022	WL_LCI_SP02	N	0.235								
2/14/2022	WL_WLCI_SP01	N	0.145								
2/14/2022	WL_BFWB_OUT_SP21	N	0.877								
2/14/2022	WL_BFWB_OUT_SP21	N									
2/15/2022	WL_LCI_SP02	N	0.51								

		CHEMICAL_NAME FRACTION REPORT_RESULT_UNIT	TURBIDITY, FIELD N ntu	Turbidity, Lab N ntu	Unknown selenium species – all other selenium species which elute from the applied chromatographic column and are not identified through retention time matching with known standards D ug/l	Uranium D ug/l	Uranium T ug/l	Vanadium D ug/l	Vanadium T ug/l	Zinc D ug/l	Zinc T ug/l
2/15/2022	WL_WLCI_SP01	N	0.163								
2/15/2022	WL_BFWB_OUT_SP21	N	0.852		< 0.010						
2/15/2022	WL_BFWB_OUT_SP21	N									
2/16/2022	WL_LCI_SP02	N	0.206								
2/16/2022	WL_WLCI_SP01	N	0.137								
2/16/2022	WL_BFWB_OUT_SP21	N	0.906								
2/16/2022	WL_BFWB_OUT_SP21	N									
2/17/2022	WL_LCI_SP02	N	0.185								
2/17/2022	WL_WLCI_SP01	N	0.153								
2/17/2022	WL_BFWB_OUT_SP21	N	0.935								
2/17/2022	WL_BFWB_OUT_SP21	N									
2/18/2022	WL_LCI_SP02	N	0.208								
2/18/2022	WL_WLCI_SP01	N	< 0.1								
2/18/2022	WL_BFWB_OUT_SP21	N	0.819								
2/18/2022	WL_BFWB_OUT_SP21	N									
2/19/2022	WL_LCI_SP02	N	0.171								
2/19/2022	WL_WLCI_SP01	N	< 0.1								
2/19/2022	WL_BFWB_OUT_SP21	N	0.918								
2/19/2022	WL_BFWB_OUT_SP21	N									
2/20/2022	WL_LCI_SP02	N	0.173								
2/20/2022	WL_WLCI_SP01	N	0.126								
2/20/2022	WL_BFWB_OUT_SP21	N	1.18								
2/20/2022	WL_BFWB_OUT_SP21	N									
2/21/2022	WL_LCI_SP02	N	0.365			5.11	5.30	< 0.50	< 0.50	12.5	14.9
2/21/2022	WL_WLCI_SP01	N	0.153			17.3	19.6	< 1.00	< 1.00	< 6.0	< 6.0
2/21/2022	WL_BFWB_OUT_SP21	N	0.767	0.63		6.32	7.22	< 0.50	< 0.50	< 3.0	< 3.0
2/21/2022	WL_BFWB_OUT_SP21	N									
2/22/2022	WL_LCI_SP02	N	0.244								
2/22/2022	WL_WLCI_SP01	N	0.147								
2/22/2022	WL_BFWB_OUT_SP21	N	0.978		< 0.010						
2/22/2022	WL_BFWB_OUT_SP21	N									
2/23/2022	WL_LCI_SP02	N	0.609								
2/23/2022	WL_WLCI_SP01	N	0.183								
2/23/2022	WL_BFWB_OUT_SP21	N	1.07								
2/23/2022	WL_BFWB_OUT_SP21	N									
2/24/2022	WL_LCI_SP02	N	0.553								
2/24/2022	WL_WLCI_SP01	N	0.296								
2/24/2022	WL_BFWB_OUT_SP21	N	1.12								
2/24/2022	WL_BFWB_OUT_SP21	N									
2/25/2022	WL_LCI_SP02	N	0.654								
2/25/2022	WL_WLCI_SP01	N	< 0.1								
2/25/2022	WL_BFWB_OUT_SP21	N	1.4								
2/25/2022	WL_BFWB_OUT_SP21	N									
2/26/2022	WL_BFWB_OUT_SP21	N									
2/26/2022	WL_LCI_SP02	N	0.34								
2/26/2022	WL_WLCI_SP01	N	0.529								
2/26/2022	WL_BFWB_OUT_SP21	N	1.18								
2/27/2022	WL_LCI_SP02	N	0.333								
2/27/2022	WL_WLCI_SP01	N	0.198								
2/27/2022	WL_BFWB_OUT_SP21	N	0.982								
2/27/2022	WL_BFWB_OUT_SP21	N									
2/28/2022	WL_LCI_SP02	N	0.306								
2/28/2022	WL_WLCI_SP01	N	0.143								
2/28/2022	WL_BFWB_OUT_SP21	N	1.2								
2/28/2022	WL_BFWB_OUT_SP21	N									
3/1/2022	WL_LCI_SP02	N	0.238								
3/1/2022	WL_WLCI_SP01	N	0.255								
3/1/2022	WL_BFWB_OUT_SP21	N	1.01		< 0.010						
3/1/2022	WL_BFWB_OUT_SP21	N									
3/1/2022	WL_BFWB_OUT_SP21	N									
3/1/2022	WL_BFWB_OUT_SP21	N									
3/2/2022	WL_LCI_SP02	N	0.21								
3/2/2022	WL_WLCI_SP01	N	0.172								
3/2/2022	WL_BFWB_OUT_SP21	N	1.09								
3/2/2022	WL_BFWB_OUT_SP21	N									
3/3/2022	WL_LCI_SP02	N	0.196								

		CHEMICAL_NAME FRACTION REPORT_RESULT_UNIT	TURBIDITY, FIELD N ntu	Turbidity, Lab N ntu	Unknown selenium species – all other selenium species which elute from the applied chromatographic column and are not identified through retention time matching with known standards D ug/l	Uranium D ug/l	Uranium T ug/l	Vanadium D ug/l	Vanadium T ug/l	Zinc D ug/l	Zinc T ug/l
3/3/2022	WL_WLCI_SP01	N	0.146								
3/3/2022	WL_BFWB_OUT_SP21	N	1.19								
3/3/2022	WL_BFWB_OUT_SP21	N									
3/3/2022	WL_BFWB_OUT_SP21	N									
3/3/2022	WL_BFWB_OUT_SP21	N									
3/4/2022	WL_LCI_SP02	N	0.202								
3/4/2022	WL_WLCI_SP01	N	0.197								
3/4/2022	WL_BFWB_OUT_SP21	N	0.96								
3/4/2022	WL_BFWB_OUT_SP21	N									
3/4/2022	WL_BFWB_OUT_SP21	N									
3/4/2022	WL_BFWB_OUT_SP21	N									
3/5/2022	WL_LCI_SP02	N	0.194								
3/5/2022	WL_WLCI_SP01	N	0.231								
3/5/2022	WL_BFWB_OUT_SP21	N	0.983								
3/5/2022	WL_BFWB_OUT_SP21	N									
3/6/2022	WL_LCI_SP02	N	0.16								
3/6/2022	WL_WLCI_SP01	N	0.336								
3/6/2022	WL_BFWB_OUT_SP21	N	1.01								
3/6/2022	WL_BFWB_OUT_SP21	N									
3/7/2022	WL_LCI_SP02	N	0.241	< 0.10		5.38	5.07	< 0.50	< 0.50	12.5	11.6
3/7/2022	WL_WLCI_SP01	N	0.153	< 0.10		19.5	18.0	< 1.00	< 1.00	< 6.0	< 6.0
3/7/2022	WL_BFWB_OUT_SP21	N	0.852			6.31	6.56	< 0.50	< 0.50	< 3.0	< 3.0
3/7/2022	WL_BFWB_OUT_SP21	N		0.71							
3/8/2022	WL_LCI_SP02	N	0.219								
3/8/2022	WL_WLCI_SP01	N	0.138								
3/8/2022	WL_BFWB_OUT_SP21	N	1.19		< 0.010						
3/8/2022	WL_BFWB_OUT_SP21	N									
3/8/2022	WL_BFWB_OUT_SP21	N									
3/8/2022	WL_BFWB_OUT_SP21	N									
3/9/2022	WL_LCI_SP02	N	0.409								
3/9/2022	WL_WLCI_SP01	N	0.125								
3/9/2022	WL_BFWB_OUT_SP21	N	0.933								
3/9/2022	WL_BFWB_OUT_SP21	N									
3/9/2022	WL_BFWB_OUT_SP21	N									
3/9/2022	WL_BFWB_OUT_SP21	N									
3/9/2022	WL_LCI_SP02	N	0.19								
3/9/2022	WL_LCI_SP02	N	0.192								
3/10/2022	WL_LCI_SP02	N	0.189								
3/10/2022	WL_LCI_SP02	N	0.366								
3/10/2022	WL_WLCI_SP01	N	< 0.1								
3/10/2022	WL_BFWB_OUT_SP21	N	0.907								
3/10/2022	WL_BFWB_OUT_SP21	N									
3/11/2022	WL_LCI_SP02	N	0.206								
3/11/2022	WL_WLCI_SP01	N	0.18								
3/11/2022	WL_BFWB_OUT_SP21	N	1.08								
3/11/2022	WL_BFWB_OUT_SP21	N									
3/11/2022	WL_BFWB_OUT_SP21	N									
3/11/2022	WL_BFWB_OUT_SP21	N									
3/12/2022	WL_LCI_SP02	N	0.881								
3/12/2022	WL_WLCI_SP01	N	0.489								
3/12/2022	WL_BFWB_OUT_SP21	N									
3/12/2022	WL_BFWB_OUT_SP21	N	1.03								
3/13/2022	WL_LCI_SP02	N	0.255								
3/13/2022	WL_WLCI_SP01	N	0.353								
3/13/2022	WL_BFWB_OUT_SP21	N	0.952								
3/14/2022	WL_LCI_SP02	N	0.306								
3/14/2022	WL_WLCI_SP01	N	0.393								
3/14/2022	WL_BFWB_OUT_SP21	N									
3/14/2022	WL_BFWB_OUT_SP21	N	1.05								
3/15/2022	WL_LCI_SP02	N	0.272								
3/15/2022	WL_WLCI_SP01	N	0.154								
3/15/2022	WL_BFWB_OUT_SP21	N									
3/15/2022	WL_BFWB_OUT_SP21	N	0.997		< 0.010						
3/16/2022	WL_LCI_SP02	N	0.4								
3/16/2022	WL_WLCI_SP01	N	0.286								
3/16/2022	WL_BFWB_OUT_SP21	N	1.34								

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3/16/2022	WL_BFWB_OUT_SP21	N									
3/16/2022	WL_BFWB_OUT_SP21	N									
3/17/2022	WL_LCI_SP02	N	0.312								
3/17/2022	WL_WLCI_SP01	N	0.456								
3/17/2022	WL_BFWB_OUT_SP21	N	0.995								
3/17/2022	WL_BFWB_OUT_SP21	N									
3/18/2022	WL_LCI_SP02	N	0.249								
3/18/2022	WL_WLCI_SP01	N	< 0.1								
3/18/2022	WL_BFWB_OUT_SP21	N	0.889								
3/18/2022	WL_BFWB_OUT_SP21	N									
3/19/2022	WL_LCI_SP02	N	0.314								
3/19/2022	WL_WLCI_SP01	N	0.322								
3/19/2022	WL_BFWB_OUT_SP21	N	0.975								
3/19/2022	WL_BFWB_OUT_SP21	N									
3/20/2022	WL_LCI_SP02	N	0.575								
3/20/2022	WL_WLCI_SP01	N	0.418								
3/20/2022	WL_BFWB_OUT_SP21	N	1.14								
3/20/2022	WL_BFWB_OUT_SP21	N									
3/20/2022	WL_BFWB_OUT_SP21	N									
3/20/2022	WL_BFWB_OUT_SP21	N									
3/21/2022	WL_LCI_SP02	N	0.619			5.18	5.80	< 0.50	< 0.50	12.5	12.7
3/21/2022	WL_WLCI_SP01	N	0.244			17.9	19.2	< 1.00	< 1.00	< 6.0	< 6.0
3/21/2022	WL_BFWB_OUT_SP21	N	0.997	0.70		5.81	6.01	< 0.50	< 0.50	< 3.0	< 3.0
3/21/2022	WL_BFWB_OUT_SP21	N									
3/22/2022	WL_LCI_SP02	N	0.453								
3/22/2022	WL_WLCI_SP01	N	0.356								
3/22/2022	WL_BFWB_OUT_SP21	N	0.907		< 0.010						
3/22/2022	WL_BFWB_OUT_SP21	N									
3/23/2022	WL_LCI_SP02	N	0.678								
3/23/2022	WL_WLCI_SP01	N	0.303								
3/23/2022	WL_BFWB_OUT_SP21	N	1.5								
3/23/2022	WL_BFWB_OUT_SP21	N									
3/23/2022	WL_LCI_SP02	N	21.3								
3/23/2022	WL_LCI_SP02	N	10.7								
3/24/2022	WL_LCI_SP02	N	1.74								
3/24/2022	WL_WLCI_SP01	N	0.263								
3/24/2022	WL_BFWB_OUT_SP21	N	1.42								
3/24/2022	WL_BFWB_OUT_SP21	N									
3/25/2022	WL_LCI_SP02	N	3.41								
3/25/2022	WL_WLCI_SP01	N	0.295								
3/25/2022	WL_BFWB_OUT_SP21	N	0.961								
3/25/2022	WL_BFWB_OUT_SP21	N									
3/26/2022	WL_BFWB_OUT_SP21	N									
3/26/2022	WL_LCI_SP02	N	3.31								
3/26/2022	WL_WLCI_SP01	N	0.27								
3/26/2022	WL_BFWB_OUT_SP21	N	1.16								
3/27/2022	WL_BFWB_OUT_SP21	N									
3/27/2022	WL_LCI_SP02	N	2.42								
3/27/2022	WL_WLCI_SP01	N	0.482								
3/27/2022	WL_BFWB_OUT_SP21	N	1.16								
3/28/2022	WL_LCI_SP02	N	2.06								
3/28/2022	WL_WLCI_SP01	N	0.177								
3/28/2022	WL_BFWB_OUT_SP21	N	0.987								
3/28/2022	WL_BFWB_OUT_SP21	N									
3/29/2022	WL_LCI_SP02	N	2.33								
3/29/2022	WL_WLCI_SP01	N	0.165								
3/29/2022	WL_BFWB_OUT_SP21	N	1.01		< 0.010						
3/29/2022	WL_BFWB_OUT_SP21	N									
3/30/2022	WL_LCI_SP02	N	3.76								
3/30/2022	WL_WLCI_SP01	N	0.148								
3/30/2022	WL_BFWB_OUT_SP21	N	1.2								
3/30/2022	WL_BFWB_OUT_SP21	N									
3/31/2022	WL_LCI_SP02	N	1.62								
3/31/2022	WL_WLCI_SP01	N	0.215								
3/31/2022	WL_BFWB_OUT_SP21	N	1.35								
3/31/2022	WL_BFWB_OUT_SP21	N									

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4/1/2022	WL_LCI_SP02	N	1.17								
4/1/2022	WL_WLCI_SP01	N	< 0.1								
4/1/2022	WL_BFWB_OUT_SP21	N	0.98								
4/1/2022	WL_BFWB_OUT_SP21	N									
4/2/2022	WL_LCI_SP02	N	0.883								
4/2/2022	WL_WLCI_SP01	N	0.654								
4/2/2022	WL_BFWB_OUT_SP21	N	1.2								
4/2/2022	WL_BFWB_OUT_SP21	N									
4/3/2022	WL_LCI_SP02	N	0.668								
4/3/2022	WL_WLCI_SP01	N	0.238								
4/3/2022	WL_BFWB_OUT_SP21	N	0.83								
4/3/2022	WL_BFWB_OUT_SP21	N									
4/4/2022	WL_LCI_SP02	N	0.749	0.46		5.30	5.02	< 0.50	< 0.50	13.6	13.2
4/4/2022	WL_WLCI_SP01	N	0.235	< 0.10		17.4	18.9	< 1.00	< 1.00	< 6.0	< 6.0
4/4/2022	WL_BFWB_OUT_SP21	N	1.21	0.83		5.57	5.77	< 0.50	< 0.50	< 3.0	< 3.0
4/5/2022	WL_LCI_SP02	N	0.598								
4/5/2022	WL_WLCI_SP01	N	0.165								
4/5/2022	WL_BFWB_OUT_SP21	N	1.5		< 0.010						
4/5/2022	WL_BFWB_OUT_SP21	N									
4/6/2022	WL_LCI_SP02	N	0.684								
4/6/2022	WL_WLCI_SP01	N	0.113								
4/6/2022	WL_BFWB_OUT_SP21	N	1.31								
4/6/2022	WL_BFWB_OUT_SP21	N									
4/7/2022	WL_LCI_SP02	N	0.945								
4/7/2022	WL_WLCI_SP01	N	0.158								
4/7/2022	WL_BFWB_OUT_SP21	N	1.04								
4/7/2022	WL_BFWB_OUT_SP21	N									
4/8/2022	WL_LCI_SP02	N	0.571								
4/8/2022	WL_WLCI_SP01	N	0.462								
4/8/2022	WL_BFWB_OUT_SP21	N	1								
4/8/2022	WL_BFWB_OUT_SP21	N									
4/8/2022	WL_BFWB_OUT_SP21	N									
4/9/2022	WL_LCI_SP02	N	0.406								
4/9/2022	WL_WLCI_SP01	N	0.117								
4/9/2022	WL_BFWB_OUT_SP21	N	1.64								
4/9/2022	WL_BFWB_OUT_SP21	N									
4/10/2022	WL_LCI_SP02	N	0.55								
4/10/2022	WL_WLCI_SP01	N	0.497								
4/10/2022	WL_BFWB_OUT_SP21	N	1.05								
4/10/2022	WL_BFWB_OUT_SP21	N									
4/11/2022	WL_LCI_SP02	N	0.587								
4/11/2022	WL_WLCI_SP01	N	0.378								
4/11/2022	WL_BFWB_OUT_SP21	N	0.909								
4/11/2022	WL_BFWB_OUT_SP21	N									
4/12/2022	WL_LCI_SP02	N	0.662		< 0.010						
4/12/2022	WL_WLCI_SP01	N	0.211		< 0.010						
4/12/2022	WL_BFWB_OUT_SP21	N	1.04		< 0.010						
4/12/2022	WL_BFWB_OUT_SP21	N									
4/13/2022	WL_LCI_SP02	N	0.436								
4/13/2022	WL_WLCI_SP01	N	< 0.1								
4/13/2022	WL_BFWB_OUT_SP21	N	1.14								
4/13/2022	WL_BFWB_OUT_SP21	N									
4/14/2022	WL_LCI_SP02	N	0.324								
4/14/2022	WL_WLCI_SP01	N	0.407								
4/14/2022	WL_BFWB_OUT_SP21	N	0.776								
4/14/2022	WL_BFWB_OUT_SP21	N									
4/15/2022	WL_LCI_SP02	N	0.236								
4/15/2022	WL_WLCI_SP01	N	0.178								
4/15/2022	WL_BFWB_OUT_SP21	N	0.899								
4/15/2022	WL_BFWB_OUT_SP21	N									
4/16/2022	WL_LCI_SP02	N	0.22								
4/16/2022	WL_WLCI_SP01	N	0.126								
4/16/2022	WL_BFWB_OUT_SP21	N	0.899								
4/16/2022	WL_BFWB_OUT_SP21	N									
4/17/2022	WL_LCI_SP02	N	0.351								
4/17/2022	WL_WLCI_SP01	N	0.507								

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4/17/2022	WL_BFWB_OUT_SP21	N	0.823								
4/17/2022	WL_BFWB_OUT_SP21	N									
4/18/2022	WL_LCI_SP02	N	0.365			5.50	4.76	< 0.50	< 0.50	12.3	11.3
4/18/2022	WL_WLCI_SP01	N	0.188			17.8	18.3	< 1.00	< 1.00	< 6.0	< 6.0
4/18/2022	WL_BFWB_OUT_SP21	N	1.01	0.62		5.50	5.39	< 0.50	< 0.50	< 3.0	< 3.0
4/18/2022	WL_BFWB_OUT_SP21	N									
4/19/2022	WL_LCI_SP02	N	0.415								
4/19/2022	WL_WLCI_SP01	N	0.146								
4/19/2022	WL_BFWB_OUT_SP21	N	0.951		< 0.010						
4/19/2022	WL_BFWB_OUT_SP21	N									
4/20/2022	WL_LCI_SP02	N	0.335								
4/20/2022	WL_WLCI_SP01	N	0.143								
4/20/2022	WL_BFWB_OUT_SP21	N	0.947								
4/20/2022	WL_BFWB_OUT_SP21	N									
4/21/2022	WL_LCI_SP02	N	0.271								
4/21/2022	WL_WLCI_SP01	N	0.133								
4/21/2022	WL_BFWB_OUT_SP21	N	1.02								
4/21/2022	WL_BFWB_OUT_SP21	N									
4/22/2022	WL_LCI_SP02	N	0.336								
4/22/2022	WL_WLCI_SP01	N	0.16								
4/22/2022	WL_BFWB_OUT_SP21	N	0.956								
4/22/2022	WL_BFWB_OUT_SP21	N									
4/23/2022	WL_LCI_SP02	N	0.801								
4/23/2022	WL_WLCI_SP01	N	0.289								
4/23/2022	WL_BFWB_OUT_SP21	N	1.52								
4/23/2022	WL_BFWB_OUT_SP21	N									
4/24/2022	WL_LCI_SP02	N	0.353								
4/24/2022	WL_WLCI_SP01	N	0.321								
4/24/2022	WL_BFWB_OUT_SP21	N	0.865								
4/24/2022	WL_BFWB_OUT_SP21	N									
4/25/2022	WL_LCI_SP02	N	0.465								
4/25/2022	WL_WLCI_SP01	N	0.241								
4/25/2022	WL_BFWB_OUT_SP21	N	0.909								
4/25/2022	WL_BFWB_OUT_SP21	N									
4/26/2022	WL_LCI_SP02	N	0.783								
4/26/2022	WL_WLCI_SP01	N	0.174								
4/26/2022	WL_BFWB_OUT_SP21	N	0.872		< 0.010						
4/27/2022	WL_LCI_SP02	N	0.486								
4/27/2022	WL_WLCI_SP01	N	0.274								
4/27/2022	WL_BFWB_OUT_SP21	N	1.67								
4/28/2022	WL_LCI_SP02	N	0.512								
4/28/2022	WL_WLCI_SP01	N	0.151								
4/28/2022	WL_BFWB_OUT_SP21	N	0.899								
4/29/2022	WL_BFWB_OUT_SP21	N									
4/29/2022	WL_LCI_SP02	N									
4/29/2022	WL_WLCI_SP01	N									
4/29/2022	WL_BFWB_OUT_SP21	N									
4/29/2022	WL_BFWB_OUT_SP21	N									
4/29/2022	WL_LCI_SP02	N									
4/29/2022	WL_WLCI_SP01	N									
4/29/2022	WL_LCI_SP02	N									
4/29/2022	WL_WLCI_SP01	N									
4/30/2022	WL_LCI_SP02	N	0.466								
4/30/2022	WL_WLCI_SP01	N	0.243								
4/30/2022	WL_BFWB_OUT_SP21	N	1.12								
4/30/2022	WL_BFWB_OUT_SP21	N									
5/1/2022	WL_LCI_SP02	N	0.379								
5/1/2022	WL_WLCI_SP01	N	0.345								
5/1/2022	WL_BFWB_OUT_SP21	N	1.05								
5/1/2022	WL_BFWB_OUT_SP21	N									
5/2/2022	WL_LCI_SP02	N	0.48	0.64		4.92	4.96	< 0.50	< 0.50	16.6	12.8
5/2/2022	WL_WLCI_SP01	N	0.233	0.42		17.2	17.8	< 1.00	< 1.00	< 6.0	< 6.0
5/2/2022	WL_BFWB_OUT_SP21	N	1.13	0.99		7.82	7.90	< 0.50	< 0.50	< 3.0	< 3.0

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5/2/2022	WL_BFWB_OUT_SP21	N									
5/3/2022	WL_LCI_SP02	N	0.411								
5/3/2022	WL_WLCI_SP01	N	0.12								
5/3/2022	WL_BFWB_OUT_SP21	N									
5/3/2022	WL_BFWB_OUT_SP21	N	0.972		< 0.010						
5/3/2022	WL_BFWB_OUT_SP21	N									
5/4/2022	WL_LCI_SP02	N	0.527								
5/4/2022	WL_WLCI_SP01	N	0.338								
5/4/2022	WL_BFWB_OUT_SP21	N	1.13								
5/4/2022	WL_BFWB_OUT_SP21	N									
5/5/2022	WL_LCI_SP02	N	0.87								
5/5/2022	WL_WLCI_SP01	N	0.159								
5/5/2022	WL_BFWB_OUT_SP21	N	0.927								
5/5/2022	WL_BFWB_OUT_SP21	N									
5/6/2022	WL_LCI_SP02	N	0.672								
5/6/2022	WL_WLCI_SP01	N	0.145								
5/6/2022	WL_BFWB_OUT_SP21	N	1.24								
5/6/2022	WL_BFWB_OUT_SP21	N									
5/6/2022	WL_LCI_SP02	N									
5/7/2022	WL_LCI_SP02	N	1.23								
5/7/2022	WL_WLCI_SP01	N	0.198								
5/7/2022	WL_BFWB_OUT_SP21	N	1								
5/7/2022	WL_BFWB_OUT_SP21	N									
5/8/2022	WL_LCI_SP02	N	0.798								
5/8/2022	WL_WLCI_SP01	N	0.296								
5/8/2022	WL_BFWB_OUT_SP21	N	1.27								
5/8/2022	WL_BFWB_OUT_SP21	N									
5/9/2022	WL_LCI_SP02	N	0.362								
5/9/2022	WL_WLCI_SP01	N	0.126								
5/9/2022	WL_BFWB_OUT_SP21	N	0.988								
5/9/2022	WL_BFWB_OUT_SP21	N									
5/10/2022	WL_LCI_SP02	N	0.464								
5/10/2022	WL_WLCI_SP01	N	0.231								
5/10/2022	WL_BFWB_OUT_SP21	N	0.899		< 0.010						
5/10/2022	WL_BFWB_OUT_SP21	N									
5/11/2022	WL_LCI_SP02	N	0.388								
5/11/2022	WL_WLCI_SP01	N	0.388								
5/11/2022	WL_WLCI_SP01	N									
5/11/2022	WL_BFWB_OUT_SP21	N	1.15								
5/11/2022	WL_BFWB_OUT_SP21	N									
5/12/2022	WL_LCI_SP02	N	0.799								
5/12/2022	WL_WLCI_SP01	N	0.104								
5/12/2022	WL_BFWB_OUT_SP21	N	0.856								
5/12/2022	WL_BFWB_OUT_SP21	N									
5/13/2022	WL_LCI_SP02	N	0.752								
5/13/2022	WL_WLCI_SP01	N	0.154								
5/13/2022	WL_BFWB_OUT_SP21	N	0.953								
5/13/2022	WL_BFWB_OUT_SP21	N									
5/14/2022	WL_LCI_SP02	N	0.202								
5/14/2022	WL_WLCI_SP01	N	0.241								
5/14/2022	WL_BFWB_OUT_SP21	N	0.848		< 0.010						
5/14/2022	WL_BFWB_OUT_SP21	N									
5/15/2022	WL_LCI_SP02	N	0.327								
5/15/2022	WL_WLCI_SP01	N	0.147								
5/15/2022	WL_BFWB_OUT_SP21	N	0.988								
5/15/2022	WL_BFWB_OUT_SP21	N									
5/16/2022	WL_LCI_SP02	N	0.57			4.38	4.39	< 0.50	< 0.50	16.0	15.5
5/16/2022	WL_WLCI_SP01	N	0.182			16.7	16.7	< 1.00	< 1.00	9.4	8.4
5/16/2022	WL_BFWB_OUT_SP21	N	0.856	0.65		9.00	9.10	< 0.50	< 0.50	< 3.0	< 3.0
5/16/2022	WL_BFWB_OUT_SP21	N									
5/17/2022	WL_LCI_SP02	N	0.394								
5/17/2022	WL_WLCI_SP01	N	0.566								
5/17/2022	WL_BFWB_OUT_SP21	N	0.893		< 0.010						
5/17/2022	WL_BFWB_OUT_SP21	N									
5/18/2022	WL_LCI_SP02	N	0.523								
5/18/2022	WL_WLCI_SP01	N	0.446								

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5/18/2022	WL_BFWB_OUT_SP21	N	0.918								
5/18/2022	WL_BFWB_OUT_SP21	N									
5/19/2022	WL_LCI_SP02	N	0.302								
5/19/2022	WL_WLCI_SP01	N	0.237								
5/19/2022	WL_BFWB_OUT_SP21	N	0.986								
5/19/2022	WL_BFWB_OUT_SP21	N									
5/20/2022	WL_LCI_SP02	N	0.389								
5/20/2022	WL_WLCI_SP01	N	0.389								
5/20/2022	WL_BFWB_OUT_SP21	N	0.821								
5/20/2022	WL_BFWB_OUT_SP21	N									
5/21/2022	WL_LCI_SP02	N	0.507								
5/21/2022	WL_WLCI_SP01	N	0.285								
5/21/2022	WL_BFWB_OUT_SP21	N	1.01								
5/21/2022	WL_BFWB_OUT_SP21	N									
5/22/2022	WL_LCI_SP02	N	0.157								
5/22/2022	WL_WLCI_SP01	N	0.227								
5/22/2022	WL_BFWB_OUT_SP21	N	0.661								
5/22/2022	WL_BFWB_OUT_SP21	N									
5/23/2022	WL_LCI_SP02	N	0.219								
5/23/2022	WL_WLCI_SP01	N	0.144								
5/23/2022	WL_BFWB_OUT_SP21	N	0.95								
5/23/2022	WL_BFWB_OUT_SP21	N									
5/24/2022	WL_LCI_SP02	N	0.648								
5/24/2022	WL_WLCI_SP01	N	0.225								
5/24/2022	WL_BFWB_OUT_SP21	N	0.845		< 0.010						
5/24/2022	WL_BFWB_OUT_SP21	N			< 0.010						
5/24/2022	WL_BFWB_OUT_SP21	N			< 0.010						
5/24/2022	WL_BFWB_OUT_SP21	N			< 0.010						
5/25/2022	WL_LCI_SP02	N	0.161								
5/25/2022	WL_WLCI_SP01	N	0.325								
5/25/2022	WL_BFWB_OUT_SP21	N	0.909								
5/25/2022	WL_BFWB_OUT_SP21	N									
5/26/2022	WL_LCI_SP02	N	0.37								
5/26/2022	WL_WLCI_SP01	N	0.183								
5/26/2022	WL_BFWB_OUT_SP21	N	0.961								
5/26/2022	WL_BFWB_OUT_SP21	N									
5/27/2022	WL_LCI_SP02	N	0.243								
5/27/2022	WL_WLCI_SP01	N	0.213								
5/27/2022	WL_BFWB_OUT_SP21	N	0.899								
5/27/2022	WL_BFWB_OUT_SP21	N									
5/28/2022	WL_LCI_SP02	N	0.207								
5/28/2022	WL_WLCI_SP01	N	0.187								
5/28/2022	WL_BFWB_OUT_SP21	N	0.692								
5/28/2022	WL_BFWB_OUT_SP21	N									
5/28/2022	WL_BFWB_OUT_SP21	N									
5/28/2022	WL_BFWB_OUT_SP21	N									
5/28/2022	WL_BFWB_OUT_SP21	N									
5/28/2022	WL_BFWB_OUT_SP21	N									
5/28/2022	WL_BFWB_OUT_SP21	N									
5/29/2022	WL_LCI_SP02	N	0.546								
5/29/2022	WL_WLCI_SP01	N	0.116								
5/29/2022	WL_BFWB_OUT_SP21	N	0.79								
5/29/2022	WL_BFWB_OUT_SP21	N									
5/30/2022	WL_LCI_SP02	N	0.555			3.65	3.67	< 0.50	< 0.50	16.7	17.1
5/30/2022	WL_WLCI_SP01	N	0.133			11.2	11.8	< 0.50	< 0.50	19.6	19.6
5/30/2022	WL_BFWB_OUT_SP21	N	0.928	0.95		9.67	10.1	< 0.50	< 0.50	< 3.0	< 3.0
5/30/2022	WL_BFWB_OUT_SP21	N									
5/31/2022	WL_LCI_SP02	N	0.4								
5/31/2022	WL_WLCI_SP01	N	0.148								
5/31/2022	WL_BFWB_OUT_SP21	N	0.874		< 0.010						
5/31/2022	WL_BFWB_OUT_SP21	N									
6/1/2022	WL_LCI_SP02	N	0.4								
6/1/2022	WL_WLCI_SP01	N	0.192								
6/1/2022	WL_BFWB_OUT_SP21	N	0.827								
6/1/2022	WL_BFWB_OUT_SP21	N									

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6/2/2022	WL_LCI_SP02	N	1.66								
6/2/2022	WL_WLCI_SP01	N	0.355								
6/2/2022	WL_BFWB_OUT_SP21	N	0.814								
6/2/2022	WL_BFWB_OUT_SP21	N									
6/3/2022	WL_LCI_SP02	N	0.232								
6/3/2022	WL_WLCI_SP01	N	0.154								
6/3/2022	WL_BFWB_OUT_SP21	N	0.89								
6/3/2022	WL_BFWB_OUT_SP21	N									
6/4/2022	WL_LCI_SP02	N	0.334								
6/4/2022	WL_WLCI_SP01	N	0.267								
6/4/2022	WL_BFWB_OUT_SP21	N	0.697								
6/4/2022	WL_BFWB_OUT_SP21	N									
6/5/2022	WL_LCI_SP02	N	0.521								
6/5/2022	WL_WLCI_SP01	N	0.176								
6/5/2022	WL_BFWB_OUT_SP21	N	1.75								
6/5/2022	WL_BFWB_OUT_SP21	N									
6/6/2022	WL_LCI_SP02	N	1.15								
6/6/2022	WL_WLCI_SP01	N	0.365								
6/6/2022	WL_BFWB_OUT_SP21	N	0.935								
6/6/2022	WL_BFWB_OUT_SP21	N									
6/7/2022	WL_LCI_SP02	N									
6/7/2022	WL_WLCI_SP01	N									
6/7/2022	WL_BFWB_OUT_SP21	N			< 0.010						
6/7/2022	WL_LCI_SP02	N	1.38								
6/7/2022	WL_WLCI_SP01	N	0.225								
6/7/2022	WL_BFWB_OUT_SP21	N									
6/8/2022	WL_LCI_SP02	N	0.55								
6/8/2022	WL_WLCI_SP01	N	0.247								
6/9/2022	WL_LCI_SP02	N	0.445								
6/9/2022	WL_WLCI_SP01	N	0.122								
6/9/2022	WL_WLCI_SP01	N									
6/9/2022	WL_BFWB_OUT_SP21	N	1.04								
6/9/2022	WL_BFWB_OUT_SP21	N									
6/10/2022	WL_LCI_SP02	N	0.359								
6/10/2022	WL_WLCI_SP01	N	0.113								
6/10/2022	WL_BFWB_OUT_SP21	N	1.21								
6/10/2022	WL_BFWB_OUT_SP21	N									
6/11/2022	WL_LCI_SP02	N	0.691								
6/11/2022	WL_WLCI_SP01	N	0.306								
6/11/2022	WL_BFWB_OUT_SP21	N	1.2								
6/11/2022	WL_BFWB_OUT_SP21	N									
6/12/2022	WL_LCI_SP02	N									
6/12/2022	WL_WLCI_SP01	N	0.374								
6/12/2022	WL_BFWB_OUT_SP21	N	0.933								
6/12/2022	WL_BFWB_OUT_SP21	N									
6/13/2022	WL_LCI_SP02	N	0.633	0.29		2.31	2.22	< 0.50	< 0.50	17.4	16.9
6/13/2022	WL_WLCI_SP01	N	0.291	0.11		6.90	6.26	< 0.50	< 0.50	54.5	52.8
6/13/2022	WL_BFWB_OUT_SP21	N	0.902	0.72		4.38	4.16	< 0.50	< 0.50	< 3.0	< 3.0
6/13/2022	WL_BFWB_OUT_SP21	N									
6/14/2022	WL_LCI_SP02	N	0.367								
6/14/2022	WL_WLCI_SP01	N	0.37								
6/14/2022	WL_BFWB_OUT_SP21	N	0.866		< 0.010						
6/14/2022	WL_BFWB_OUT_SP21	N									
6/15/2022	WL_LCI_SP02	N	0.45								
6/15/2022	WL_WLCI_SP01	N	0.112								
6/15/2022	WL_BFWB_OUT_SP21	N	0.886								
6/15/2022	WL_BFWB_OUT_SP21	N									
6/15/2022	WL_WLCI_SP01	N	0.157								
6/16/2022	WL_BFWB_OUT_SP21	N									
6/16/2022	WL_LCI_SP02	N	0.318								
6/16/2022	WL_WLCI_SP01	N	0.11								
6/16/2022	WL_BFWB_OUT_SP21	N	1.33								
6/16/2022	WL_LCI_SP02	N									
6/16/2022	WL_BFWB_OUT_SP21	N									
6/16/2022	WL_LCI_SP02	N									
6/16/2022	WL_WLCI_SP01	N									

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6/17/2022	WL_LCI_SP02	N	0.843								
6/17/2022	WL_WLCI_SP01	N	0.309								
6/17/2022	WL_BFWB_OUT_SP21	N	1.32								
6/17/2022	WL_BFWB_OUT_SP21	N									
6/18/2022	WL_LCI_SP02	N	1.39								
6/18/2022	WL_WLCI_SP01	N	0.178								
6/18/2022	WL_BFWB_OUT_SP21	N	1.59								
6/18/2022	WL_BFWB_OUT_SP21	N									
6/19/2022	WL_LCI_SP02	N	0.747								
6/19/2022	WL_WLCI_SP01	N	0.469								
6/19/2022	WL_BFWB_OUT_SP21	N	0.748								
6/19/2022	WL_BFWB_OUT_SP21	N									
6/20/2022	WL_WLCI_SP01	N	0.323								
6/20/2022	WL_BFWB_OUT_SP21	N	0.629								
6/20/2022	WL_LCI_SP02	N	4.12								
6/20/2022	WL_BFWB_OUT_SP21	N									
6/21/2022	WL_LCI_SP02	N	0.691								
6/21/2022	WL_WLCI_SP01	N	0.275								
6/21/2022	WL_BFWB_OUT_SP21	N	0.716		< 0.010						
6/21/2022	WL_BFWB_OUT_SP21	N									
6/22/2022	WL_LCI_SP02	N	0.726								
6/22/2022	WL_WLCI_SP01	N	0.173								
6/22/2022	WL_BFWB_OUT_SP21	N	0.743								
6/22/2022	WL_BFWB_OUT_SP21	N									
6/23/2022	WL_LCI_SP02	N	0.658								
6/23/2022	WL_WLCI_SP01	N	0.101								
6/23/2022	WL_BFWB_OUT_SP21	N	0.889								
6/23/2022	WL_BFWB_OUT_SP21	N									
6/24/2022	WL_LCI_SP02	N	2.45								
6/24/2022	WL_WLCI_SP01	N	0.25								
6/24/2022	WL_BFWB_OUT_SP21	N	1.02								
6/24/2022	WL_BFWB_OUT_SP21	N									
6/25/2022	WL_LCI_SP02	N	0.561								
6/25/2022	WL_WLCI_SP01	N	0.246								
6/25/2022	WL_BFWB_OUT_SP21	N	0.905								
6/25/2022	WL_BFWB_OUT_SP21	N									
6/26/2022	WL_LCI_SP02	N	0.751								
6/26/2022	WL_WLCI_SP01	N	0.172								
6/26/2022	WL_BFWB_OUT_SP21	N	0.815								
6/26/2022	WL_BFWB_OUT_SP21	N									
6/27/2022	WL_LCI_SP02	N	0.5			2.43	2.58	< 0.50	< 0.50	22.8	24.1
6/27/2022	WL_WLCI_SP01	N	0.3			6.65	6.97	< 0.50	< 0.50	64.2	60.2
6/27/2022	WL_BFWB_OUT_SP21	N	0.982	0.76		3.65	3.74	< 0.50	< 0.50	< 3.0	< 3.0
6/27/2022	WL_BFWB_OUT_SP21	N									
6/27/2022	WL_BFWB_OUT_SP21	N									
6/27/2022	WL_BFWB_OUT_SP21	N									
6/28/2022	WL_LCI_SP02	N	0.3								
6/28/2022	WL_WLCI_SP01	N	0.22								
6/28/2022	WL_BFWB_OUT_SP21	N	0.823		< 0.010						
6/28/2022	WL_BFWB_OUT_SP21	N									
6/29/2022	WL_LCI_SP02	N	0.285								
6/29/2022	WL_WLCI_SP01	N	0.127								
6/29/2022	WL_BFWB_OUT_SP21	N	1.08								
6/29/2022	WL_BFWB_OUT_SP21	N									
6/30/2022	WL_LCI_SP02	N	0.342								
6/30/2022	WL_WLCI_SP01	N	0.155								
6/30/2022	WL_LCI_SP02	N									
6/30/2022	WL_WLCI_SP01	N									
6/30/2022	WL_BFWB_OUT_SP21	N	1.04								
6/30/2022	WL_BFWB_OUT_SP21	N									
7/1/2022	WL_LCI_SP02	N	0.393								
7/1/2022	WL_WLCI_SP01	N	< 0.1								
7/1/2022	WL_BFWB_OUT_SP21	N	0.104								
7/1/2022	WL_LCI_SP02	N									
7/1/2022	WL_BFWB_OUT_SP21	N									
7/2/2022	WL_LCI_SP02	N	1.58								

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7/2/2022	WL_WLCI_SP01	N	0.403								
7/2/2022	WL_BFWB_OUT_SP21	N	1.08								
7/2/2022	WL_WLCI_SP01	N									
7/2/2022	WL_BFWB_OUT_SP21	N									
7/3/2022	WL_LCI_SP02	N	0.395								
7/3/2022	WL_WLCI_SP01	N	0.284								
7/3/2022	WL_BFWB_OUT_SP21	N	0.941								
7/3/2022	WL_LCI_SP02	N									
7/3/2022	WL_BFWB_OUT_SP21	N									
7/4/2022	WL_LCI_SP02	N	0.375								
7/4/2022	WL_WLCI_SP01	N	0.393								
7/4/2022	WL_BFWB_OUT_SP21	N	0.826								
7/4/2022	WL_BFWB_OUT_SP21	N									
7/5/2022	WL_LCI_SP02	N	0.321		< 0.010						
7/5/2022	WL_WLCI_SP01	N	0.306		< 0.010						
7/5/2022	WL_BFWB_OUT_SP21	N	0.938		0.024						
7/5/2022	WL_BFWB_OUT_SP21	N									
7/6/2022	WL_LCI_SP02	N	0.697								
7/6/2022	WL_WLCI_SP01	N	< 0.1								
7/6/2022	WL_BFWB_OUT_SP21	N	1.14								
7/6/2022	WL_BFWB_OUT_SP21	N									
7/7/2022	WL_LCI_SP02	N	0.331								
7/7/2022	WL_WLCI_SP01	N	0.431								
7/7/2022	WL_BFWB_OUT_SP21	N	1.05								
7/7/2022	WL_BFWB_OUT_SP21	N									
7/7/2022	WL_BFWB_OUT_SP21	N									
7/7/2022	WL_LCI_SP02	N	0.717								
7/7/2022	WL_WLCI_SP01	N	0.134								
7/7/2022	WL_LCI_SP02	N									
7/8/2022	WL_LCI_SP02	N	0.361								
7/8/2022	WL_WLCI_SP01	N	0.12								
7/8/2022	WL_BFWB_OUT_SP21	N	2.18								
7/8/2022	WL_BFWB_OUT_SP21	N									
7/9/2022	WL_LCI_SP02	N	0.287								
7/9/2022	WL_WLCI_SP01	N	0.199								
7/9/2022	WL_BFWB_OUT_SP21	N	1.8								
7/9/2022	WL_BFWB_OUT_SP21	N									
7/10/2022	WL_LCI_SP02	N	0.214								
7/10/2022	WL_WLCI_SP01	N	0.118								
7/10/2022	WL_BFWB_OUT_SP21	N	1.31								
7/10/2022	WL_BFWB_OUT_SP21	N									
7/11/2022	WL_LCI_SP02	N	0.867	0.20		3.08	2.92	< 0.50	< 0.50	28.5	26.8
7/11/2022	WL_WLCI_SP01	N	0.521	< 0.10		8.88	8.68	< 0.50	< 0.50	78.5	75.5
7/11/2022	WL_BFWB_OUT_SP21	N	1.25	1.09		6.15	5.78	< 0.50	< 0.50	< 3.0	< 3.0
7/11/2022	WL_BFWB_OUT_SP21	N									
7/12/2022	WL_LCI_SP02	N	0.482								
7/12/2022	WL_WLCI_SP01	N	0.516								
7/12/2022	WL_BFWB_OUT_SP21	N	1.26		< 0.010						
7/12/2022	WL_BFWB_OUT_SP21	N									
7/13/2022	WL_LCI_SP02	N	0.489								
7/13/2022	WL_WLCI_SP01	N	0.244								
7/13/2022	WL_BFWB_OUT_SP21	N	1.3								
7/13/2022	WL_BFWB_OUT_SP21	N									
7/14/2022	WL_LCI_SP02	N	0.239								
7/14/2022	WL_WLCI_SP01	N	0.398								
7/14/2022	WL_BFWB_OUT_SP21	N	1.5								
7/14/2022	WL_BFWB_OUT_SP21	N									
7/15/2022	WL_LCI_SP02	N	0.663								
7/15/2022	WL_WLCI_SP01	N	0.219								
7/15/2022	WL_BFWB_OUT_SP21	N	1.7								
7/15/2022	WL_BFWB_OUT_SP21	N									
7/16/2022	WL_LCI_SP02	N	0.72								
7/16/2022	WL_WLCI_SP01	N	0.174								
7/16/2022	WL_BFWB_OUT_SP21	N	1.5								
7/16/2022	WL_BFWB_OUT_SP21	N									
7/17/2022	WL_LCI_SP02	N	0.492								

		CHEMICAL_NAME FRACTION REPORT_RESULT_UNIT	TURBIDITY, FIELD N ntu	Turbidity, Lab N ntu	Unknown selenium species – all other selenium species which elute from the applied chromatographic column and are not identified through retention time matching with known standards D ug/l	Uranium D ug/l	Uranium T ug/l	Vanadium D ug/l	Vanadium T ug/l	Zinc D ug/l	Zinc T ug/l
7/17/2022	WL_WLCI_SP01	N	0.197								
7/17/2022	WL_BFWB_OUT_SP21	N	1.48								
7/17/2022	WL_BFWB_OUT_SP21	N									
7/18/2022	WL_LCI_SP02	N	0.379								
7/18/2022	WL_WLCI_SP01	N	0.121								
7/18/2022	WL_BFWB_OUT_SP21	N	1.46								
7/18/2022	WL_BFWB_OUT_SP21	N									
7/19/2022	WL_LCI_SP02	N	0.43								
7/19/2022	WL_WLCI_SP01	N	0.115								
7/19/2022	WL_BFWB_OUT_SP21	N	0.969		< 0.010						
7/19/2022	WL_BFWB_OUT_SP21	N									
7/20/2022	WL_LCI_SP02	N	0.383								
7/20/2022	WL_WLCI_SP01	N	0.318								
7/20/2022	WL_BFWB_OUT_SP21	N	1.07								
7/20/2022	WL_BFWB_OUT_SP21	N									
7/21/2022	WL_LCI_SP02	N	0.289								
7/21/2022	WL_WLCI_SP01	N	0.383								
7/21/2022	WL_BFWB_OUT_SP21	N	1								
7/21/2022	WL_BFWB_OUT_SP21	N									
7/22/2022	WL_LCI_SP02	N	0.266								
7/22/2022	WL_WLCI_SP01	N	0.343								
7/22/2022	WL_BFWB_OUT_SP21	N	1.16								
7/22/2022	WL_BFWB_OUT_SP21	N									
7/23/2022	WL_LCI_SP02	N	0.225								
7/23/2022	WL_WLCI_SP01	N	0.146								
7/23/2022	WL_BFWB_OUT_SP21	N	1.04								
7/23/2022	WL_BFWB_OUT_SP21	N									
7/24/2022	WL_LCI_SP02	N	0.24								
7/24/2022	WL_WLCI_SP01	N	0.388								
7/24/2022	WL_BFWB_OUT_SP21	N	1.05								
7/24/2022	WL_BFWB_OUT_SP21	N									
7/25/2022	WL_LCI_SP02	N	0.261			4.44	4.22	< 0.50	< 0.50	29.4	27.3
7/25/2022	WL_WLCI_SP01	N	0.535			10.4	10.3	< 0.50	< 0.50	90.4	86.7
7/25/2022	WL_BFWB_OUT_SP21	N	0.978	0.71		7.65	7.36	< 0.50	< 0.50	< 3.0	< 3.0
7/25/2022	WL_BFWB_OUT_SP21	N									
7/26/2022	WL_BFWB_OUT_SP21	N	1.48		< 0.010						
7/26/2022	WL_LCI_SP02	N									
7/26/2022	WL_WLCI_SP01	N									
7/26/2022	WL_LCI_SP02	N	0.18								
7/26/2022	WL_WLCI_SP01	N	< 0.1								
7/26/2022	WL_BFWB_OUT_SP21	N									
7/27/2022	WL_LCI_SP02	N	0.178								
7/27/2022	WL_WLCI_SP01	N	0.114								
7/28/2022	WL_LCI_SP02	N	0.199								
7/28/2022	WL_WLCI_SP01	N	0.194								
7/29/2022	WL_LCI_SP02	N	0.411								
7/29/2022	WL_WLCI_SP01	N	0.11								
7/29/2022	WL_WLCI_SP01	N									
7/29/2022	WL_LCI_SP02	N									
7/29/2022	WL_WLCI_SP01	N									
7/29/2022	WL_BFWB_OUT_SP21	N									
7/29/2022	WL_BFWB_OUT_SP21	N	1.87								
7/29/2022	WL_LCI_SP02	N									
7/29/2022	WL_BFWB_OUT_SP21	N									
7/30/2022	WL_LCI_SP02	N	0.442								
7/30/2022	WL_WLCI_SP01	N	0.427								
7/30/2022	WL_BFWB_OUT_SP21	N	1.79								
7/30/2022	WL_BFWB_OUT_SP21	N									
7/31/2022	WL_LCI_SP02	N	0.318								
7/31/2022	WL_WLCI_SP01	N	< 0.1								
7/31/2022	WL_BFWB_OUT_SP21	N	2.02								
7/31/2022	WL_BFWB_OUT_SP21	N									
8/1/2022	WL_LCI_SP02	N	0.144								
8/1/2022	WL_WLCI_SP01	N	0.255								
8/1/2022	WL_BFWB_OUT_SP21	N	1.13								
8/1/2022	WL_BFWB_OUT_SP21	N									

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8/2/2022	WL_LCI_SP02	N	0.555								
8/2/2022	WL_WLCI_SP01	N	0.19								
8/2/2022	WL_BFWB_OUT_SP21	N	1.08		< 0.010						
8/2/2022	WL_BFWB_OUT_SP21	N									
8/3/2022	WL_LCI_SP02	N	1.03								
8/3/2022	WL_WLCI_SP01	N	0.235								
8/3/2022	WL_BFWB_OUT_SP21	N	0.353								
8/3/2022	WL_BFWB_OUT_SP21	N									
8/4/2022	WL_LCI_SP02	N	0.207								
8/4/2022	WL_WLCI_SP01	N	0.163								
8/4/2022	WL_BFWB_OUT_SP21	N	0.814								
8/4/2022	WL_BFWB_OUT_SP21	N									
8/5/2022	WL_LCI_SP02	N	0.416								
8/5/2022	WL_WLCI_SP01	N	< 0.1								
8/5/2022	WL_BFWB_OUT_SP21	N	1.05								
8/5/2022	WL_BFWB_OUT_SP21	N									
8/6/2022	WL_LCI_SP02	N	0.212								
8/6/2022	WL_WLCI_SP01	N	0.176								
8/6/2022	WL_BFWB_OUT_SP21	N	0.788								
8/6/2022	WL_BFWB_OUT_SP21	N									
8/7/2022	WL_LCI_SP02	N	0.183								
8/7/2022	WL_WLCI_SP01	N	0.129								
8/7/2022	WL_BFWB_OUT_SP21	N	0.991								
8/7/2022	WL_BFWB_OUT_SP21	N									
8/8/2022	WL_LCI_SP02	N	0.485	0.22		4.10	4.05	< 0.50	< 0.50	21.9	21.2
8/8/2022	WL_WLCI_SP01	N	0.141	< 0.10		11.5	11.7	< 0.50	< 0.50	97.1	97.2
8/8/2022	WL_BFWB_OUT_SP21	N	0.883	0.75		8.70	8.92	< 0.50	< 0.50	< 3.0	< 3.0
8/8/2022	WL_BFWB_OUT_SP21	N									
8/9/2022	WL_LCI_SP02	N	0.373								
8/9/2022	WL_WLCI_SP01	N	0.155								
8/9/2022	WL_BFWB_OUT_SP21	N	0.893		< 0.010						
8/9/2022	WL_BFWB_OUT_SP21	N									
8/10/2022	WL_LCI_SP02	N	0.281								
8/10/2022	WL_WLCI_SP01	N	< 0.1								
8/10/2022	WL_BFWB_OUT_SP21	N	0.827								
8/10/2022	WL_BFWB_OUT_SP21	N									
8/11/2022	WL_LCI_SP02	N	0.249								
8/11/2022	WL_WLCI_SP01	N	0.522								
8/11/2022	WL_BFWB_OUT_SP21	N	0.848								
8/11/2022	WL_BFWB_OUT_SP21	N									
8/12/2022	WL_LCI_SP02	N	0.17								
8/12/2022	WL_WLCI_SP01	N	0.335								
8/12/2022	WL_BFWB_OUT_SP21	N	1.1								
8/12/2022	WL_BFWB_OUT_SP21	N									
8/13/2022	WL_LCI_SP02	N	0.296								
8/13/2022	WL_WLCI_SP01	N	0.361								
8/13/2022	WL_BFWB_OUT_SP21	N	0.849								
8/13/2022	WL_BFWB_OUT_SP21	N									
8/14/2022	WL_LCI_SP02	N	0.252								
8/14/2022	WL_WLCI_SP01	N	0.62								
8/14/2022	WL_BFWB_OUT_SP21	N	1.05								
8/14/2022	WL_BFWB_OUT_SP21	N									
8/15/2022	WL_LCI_SP02	N	0.458								
8/15/2022	WL_WLCI_SP01	N	1.21								
8/15/2022	WL_BFWB_OUT_SP21	N	1.06								
8/15/2022	WL_BFWB_OUT_SP21	N									
8/16/2022	WL_LCI_SP02	N	0.288								
8/16/2022	WL_WLCI_SP01	N	0.356								
8/16/2022	WL_BFWB_OUT_SP21	N	1.12		< 0.010						
8/16/2022	WL_BFWB_OUT_SP21	N									
8/17/2022	WL_LCI_SP02	N	0.226								
8/17/2022	WL_WLCI_SP01	N	0.222								
8/17/2022	WL_BFWB_OUT_SP21	N	1.02								
8/17/2022	WL_BFWB_OUT_SP21	N									
8/17/2022	WL_BFWB_OUT_SP21	N	16.9								

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8/17/2022	WL_BFWB_OUT_SP21	N		0.75	< 0.010	9.10	9.25	< 0.50	< 0.50	1.6	< 3.0
8/18/2022	WL_LCI_SP02	N	0.232								
8/18/2022	WL_WLCI_SP01	N	< 0.1								
8/18/2022	WL_BFWB_OUT_SP21	N	1.04	0.91		9.59	8.93	< 0.50	< 0.50	< 3.0	< 3.0
8/18/2022	WL_BFWB_OUT_SP21	N		0.91	< 0.010	9.59	8.93	< 0.50	< 0.50	< 3.0	< 3.0
8/19/2022	WL_LCI_SP02	N	0.282								
8/19/2022	WL_WLCI_SP01	N	0.212								
8/19/2022	WL_BFWB_OUT_SP21	N	0.93								
8/19/2022	WL_BFWB_OUT_SP21	N									
8/20/2022	WL_LCI_SP02	N	0.252								
8/20/2022	WL_WLCI_SP01	N	0.335								
8/20/2022	WL_BFWB_OUT_SP21	N	0.886								
8/20/2022	WL_BFWB_OUT_SP21	N									
8/21/2022	WL_LCI_SP02	N	0.255								
8/21/2022	WL_WLCI_SP01	N	0.182								
8/21/2022	WL_BFWB_OUT_SP21	N	0.925								
8/21/2022	WL_BFWB_OUT_SP21	N									
8/22/2022	WL_BFWB_OUT_SP21	N	0.986	0.65		9.06	8.59	< 0.50	< 0.50	< 3.0	< 3.0
8/22/2022	WL_LCI_SP02	N	0.64			4.12	3.99	< 0.50	< 0.50	21.4	21.6
8/22/2022	WL_WLCI_SP01	N	0.623			13.1	12.4	< 1.00	< 0.50	111	107
8/22/2022	WL_BFWB_OUT_SP21	N									
8/23/2022	WL_LCI_SP02	N	1.03								
8/23/2022	WL_WLCI_SP01	N	0.351								
8/23/2022	WL_BFWB_OUT_SP21	N	1.2		< 0.010						
8/23/2022	WL_BFWB_OUT_SP21	N									
8/24/2022	WL_LCI_SP02	N	0.293								
8/24/2022	WL_WLCI_SP01	N	0.103								
8/24/2022	WL_BFWB_OUT_SP21	N	1.08								
8/24/2022	WL_BFWB_OUT_SP21	N									
8/25/2022	WL_LCI_SP02	N	0.211								
8/25/2022	WL_WLCI_SP01	N	0.128								
8/25/2022	WL_BFWB_OUT_SP21	N	1.07								
8/25/2022	WL_BFWB_OUT_SP21	N									
8/26/2022	WL_LCI_SP02	N	0.688								
8/26/2022	WL_WLCI_SP01	N	0.213								
8/26/2022	WL_BFWB_OUT_SP21	N	0.885								
8/26/2022	WL_BFWB_OUT_SP21	N									
8/27/2022	WL_LCI_SP02	N	0.302								
8/27/2022	WL_WLCI_SP01	N	0.164								
8/27/2022	WL_BFWB_OUT_SP21	N	1.03								
8/27/2022	WL_BFWB_OUT_SP21	N									
8/28/2022	WL_LCI_SP02	N	0.298								
8/28/2022	WL_WLCI_SP01	N	0.127								
8/28/2022	WL_BFWB_OUT_SP21	N	1.12								
8/28/2022	WL_BFWB_OUT_SP21	N									
8/29/2022	WL_BFWB_OUT_SP21	N	0.98								
8/29/2022	WL_BFWB_OUT_SP21	N									
8/29/2022	WL_BFWB_OUT_SP21	N									
8/29/2022	WL_BFWB_OUT_SP21	N									
8/29/2022	WL_BFWB_OUT_SP21	N	0.928								
8/29/2022	WL_LCI_SP02	N	0.842								
8/29/2022	WL_WLCI_SP01	N	< 0.1								
8/29/2022	WL_BFWB_OUT_SP21	N	2.09								
8/30/2022	WL_BFWB_OUT_SP21	N									
8/30/2022	WL_BFWB_OUT_SP21	N	1.39		< 0.010						
8/30/2022	WL_LCI_SP02	N									
8/30/2022	WL_WLCI_SP01	N									
8/30/2022	WL_BFWB_OUT_SP21	N									
8/30/2022	WL_LCI_SP02	N	0.378								
8/30/2022	WL_WLCI_SP01	N	0.104								
8/31/2022	WL_LCI_SP02	N	0.224								
8/31/2022	WL_WLCI_SP01	N	0.232								
9/1/2022	WL_LCI_SP02	N	0.248								

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9/1/2022	WL_WLCI_SP01	N	0.206								
9/1/2022	WL_LCI_SP02	N	0.172								
9/1/2022	WL_WLCI_SP01	N	0.161								
9/1/2022	WL_BFWB_OUT_SP21	N	1.32								
9/1/2022	WL_BFWB_OUT_SP21	N									
9/2/2022	WL_LCI_SP02	N	0.212								
9/2/2022	WL_WLCI_SP01	N	0.558								
9/2/2022	WL_BFWB_OUT_SP21	N	1.49		0.021						
9/2/2022	WL_BFWB_OUT_SP21	N									
9/3/2022	WL_LCI_SP02	N	0.283								
9/3/2022	WL_WLCI_SP01	N	0.207								
9/3/2022	WL_BFWB_OUT_SP21	N	1.33								
9/3/2022	WL_BFWB_OUT_SP21	N									
9/4/2022	WL_LCI_SP02	N	0.198								
9/4/2022	WL_WLCI_SP01	N	0.465								
9/4/2022	WL_BFWB_OUT_SP21	N	1.27								
9/4/2022	WL_BFWB_OUT_SP21	N									
9/5/2022	WL_LCI_SP02	N	1.4	0.58		3.77	4.07	< 0.50	< 0.50	20.0	21.4
9/5/2022	WL_WLCI_SP01	N	0.418	< 0.10		14.7	16.7	< 1.00	< 0.50	102	101
9/5/2022	WL_BFWB_OUT_SP21	N	1.2	0.85		10.9	11.2	< 0.50	< 0.50	< 3.0	< 3.0
9/5/2022	WL_BFWB_OUT_SP21	N									
9/6/2022	WL_LCI_SP02	N	0.614								
9/6/2022	WL_WLCI_SP01	N	0.189								
9/6/2022	WL_BFWB_OUT_SP21	N	1.23		< 0.010						
9/6/2022	WL_BFWB_OUT_SP21	N									
9/6/2022	WL_BFWB_OUT_SP21	N									
9/7/2022	WL_LCI_SP02	N	0.336								
9/7/2022	WL_WLCI_SP01	N	0.491								
9/7/2022	WL_BFWB_OUT_SP21	N	1.03								
9/7/2022	WL_BFWB_OUT_SP21	N									
9/8/2022	WL_LCI_SP02	N	0.329								
9/8/2022	WL_WLCI_SP01	N	0.181								
9/8/2022	WL_BFWB_OUT_SP21	N	1.66								
9/8/2022	WL_BFWB_OUT_SP21	N									
9/9/2022	WL_LCI_SP02	N	0.287								
9/9/2022	WL_WLCI_SP01	N	0.175								
9/9/2022	WL_BFWB_OUT_SP21	N	1.3								
9/9/2022	WL_BFWB_OUT_SP21	N									
9/10/2022	WL_LCI_SP02	N	0.469								
9/10/2022	WL_WLCI_SP01	N	0.107								
9/10/2022	WL_BFWB_OUT_SP21	N	1.23								
9/10/2022	WL_BFWB_OUT_SP21	N									
9/11/2022	WL_LCI_SP02	N	0.28								
9/11/2022	WL_WLCI_SP01	N	0.351								
9/11/2022	WL_BFWB_OUT_SP21	N	1.14								
9/11/2022	WL_BFWB_OUT_SP21	N									
9/12/2022	WL_LCI_SP02	N	0.857								
9/12/2022	WL_WLCI_SP01	N	0.38								
9/12/2022	WL_BFWB_OUT_SP21	N	0.999								
9/12/2022	WL_BFWB_OUT_SP21	N									
9/13/2022	WL_LCI_SP02	N	0.372								
9/13/2022	WL_WLCI_SP01	N	0.765								
9/13/2022	WL_BFWB_OUT_SP21	N	1.25		< 0.010						
9/13/2022	WL_BFWB_OUT_SP21	N									
9/13/2022	WL_WLCI_SP01	N	0.184								
9/14/2022	WL_LCI_SP02	N	0.55								
9/14/2022	WL_WLCI_SP01	N	0.259								
9/14/2022	WL_BFWB_OUT_SP21	N	1.18								
9/14/2022	WL_BFWB_OUT_SP21	N									
9/15/2022	WL_LCI_SP02	N	0.913								
9/15/2022	WL_WLCI_SP01	N	0.764								
9/15/2022	WL_BFWB_OUT_SP21	N	1.1								
9/15/2022	WL_BFWB_OUT_SP21	N									
9/16/2022	WL_LCI_SP02	N	0.175								
9/16/2022	WL_WLCI_SP01	N	0.276								
9/16/2022	WL_BFWB_OUT_SP21	N	1.47								

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9/16/2022	WL_BFWB_OUT_SP21	N									
9/17/2022	WL_LCI_SP02	N	0.262								
9/17/2022	WL_WLCI_SP01	N	0.123								
9/17/2022	WL_BFWB_OUT_SP21	N	1.95								
9/18/2022	WL_LCI_SP02	N	0.212								
9/18/2022	WL_WLCI_SP01	N	0.129								
9/18/2022	WL_BFWB_OUT_SP21	N	1.5								
9/18/2022	WL_BFWB_OUT_SP21	N									
9/19/2022	WL_LCI_SP02	N	0.447			4.38	3.94	< 0.50	< 0.50	19.3	22.5
9/19/2022	WL_WLCI_SP01	N	0.444			16.9	15.4	< 1.00	< 1.00	112	122
9/19/2022	WL_BFWB_OUT_SP21	N	1.23	0.99		9.21	8.37	< 0.50	< 0.50	< 3.0	< 3.0
9/20/2022	WL_LCI_SP02	N	0.209								
9/20/2022	WL_WLCI_SP01	N	0.353								
9/20/2022	WL_BFWB_OUT_SP21	N	1.24		< 0.010						
9/20/2022	WL_BFWB_OUT_SP21	N									
9/21/2022	WL_LCI_SP02	N	0.252								
9/21/2022	WL_WLCI_SP01	N	0.481								
9/21/2022	WL_BFWB_OUT_SP21	N	1.17								
9/21/2022	WL_BFWB_OUT_SP21	N									
9/22/2022	WL_LCI_SP02	N	0.245								
9/22/2022	WL_WLCI_SP01	N	0.159								
9/22/2022	WL_BFWB_OUT_SP21	N	0.88								
9/22/2022	WL_BFWB_OUT_SP21	N									
9/23/2022	WL_LCI_SP02	N	0.199								
9/23/2022	WL_WLCI_SP01	N	0.171								
9/23/2022	WL_BFWB_OUT_SP21	N	0.816								
9/23/2022	WL_BFWB_OUT_SP21	N									
9/24/2022	WL_LCI_SP02	N	0.365								
9/24/2022	WL_WLCI_SP01	N	0.301								
9/24/2022	WL_BFWB_OUT_SP21	N	1.23								
9/24/2022	WL_BFWB_OUT_SP21	N									
9/25/2022	WL_LCI_SP02	N	0.339								
9/25/2022	WL_WLCI_SP01	N	0.426								
9/25/2022	WL_BFWB_OUT_SP21	N	0.794								
9/25/2022	WL_BFWB_OUT_SP21	N									
9/26/2022	WL_LCI_SP02	N	0.203								
9/26/2022	WL_WLCI_SP01	N	< 0.1								
9/26/2022	WL_BFWB_OUT_SP21	N	1.88								
9/26/2022	WL_BFWB_OUT_SP21	N									
9/27/2022	WL_LCI_SP02	N	0.233								
9/27/2022	WL_WLCI_SP01	N	0.187								
9/27/2022	WL_BFWB_OUT_SP21	N	1.64		< 0.010						
9/27/2022	WL_BFWB_OUT_SP21	N									
9/28/2022	WL_LCI_SP02	N	0.289								
9/28/2022	WL_WLCI_SP01	N	0.181								
9/28/2022	WL_BFWB_OUT_SP21	N	0.797								
9/28/2022	WL_BFWB_OUT_SP21	N									
9/29/2022	WL_LCI_SP02	N	0.572								
9/29/2022	WL_WLCI_SP01	N	0.244								
9/29/2022	WL_BFWB_OUT_SP21	N	0.817								
9/29/2022	WL_BFWB_OUT_SP21	N									
9/30/2022	WL_LCI_SP02	N	0.181								
9/30/2022	WL_WLCI_SP01	N	< 0.1								
9/30/2022	WL_BFWB_OUT_SP21	N	0.856								
9/30/2022	WL_BFWB_OUT_SP21	N									
10/1/2022	WL_LCI_SP02	N	0.203								
10/1/2022	WL_WLCI_SP01	N	0.153								
10/1/2022	WL_BFWB_OUT_SP21	N	1.02								
10/1/2022	WL_BFWB_OUT_SP21	N									
10/2/2022	WL_LCI_SP02	N	0.35								
10/2/2022	WL_WLCI_SP01	N	0.186								
10/2/2022	WL_BFWB_OUT_SP21	N	0.844								
10/2/2022	WL_BFWB_OUT_SP21	N									
10/2/2022	WL_BFWB_OUT_SP21	N									
10/3/2022	WL_LCI_SP02	N	0.574	0.16		4.15	4.34	< 0.50	< 0.50	18.4	19.7

		CHEMICAL_NAME FRACTION REPORT_RESULT_UNIT	TURBIDITY, FIELD N ntu	Turbidity, Lab N ntu	Unknown selenium species – all other selenium species which elute from the applied chromatographic column and are not identified through retention time matching with known standards D ug/l	Uranium D ug/l	Uranium T ug/l	Vanadium D ug/l	Vanadium T ug/l	Zinc D ug/l	Zinc T ug/l
10/3/2022	WL_WLCI_SP01	N	0.155	< 0.10		17.1	19.1	< 1.00	< 1.00	104	109
10/3/2022	WL_BFWB_OUT_SP21	N	0.718	0.56		9.26	11.5	< 0.50	< 1.00	< 3.0	< 6.0
10/3/2022	WL_BFWB_OUT_SP21	N									
10/4/2022	WL_LCI_SP02	N	0.186								
10/4/2022	WL_WLCI_SP01	N	0.17								
10/4/2022	WL_BFWB_OUT_SP21	N	0.747		< 0.010						
10/4/2022	WL_BFWB_OUT_SP21	N									
10/5/2022	WL_LCI_SP02	N	0.249								
10/5/2022	WL_WLCI_SP01	N	0.436								
10/5/2022	WL_BFWB_OUT_SP21	N	1.06								
10/5/2022	WL_BFWB_OUT_SP21	N									
10/6/2022	WL_LCI_SP02	N	0.177								
10/6/2022	WL_WLCI_SP01	N	0.214								
10/6/2022	WL_BFWB_OUT_SP21	N	0.659								
10/6/2022	WL_BFWB_OUT_SP21	N									
10/7/2022	WL_LCI_SP02	N	0.22								
10/7/2022	WL_WLCI_SP01	N	0.163								
10/7/2022	WL_BFWB_OUT_SP21	N	0.647								
10/7/2022	WL_BFWB_OUT_SP21	N									
10/8/2022	WL_LCI_SP02	N	0.447								
10/8/2022	WL_WLCI_SP01	N	0.207								
10/8/2022	WL_BFWB_OUT_SP21	N	0.67								
10/8/2022	WL_BFWB_OUT_SP21	N									
10/9/2022	WL_LCI_SP02	N	0.255								
10/9/2022	WL_WLCI_SP01	N	0.153								
10/9/2022	WL_BFWB_OUT_SP21	N	0.567								
10/9/2022	WL_BFWB_OUT_SP21	N									
10/10/2022	WL_LCI_SP02	N	0.2								
10/10/2022	WL_WLCI_SP01	N	0.138								
10/10/2022	WL_BFWB_OUT_SP21	N	0.782								
10/10/2022	WL_BFWB_OUT_SP21	N									
10/11/2022	WL_LCI_SP02	N	0.308		< 0.010						
10/11/2022	WL_WLCI_SP01	N	0.167		< 0.010						
10/11/2022	WL_BFWB_OUT_SP21	N	0.736		< 0.010						
10/11/2022	WL_BFWB_OUT_SP21	N									
10/12/2022	WL_LCI_SP02	N	0.337								
10/12/2022	WL_WLCI_SP01	N	0.351								
10/12/2022	WL_BFWB_OUT_SP21	N	1.44								
10/12/2022	WL_BFWB_OUT_SP21	N									
10/13/2022	WL_LCI_SP02	N	0.21								
10/13/2022	WL_WLCI_SP01	N	0.108								
10/13/2022	WL_BFWB_OUT_SP21	N	0.843								
10/13/2022	WL_BFWB_OUT_SP21	N									
10/14/2022	WL_LCI_SP02	N	0.427								
10/14/2022	WL_WLCI_SP01	N	0.139								
10/14/2022	WL_BFWB_OUT_SP21	N	0.909								
10/14/2022	WL_BFWB_OUT_SP21	N									
10/15/2022	WL_LCI_SP02	N	0.662								
10/15/2022	WL_WLCI_SP01	N	0.123								
10/15/2022	WL_BFWB_OUT_SP21	N	0.743								
10/15/2022	WL_BFWB_OUT_SP21	N									
10/16/2022	WL_LCI_SP02	N	0.284								
10/16/2022	WL_WLCI_SP01	N	< 0.1								
10/16/2022	WL_BFWB_OUT_SP21	N	1.03								
10/16/2022	WL_BFWB_OUT_SP21	N									
10/17/2022	WL_LCI_SP02	N	0.348			3.99	4.04	< 0.50	< 0.50	15.9	17.0
10/17/2022	WL_WLCI_SP01	N	0.137			18.6	19.9	< 1.00	< 1.00	101	112
10/17/2022	WL_BFWB_OUT_SP21	N	0.86	0.55		8.72	9.62	< 0.50	< 0.50	< 3.0	< 3.0
10/17/2022	WL_BFWB_OUT_SP21	N									
10/18/2022	WL_LCI_SP02	N	0.143								
10/18/2022	WL_WLCI_SP01	N	< 0.1								
10/18/2022	WL_BFWB_OUT_SP21	N	0.699		< 0.010						
10/18/2022	WL_BFWB_OUT_SP21	N									
10/19/2022	WL_LCI_SP02	N	0.514								

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10/19/2022	WL_WLCI_SP01	N	< 0.1								
10/19/2022	WL_BFWB_OUT_SP21	N	0.931								
10/19/2022	WL_BFWB_OUT_SP21	N									
10/20/2022	WL_LCI_SP02	N	0.188								
10/20/2022	WL_WLCI_SP01	N	0.157								
10/20/2022	WL_BFWB_OUT_SP21	N	1								
10/20/2022	WL_BFWB_OUT_SP21	N									
10/21/2022	WL_LCI_SP02	N	0.21								
10/21/2022	WL_WLCI_SP01	N	0.209								
10/21/2022	WL_BFWB_OUT_SP21	N	0.674								
10/21/2022	WL_BFWB_OUT_SP21	N									
10/22/2022	WL_LCI_SP02	N	0.179								
10/22/2022	WL_WLCI_SP01	N	0.25								
10/22/2022	WL_BFWB_OUT_SP21	N	0.877								
10/22/2022	WL_BFWB_OUT_SP21	N									
10/23/2022	WL_LCI_SP02	N	0.222								
10/23/2022	WL_WLCI_SP01	N	< 0.1								
10/23/2022	WL_BFWB_OUT_SP21	N	0.826								
10/23/2022	WL_BFWB_OUT_SP21	N									
10/24/2022	WL_LCI_SP02	N	0.21								
10/24/2022	WL_WLCI_SP01	N	0.281								
10/24/2022	WL_BFWB_OUT_SP21	N	1.03								
10/24/2022	WL_BFWB_OUT_SP21	N									
10/25/2022	WL_LCI_SP02	N	0.246								
10/25/2022	WL_WLCI_SP01	N	0.161								
10/25/2022	WL_BFWB_OUT_SP21	N	0.723		< 0.010						
10/25/2022	WL_BFWB_OUT_SP21	N									
10/26/2022	WL_LCI_SP02	N	0.438								
10/26/2022	WL_WLCI_SP01	N	0.154								
10/26/2022	WL_BFWB_OUT_SP21	N	0.669								
10/26/2022	WL_BFWB_OUT_SP21	N									
10/27/2022	WL_LCI_SP02	N	0.612								
10/27/2022	WL_WLCI_SP01	N	1.24								
10/27/2022	WL_BFWB_OUT_SP21	N	0.798								
10/27/2022	WL_BFWB_OUT_SP21	N									
10/27/2022	WL_WLCI_SP01	N	0.201								
10/28/2022	WL_LCI_SP02	N	0.811								
10/28/2022	WL_WLCI_SP01	N	0.219								
10/28/2022	WL_BFWB_OUT_SP21	N	0.793								
10/28/2022	WL_BFWB_OUT_SP21	N									
10/29/2022	WL_LCI_SP02	N	0.247								
10/29/2022	WL_WLCI_SP01	N	0.147								
10/29/2022	WL_BFWB_OUT_SP21	N	0.804								
10/29/2022	WL_BFWB_OUT_SP21	N									
10/30/2022	WL_LCI_SP02	N	0.402								
10/30/2022	WL_WLCI_SP01	N	0.106								
10/30/2022	WL_BFWB_OUT_SP21	N	0.831								
10/30/2022	WL_BFWB_OUT_SP21	N									
10/31/2022	WL_LCI_SP02	N	0.339			4.07	4.21	< 0.50	< 0.50	14.2	13.8
10/31/2022	WL_WLCI_SP01	N	0.315			22.3	24.8	< 1.00	< 1.00	46.0	50.6
10/31/2022	WL_BFWB_OUT_SP21	N	0.967	0.58		9.66	10.0	< 0.50	< 0.50	< 3.0	< 3.0
10/31/2022	WL_BFWB_OUT_SP21	N									
11/1/2022	WL_LCI_SP02	N	0.305								
11/1/2022	WL_WLCI_SP01	N	0.314								
11/1/2022	WL_BFWB_OUT_SP21	N	0.751		< 0.010						
11/1/2022	WL_BFWB_OUT_SP21	N									
11/2/2022	WL_LCI_SP02	N	0.401								
11/2/2022	WL_WLCI_SP01	N	0.188								
11/2/2022	WL_BFWB_OUT_SP21	N	0.921								
11/2/2022	WL_BFWB_OUT_SP21	N									
11/3/2022	WL_LCI_SP02	N	0.288								
11/3/2022	WL_WLCI_SP01	N	0.272								
11/3/2022	WL_BFWB_OUT_SP21	N	0.805								
11/3/2022	WL_BFWB_OUT_SP21	N									
11/4/2022	WL_LCI_SP02	N	0.189								
11/4/2022	WL_WLCI_SP01	N	0.164								

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11/4/2022	WL_BFWB_OUT_SP21	N	0.824								
11/4/2022	WL_BFWB_OUT_SP21	N									
11/5/2022	WL_LCI_SP02	N	0.343								
11/5/2022	WL_WLCI_SP01	N	0.124								
11/5/2022	WL_BFWB_OUT_SP21	N	0.981								
11/5/2022	WL_BFWB_OUT_SP21	N									
11/6/2022	WL_LCI_SP02	N	0.779								
11/6/2022	WL_WLCI_SP01	N	0.36								
11/6/2022	WL_BFWB_OUT_SP21	N	0.905								
11/6/2022	WL_BFWB_OUT_SP21	N									
11/7/2022	WL_LCI_SP02	N	0.362								
11/7/2022	WL_WLCI_SP01	N	0.344								
11/7/2022	WL_BFWB_OUT_SP21	N	0.945								
11/7/2022	WL_BFWB_OUT_SP21	N									
11/8/2022	WL_LCI_SP02	N	0.381								
11/8/2022	WL_WLCI_SP01	N	0.202								
11/8/2022	WL_BFWB_OUT_SP21	N	0.741		< 0.010						
11/8/2022	WL_BFWB_OUT_SP21	N									
11/9/2022	WL_LCI_SP02	N	0.245								
11/9/2022	WL_WLCI_SP01	N	0.287								
11/9/2022	WL_BFWB_OUT_SP21	N	2.23								
11/9/2022	WL_BFWB_OUT_SP21	N									
11/10/2022	WL_LCI_SP02	N	0.223								
11/10/2022	WL_WLCI_SP01	N	0.442								
11/10/2022	WL_BFWB_OUT_SP21	N	0.789								
11/10/2022	WL_BFWB_OUT_SP21	N									
11/11/2022	WL_LCI_SP02	N	0.4								
11/11/2022	WL_WLCI_SP01	N	0.222								
11/11/2022	WL_BFWB_OUT_SP21	N	0.771								
11/11/2022	WL_BFWB_OUT_SP21	N									
11/12/2022	WL_LCI_SP02	N	0.321								
11/12/2022	WL_WLCI_SP01	N	0.315								
11/12/2022	WL_BFWB_OUT_SP21	N	0.873								
11/12/2022	WL_BFWB_OUT_SP21	N									
11/13/2022	WL_LCI_SP02	N	0.263								
11/13/2022	WL_WLCI_SP01	N	0.228								
11/13/2022	WL_BFWB_OUT_SP21	N	0.851								
11/13/2022	WL_BFWB_OUT_SP21	N									
11/14/2022	WL_BFWB_OUT_SP21	N									
11/14/2022	WL_LCI_SP02	N	0.494	0.11		4.70	4.57	< 0.50	< 0.50	12.8	12.8
11/14/2022	WL_WLCI_SP01	N	0.711	< 0.10		24.4	24.7	< 1.00	< 1.00	18.9	18.5
11/14/2022	WL_BFWB_OUT_SP21	N	1.6	0.45		9.20	9.47	< 0.50	< 0.50	< 3.0	< 3.0
11/14/2022	WL_BFWB_OUT_SP21	N									
11/15/2022	WL_LCI_SP02	N	0.186								
11/15/2022	WL_WLCI_SP01	N	0.469								
11/15/2022	WL_BFWB_OUT_SP21	N	0.901		< 0.010						
11/15/2022	WL_BFWB_OUT_SP21	N									
11/15/2022	WL_BFWB_OUT_SP21	N									
11/16/2022	WL_LCI_SP02	N	0.592								
11/16/2022	WL_WLCI_SP01	N	0.417								
11/16/2022	WL_BFWB_OUT_SP21	N	0.781								
11/16/2022	WL_BFWB_OUT_SP21	N									
11/17/2022	WL_LCI_SP02	N	0.152								
11/17/2022	WL_WLCI_SP01	N	0.252								
11/17/2022	WL_BFWB_OUT_SP21	N	0.609								
11/17/2022	WL_BFWB_OUT_SP21	N									
11/18/2022	WL_LCI_SP02	N	0.152								
11/18/2022	WL_WLCI_SP01	N	0.164								
11/18/2022	WL_BFWB_OUT_SP21	N	1								
11/18/2022	WL_BFWB_OUT_SP21	N									
11/19/2022	WL_LCI_SP02	N	0.355								
11/19/2022	WL_WLCI_SP01	N	0.136								
11/19/2022	WL_BFWB_OUT_SP21	N	0.653								
11/19/2022	WL_BFWB_OUT_SP21	N									
11/20/2022	WL_LCI_SP02	N	0.152								
11/20/2022	WL_WLCI_SP01	N	0.47								

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11/20/2022	WL_BFWB_OUT_SP21	N	0.992								
11/20/2022	WL_BFWB_OUT_SP21	N									
11/21/2022	WL_LCI_SP02	N	0.184								
11/21/2022	WL_WLCI_SP01	N	0.239								
11/21/2022	WL_BFWB_OUT_SP21	N	1.03								
11/21/2022	WL_BFWB_OUT_SP21	N									
11/22/2022	WL_LCI_SP02	N	0.54								
11/22/2022	WL_WLCI_SP01	N	0.963								
11/22/2022	WL_BFWB_OUT_SP21	N	0.842		< 0.010						
11/22/2022	WL_BFWB_OUT_SP21	N									
11/23/2022	WL_LCI_SP02	N	0.175								
11/23/2022	WL_WLCI_SP01	N	0.514								
11/23/2022	WL_BFWB_OUT_SP21	N	1.07								
11/23/2022	WL_BFWB_OUT_SP21	N									
11/24/2022	WL_LCI_SP02	N	0.225								
11/24/2022	WL_WLCI_SP01	N	0.154								
11/24/2022	WL_BFWB_OUT_SP21	N	0.87								
11/24/2022	WL_BFWB_OUT_SP21	N									
11/25/2022	WL_LCI_SP02	N	0.357								
11/25/2022	WL_WLCI_SP01	N	0.1								
11/25/2022	WL_BFWB_OUT_SP21	N	0.914								
11/25/2022	WL_BFWB_OUT_SP21	N									
11/26/2022	WL_LCI_SP02	N	0.325								
11/26/2022	WL_WLCI_SP01	N	0.366								
11/26/2022	WL_BFWB_OUT_SP21	N	1.07								
11/26/2022	WL_BFWB_OUT_SP21	N									
11/27/2022	WL_LCI_SP02	N	0.356								
11/27/2022	WL_WLCI_SP01	N	< 0.1								
11/27/2022	WL_BFWB_OUT_SP21	N	0.769								
11/27/2022	WL_BFWB_OUT_SP21	N									
11/28/2022	WL_LCI_SP02	N	0.215			4.38	4.34	< 0.50	< 0.50	11.2	11.9
11/28/2022	WL_WLCI_SP01	N	0.192			23.8	22.0	< 1.00	< 1.00	13.0	13.4
11/28/2022	WL_BFWB_OUT_SP21	N	0.978	0.52		8.92	9.57	< 0.50	< 0.50	3.1	< 3.0
11/28/2022	WL_BFWB_OUT_SP21	N									
11/29/2022	WL_LCI_SP02	N	0.163								
11/29/2022	WL_WLCI_SP01	N	0.35								
11/29/2022	WL_BFWB_OUT_SP21	N	0.74		< 0.010						
11/29/2022	WL_BFWB_OUT_SP21	N									
11/30/2022	WL_LCI_SP02	N	0.157								
11/30/2022	WL_WLCI_SP01	N	0.214								
11/30/2022	WL_BFWB_OUT_SP21	N	0.95								
11/30/2022	WL_BFWB_OUT_SP21	N									
12/1/2022	WL_LCI_SP02	N	0.227								
12/1/2022	WL_WLCI_SP01	N	0.33								
12/1/2022	WL_BFWB_OUT_SP21	N	0.803								
12/1/2022	WL_BFWB_OUT_SP21	N									
12/2/2022	WL_LCI_SP02	N	0.274								
12/2/2022	WL_WLCI_SP01	N	0.115								
12/2/2022	WL_BFWB_OUT_SP21	N	0.951								
12/2/2022	WL_BFWB_OUT_SP21	N									
12/3/2022	WL_LCI_SP02	N	0.202								
12/3/2022	WL_WLCI_SP01	N	0.196								
12/3/2022	WL_BFWB_OUT_SP21	N	0.959								
12/3/2022	WL_BFWB_OUT_SP21	N									
12/4/2022	WL_LCI_SP02	N	0.154								
12/4/2022	WL_WLCI_SP01	N	0.366								
12/4/2022	WL_BFWB_OUT_SP21	N	0.912								
12/4/2022	WL_BFWB_OUT_SP21	N									
12/5/2022	WL_LCI_SP02	N	0.377								
12/5/2022	WL_WLCI_SP01	N	0.189								
12/5/2022	WL_BFWB_OUT_SP21	N	0.863								
12/5/2022	WL_BFWB_OUT_SP21	N									
12/6/2022	WL_LCI_SP02	N	0.125								
12/6/2022	WL_WLCI_SP01	N	0.184								
12/6/2022	WL_BFWB_OUT_SP21	N	0.777		< 0.010						
12/6/2022	WL_BFWB_OUT_SP21	N									

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12/7/2022	WL_LCI_SP02	N	0.345								
12/7/2022	WL_WLCI_SP01	N	0.307								
12/7/2022	WL_BFWB_OUT_SP21	N	1.12								
12/7/2022	WL_BFWB_OUT_SP21	N									
12/8/2022	WL_LCI_SP02	N	0.262								
12/8/2022	WL_WLCI_SP01	N	0.204								
12/8/2022	WL_BFWB_OUT_SP21	N	0.93								
12/8/2022	WL_BFWB_OUT_SP21	N									
12/9/2022	WL_LCI_SP02	N	0.273								
12/9/2022	WL_WLCI_SP01	N	0.207								
12/9/2022	WL_BFWB_OUT_SP21	N	1.13								
12/9/2022	WL_BFWB_OUT_SP21	N									
12/10/2022	WL_LCI_SP02	N	0.309								
12/10/2022	WL_WLCI_SP01	N	0.181								
12/10/2022	WL_BFWB_OUT_SP21	N	1.11								
12/10/2022	WL_BFWB_OUT_SP21	N									
12/11/2022	WL_LCI_SP02	N	0.29								
12/11/2022	WL_WLCI_SP01	N	0.293								
12/11/2022	WL_BFWB_OUT_SP21	N	1.19								
12/11/2022	WL_BFWB_OUT_SP21	N									
12/12/2022	WL_LCI_SP02	N	0.241	0.32		4.53	4.48	< 0.50	< 0.50	10.6	48.8
12/12/2022	WL_WLCI_SP01	N	0.214	< 0.10		21.0	20.3	< 1.00	< 1.00	10.0	10.3
12/12/2022	WL_BFWB_OUT_SP21	N	1.14	0.88		7.92	7.52	< 0.50	< 0.50	< 3.0	< 3.0
12/12/2022	WL_BFWB_OUT_SP21	N									
12/13/2022	WL_LCI_SP02	N	0.299								
12/13/2022	WL_WLCI_SP01	N	0.16								
12/13/2022	WL_BFWB_OUT_SP21	N	0.759		< 0.010						
12/13/2022	WL_BFWB_OUT_SP21	N									
12/14/2022	WL_LCI_SP02	N	0.413								
12/14/2022	WL_WLCI_SP01	N	0.193								
12/14/2022	WL_BFWB_OUT_SP21	N	1.06								
12/14/2022	WL_BFWB_OUT_SP21	N									
12/15/2022	WL_LCI_SP02	N	0.167								
12/15/2022	WL_WLCI_SP01	N	0.166								
12/15/2022	WL_BFWB_OUT_SP21	N	0.551								
12/15/2022	WL_BFWB_OUT_SP21	N									
12/16/2022	WL_LCI_SP02	N	0.2								
12/16/2022	WL_WLCI_SP01	N	< 0.1								
12/16/2022	WL_BFWB_OUT_SP21	N	0.675								
12/16/2022	WL_BFWB_OUT_SP21	N									
12/17/2022	WL_LCI_SP02	N	0.257								
12/17/2022	WL_WLCI_SP01	N	0.13								
12/17/2022	WL_BFWB_OUT_SP21	N	0.786								
12/17/2022	WL_BFWB_OUT_SP21	N									
12/18/2022	WL_LCI_SP02	N	0.321								
12/18/2022	WL_WLCI_SP01	N	0.399								
12/18/2022	WL_BFWB_OUT_SP21	N	0.731								
12/18/2022	WL_BFWB_OUT_SP21	N									
12/19/2022	WL_LCI_SP02	N	0.318								
12/19/2022	WL_WLCI_SP01	N	0.211								
12/19/2022	WL_BFWB_OUT_SP21	N	1.65								
12/19/2022	WL_BFWB_OUT_SP21	N									
12/20/2022	WL_LCI_SP02	N	0.223								
12/20/2022	WL_WLCI_SP01	N	< 0.1								
12/20/2022	WL_BFWB_OUT_SP21	N	0.744		< 0.010						
12/20/2022	WL_BFWB_OUT_SP21	N									
12/21/2022	WL_LCI_SP02	N	0.481								
12/21/2022	WL_WLCI_SP01	N	0.162								
12/21/2022	WL_BFWB_OUT_SP21	N	0.776								
12/21/2022	WL_BFWB_OUT_SP21	N									
12/22/2022	WL_LCI_SP02	N	0.238								
12/22/2022	WL_WLCI_SP01	N	0.2								
12/22/2022	WL_BFWB_OUT_SP21	N	0.677								
12/22/2022	WL_BFWB_OUT_SP21	N									
12/23/2022	WL_LCI_SP02	N	0.431								
12/23/2022	WL_WLCI_SP01	N	0.183								

		CHEMICAL_NAME FRACTION REPORT_RESULT_UNIT	TURBIDITY, FIELD N ntu	Turbidity, Lab N ntu	Unknown selenium species – all other selenium species which elute from the applied chromatographic column and are not identified through retention time matching with known standards D ug/l	Uranium D ug/l	Uranium T ug/l	Vanadium D ug/l	Vanadium T ug/l	Zinc D ug/l	Zinc T ug/l
12/23/2022	WL_BFWB_OUT_SP21	N	0.679								
12/23/2022	WL_BFWB_OUT_SP21	N									
12/24/2022	WL_BFWB_OUT_SP21	N	1.27								
12/24/2022	WL_BFWB_OUT_SP21	N									
12/24/2022	WL_LCI_SP02	N	0.282								
12/24/2022	WL_WLCI_SP01	N	0.152								
12/25/2022	WL_LCI_SP02	N	0.447								
12/25/2022	WL_WLCI_SP01	N	0.191								
12/25/2022	WL_BFWB_OUT_SP21	N	0.685								
12/25/2022	WL_BFWB_OUT_SP21	N									
12/26/2022	WL_LCI_SP02	N	0.248								
12/26/2022	WL_WLCI_SP01	N	0.474								
12/26/2022	WL_BFWB_OUT_SP21	N	0.991		< 0.010						
12/26/2022	WL_BFWB_OUT_SP21	N									
12/27/2022	WL_LCI_SP02	N	0.498			4.28	4.71	< 0.50	< 0.50	10.0	10.0
12/27/2022	WL_WLCI_SP01	N	0.557			19.7	23.8	< 1.00	< 1.00	8.0	8.2
12/27/2022	WL_BFWB_OUT_SP21	N	0.889	0.53		7.02	7.45	< 0.50	< 0.50	< 3.0	< 3.0
12/27/2022	WL_BFWB_OUT_SP21	N									
12/28/2022	WL_LCI_SP02	N	0.488								
12/28/2022	WL_WLCI_SP01	N	0.192								
12/28/2022	WL_BFWB_OUT_SP21	N	0.718								
12/28/2022	WL_BFWB_OUT_SP21	N									
12/29/2022	WL_LCI_SP02	N	0.214								
12/29/2022	WL_WLCI_SP01	N	0.164								
12/29/2022	WL_BFWB_OUT_SP21	N	0.81								
12/29/2022	WL_BFWB_OUT_SP21	N									
12/30/2022	WL_LCI_SP02	N	0.27								
12/30/2022	WL_WLCI_SP01	N	0.228								
12/30/2022	WL_BFWB_OUT_SP21	N	1.05								
12/30/2022	WL_BFWB_OUT_SP21	N									
12/31/2022	WL_LCI_SP02	N	0.254								
12/31/2022	WL_WLCI_SP01	N	0.147								
12/31/2022	WL_BFWB_OUT_SP21	N	0.901								
12/31/2022	WL_BFWB_OUT_SP21	N									
1/1/2023	WL_LCI_SP02	N	0.424								
1/1/2023	WL_WLCI_SP01	N	0.187								
1/1/2023	WL_BFWB_OUT_SP21	N	0.918								
1/1/2023	WL_BFWB_OUT_SP21	N									

		Parameter	48-h Static acute lethality test using Daphnia ma	96-Hr 100% Conc. Acute lethality test for R. Trout	Alkalinity, Total (As CaCO3)	Aluminum	Aluminum	Antimony	Antimony	Arsenic	Arsenic	Barium	Barium	Beryllium	Beryllium	BOD	Bismuth	Bismuth	Boron	Boron	Bromide	Cadmium	Cadmium	Calcium	Carbon, Dissolved Organic	Carbon, Total Organic
		Fraction	N	N	N	D	T	D	T	D	T	D	T	D	T	N	D	T	D	T	N	D	T	T	D	T
		Unit	%	%	mg/l	mg/l	mg/l	ug/l	ug/l	ug/l	ug/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
1/1/2022	E321811	F2_ECIN			447																< 0.250				0.65	
1/1/2022	E321791	F2_NWPI			263																< 0.250				0.59	
1/1/2022	E321812	F2_BPO			474											< 2.0					0.599				0.96	
1/1/2022	E321812	F2_BPO																								
1/2/2022	E321812	F2_BPO																								
1/2/2022	E321811	F2_ECIN			454																< 0.250				< 0.50	
1/2/2022	E321791	F2_NWPI			261																< 0.250				< 0.50	
1/2/2022	E321812	F2_BPO			473											< 2.0					0.605				0.88	
1/2/2022	E321812	F2_BPO																								
1/3/2022	E321811	F2_ECIN			441	< 0.0020		< 0.20		0.27		0.0617		< 0.040		2.0	< 0.000100		< 0.020		< 0.250	0.0654			< 0.50	
1/3/2022	E321791	F2_NWPI			268	0.0015		1.92		0.19		0.0428		< 0.020		< 2.0	< 0.000050		0.040		< 0.250	0.616			< 0.50	
1/3/2022	E206231	EV_GT1	0	0	247	0.0020	0.0233	0.47	0.50	0.34	0.46	0.0467	0.0529	< 0.040	< 0.040	< 2.0	< 0.000100	< 0.000100	< 0.020	< 0.020	< 0.250	0.145	0.207	239	1.88	1.99
1/3/2022	E321812	F2_BPO			479	< 0.0010		0.50		0.41		0.0106		< 0.020		< 2.0	< 0.000050		0.030		0.510	0.213			0.82	
1/3/2022	E321812	F2_BPO																								
1/3/2022	E102685	EV_BC1	0	0	332	< 0.0020	< 0.0060	0.54	0.62	0.24	0.40	0.0567	0.0664	< 0.040	< 0.040	2.0	< 0.000100	< 0.000100	0.074	0.074	< 0.250	0.0954	0.113	275	1.13	1.09
1/3/2022	E321812	F2_BPO																								
1/4/2022	E321812	F2_BPO																								
1/4/2022	E321812	F2_BPO																								
1/4/2022	E321812	F2_BPO	0	0	484	0.0061	< 0.0060	0.51	0.52	0.37	0.50	0.0121	0.0106	< 0.040	< 0.040	< 2.0	< 0.000100	< 0.000100	0.037	0.034	0.541	0.240	0.549	271	1.22	1.26
1/4/2022	E321811	F2_ECIN			445	0.0014	< 0.0030	0.20	0.20	0.27	0.30	0.0717	0.0681	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.014	0.014	< 0.250	0.102	0.0980	286	0.62	0.64
1/4/2022	E321791	F2_NWPI			281	0.0015	0.0320	1.94	2.06	0.22	0.29	0.0486	0.0516	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.047	0.049	< 0.250	0.712	0.682	244	0.80	1.19
1/4/2022	E321812	F2_BPO																								
1/5/2022	E321812	F2_BPO			268											< 2.0					0.439				0.82	
1/5/2022	E321812	F2_BPO																								
1/5/2022	E321811	F2_ECIN			461																< 0.250				0.54	
1/5/2022	E321791	F2_NWPI			271																< 0.250				< 0.50	
1/5/2022	0200097	EV_EC1			416	< 0.0010	< 0.0060	0.44	0.45	0.36	0.29	0.0280	0.0274	< 0.020	< 0.040	< 2.0		< 0.000100		0.032	< 0.250	0.0230	0.0306	290	0.85	1.68
1/5/2022	E321812	F2_BPO																								
1/5/2022	0200203	EV_MC3			145	0.0017	0.0185	< 0.10	< 0.10	0.16	0.16	0.111	0.108	< 0.020	< 0.020	< 2.0		< 0.000050		0.010	< 0.050	0.0200	0.0235	60.1	2.15	1.79
1/6/2022	E321811	F2_ECIN			449	< 0.0010		0.20		0.24		0.0677		< 0.020		< 2.0	< 0.000050		0.014		< 0.250	0.0866			< 0.50	
1/6/2022	E321791	F2_NWPI			266	0.0023		1.93		0.18		0.0444		< 0.020		< 2.0	< 0.000050		0.049		< 0.250	0.631			< 0.50	
1/6/2022	E321812	F2_BPO			470	< 0.0020		0.50		0.39		0.0109		< 0.040		< 2.0	< 0.000100		0.036		0.549	0.338			0.68	
1/6/2022	E321814	EV_ECOUT			464	0.0010	0.0048	0.41	0.45	0.30	0.39	0.0259	0.0262	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.028	0.031	0.344	0.282	0.420	294	0.54	0.63
1/6/2022	310168	EV_MC2A			169	0.0025	0.0118	< 0.10	< 0.10	0.14	0.15	0.105	0.107	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.011	0.012	< 0.050	0.0249	0.0287	71.2	0.66	0.64
1/6/2022	E300091	EV_MC2			174	0.0023	0.0125	< 0.10	0.10	0.14	0.16	0.106	0.104	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.012	0.013	< 0.050	0.0186	0.0278	75.7	0.57	0.65
1/6/2022	E321812	F2_BPO																								
1/6/2022	200393	EV_ER1			172	0.0028	0.0141	< 0.10	0.16	0.18	0.19	0.0799	0.0830	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	< 0.010	< 0.010	< 0.050	0.0109	0.0205	73.0	< 0.50	< 0.50
1/7/2022	E321811	F2_ECIN			488																< 0.250				< 0.50	
1/7/2022	E321791	F2_NWPI			279																< 0.250				< 0.50	
1/7/2022	E321812	F2_BPO			498											< 2.0					0.419				0.70	
1/7/2022	E321812	F2_BPO																								
1/7/2022	E321812	F2_BPO																								
1/8/2022	E321811	F2_ECIN			445																< 0.250				< 0.50	
1/8/2022	E321791	F2_NWPI			271																< 0.250				0.69	
1/8/2022	E321812	F2_BPO			470											< 2.0					0.536				1.04	
1/8/2022	E321812	F2_BPO																								
1/8/2022	E321812	F2_BPO																								
1/9/2022	E321811	F2_ECIN			454																< 0.250				1.28	

		Parameter	48-h Static acute lethality test using Daphnia ma	96-Hr 100% Conc. Acute lethality test for R. Trout	Alkalinity, Total (As CaCO3)	Aluminum	Aluminum	Antimony	Antimony	Arsenic	Arsenic	Barium	Barium	Beryllium	Beryllium	BOD	Bismuth	Bismuth	Boron	Boron	Bromide	Cadmium	Cadmium	Calcium	Carbon, Dissolved Organic	Carbon, Total Organic
		Fraction	N	N	N	D	T	D	T	D	T	D	T	D	T	N	D	T	D	T	N	D	T	T	D	T
		Unit	%	%	mg/l	mg/l	mg/l	ug/l	ug/l	ug/l	ug/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
1/9/2022	E321791	F2_NWPI			268																< 0.250				0.73	
1/9/2022	E321812	F2_BPO			469											< 2.0					0.463				1.16	
1/9/2022	E321812	F2_BPO																								
1/9/2022	E321812	F2_BPO																								
1/10/2022	E321811	F2_ECIN			440	0.0034	< 0.0030	0.21	0.22	0.25	0.28	0.0725	0.0651	< 0.040	< 0.020	< 2.0	< 0.000100	< 0.000050	< 0.020	0.014	< 0.250	0.0903	0.0830	255	< 0.50	< 0.50
1/10/2022	E321791	F2_NWPI			265	0.0014	0.0236	2.02	2.11	0.22	0.21	0.0445	0.0464	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.048	0.047	< 0.250	0.667	0.692	213	< 0.50	< 0.50
1/10/2022	E321814	EV_ECOUT																								
1/10/2022	E321812	F2_BPO																								
1/10/2022	E321812	F2_BPO	0	0	476	0.0022	0.0057	0.54	0.61	0.38	0.48	0.0117	0.0110	< 0.040	< 0.020	< 2.0	< 0.000100	< 0.000050	0.034	0.035	0.548	0.308	0.587	252	1.03	0.97
1/10/2022	E321812	F2_BPO																								
1/11/2022	E321811	F2_ECIN			450	< 0.0010		0.20		0.28		0.0595		< 0.020		< 2.0	< 0.000050		0.012		< 0.250	0.0888			< 0.50	
1/11/2022	E321791	F2_NWPI			272	0.0016		1.96		0.18		0.0424		< 0.020		< 2.0	< 0.000050		0.047		< 0.250	0.673			< 0.50	
1/11/2022	0200097	EV_EC1																								
1/11/2022	E321812	F2_BPO																								
1/11/2022	E321812	F2_BPO			480	0.0013		0.49		0.39		0.0109		< 0.020		< 2.0	< 0.000050		0.031		0.509	0.283			0.58	
1/11/2022	E321812	F2_BPO																								
1/12/2022	E321811	F2_ECIN			471																< 0.250				0.61	
1/12/2022	E321791	F2_NWPI			279																< 0.250				0.64	
1/12/2022	E321812	F2_BPO																								
1/12/2022	E321812	F2_BPO			499											< 2.0					0.390				1.01	
1/12/2022	E321812	F2_BPO																								
1/13/2022	E321811	F2_ECIN			471	0.0055		0.20		0.25		0.0638		< 0.020		< 2.0	< 0.000050		0.014		< 0.250	0.0760			< 0.50	
1/13/2022	E321791	F2_NWPI			276	0.0019		1.84		0.17		0.0412		< 0.020		< 2.0	< 0.000050		0.046		1.08	0.694			0.62	
1/13/2022	E321814	EV_ECOUT																								
1/13/2022	E321812	F2_BPO			490	< 0.0010		0.50		0.36		0.0104		< 0.020		< 2.0	< 0.000050		0.032		0.496	0.357			1.00	
1/13/2022	E321814	EV_ECOUT			473	0.0012	0.0031	0.34	0.34	0.25	0.30	0.0422	0.0467	< 0.020	< 0.020		< 0.000050	< 0.000050	0.021	0.021	< 0.250	0.239	0.292	286	0.87	1.49
1/13/2022	E321812	F2_BPO																								
1/13/2022	0200097	EV_EC1																								
1/14/2022	E321811	F2_ECIN			479																< 0.250				< 0.50	
1/14/2022	E321791	F2_NWPI			282																< 0.250				0.69	
1/14/2022	E321812	F2_BPO																								
1/14/2022	E321812	F2_BPO			496											< 2.0					0.488				1.02	
1/14/2022	E321812	F2_BPO																								
1/15/2022	E321811	F2_ECIN			479																< 0.250				< 0.50	
1/15/2022	E321791	F2_NWPI			279																< 0.250				< 0.50	
1/15/2022	E321812	F2_BPO			485											< 2.0					0.444				0.98	
1/15/2022	E321812	F2_BPO																								
1/16/2022	E321811	F2_ECIN			468																< 0.250				0.86	
1/16/2022	E321791	F2_NWPI			275																< 0.250				< 0.50	
1/16/2022	E321812	F2_BPO			500											< 2.0					0.422				1.02	
1/16/2022	E321812	F2_BPO																								
1/17/2022	E321812	F2_BPO	3	0	494	0.0023	< 0.0030	0.56	0.54	0.34	0.45	0.0109	0.0106	< 0.040	< 0.020	< 2.0	< 0.000100	< 0.000050	0.034	0.035	0.402	0.303	0.561	268	1.22	1.37
1/17/2022	E321811	F2_ECIN			475	0.0013	< 0.0030	0.22	0.21	0.23	0.27	0.0648	0.0617	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.015	0.014	< 0.250	0.0948	0.0881	266	0.68	0.70
1/17/2022	E321791	F2_NWPI			270	0.0026	0.0311	1.96	1.90	< 0.20	0.23	0.0409	0.0458	< 0.040	< 0.020	< 2.0	< 0.000100	< 0.000050	0.050	0.047	< 0.250	0.689	0.707	222	0.96	0.72
1/17/2022	0200097	EV_EC1			434	< 0.0010	< 0.0030	0.41	0.42	0.29	0.33	0.0230	0.0222	< 0.020	< 0.020		< 0.000050	< 0.000050	0.028	0.028	0.316	0.0220	0.0267	242	1.05	0.98
1/17/2022	E321812	F2_BPO																								
1/17/2022	0200097	EV_EC1	0	0	436	0.0013	< 0.0030	0.43	0.42	0.28	0.33	0.0234	0.0224	< 0.020	< 0.020	< 2.0		< 0.000050		0.029	0.346	< 0.0200	0.0260	240	0.71	0.77
1/17/2022	0200203	EV_MC3			155	0.0020	0.0180	< 0.10	< 0.10	0.17	0.16	0.111	0.101	< 0.020	< 0.020	< 2.0		< 0.000050		0.010	< 0.050	0.0170	0.0272	53.2	1.05	1.00

		Parameter	48-h Static acute lethality test using Daphnia ma	96-Hr 100% Conc. Acute lethality test for R. Trout	Alkalinity, Total (As CaCO3)	Aluminum	Aluminum	Antimony	Antimony	Arsenic	Arsenic	Barium	Barium	Beryllium	Beryllium	BOD	Bismuth	Bismuth	Boron	Boron	Bromide	Cadmium	Cadmium	Calcium	Carbon, Dissolved Organic	Carbon, Total Organic
		Fraction	N	N	N	D	T	D	T	D	T	D	T	D	T	N	D	T	D	T	N	D	T	T	D	T
		Unit	%	%	mg/l	mg/l	mg/l	ug/l	ug/l	ug/l	ug/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
1/17/2022	310168	EV_MC2A			174	0.0026	0.0120	< 0.10	< 0.10	0.15	0.18	0.108	0.105	< 0.020	< 0.020	< 2.0		< 0.000050		0.011	< 0.050	0.0180	0.0187	64.0	1.14	1.20
1/17/2022	0200203	EV_MC3			148	0.0025	0.0347	< 0.10	< 0.10	0.16	0.20	0.109	0.109	< 0.020	< 0.020		< 0.000050	< 0.000050	0.010	< 0.010	< 0.050	0.0210	0.0235	54.9	1.07	0.97
1/17/2022	E321814	EV_ECOUT	0	0	493	0.0015	< 0.0030	0.34	0.36	0.28	0.36	0.0463	0.0380	< 0.020	< 0.020	< 2.0		< 0.000050		0.024	< 0.250	0.233	0.306	263	0.94	0.79
1/17/2022	200393	EV_ER1			178	0.0012	0.0112	< 0.10	< 0.10	0.19	0.19	0.0780	0.0730	< 0.020	< 0.020	< 2.0		< 0.000050		< 0.010	< 0.050	0.0105	0.0173	65.7	0.54	0.62
1/17/2022	E300091	EV_MC2			176	0.0019	0.0248	< 0.10	< 0.10	0.16	0.21	0.106	0.0958	< 0.020	< 0.020	< 2.0		< 0.000050		0.012	< 0.050	0.0202	0.0366	66.9	0.76	0.97
1/17/2022	E206231	EV_GT1	0	0	250	0.0032	0.0265	0.49	0.52	0.38	0.43	0.0472	0.0488	< 0.040	< 0.040		< 0.000100	< 0.000100	< 0.020	< 0.020	< 0.250	0.144	0.174	229	2.12	2.22
1/17/2022	E321812	F2_BPO																								
1/18/2022	E321812	F2_BPO			484	< 0.0020		0.53		0.34		0.0103		< 0.040		< 2.0	< 0.000100		0.034			0.414			0.92	
1/18/2022	E321811	F2_ECIN			473	< 0.0020		< 0.20		0.22		0.0634		< 0.040		< 2.0	< 0.000100		< 0.020			0.0792			0.82	
1/18/2022	E321791	F2_NWPI			277	< 0.0020		1.76		< 0.20		0.0395		< 0.040		< 2.0	< 0.000100		0.044			0.647			0.52	
1/18/2022	E206231	EV_GT1	0	0	252	0.0017	0.0281	0.49	0.50	0.39	0.48	0.0478	0.0496	< 0.020	< 0.040	< 2.0	< 0.000050	< 0.000100	0.017	< 0.020	< 0.250	0.115	0.169	238	2.35	2.44
1/18/2022	E102685	EV_BC1	0		310	0.0035	0.0103	0.57	0.55	0.23	0.27	0.0573	0.0674	< 0.040	< 0.040	< 2.0	< 0.000100	< 0.000100	0.068	0.068	< 0.250	0.118	0.114	275	1.39	1.40
1/18/2022	200393	EV_ER1			164	0.0027	0.0118	< 0.10	< 0.10	0.19	0.21	0.0803	0.0787	< 0.020	< 0.020		< 0.000050	< 0.000050	< 0.010	< 0.010	< 0.050	0.0129	0.0166	69.0	0.64	< 0.50
1/18/2022	E102685	EV_BC1	0	0	314	0.0031	0.0070	0.58	0.60	0.23	0.25	0.0512	0.0619	< 0.040	< 0.040		< 0.000100	< 0.000100	0.070	0.068	< 0.250	0.112	0.124	277	1.36	1.31
1/18/2022	E300091	EV_MC2			176	0.0018	0.0211	< 0.10	< 0.10	0.16	0.20	0.108	0.107	< 0.020	< 0.020		< 0.000050	< 0.000050	0.013	0.013	< 0.050	0.0257	0.0333	76.2	0.84	0.76
1/18/2022	E321812	F2_BPO																								
1/19/2022	E321811	F2_ECIN			459																< 0.250				< 0.50	
1/19/2022	E321791	F2_NWPI			274																< 0.250				< 0.50	
1/19/2022	E321812	F2_BPO																								
1/19/2022	E321812	F2_BPO			492											< 2.0					0.386				1.05	
1/19/2022	E321812	F2_BPO																								
1/20/2022	E321811	F2_ECIN			473	< 0.0010		0.21		0.26		0.0681		< 0.020		< 2.0	< 0.000050		0.013		< 0.250	0.101			0.86	
1/20/2022	E321791	F2_NWPI			265	0.0012		1.87		0.20		0.0398		< 0.020		< 2.0	< 0.000050		0.044		< 0.250	0.694			0.78	
1/20/2022	E321814	EV_ECOUT																								
1/20/2022	E321812	F2_BPO			487	< 0.0010		0.53		0.41		0.0109		< 0.020		< 2.0	< 0.000050		0.032		0.472	0.337			1.19	
1/20/2022	E321812	F2_BPO																								
1/20/2022	0200097	EV_EC1																								
1/20/2022	E321812	F2_BPO																								
1/21/2022	E321811	F2_ECIN			380																< 0.250				0.64	
1/21/2022	E321811	F2_ECIN																			< 0.250					
1/21/2022	E321791	F2_NWPI			232																< 0.250				0.75	
1/21/2022	E321812	F2_BPO			414											< 2.0					0.484				0.72	
1/21/2022	E321812	F2_BPO																			0.484					
1/21/2022	E321812	F2_BPO																								
1/21/2022	E321812	F2_BPO																								
1/22/2022	E321811	F2_ECIN			380																< 0.250				< 0.50	
1/22/2022	E321791	F2_NWPI			228																< 0.250				< 0.50	
1/22/2022	E321812	F2_BPO			408											< 2.0					0.429				0.74	
1/22/2022	E321812	F2_BPO																								
1/22/2022	E321812	F2_BPO																								
1/23/2022	E321811	F2_ECIN			396																< 0.250				< 0.50	
1/23/2022	E321791	F2_NWPI			228																< 0.250				< 0.50	
1/23/2022	E321812	F2_BPO																								
1/23/2022	E321812	F2_BPO			420											< 2.0					0.484				0.76	
1/23/2022	E321812	F2_BPO																								
1/24/2022	E321811	F2_ECIN			460	< 0.0010	< 0.0030	0.21	0.21	0.25	0.27	0.0664	0.0635	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.014	0.014	< 0.250	0.0918	0.0962	272	0.56	0.68
1/24/2022	E321791	F2_NWPI			272	0.0018	0.0361	1.89	1.89	0.18	0.22	0.0409	0.0445	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.045	0.048	< 0.250	0.758	0.775	230	0.56	0.73
1/24/2022	E321814	EV_ECOUT																								

		Parameter	48-h Static acute lethality test using Daphnia ma	96-Hr 100% Conc. Acute lethality test for R. Trout	Alkalinity, Total (As CaCO3)	Aluminum	Aluminum	Antimony	Antimony	Arsenic	Arsenic	Barium	Barium	Beryllium	Beryllium	BOD	Bismuth	Bismuth	Boron	Boron	Bromide	Cadmium	Cadmium	Calcium	Carbon, Dissolved Organic	Carbon, Total Organic
		Fraction	N	N	N	D	T	D	T	D	T	D	T	D	T	N	D	T	D	T	N	D	T	T	D	T
		Unit	%	%	mg/l	mg/l	mg/l	ug/l	ug/l	ug/l	ug/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
1/24/2022	E321812	F2_BPO	0	0	499	< 0.0010	< 0.0060	0.50	0.51	0.35	0.44	0.0106	0.0112	< 0.020	< 0.040	< 2.0	< 0.000050	< 0.000100	0.034	0.034	0.460	0.239	0.647	265	1.12	1.14
1/24/2022	0200097	EV_EC1																								
1/24/2022	E321812	F2_BPO																								
1/25/2022	E321811	F2_ECIN			384	< 0.0010		0.21		0.24		0.0658		< 0.020		< 2.0	< 0.000050		0.012		< 0.250	0.0847			< 0.50	
1/25/2022	E321791	F2_NWPI			233	< 0.0010		1.94		0.16		0.0375		< 0.020		< 2.0	< 0.000050		0.040		< 0.250	0.729			< 0.50	
1/25/2022	E321812	F2_BPO			407	< 0.0010		0.51		0.34		0.0106		< 0.020		2.2	< 0.000050		0.031		0.401	0.287			0.86	
1/25/2022	E321812	F2_BPO																								
1/26/2022	E321811	F2_ECIN			469																< 0.250				0.70	
1/26/2022	E321791	F2_NWPI			281																< 0.250				0.74	
1/26/2022	E321812	F2_BPO			497											< 2.0					0.455				1.26	
1/26/2022	E321812	F2_BPO																								
1/26/2022	E321812	F2_BPO																								
1/27/2022	E321811	F2_ECIN			470	0.0038		0.19		0.23		0.0679		< 0.020		< 2.0	< 0.000050		0.013		< 0.250	0.0850			0.68	
1/27/2022	E321791	F2_NWPI			287	0.0013		1.84		0.15		0.0382		< 0.020		< 2.0	< 0.000050		0.043		< 0.250	0.744			0.63	
1/27/2022	E321814	EV_ECOUT																								
1/27/2022	E321812	F2_BPO			500	< 0.0010		0.49		0.35		0.0100		< 0.020		< 2.0	< 0.000050		0.032		0.338	0.217			1.19	
1/27/2022	E321812	F2_BPO																								
1/27/2022	0200097	EV_EC1																								
1/27/2022	E321812	F2_BPO																								
1/28/2022	E321811	F2_ECIN																			< 0.250					
1/28/2022	E321791	F2_NWPI																			< 0.250					
1/28/2022	E321812	F2_BPO																								
1/28/2022	E321812	F2_BPO			496											< 2.0					0.446				1.29	
1/28/2022	E321812	F2_BPO																								
1/29/2022	E321811	F2_ECIN			474																< 0.250				0.64	
1/29/2022	E321791	F2_NWPI			299																< 0.250				0.64	
1/29/2022	E321812	F2_BPO			491											< 2.0					0.433				1.07	
1/29/2022	E321812	F2_BPO																								
1/29/2022	E321812	F2_BPO																								
1/30/2022	E321811	F2_ECIN			474																< 0.250				0.62	
1/30/2022	E321791	F2_NWPI			292																< 0.250				0.63	
1/30/2022	E321812	F2_BPO			511											< 2.0					0.354				1.46	
1/30/2022	E321812	F2_BPO																								
1/30/2022	E321812	F2_BPO																								
1/31/2022	E300091	EV_MC2			182	0.0014	0.0262	< 0.10	< 0.10	0.12	0.17	0.0963	0.0990	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.011	0.012	< 0.050	0.0231	0.0358	74.0	1.22	1.32
1/31/2022	E321812	F2_BPO	0	0	506	< 0.0010	< 0.0060	0.46	0.53	0.37	0.48	0.0106	0.0111	< 0.020	< 0.040	< 2.0	< 0.000050	< 0.000100	0.032	0.034	0.333	0.217	0.577	272	1.09	1.19
1/31/2022	E321812	F2_BPO																								
1/31/2022	0200097	EV_EC1	0	0	424	0.0012	< 0.0060	0.37	0.47	0.30	0.35	0.0222	0.0230	< 0.020	< 0.040	< 2.0	< 0.000050	< 0.000100	0.027	0.030	0.366	0.0185	0.0231	251	1.08	1.41
1/31/2022	0200203	EV_MC3			159	0.0017	0.0146	< 0.10	< 0.10	0.15	0.18	0.111	0.115	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	< 0.010	< 0.010	< 0.050	0.0149	0.0252	57.3	1.17	1.32
1/31/2022	310168	EV_MC2A			172	0.0012	0.0221	< 0.10	< 0.10	0.15	0.21	0.0984	0.110	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.010	0.011	< 0.050	0.0171	0.0289	68.8	0.95	1.08
1/31/2022	E321811	F2_ECIN			484	0.0013	< 0.0030	0.19	0.21	0.23	0.26	0.0643	0.0651	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.013	0.014	< 0.250	0.0864	0.0867	274	0.90	0.82
1/31/2022	E321791	F2_NWPI			290	0.0012	0.0205	1.90	2.01	0.18	0.25	0.0370	0.0461	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.048	0.047	< 0.250	0.713	0.783	234	0.73	0.99
1/31/2022	E321814	EV_ECOUT	0	0	484	< 0.0010	< 0.0060	0.34	0.35	0.30	0.33	0.0420	0.0453	< 0.020	< 0.040	< 2.0	< 0.000050	< 0.000100	0.023	0.023	< 0.250	0.193	0.316	274	1.00	1.06
1/31/2022	200393	EV_ER1			176	0.0010	0.0094	< 0.10	< 0.10	0.16	0.22	0.0752	0.0801	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	< 0.010	< 0.010	< 0.050	0.0112	0.0133	70.8	0.70	0.76
1/31/2022	E321812	F2_BPO																								
2/1/2022	E321812	F2_BPO																								
2/1/2022	E206231	EV_GT1	0	0	272	0.0024	0.0215	0.53	0.52	0.40	0.44	0.0490	0.0521	< 0.040	< 0.040	< 2.0	< 0.000100	< 0.000100	< 0.020	< 0.020	< 0.250	0.144	0.184	256	2.23	2.24
2/1/2022	E321812	F2_BPO			500	< 0.0010		0.50		0.38		0.0103		< 0.020		< 2.0	< 0.000050		0.031		0.322	0.241			0.91	

		Parameter	48-h Static acute lethality test using Daphnia ma	96-Hr 100% Conc. Acute lethality test for R. Trout	Alkalinity, Total (As CaCO3)	Aluminum	Aluminum	Antimony	Antimony	Arsenic	Arsenic	Barium	Barium	Beryllium	Beryllium	BOD	Bismuth	Bismuth	Boron	Boron	Bromide	Cadmium	Cadmium	Calcium	Carbon, Dissolved Organic	Carbon, Total Organic
		Fraction	N	N	N	D	T	D	T	D	T	D	T	D	T	N	D	T	D	T	N	D	T	T	D	T
		Unit	%	%	mg/l	mg/l	mg/l	ug/l	ug/l	ug/l	ug/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2/1/2022	E102685	EV_BC1	0	0	324	0.0038	< 0.0060	0.57	0.61	0.24	0.33	0.0558	0.0647	< 0.040	< 0.040	< 2.0	< 0.000100	< 0.000100	0.062	0.064	< 0.250	0.116	0.147	306	1.21	1.38
2/1/2022	E300091	EV_MC2			207	0.0018	0.0100	< 0.10	0.10	0.16	0.15	0.116	0.103	< 0.020	< 0.020		< 0.000050	< 0.000050	0.014	0.014	< 0.050	0.0315	0.0304	80.2	1.44	1.00
2/1/2022	E321811	F2_ECIN			477	< 0.0010		0.20		0.26		0.0664		< 0.020		< 2.0	< 0.000050		0.012		< 0.250	0.0947			0.82	
2/1/2022	E321791	F2_NWPI			289	0.0014		1.95		0.18		0.0348		< 0.020		< 2.0	< 0.000050		0.041		< 0.250	0.671			0.57	
2/1/2022	E321812	F2_BPO																								
2/2/2022	E321791	F2_NWPI			282																< 0.250				0.66	
2/2/2022	E321812	F2_BPO																								
2/2/2022	E321812	F2_BPO			501											< 2.0					0.317				1.41	
2/2/2022	E321812	F2_BPO																								
2/2/2022	E321811	F2_ECIN			495																< 0.250				0.64	
2/3/2022	E321811	F2_ECIN			476	< 0.0010		0.19		0.23		0.0640		< 0.020		< 2.0	< 0.000050		0.014		< 0.250	0.0836			0.98	
2/3/2022	E321791	F2_NWPI			287	0.0012		1.86		0.19		0.0365		< 0.020		< 2.0	< 0.000050		0.047		< 0.250	0.701			0.92	
2/3/2022	E321812	F2_BPO			482	< 0.0010		0.49		0.38		0.0106		< 0.020		< 2.0	< 0.000050		0.029		0.454	0.358			1.11	
2/3/2022	E321812	F2_BPO																								
2/3/2022	E321814	EV_ECOUT																								
2/3/2022	0200097	EV_EC1																								
2/3/2022	0200097	EV_EC1																								
2/3/2022	E321812	F2_BPO																								
2/4/2022	E321811	F2_ECIN			463																< 0.250				0.88	
2/4/2022	E321791	F2_NWPI			279																< 0.250				0.74	
2/4/2022	E321812	F2_BPO			477											< 2.0					0.366				0.99	
2/4/2022	E321812	F2_BPO																								
2/4/2022	E321812	F2_BPO																								
2/5/2022	E321811	F2_ECIN			485																< 0.250				< 0.50	
2/5/2022	E321791	F2_NWPI			281																< 0.250				0.51	
2/5/2022	E321812	F2_BPO			481											< 2.0					0.380				0.97	
2/5/2022	E321812	F2_BPO																								
2/5/2022	E321812	F2_BPO																								
2/6/2022	E321811	F2_ECIN			485																< 0.250				0.67	
2/6/2022	E321791	F2_NWPI			296																< 0.250				0.66	
2/6/2022	E321812	F2_BPO			494											< 2.0					0.374				0.96	
2/6/2022	E321812	F2_BPO																								
2/6/2022	E321812	F2_BPO																								
2/7/2022	E321811	F2_ECIN			474	0.0013	< 0.0030	0.20	0.20	0.23	0.30	0.0660	0.0636	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.013	0.013	< 0.250	0.0924	0.0836	260	< 0.50	< 0.50
2/7/2022	E321791	F2_NWPI			292	0.0017	0.0126	1.97	2.04	0.18	0.24	0.0365	0.0444	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.044	0.045	< 0.250	0.713	0.805	228	< 0.50	0.53
2/7/2022	E321812	F2_BPO	0	0	520	0.0023	< 0.0060	0.49	0.54	0.33	0.45	0.0113	0.0109	< 0.040	< 0.040	< 2.0	< 0.000100	< 0.000100	0.037	0.040	0.467	0.430	0.662	291	1.18	1.16
2/7/2022	E321812	F2_BPO																								
2/7/2022	E321812	F2_BPO																								
2/8/2022	E321811	F2_ECIN			493	< 0.0010		0.20		0.25		0.0629		< 0.020		< 2.0	< 0.000050		0.014		< 0.250	0.0846			0.62	
2/8/2022	E321791	F2_NWPI			293	< 0.0010		1.84		0.19		0.0345		< 0.020		< 2.0	< 0.000050		0.044		< 0.250	0.753			< 0.50	
2/8/2022	E321814	EV_ECOUT			510	< 0.0010	< 0.0030	0.43	0.48	0.30	0.38	0.0220	0.0190	< 0.020	< 0.020		< 0.000050	< 0.000050	0.030	0.035	0.365	0.344	0.532	269	0.89	0.91
2/8/2022	E321812	F2_BPO																								
2/8/2022	E321812	F2_BPO			529	< 0.0010		0.47		0.34		0.0101		< 0.020		< 2.0	< 0.000050		0.036		0.517	0.454			1.19	
2/8/2022	0200203	EV_MC3			155	0.0014	0.0301	< 0.10	< 0.10	0.13	0.18	0.116	0.126	< 0.020	< 0.020		< 0.000050	< 0.000050	< 0.010	< 0.010	< 0.050	0.0180	0.0274	57.8	0.85	0.92
2/8/2022	200393	EV_ER1			183	0.0010	0.0266	< 0.10	< 0.10	0.18	0.22	0.0910	0.0840	< 0.020	< 0.020		< 0.000050	< 0.000050	< 0.010	< 0.010	< 0.050	0.0134	0.0172	70.0	< 0.50	< 0.50
2/8/2022	E206231	EV_GT1			277	0.0011	0.0082	0.63	0.68	0.29	0.36	0.114	0.110	< 0.020	< 0.040		< 0.000050	< 0.000100	0.023	0.026	< 0.250	0.122	0.138	224	1.60	1.40
2/8/2022	E102685	EV_BC1			298	0.0029	0.0060	0.96	1.05	< 0.20	0.26	0.0882	0.0908	< 0.040	< 0.040		< 0.000100	< 0.000100	0.045	0.048	0.260	0.0554	0.0685	251	0.84	0.89
2/8/2022	E300091	EV_MC2			187	0.0017	0.0157	< 0.10	0.11	0.16	0.20	0.122	0.112	< 0.020	< 0.020		< 0.000050	< 0.000050	0.013	0.012	< 0.050	0.0229	0.0278	72.3	0.87	0.77

		Parameter	48-h Static acute lethality test using Daphnia ma	96-Hr 100% Conc. Acute lethality test for R. Trout	Alkalinity, Total (As CaCO3)	Aluminum	Aluminum	Antimony	Antimony	Arsenic	Arsenic	Barium	Barium	Beryllium	Beryllium	BOD	Bismuth	Bismuth	Boron	Boron	Bromide	Cadmium	Cadmium	Calcium	Carbon, Dissolved Organic	Carbon, Total Organic
		Fraction	N	N	N	D	T	D	T	D	T	D	T	D	T	N	D	T	D	T	N	D	T	T	D	T
		Unit	%	%	mg/l	mg/l	mg/l	ug/l	ug/l	ug/l	ug/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2/8/2022	E321812	F2_BPO																								
2/9/2022	E321811	F2_ECIN			462																< 0.250				0.60	
2/9/2022	E321791	F2_NWPI			276																< 0.250				0.75	
2/9/2022	E321812	F2_BPO			515											< 2.0					< 0.250				1.21	
2/9/2022	E321812	F2_BPO																								
2/9/2022	E321812	F2_BPO																								
2/10/2022	E321811	F2_ECIN			476	< 0.0010		0.20		0.22		0.0674		< 0.020		< 2.0	< 0.000050		0.013		< 0.250	0.0804			< 0.50	
2/10/2022	E321791	F2_NWPI			292	0.0039		1.97		< 0.20		0.0387		< 0.040		< 2.0	< 0.000100		0.048		< 0.250	0.768			< 0.50	
2/10/2022	E321812	F2_BPO			512	< 0.0020		0.55		0.33		0.0120		< 0.040		< 2.0	< 0.000100		0.041		0.552	0.487			0.62	
2/10/2022	E321812	F2_BPO																								
2/10/2022	E321812	F2_BPO																								
2/11/2022	E321811	F2_ECIN			477																< 0.250				0.63	
2/11/2022	E321791	F2_NWPI			283																< 0.250				< 0.50	
2/11/2022	E321812	F2_BPO			512											< 2.0					0.451				1.05	
2/11/2022	E321812	F2_BPO																								
2/11/2022	E321812	F2_BPO																								
2/12/2022	E321811	F2_ECIN			473																< 0.250				0.51	
2/12/2022	E321791	F2_NWPI			274																< 0.250				< 0.50	
2/12/2022	E321812	F2_BPO			503											< 2.0					0.562				0.77	
2/12/2022	E321812	F2_BPO																								
2/12/2022	E321812	F2_BPO																								
2/13/2022	E321811	F2_ECIN			465																< 0.250				< 0.50	
2/13/2022	E321791	F2_NWPI			290																< 0.250				< 0.50	
2/13/2022	E321812	F2_BPO			504											3.0					0.443				1.04	
2/13/2022	E321812	F2_BPO																								
2/13/2022	E321812	F2_BPO																								
2/14/2022	E321812	F2_BPO	3	0	494	0.0017	< 0.0030	0.51	0.56	0.37	0.46	0.0108	0.0116	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.036	0.040	0.553	0.339	0.610	281	0.81	0.83
2/14/2022	E321811	F2_ECIN			472	0.0038	0.0035	0.20	0.24	0.25	0.25	0.0647	0.0664	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.013	0.015	< 0.250	0.0832	0.0817	272	< 0.50	< 0.50
2/14/2022	E321791	F2_NWPI			289	0.0017	0.0176	1.89	2.21	0.18	0.22	0.0364	0.0471	< 0.020	< 0.040	< 2.0	< 0.000050	< 0.000100	0.044	0.053	< 0.250	0.750	0.871	251	< 0.50	< 0.50
2/14/2022	E321812	F2_BPO																								
2/14/2022	0200097	EV_EC1	0	0	424	0.0014	< 0.0060	0.35	0.46	0.28	0.34	0.0224	0.0270	< 0.020	< 0.040	< 2.0	< 0.000050	< 0.000100	0.025	0.034	< 0.250	0.0153	0.0229	280	0.58	0.58
2/14/2022	0200203	EV_MC3			154	0.0020	0.0108	< 0.10	< 0.10	0.13	0.17	0.109	0.125	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	< 0.010	0.010	< 0.050	0.0172	0.0207	58.3	0.69	0.64
2/14/2022	310168	EV_MC2A			178	0.0034	0.0072	< 0.10	0.11	0.14	0.17	0.108	0.116	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	< 0.010	0.012	< 0.050	0.0136	0.0206	70.1	0.55	0.57
2/14/2022	200393	EV_ER1			181	0.0030	0.0072	< 0.10	< 0.10	0.18	0.23	0.0792	0.112	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	< 0.010	< 0.010	< 0.050	0.0149	0.0164	67.4	< 0.50	< 0.50
2/14/2022	E321814	EV_ECOUT	0	0	484	0.0012	0.0065	0.27	0.35	0.24	0.30	0.0457	0.0536	< 0.020	< 0.040	< 2.0	< 0.000050	< 0.000100	0.018	0.024	< 0.250	0.193	0.277	289	0.54	0.54
2/14/2022	E300091	EV_MC2			188	0.0012	0.0077	< 0.10	0.13	0.13	0.17	0.104	0.114	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.011	0.014	< 0.050	0.0201	0.0284	76.6	0.57	0.54
2/14/2022	E321812	F2_BPO																								
2/15/2022	E321811	F2_ECIN			448	0.0012		0.21		0.25		0.0651		< 0.020		< 2.0	< 0.000050		0.014		< 0.250	0.0863			< 0.50	
2/15/2022	E321791	F2_NWPI			278	0.0024		1.94		0.17		0.0366		< 0.020		< 2.0	< 0.000050		0.047		< 0.250	0.739			< 0.50	
2/15/2022	E321812	F2_BPO			502	0.0013		0.49		0.35		0.0106		< 0.020		< 2.0	< 0.000050		0.035		0.450	0.309			0.68	
2/15/2022	E321812	F2_BPO																								
2/15/2022	E102685	EV_BC1	0	0	333	0.0048	< 0.0060	0.99	1.03	0.26	0.22	0.0964	0.0941	< 0.040	< 0.040	< 2.0	< 0.000100	< 0.000100	0.041	0.043	0.250	0.0344	0.0321	248	0.88	0.98
2/15/2022	E206231	EV_GT1	0	0	312	< 0.0020	0.0130	0.90	0.89	0.27	0.34	0.211	0.144	< 0.040	< 0.040	< 2.0	< 0.000100	< 0.000100	0.035	0.035	< 0.250	0.110	0.122	243	1.23	1.31
2/15/2022	E300091	EV_MC2			186	0.0010	0.0101	0.11	0.14	0.14	0.16	0.107	0.105	< 0.020	< 0.020		< 0.000050	< 0.000050	0.013	0.014	< 0.050	0.0267	0.0357	85.2	0.90	0.91
2/15/2022	E321812	F2_BPO																								
2/16/2022	E321811	F2_ECIN			461																< 0.250				0.85	
2/16/2022	E321791	F2_NWPI			283																< 0.250				< 0.50	
2/16/2022	E321812	F2_BPO			500											< 2.0					0.471				0.78	

		Parameter	48-h Static acute lethality test using Daphnia ma	96-Hr 100% Conc. Acute lethality test for R. Trout	Alkalinity, Total (As CaCO3)	Aluminum	Aluminum	Antimony	Antimony	Arsenic	Arsenic	Barium	Barium	Beryllium	Beryllium	BOD	Bismuth	Bismuth	Boron	Boron	Bromide	Cadmium	Cadmium	Calcium	Carbon, Dissolved Organic	Carbon, Total Organic
		Fraction	N	N	N	D	T	D	T	D	T	D	T	D	T	N	D	T	D	T	N	D	T	T	D	T
		Unit	%	%	mg/l	mg/l	mg/l	ug/l	ug/l	ug/l	ug/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2/16/2022	E321812	F2_BPO																								
2/16/2022	0200097	EV_EC1	3	0	441	0.0018	< 0.0030	0.36	0.40	0.27	0.50	0.0250	0.0269	< 0.020	< 0.020		< 0.000050	< 0.000050	0.026	0.028	< 0.250	0.0192	0.0254	257	0.61	0.62
2/16/2022	E321812	F2_BPO																								
2/17/2022	E321811	F2_ECIN			453	0.0010		0.19		0.26		0.0645		< 0.020		< 2.0	< 0.000050		0.013		< 0.250	0.0849			< 0.50	
2/17/2022	E321791	F2_NWPI			274	< 0.0010		1.82		0.16		0.0367		< 0.020		< 2.0	< 0.000050		0.046		< 0.250	0.666			< 0.50	
2/17/2022	E321812	F2_BPO			487	< 0.0010		0.52		0.51		0.0112		< 0.020		< 2.0	< 0.000050		0.031		0.517	0.232			0.90	
2/17/2022	E321812	F2_BPO																								
2/17/2022	E321812	F2_BPO																								
2/18/2022	E321811	F2_ECIN			463																< 0.250				< 0.50	
2/18/2022	E321791	F2_NWPI			279																< 0.250				< 0.50	
2/18/2022	E321812	F2_BPO			485											< 2.0					0.515				0.65	
2/18/2022	E321812	F2_BPO																								
2/18/2022	E321812	F2_BPO																								
2/19/2022	E321811	F2_ECIN			478																< 0.250				< 0.50	
2/19/2022	E321791	F2_NWPI			284																< 0.250				< 0.50	
2/19/2022	E321812	F2_BPO			506											< 2.0					0.494				0.72	
2/19/2022	E321812	F2_BPO																								
2/19/2022	E321812	F2_BPO																								
2/20/2022	E321811	F2_ECIN			466																< 0.250				< 0.50	
2/20/2022	E321791	F2_NWPI			279																< 0.250				< 0.50	
2/20/2022	E321812	F2_BPO			496											< 2.0					0.368				0.75	
2/20/2022	E321812	F2_BPO																								
2/20/2022	E321812	F2_BPO																								
2/21/2022	E321811	F2_ECIN			477	0.0016	< 0.0030	0.20	0.21	0.21	0.28	0.0636	0.0648	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.014	0.014	< 0.250	0.0905	0.0905	276	0.64	0.58
2/21/2022	E321791	F2_NWPI			284	< 0.0010	0.0148	1.77	1.84	0.13	0.18	0.0340	0.0415	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.044	0.044	< 0.250	0.761	0.784	234	0.52	0.55
2/21/2022	E321812	F2_BPO	0	0	503	0.0015	< 0.0030	0.46	0.50	0.35	0.44	0.0101	0.0113	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.035	0.035	0.404	0.306	0.605	282	1.04	1.10
2/21/2022	E321812	F2_BPO																								
2/21/2022	E321812	F2_BPO																								
2/22/2022	E321811	F2_ECIN			477	< 0.0010		0.21		0.22		0.0639		< 0.020		< 2.0	< 0.000050		0.013		< 0.250	0.0927			0.54	
2/22/2022	E321791	F2_NWPI			284	< 0.0010		1.92		0.18		0.0356		< 0.020		< 2.0	< 0.000050		0.043		< 0.250	0.845			< 0.50	
2/22/2022	E321812	F2_BPO																								
2/22/2022	E321812	F2_BPO			505	< 0.0010		0.49		0.40		0.0105		< 0.020		< 2.0	< 0.000050		0.033		0.527	0.431			1.18	
2/22/2022	E300091	EV_MC2			231	0.0014	0.0058	0.13	0.13	0.15	0.20	0.134	0.131	< 0.020	< 0.020		< 0.000050	< 0.000050	0.016	0.019	0.076	0.0472	0.0434	107	0.63	0.66
2/22/2022	E321812	F2_BPO																								
2/22/2022	E321812	F2_BPO																								
2/23/2022	E321811	F2_ECIN			450																< 0.250				0.63	
2/23/2022	E321791	F2_NWPI			284																< 0.250				0.57	
2/23/2022	E321812	F2_BPO			506											< 2.0					0.370				1.07	
2/23/2022	E321812	F2_BPO																								
2/23/2022	E321812	F2_BPO																								
2/24/2022	E321811	F2_ECIN			451	< 0.0010		0.19		0.22		0.0606		< 0.020		< 2.0	< 0.000050		0.014		< 0.250	0.0846			0.55	
2/24/2022	E321791	F2_NWPI			277	0.0012		1.70		0.16		0.0312		< 0.020		< 2.0	< 0.000050		0.043		< 0.250	0.731			< 0.50	
2/24/2022	E321812	F2_BPO																								
2/24/2022	E321812	F2_BPO			475	0.0020		0.45		0.37		0.00971		< 0.020		< 2.0	< 0.000050		0.034		0.417	0.404			1.21	
2/24/2022	E321812	F2_BPO																								
2/25/2022	E321811	F2_ECIN			471																< 0.250				< 0.50	
2/25/2022	E321791	F2_NWPI			276																< 0.250				< 0.50	
2/25/2022	E321812	F2_BPO			477											< 2.0					0.451				1.00	

		Parameter	48-h Static acute lethality test using Daphnia ma	96-Hr 100% Conc. Acute lethality test for R. Trout	Alkalinity, Total (As CaCO3)	Aluminum	Aluminum	Antimony	Antimony	Arsenic	Arsenic	Barium	Barium	Beryllium	Beryllium	BOD	Bismuth	Bismuth	Boron	Boron	Bromide	Cadmium	Cadmium	Calcium	Carbon, Dissolved Organic	Carbon, Total Organic
		Fraction	N	N	N	D	T	D	T	D	T	D	T	D	T	N	D	T	D	T	N	D	T	T	D	T
		Unit	%	%	mg/l	mg/l	mg/l	ug/l	ug/l	ug/l	ug/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2/25/2022	E321812	F2_BPO																								
2/25/2022	E321812	F2_BPO																								
2/26/2022	E321811	F2_ECIN			473																< 0.250				0.73	
2/26/2022	E321791	F2_NWPI			275																< 0.250				0.50	
2/26/2022	E321812	F2_BPO			489											< 2.0					0.456				1.18	
2/26/2022	E321812	F2_BPO																								
2/27/2022	E321811	F2_ECIN			453																< 0.250				0.70	
2/27/2022	E321791	F2_NWPI			275																< 0.250				0.57	
2/27/2022	E321812	F2_BPO																								
2/27/2022	E321812	F2_BPO			502											< 2.0					0.556				1.22	
2/27/2022	E321812	F2_BPO																								
2/28/2022	E321812	F2_BPO	0	0	497	0.0011	0.0037	0.47	0.52	0.35	0.49	0.0109	0.0111	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.032	0.037	0.382	0.371	0.496	270	0.86	0.78
2/28/2022	E321811	F2_ECIN			467	< 0.0010	< 0.0030	0.21	0.22	0.21	0.34	0.0672	0.0650	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.014	0.014	< 0.250	0.0872	0.0836	269	< 0.50	< 0.50
2/28/2022	E321791	F2_NWPI			288	< 0.0010	0.0154	1.92	1.92	0.18	0.26	0.0347	0.0418	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.044	0.048	< 0.250	0.797	0.817	232	< 0.50	< 0.50
2/28/2022	E321812	F2_BPO																								
2/28/2022	0200097	EV_EC1	0	0	443	< 0.0020	< 0.0030	0.40	0.42	0.27	0.36	0.0224	0.0214	< 0.040	< 0.020	< 2.0	< 0.000100	< 0.000050	0.029	0.031	0.371	0.0169	0.0185	243	0.56	0.54
2/28/2022	200393	EV_ER1			183	0.0011	0.0092	< 0.10	< 0.10	0.21	0.26	0.0824	0.0812	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	< 0.010	< 0.010	< 0.050	0.0148	0.0137	67.0	< 0.50	< 0.50
2/28/2022	E321812	F2_BPO																								
2/28/2022	E321814	EV_ECOUT	0	0	492	< 0.0010	< 0.0060	0.40	0.41	0.32	0.38	0.0300	0.0327	< 0.020	< 0.040	< 2.0	< 0.000050	< 0.000100	0.027	0.030	0.325	0.279	0.347	266	0.55	0.62
3/1/2022	0200203	EV_MC3			155	0.0035	0.0076	< 0.10	< 0.10	0.13	0.22	0.119	0.120	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	< 0.010	< 0.010	< 0.050	0.0220	0.0210	53.8	0.69	0.68
3/1/2022	E321812	F2_BPO			481	0.0012		0.49		0.37		0.0110		< 0.020		< 2.0	< 0.000050		0.034		0.535	0.289			1.18	
3/1/2022	E321811	F2_ECIN			450	< 0.0010		0.20		0.24		0.0625		< 0.020		< 2.0	< 0.000050		0.013		< 0.250	0.0878			0.76	
3/1/2022	E321791	F2_NWPI			276	0.0018		1.84		0.17		0.0338		< 0.020		< 2.0	< 0.000050		0.044		< 0.250	0.776			1.04	
3/1/2022	E300091	EV_MC2	0	0	184	< 0.0010	0.0428	< 0.10	0.11	0.13	0.17	0.100	0.104	< 0.020	< 0.020		< 0.000050	< 0.000050	0.012	0.014	< 0.050	0.0238	0.0278	80.2	0.73	0.76
3/1/2022	E321812	F2_BPO																								
3/1/2022	310168	EV_MC2A			188	0.0014	0.0067	< 0.10	< 0.10	0.14	0.23	0.112	0.112	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.011	0.011	< 0.050	0.0215	0.0208	63.6	< 0.50	< 0.50
3/1/2022	E102685	EV_BC1	0	0	299	< 0.0020	0.0425	0.93	0.99	< 0.20	0.31	0.0829	0.0823	< 0.040	< 0.040	< 2.0	< 0.000100	< 0.000100	0.042	0.048	0.332	0.0454	0.0882	283	0.64	0.85
3/1/2022	E206231	EV_GT1	0	0	264	< 0.0010	0.0247	0.60	0.70	0.32	0.40	0.126	0.121	< 0.020	< 0.040	< 2.0	< 0.000050	< 0.000100	0.022	0.027	< 0.250	0.100	0.130	269	1.58	1.58
3/1/2022	E300091	EV_MC2			188	0.0011	0.0084	< 0.10	0.12	0.13	0.21	0.108	0.116	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.013	0.013	< 0.050	0.0280	0.0295	72.1	< 0.50	< 0.50
3/1/2022	E321812	F2_BPO																								
3/2/2022	E321811	F2_ECIN			457	< 0.0010	< 0.0030	0.20	0.22	0.26	0.27	0.0597	0.0628	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.012	0.014	< 0.250	0.0821	0.0925	258	< 0.50	
3/2/2022	E321791	F2_NWPI			275	< 0.0010	0.0104	1.93	1.95	0.20	0.19	0.0331	0.0385	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.041	0.045	< 0.250	0.750	0.794	224	< 0.50	
3/2/2022	E321812	F2_BPO			473	< 0.0010	< 0.0030	0.48	0.52	0.39	0.49	0.00958	0.0108	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.028	0.034	0.491	0.308	0.471	264	0.87	
3/2/2022	E321812	F2_BPO																								
3/2/2022	E321812	F2_BPO																								
3/3/2022	E321811	F2_ECIN			464	0.0040		0.20		0.23		0.0653		< 0.020		< 2.0	< 0.000050		0.014		< 0.250	0.0916			< 0.50	
3/3/2022	E321791	F2_NWPI			292	0.0031		1.81		0.17		0.0346		< 0.020		< 2.0	< 0.000050		0.045		< 0.250	0.834			< 0.50	
3/3/2022	E321812	F2_BPO			484	0.0010		0.47		0.43		0.0111		< 0.020		< 2.0	< 0.000050		0.034		0.417	0.311			0.92	
3/3/2022	E321812	F2_BPO																								
3/3/2022	E321812	F2_BPO																								
3/4/2022	E321811	F2_ECIN			457																< 0.250				< 0.50	
3/4/2022	E321812	F2_BPO			476											< 2.0					0.365				0.94	
3/4/2022	E321812	F2_BPO																								
3/4/2022	E321791	F2_NWPI			279																< 0.250				< 0.50	
3/4/2022	E321812	F2_BPO																								
3/5/2022	E321811	F2_ECIN			456																< 0.250				< 0.50	
3/5/2022	E321791	F2_NWPI			282																< 0.250				< 0.50	
3/5/2022	E321812	F2_BPO			484											< 2.0					0.455				0.88	

		Parameter	48-h Static acute lethality test using Daphnia ma	96-Hr 100% Conc. Acute lethality test for R. Trout	Alkalinity, Total (As CaCO3)	Aluminum	Aluminum	Antimony	Antimony	Arsenic	Arsenic	Barium	Barium	Beryllium	Beryllium	BOD	Bismuth	Bismuth	Boron	Boron	Bromide	Cadmium	Cadmium	Calcium	Carbon, Dissolved Organic	Carbon, Total Organic
		Fraction	N	N	N	D	T	D	T	D	T	D	T	D	T	N	D	T	D	T	N	D	T	T	D	T
		Unit	%	%	mg/l	mg/l	mg/l	ug/l	ug/l	ug/l	ug/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
3/5/2022	E321812	F2_BPO																								
3/6/2022	E321811	F2_ECIN			463																< 0.250				< 0.50	
3/6/2022	E321791	F2_NWPI			282																< 0.250				< 0.50	
3/6/2022	E321812	F2_BPO			498											< 2.0					0.472				0.97	
3/6/2022	E321812	F2_BPO																								
3/6/2022	E321812	F2_BPO																								
3/7/2022	E321814	EV_ECOUT			486	< 0.0010	0.0085	0.41	0.40	0.31	0.44	0.0251	0.0307	< 0.020	< 0.020		< 0.000050	< 0.000050	0.025	0.028	0.382	0.240	0.387	265	< 0.50	0.56
3/7/2022	E321812	F2_BPO	0	0	509	0.0017	< 0.0030	0.45	0.48	0.43	0.66	0.0106	0.0109	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.030	0.032	0.357	0.275	0.488	252	0.99	1.11
3/7/2022	E321811	F2_ECIN			459	0.0013	< 0.0030	0.20	0.21	0.24	0.41	0.0654	0.0663	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.012	0.013	< 0.250	0.0871	0.0953	267	0.56	< 0.50
3/7/2022	E321791	F2_NWPI			283	0.0011	0.0159	1.90	1.93	0.18	0.34	0.0339	0.0396	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.040	0.045	< 0.250	0.784	0.865	225	< 0.50	< 0.50
3/7/2022	E321812	F2_BPO																								
3/8/2022	E321811	F2_ECIN			444	< 0.0010		0.20		0.22		0.0666		< 0.020		< 2.0	< 0.000050		0.013		< 0.250	0.0734			1.15	
3/8/2022	E321791	F2_NWPI			274	0.0021		1.91		0.15		0.0361		< 0.020		< 2.0	< 0.000050		0.043		< 0.250	0.826			0.78	
3/8/2022	E300091	EV_MC2			184	0.0016	0.0079	< 0.10	0.11	0.14	0.15	0.103	0.102	< 0.020	< 0.020		< 0.000050	< 0.000050	0.012	0.012	0.054	0.0240	0.0322	72.9	< 0.50	< 0.50
3/8/2022	E321812	F2_BPO			490	< 0.0010		0.46		0.42		0.0108		< 0.020		2.2	< 0.000050		0.032		0.387	0.235			1.40	
3/8/2022	E321812	F2_BPO																								
3/8/2022	E321812	F2_BPO																								
3/9/2022	E321811	F2_ECIN			457																< 0.250				< 0.50	
3/9/2022	E321791	F2_NWPI			284																< 0.250				< 0.50	
3/9/2022	E321812	F2_BPO																								
3/9/2022	E321812	F2_BPO			501											< 2.0					0.436				0.94	
3/9/2022	E321812	F2_BPO																								
3/10/2022	E321791	F2_NWPI			286	0.0039		1.78		0.18		0.0332		< 0.020		< 2.0	< 0.000050		0.043		< 0.250	0.763			< 0.50	
3/10/2022	E321812	F2_BPO			493	0.0012		0.42		0.44		0.0106		< 0.020		< 2.0	< 0.000050		0.031		0.306	0.340			0.83	
3/10/2022	E321812	F2_BPO																								
3/10/2022	E321811	F2_ECIN			452	0.0011		0.18		0.22		0.0710		< 0.020		< 2.0	< 0.000050		0.013		< 0.250	0.0926			< 0.50	
3/10/2022	E321812	F2_BPO																								
3/11/2022	E321811	F2_ECIN			462																< 0.250				< 0.50	
3/11/2022	E321791	F2_NWPI			281																< 0.250				< 0.50	
3/11/2022	E321812	F2_BPO			486											< 2.0					0.266				0.78	
3/11/2022	E321812	F2_BPO																								
3/12/2022	E321811	F2_ECIN			465																< 0.250				< 0.50	
3/12/2022	E321791	F2_NWPI			279																< 0.250				< 0.50	
3/12/2022	E321812	F2_BPO																								
3/12/2022	E321812	F2_BPO			488											< 2.0					0.436				0.72	
3/12/2022	E321812	F2_BPO																								
3/13/2022	E321811	F2_ECIN			462																< 0.250				< 0.50	
3/13/2022	E321791	F2_NWPI			280																< 0.250				< 0.50	
3/13/2022	E321812	F2_BPO			488											< 2.0					0.376				0.76	
3/13/2022	E321812	F2_BPO																								
3/14/2022	E321812	F2_BPO	0	0	488	0.0010	< 0.0060	0.44	0.51	0.42	0.52	0.0105	0.0118	< 0.020	< 0.040	< 2.0	< 0.000050	< 0.000100	0.031	0.036	0.374	0.216	0.615	282	0.83	0.74
3/14/2022	E321812	F2_BPO																								
3/14/2022	0200097	EV_EC1	0	0	414	0.0013	< 0.0030	0.38	0.36	0.28	0.30	0.0190	0.0206	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.024	0.027	< 0.250	0.0162	0.0136	244	0.63	0.80
3/14/2022	0200203	EV_MC3			152	0.0013	0.0166	< 0.10	< 0.10	0.13	0.18	0.103	0.113	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	< 0.010	< 0.010	< 0.050	0.0178	0.0241	53.0	0.92	0.96
3/14/2022	E321811	F2_ECIN			464	0.0011	0.0036	0.20	0.24	0.26	0.30	0.0642	0.0719	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.013	0.016	< 0.250	0.0835	0.104	304	< 0.50	< 0.50
3/14/2022	310168	EV_MC2A			179	0.0013	0.0139	< 0.10	< 0.10	0.14	0.16	0.105	0.114	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	< 0.010	0.011	< 0.050	0.0139	0.0219	69.6	0.70	0.75
3/14/2022	E321791	F2_NWPI			276	0.0010	0.0264	1.93	2.13	0.17	0.20	0.0336	0.0450	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.043	0.049	< 0.250	0.818	0.889	249	< 0.50	< 0.50

		Parameter	48-h Static acute lethality test using Daphnia ma	96-Hr 100% Conc. Acute lethality test for R. Trout	Alkalinity, Total (As CaCO3)	Aluminum	Aluminum	Antimony	Antimony	Arsenic	Arsenic	Barium	Barium	Beryllium	Beryllium	BOD	Bismuth	Bismuth	Boron	Boron	Bromide	Cadmium	Cadmium	Calcium	Carbon, Dissolved Organic	Carbon, Total Organic
		Fraction	N	N	N	D	T	D	T	D	T	D	T	D	T	N	D	T	D	T	N	D	T	T	D	T
		Unit	%	%	mg/l	mg/l	mg/l	ug/l	ug/l	ug/l	ug/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
3/14/2022	200393	EV_ER1			174	0.0012	0.0070	< 0.10	< 0.10	0.17	0.21	0.0822	0.0839	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	< 0.010	< 0.010	< 0.050	0.0127	0.0178	72.1	< 0.50	< 0.50
3/14/2022	E300091	EV_MC2			186	0.0016	0.0094	0.11	0.11	0.13	0.16	0.102	0.115	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.011	0.012	< 0.050	0.0217	0.0264	78.5	0.73	0.70
3/14/2022	E321814	EV_ECOUT	0	0	472	0.0014	0.0031	0.39	0.41	0.32	0.40	0.0220	0.0221	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.024	0.028	< 0.250	< 0.275	0.397	253	0.85	0.87
3/14/2022	E321812	F2_BPO																								
3/15/2022	E321812	F2_BPO			511	< 0.0010	0.0037	0.43	0.42	0.37	0.42	0.00986	0.0104	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.027	0.034	0.410	0.220	0.500	270	1.32	
3/15/2022	E321812	F2_BPO																								
3/15/2022	E321811	F2_ECIN			452	0.0019	0.0050	0.19	0.20	0.21	0.18	0.0599	0.0674	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.011	0.015	< 0.250	0.0866	0.0853	288	0.79	
3/15/2022	E321791	F2_NWPI			288	0.0025	0.0157	1.88	1.87	0.17	0.14	0.0339	0.0335	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.038	0.046	< 0.250	0.804	0.814	242	0.70	
3/15/2022	E300091	EV_MC2			192	< 0.0010	0.0143	< 0.10	0.11	0.14	0.17	0.104	0.100	< 0.020	< 0.020		< 0.000050	< 0.000050	0.011	0.010	< 0.050	0.0212	0.0274	63.6	0.85	0.93
3/15/2022	E102685	EV_BC1	0	0	298	0.0041	0.0396	0.93	1.00	0.20	< 0.20	0.0828	0.108	< 0.040	< 0.040	< 2.0	< 0.000100	< 0.000100	0.040	0.053	< 0.250	0.0407	0.0541	277	0.95	1.10
3/15/2022	E206231	EV_GT1	0	0	291	0.0032	0.145	0.72	0.85	0.28	0.35	0.177	0.236	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.025	0.035	< 0.250	0.0923	0.134	255	1.37	1.44
3/15/2022	E321812	F2_BPO																								
3/16/2022	E321811	F2_ECIN			465																< 0.250				< 0.50	
3/16/2022	E321791	F2_NWPI			281																< 0.250				< 0.50	
3/16/2022	E321812	F2_BPO																								
3/16/2022	0200203	EV_MC3			150	0.0043	0.0296	< 0.10	< 0.10	0.12	0.15	0.0973	0.112	< 0.020	< 0.020		< 0.000050	< 0.000050	< 0.010	< 0.010	< 0.050	0.0165	0.0239	56.9	0.95	0.95
3/16/2022	E321812	F2_BPO			490											< 2.0					0.260				0.86	
3/16/2022	E206231	EV_GT1			282	0.0030	0.264	0.68	0.74	0.31	0.49	0.192	0.200	< 0.020	< 0.020		< 0.000050	< 0.000050	0.026	0.029	< 0.250	0.103	0.157	222	1.86	1.85
3/16/2022	E102685	EV_BC1			299	0.0021	0.0448	0.91	0.94	0.23	0.30	0.0924	0.0922	< 0.020	< 0.020		< 0.000050	< 0.000050	0.041	0.044	< 0.250	0.0366	< 0.0700	244	1.11	1.04
3/16/2022	E300091	EV_MC2			193	0.0038	0.0132	< 0.10	0.11	0.13	0.17	0.0953	0.106	< 0.020	< 0.020		< 0.000050	< 0.000050	0.013	0.013	< 0.050	0.0190	0.0336	81.9	0.85	0.98
3/16/2022	E321812	F2_BPO																								
3/17/2022	E321811	F2_ECIN			454	< 0.0010		0.20		0.26		0.0649		< 0.020		< 2.0	< 0.000050		0.013		< 0.250	0.0865			< 0.50	
3/17/2022	E321791	F2_NWPI			281	< 0.0010		1.92		0.17		0.0339		< 0.020		< 2.0	< 0.000050		0.045		< 0.250	0.818			< 0.50	
3/17/2022	E321812	F2_BPO			481	0.0010		0.41		0.46		0.0106		< 0.020		< 2.0	< 0.000050		0.030		0.306	0.298			0.75	
3/17/2022	E321812	F2_BPO																								
3/17/2022	200393	EV_ER1			177	0.0033	0.0105	< 0.10	< 0.10	0.17	0.21	0.0773	0.0822	< 0.020	< 0.020		< 0.000050	< 0.000050	< 0.010	< 0.010	< 0.050	0.0102	0.0188	73.1	0.54	0.58
3/17/2022	0200097	EV_EC1			226	0.0020	< 0.0030	0.38	0.38	0.29	0.31	0.0197	0.0204	< 0.020	< 0.020		< 0.000050	< 0.000050	0.027	0.028	< 0.250	0.0152	0.0189	240	0.84	0.87
3/17/2022	E321812	F2_BPO																								
3/18/2022	E321811	F2_ECIN			470																< 0.250				< 0.50	
3/18/2022	E321791	F2_NWPI			283																< 0.250				< 0.50	
3/18/2022	E321812	F2_BPO			491											< 2.0					0.392				0.64	
3/18/2022	E321812	F2_BPO																								
3/18/2022	E321812	F2_BPO																								
3/19/2022	E321811	F2_ECIN			462																< 0.250				0.52	
3/19/2022	E321791	F2_NWPI			288																< 0.250				< 0.50	
3/19/2022	E321812	F2_BPO			496											< 2.0					0.586				1.02	
3/19/2022	E321812	F2_BPO																								
3/19/2022	E321812	F2_BPO																								
3/20/2022	E321811	F2_ECIN			464	0.0018		0.20		0.23		0.0644		< 0.020		< 2.0	< 0.000050		0.013		< 0.250	0.0967			< 0.50	
3/20/2022	E321791	F2_NWPI			284	0.0068		1.88		0.20		0.0316		< 0.020		< 2.0	< 0.000050		0.044		< 0.250	0.840			< 0.50	
3/20/2022	E321812	F2_BPO			491	< 0.0010		0.39		0.41		0.0107		< 0.020		< 2.0	< 0.000050		0.031		0.496	0.332			0.85	
3/20/2022	E321812	F2_BPO																								
3/20/2022	E321812	F2_BPO																								
3/21/2022	E321812	F2_BPO	0	0	490	0.0014	< 0.0030	0.37	0.41	0.38	0.48	0.0101	0.0122	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.027	0.035	0.444	0.276	0.280	271	1.01	0.85
3/21/2022	E321811	F2_ECIN			454	0.0016	0.0048	0.19	0.21	0.21	0.27	0.0613	0.0714	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.012	0.015	< 0.250	0.0790	0.0930	280	< 0.50	< 0.50
3/21/2022	E321791	F2_NWPI			285	0.0033	0.0252	1.82	1.95	0.18	0.22	0.0299	0.0446	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.041	0.049	< 0.250	0.814	0.894	238	< 0.50	< 0.50
3/21/2022	0200097	EV_EC1			436	< 0.0010	< 0.0030	0.37	0.35	0.33	0.30	0.0210	0.0208	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.029	0.028	0.305	0.0190	0.0190	233	0.81	0.80
3/21/2022	E321812	F2_BPO																								

		Parameter	48-h Static acute lethality test using Daphnia ma	96-Hr 100% Conc. Acute lethality test for R. Trout	Alkalinity, Total (As CaCO3)	Aluminum	Aluminum	Antimony	Antimony	Arsenic	Arsenic	Barium	Barium	Beryllium	Beryllium	BOD	Bismuth	Bismuth	Boron	Boron	Bromide	Cadmium	Cadmium	Calcium	Carbon, Dissolved Organic	Carbon, Total Organic
		Fraction	N	N	N	D	T	D	T	D	T	D	T	D	T	N	D	T	D	T	N	D	T	T	D	T
		Unit	%	%	mg/l	mg/l	mg/l	ug/l	ug/l	ug/l	ug/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
3/21/2022	0200203	EV_MC3			158	0.0030	0.0295	< 0.10	< 0.10	0.14	0.15	0.114	0.121	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	< 0.010	< 0.010	< 0.050	0.0253	0.0226	57.9	0.88	0.91
3/21/2022	310168	EV_MC2A			180	0.0019	0.0258	< 0.10	< 0.10	0.13	0.16	0.113	0.112	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.011	0.012	< 0.050	0.0195	0.0233	68.1	0.91	0.91
3/21/2022	E321814	EV_ECOUT			474	0.0010	0.0032	0.34	0.36	0.38	0.42	0.0289	0.0284	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.027	0.028	0.308	0.286	0.451	266	0.74	0.78
3/21/2022	200393	EV_ER1			175	0.0012	0.0123	< 0.10	< 0.10	0.18	0.18	0.0861	0.0844	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	< 0.010	0.010	< 0.050	0.0178	0.0210	71.3	0.53	0.56
3/21/2022	E300091	EV_MC2			182	0.0026	0.0184	< 0.10	0.10	0.14	0.17	0.110	0.108	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.013	0.014	< 0.050	0.0265	0.0378	75.9	0.78	0.84
3/21/2022	E321812	F2_BPO																								
3/22/2022	E321812	F2_BPO			491	< 0.0010		0.39		0.41		0.0107		< 0.020		< 2.0	< 0.000050		0.031		0.490	0.332			0.85	
3/22/2022	E321811	F2_ECIN			464	0.0018		0.20		0.23		0.0644		< 0.020		< 2.0	< 0.000050		0.013		< 0.250	0.0967			< 0.50	
3/22/2022	E321791	F2_NWPI			284	0.0068		1.88		0.20		0.0316		< 0.020		< 2.0	< 0.000050		0.044		< 0.250	0.840			< 0.50	
3/22/2022	0200097	EV_EC1																								
3/22/2022	E321812	F2_BPO																								
3/22/2022	E102685	EV_BC1			317	0.0021	0.0096	0.86	0.89	0.17	0.23	0.0942	0.104	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.042	0.043	< 0.250	0.0150	0.0245	236	0.53	0.76
3/22/2022	E206231	EV_GT1			264	0.0022	0.0653	0.62	0.65	0.30	0.34	0.155	0.166	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.024	0.025	< 0.250	0.0845	0.104	210	1.78	1.68
3/22/2022	0200203	EV_MC3			157	0.0017	0.0437	< 0.10	< 0.10	0.14	0.16	0.112	0.120	< 0.020	< 0.020		< 0.000050	< 0.000050	< 0.010	< 0.010	< 0.050	0.0140	0.0205	52.7	0.95	0.93
3/22/2022	E206231	EV_GT1																								
3/22/2022	E102685	EV_BC1																								
3/22/2022	E300091	EV_MC2			198	0.0030	0.0602	0.10	0.15	0.14	0.19	0.104	0.110	< 0.020	< 0.020		< 0.000050	< 0.000050	0.013	0.014	0.081	0.0290	0.0467	77.5	0.99	1.10
3/22/2022	200393	EV_ER1			186	0.0018	0.0546	< 0.10	0.15	0.18	0.22	0.0824	0.0839	< 0.020	< 0.020		< 0.000050	< 0.000050	0.010	0.010	< 0.050	0.0127	0.0225	68.8	0.52	0.67
3/22/2022	E321812	F2_BPO																								
3/23/2022	E321811	F2_ECIN			459																< 0.250				0.91	
3/23/2022	E321791	F2_NWPI			273																< 0.250				0.76	
3/23/2022	E321812	F2_BPO			483											< 2.0					0.291				1.14	
3/23/2022	E321812	F2_BPO																								
3/23/2022	E321812	F2_BPO																								
3/24/2022	E321812	F2_BPO																								
3/24/2022	E321812	F2_BPO			499	0.0012		0.40		0.41		0.0104		< 0.020		< 2.0	< 0.000050		0.029		0.457	0.286			0.75	
3/24/2022	E321811	F2_ECIN			471	0.0022		0.20		0.22		0.0628		< 0.020		< 2.0	< 0.000050		0.012		< 0.250	0.0883			0.52	
3/24/2022	E321791	F2_NWPI			286	0.0026		1.96		0.16		0.0312		< 0.020		< 2.0	< 0.000050		0.040		< 0.250	0.821			0.52	
3/24/2022	E321812	F2_BPO																								
3/25/2022	E321811	F2_ECIN			452																< 0.250				< 0.50	
3/25/2022	E321791	F2_NWPI			292																< 0.250				< 0.50	
3/25/2022	E321812	F2_BPO			478											< 2.0					0.420				0.85	
3/25/2022	E321812	F2_BPO																								
3/26/2022	E321811	F2_ECIN			462																< 0.250				0.60	
3/26/2022	E321791	F2_NWPI			285																< 0.250				0.56	
3/26/2022	E321812	F2_BPO			499											< 2.0					0.421				0.89	
3/26/2022	E321812	F2_BPO																								
3/26/2022	E321812	F2_BPO																								
3/28/2022	0200097	EV_EC1			382																< 0.250					
3/28/2022	0200203	EV_MC3			155	0.0031	0.183	< 0.10	< 0.10	0.16	0.23	0.114	0.117	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	< 0.010	0.010	< 0.050	0.0213	0.0409	51.3	1.40	1.94
3/28/2022	E321814	EV_ECOUT	0	0	465	0.0021	0.0037	0.21	0.20	0.24	0.30	0.0658	0.0674	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.012	0.014	< 0.250	0.0867	0.0880	270	0.64	0.89
3/28/2022	E321812	F2_BPO																								
3/28/2022	200393	EV_ER1			192	0.0019	0.0522	< 0.10	< 0.10	0.17	0.24	0.0864	0.0867	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	< 0.010	0.011	< 0.050	0.0149	0.0234	71.3	0.89	0.98
3/28/2022	E321812	F2_BPO	0	0	494	< 0.0010	0.0037	0.38	0.38	0.44	0.59	0.0104	0.0108	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.029	0.032	0.283	0.306	0.544	278	1.38	< 0.50
3/28/2022	310168	EV_MC2A			178	0.0021	0.119	< 0.10	< 0.10	0.16	0.23	0.121	0.120	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	< 0.010	0.011	< 0.050	0.0178	0.0394	62.0	1.56	1.57
3/28/2022	E300091	EV_MC2			178	0.0020	0.0871	< 0.10	0.11	0.14	0.22	0.111	0.118	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	< 0.010	0.012	< 0.050	0.0208	0.0406	68.2	1.41	1.73
3/28/2022	E300091	EV_MC2			175																< 0.050					
3/28/2022	E321791	F2_NWPI			295																< 0.250				< 0.50	

		Parameter	48-h Static acute lethality test using Daphnia ma	96-Hr 100% Conc. Acute lethality test for R. Trout	Alkalinity, Total (As CaCO3)	Aluminum	Aluminum	Antimony	Antimony	Arsenic	Arsenic	Barium	Barium	Beryllium	Beryllium	BOD	Bismuth	Bismuth	Boron	Boron	Bromide	Cadmium	Cadmium	Calcium	Carbon, Dissolved Organic	Carbon, Total Organic
		Fraction	N	N	N	D	T	D	T	D	T	D	T	D	T	N	D	T	D	T	N	D	T	T	D	T
		Unit	%	%	mg/l	mg/l	mg/l	ug/l	ug/l	ug/l	ug/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
3/28/2022	E321811	F2_ECIN			452																< 0.250				0.56	
3/28/2022	0200097	EV_EC1	0	0	417	< 0.0010	< 0.0030	0.25	0.25	0.28	0.32	0.0310	0.0337	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.015	0.017	< 0.250	0.0092	0.0108	239	0.86	0.85
3/29/2022	E321812	F2_BPO																								
3/29/2022	E102685	EV_BC1	0	0	304	0.0028	0.0060	0.92	0.91	0.20	0.24	0.0936	0.0986	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.039	0.046	< 0.250	0.0141	0.0162	234	0.78	0.87
3/29/2022	E321812	F2_BPO			487	0.0013		0.38		0.40		0.0109		< 0.020		< 2.0	< 0.000050		0.030		0.384	0.396			0.94	
3/29/2022	E206231	EV_GT1	0	0	222	0.0027	0.406	0.57	0.61	0.33	0.70	0.0593	0.0863	< 0.020	0.035	< 2.0	< 0.000050	< 0.000050	0.015	0.019	< 0.250	0.162	0.308	161	1.83	5.74
3/29/2022	E206231	EV_GT1																								
3/29/2022	0200203	EV_MC3			142	0.0027	1.71	< 0.10	0.17	0.17	0.56	0.104	0.138	< 0.020	0.075		< 0.000050	< 0.000050	< 0.010	0.012	< 0.050	0.0204	0.121	51.9	1.80	3.50
3/29/2022	E300091	EV_MC2			182	0.0045	0.206	< 0.10	0.14	0.16	0.25	0.105	0.102	< 0.020	< 0.020		< 0.000050	< 0.000050	0.011	0.012	< 0.050	0.0250	0.0583	66.0	1.52	2.02
3/29/2022	E206231	EV_GT1																								
3/29/2022	E321811	F2_ECIN			464	0.0019	0.0076	0.21	0.22	0.24	0.33	0.0646	0.0674	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.013	0.015	< 0.250	0.0815	0.0947	270	< 0.50	0.57
3/29/2022	E321791	F2_NWPI			290	0.0033	0.0195	1.98	1.94	0.17	0.24	0.0330	0.0400	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.042	0.043	< 0.250	0.901	0.868	260	< 0.50	< 0.50
3/29/2022	E102685	EV_BC1																								
3/29/2022	200393	EV_ER1			174	0.0019	0.164	< 0.10	< 0.10	0.20	0.26	0.0823	0.0923	< 0.020	< 0.020		< 0.000050	< 0.000050	< 0.010	0.011	< 0.050	0.0153	0.0345	70.7	1.05	1.28
3/29/2022	E321812	F2_BPO																								
3/30/2022	E321812	F2_BPO			492											< 2.0					0.391				0.72	
3/30/2022	E321811	F2_ECIN			467																< 0.250				< 0.50	
3/30/2022	E321791	F2_NWPI			274																< 0.250				< 0.50	
3/30/2022	E321812	F2_BPO																								
3/30/2022	0200097	EV_EC1																								
3/30/2022	E321812	F2_BPO																								
3/30/2022	E321812	F2_BPO																								
3/30/2022	0200097	EV_EC1																								
3/30/2022	E321812	F2_BPO																								
3/31/2022	E321811	F2_ECIN			455	< 0.0010		0.21		0.24		0.0626		< 0.020		< 2.0	< 0.000050		0.014		< 0.250	0.0790			< 0.50	
3/31/2022	E321791	F2_NWPI			293	< 0.0010		1.91		0.16		0.0277		< 0.020		< 2.0	< 0.000050		0.042		< 0.250	0.866			< 0.50	
3/31/2022	E321812	F2_BPO			487	< 0.0010		0.36		0.43		0.0104		< 0.020		< 2.0	< 0.000050		0.030		0.431	0.357			0.80	
3/31/2022	E321812	F2_BPO																								
3/31/2022	E321812	F2_BPO																								
4/1/2022	E321811	F2_ECIN			477																< 0.250				0.63	
4/1/2022	E321791	F2_NWPI			285																< 0.250				0.64	
4/1/2022	E321812	F2_BPO			484											< 2.0					0.368				0.95	
4/1/2022	E321812	F2_BPO																								
4/2/2022	E321811	F2_ECIN			472																< 0.250				< 0.50	
4/2/2022	E321791	F2_NWPI			287																< 0.250				< 0.50	
4/2/2022	E321812	F2_BPO			495											< 2.0					0.421				0.67	
4/2/2022	E321812	F2_BPO																								
4/2/2022	E321812	F2_BPO																								
4/3/2022	E321811	F2_ECIN			468																< 0.250				0.59	
4/3/2022	E321791	F2_NWPI			289																< 0.250				0.52	
4/3/2022	E321812	F2_BPO			498											< 2.0					0.516				1.16	
4/3/2022	E321812	F2_BPO																								
4/3/2022	E321812	F2_BPO																								
4/4/2022	E321812	F2_BPO	0	0	503	0.0012	0.0068	0.39	0.40	0.44	0.58	0.0109	0.0117	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.032	0.034	0.427	0.392	0.591	266	1.10	0.76
4/4/2022	0200097	EV_EC1			418	0.0011	0.0055	0.30	0.38	0.32	0.39	0.0306	0.0385	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.023	0.030	< 0.250	0.0186	0.0256	277	0.89	0.80
4/4/2022	E321812	F2_BPO																								
4/4/2022	0200203	EV_MC3			151	0.0041	0.115	< 0.10	0.11	0.15	0.25	0.112	0.137	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	< 0.010	0.011	< 0.050	0.0064	0.0500	56.0	1.60	1.77
4/4/2022	310168	EV_MC2A			178	0.0090	0.0809	< 0.10	0.10	0.18	0.21	0.106	0.121	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	< 0.010	0.011	< 0.050	0.0198	0.0411	61.2	1.65	1.77
4/4/2022	E321811	F2_ECIN			473	< 0.0010	< 0.0030	0.19	0.20	0.19	0.26	0.0591	0.0576	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.014	0.014	< 0.250	0.0807	0.0789	266	< 0.50	< 0.50
4/4/2022	E321791	F2_NWPI			305	0.0010	0.0138	1.99	2.27	0.16	0.26	0.0278	0.0393	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.043	0.048	< 0.250	0.882	0.977	255	< 0.50	< 0.50
4/4/2022	200393	EV_ER1			189	0.0022	0.0384	< 0.10	< 0.10	0.16	0.21	0.0838	0.0884	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	< 0.010	< 0.010	< 0.050	0.0106	0.0228	67.5	0.84	0.90

Parameter			48-h Static acute lethality test using Daphnia ma	96-Hr 100% Conc. Acute lethality test for R. Trout	Alkalinity, Total (As CaCO3)	Aluminum	Aluminum	Antimony	Antimony	Arsenic	Arsenic	Barium	Barium	Beryllium	Beryllium	BOD	Bismuth	Bismuth	Boron	Boron	Bromide	Cadmium	Cadmium	Calcium	Carbon, Dissolved Organic	Carbon, Total Organic
Fraction			N	N	N	D	T	D	T	D	T	D	T	D	T	N	D	T	D	T	N	D	T	T	D	T
Unit			%	%	mg/l	mg/l	mg/l	ug/l	ug/l	ug/l	ug/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
4/4/2022	E321814	EV_ECOUT			467	0.0020	0.0080	0.23	0.27	0.24	0.29	0.0581	0.0668	< 0.020	< 0.040	< 2.0	< 0.000050	< 0.000100	0.016	< 0.020	< 0.250	0.157	0.210	295	< 0.50	0.71
4/4/2022	E300091	EV_MC2			176	0.0059	0.0665	0.11	0.11	0.16	0.19	0.108	0.113	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.010	0.011	< 0.050	0.0219	0.0393	61.6	1.78	1.72
4/4/2022	E321812	F2_BPO																								
4/5/2022	E321791	F2_NWPI			278	0.0013		1.95		0.15		0.0287		< 0.020		< 2.0	< 0.000050		0.041		< 0.250	0.847			< 0.50	
4/5/2022	E321811	F2_ECIN			439	< 0.0010		0.19		0.23		0.0616		< 0.020		< 2.0	< 0.000050		0.013		< 0.250	0.0715			0.56	
4/5/2022	E206231	EV_GT1			293	0.0028	0.0285	0.69	0.72	0.32	0.36	0.208	0.179	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.024	0.028	< 0.250	0.154	0.161	214	1.55	1.65
4/5/2022	E102685	EV_BC1			291	0.0034	0.0054	0.94	0.92	0.24	0.27	0.0858	0.0849	< 0.040	< 0.020	< 2.0	< 0.000100	< 0.000050	0.040	0.044	< 0.250	0.0154	0.0218	231	1.14	1.20
4/5/2022	E321812	F2_BPO			498	< 0.0010		0.37		0.50		0.0106		< 0.020		< 2.0	< 0.000050		0.032		0.459	0.482			1.02	
4/5/2022	0200203	EV_MC3			157	0.0022	0.138	< 0.10	0.10	0.14	0.24	0.111	0.114	< 0.020	< 0.020		< 0.000050	< 0.000050	< 0.010	0.010	< 0.050	0.0142	0.0466	49.1	2.46	2.45
4/5/2022	E321812	F2_BPO																								
4/5/2022	E206231	EV_GT1																								
4/5/2022	E102685	EV_BC1																								
4/5/2022	E300091	EV_MC2			189	0.0016	0.0803	< 0.10	0.11	0.14	0.21	0.102	0.106	< 0.020	< 0.020		< 0.000050	< 0.000050	0.011	0.014	< 0.050	0.0243	0.0510	73.9	1.74	1.70
4/5/2022	200393	EV_ER1			182	0.0011	0.0430	< 0.10	< 0.10	0.17	0.20	0.0811	0.0886	< 0.020	< 0.020		< 0.000050	< 0.000050	< 0.010	0.010	< 0.050	0.0150	0.0280	74.3	1.04	1.28
4/5/2022	E321812	F2_BPO																								
4/6/2022	E321811	F2_ECIN			455																< 0.250				0.76	
4/6/2022	E321791	F2_NWPI			283																< 0.250				0.82	
4/6/2022	E321812	F2_BPO			507											< 2.0					0.433				1.34	
4/6/2022	E321812	F2_BPO																								
4/6/2022	0200097	EV_EC1																								
4/6/2022	E321812	F2_BPO																								
4/6/2022	0200097	EV_EC1																								
4/6/2022	E321812	F2_BPO																								
4/7/2022	E321811	F2_ECIN			447	0.0012		0.20		0.24		0.0619		< 0.020		< 2.0	< 0.000050		0.012		< 0.250	0.0820			0.61	
4/7/2022	E321791	F2_NWPI			276	0.0016		1.99		0.18		0.0287		< 0.020		< 2.0	< 0.000050		0.040		< 0.250	0.857			0.75	
4/7/2022	E321812	F2_BPO																								
4/7/2022	E321812	F2_BPO			509	0.0012		0.36		0.43		0.00992		< 0.020		< 2.0	< 0.000050		0.031		< 0.250	0.495			0.91	
4/7/2022	E321812	F2_BPO																								
4/8/2022	E321811	F2_ECIN			462																< 0.250				< 0.50	
4/8/2022	E321791	F2_NWPI			287																< 0.250				< 0.50	
4/8/2022	E321812	F2_BPO			516											< 2.0					0.451				1.06	
4/8/2022	E321812	F2_BPO																								
4/9/2022	E321811	F2_ECIN			467																< 0.250				6.20	
4/9/2022	E321791	F2_NWPI			298																< 0.250				0.66	
4/9/2022	E321812	F2_BPO			515											< 2.0					0.501				0.80	
4/9/2022	E321812	F2_BPO																								
4/10/2022	E300091	EV_MC2			191																< 0.050					
4/10/2022	0200097	EV_EC1			370																< 0.250					
4/10/2022	E321791	F2_NWPI			280																< 0.250				< 0.50	
4/10/2022	E321812	F2_BPO			494											< 2.0					0.488				1.68	
4/10/2022	E321812	F2_BPO																								
4/11/2022	E321791	F2_NWPI			287	0.0041	0.0278	1.99	1.93	0.17	0.28	0.0298	0.0376	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.048	0.045	< 0.250	0.848	0.910	234	0.73	0.89
4/11/2022	E321812	F2_BPO	0	0	501	< 0.0010	< 0.0030	0.33	0.33	0.44	0.62	0.0105	0.0109	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.036	0.032	0.759	0.348	0.552	256	1.44	1.47
4/11/2022	E321812	F2_BPO																								
4/11/2022	E300091	EV_MC2			170	0.0019	0.0341	0.12	0.11	0.15	0.20	0.0974	0.110	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.011	0.012	< 0.050	0.0224	0.0294	65.9	1.50	1.57
4/11/2022	E300091	EV_MC2			179																< 0.050					
4/11/2022	310168	EV_MC2A			167	0.0017	0.0330	< 0.10	< 0.10	0.17	0.18	0.101	0.107	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.011	0.010	< 0.050	0.0153	0.0252	59.7	1.86	1.84
4/11/2022	0200097	EV_EC1	0	0	406	< 0.0010	< 0.0030	0.23	0.23	0.27	0.31	0.0389	0.0372	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.015	0.016	< 0.250	0.0106	0.0067	233	0.99	1.12
4/11/2022	0200097	EV_EC1			384																< 0.250					
4/11/2022	0200203	EV_MC3			157	0.0019	0.0443	< 0.10	< 0.10	0.13	0.20	0.106	0.111	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	< 0.010	< 0.010	< 0.050	0.0218	0.0246	50.2	1.88	1.90

		Parameter	48-h Static acute lethality test using Daphnia ma	96-Hr 100% Conc. Acute lethality test for R. Trout	Alkalinity, Total (As CaCO3)	Aluminum	Aluminum	Antimony	Antimony	Arsenic	Arsenic	Barium	Barium	Beryllium	Beryllium	BOD	Bismuth	Bismuth	Boron	Boron	Bromide	Cadmium	Cadmium	Calcium	Carbon, Dissolved Organic	Carbon, Total Organic
		Fraction	N	N	N	D	T	D	T	D	T	D	T	D	T	N	D	T	D	T	N	D	T	T	D	T
		Unit	%	%	mg/l	mg/l	mg/l	ug/l	ug/l	ug/l	ug/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
4/11/2022	200393	EV_ER1			195	0.0032	0.0242	< 0.10	< 0.10	0.19	0.20	0.0799	0.0857	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.011	< 0.010	< 0.050	0.0140	0.0155	71.1	0.82	1.04
4/11/2022	E321814	EV_ECOUT	7	0	459	0.0018	0.0031	0.22	0.24	0.26	0.27	0.0656	0.0646	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.013	0.015	< 0.250	0.0967	0.0924	286	0.64	0.60
4/11/2022	E321812	F2_BPO																								
4/12/2022	0200097	EV_EC1			405																< 0.250					
4/12/2022	E102685	EV_BC1	0	0	317	0.0032	0.0072	0.92	0.87	0.21	0.26	0.0625	0.0658	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.037	0.041	< 0.250	< 0.0150	< 0.0150	224	0.91	1.00
4/12/2022	E206231	EV_GT1	0	0	321	0.0026	0.0114	0.77	0.80	0.29	0.38	0.234	0.214	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.032	0.033	< 0.250	0.145	0.147	242	1.37	1.38
4/12/2022	E206231	EV_GT1	0	0	311	0.0014	0.0219	0.79	0.95	0.29	0.34	0.238	0.121	< 0.020	< 0.040		< 0.000050	< 0.000100	0.030	0.040	< 0.250	0.134	0.167	269	1.25	1.28
4/12/2022	E321812	F2_BPO			490	0.0014		0.30		0.46		0.0106		< 0.020		< 2.0	< 0.000050		0.031		0.360	0.365			1.07	
4/12/2022	E321812	F2_BPO																								
4/12/2022	E300091	EV_MC2			188																< 0.050					
4/12/2022	E102685	EV_BC1	0	0	308	< 0.0010	0.0034	0.93	0.91	0.17	0.28	0.0654	0.0653	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.041	0.045	< 0.250	< 0.0100	< 0.0150	224	1.02	1.05
4/12/2022	E300091	EV_MC2			183	0.0042	0.0208	0.11	0.12	0.14	0.17	0.104	0.117	< 0.020	< 0.020		< 0.000050	< 0.000050	0.011	0.013	< 0.050	0.0262	0.0327	73.4	1.51	1.71
4/12/2022	E321812	F2_BPO																								
4/12/2022	E321791	F2_NWPI			293	0.0057		2.10		0.23		0.0309		< 0.020		< 2.0	< 0.000050		0.043		< 0.250	0.912			0.79	
4/13/2022	E300091	EV_MC2			186																< 0.050					
4/13/2022	0200097	EV_EC1			404																< 0.250					
4/13/2022	E321791	F2_NWPI			289																< 0.250				0.68	
4/13/2022	E321812	F2_BPO			476											< 2.0					0.255				1.07	
4/13/2022	E321812	F2_BPO																								
4/13/2022	0200097	EV_EC1	0	0	398	0.0056	< 0.0030	0.21	0.24	0.24	0.34	0.0415	0.0430	< 0.020	< 0.020		< 0.000050	< 0.000050	0.014	0.016	< 0.250	0.0103	0.0097	243	0.96	1.08
4/13/2022	E321812	F2_BPO																								
4/13/2022	0200097	EV_EC1	0	0	398	0.0056	< 0.0030	0.21	0.24	0.24	0.34	0.0415	0.0430	< 0.020	< 0.020		< 0.000050	< 0.000050	0.014	0.016	< 0.250	0.0103	0.0097	243	0.96	1.08
4/13/2022	0200203	EV_MC3			155	0.0030	0.0525	< 0.10	< 0.10	0.14	0.19	0.116	0.113	< 0.020	< 0.020		< 0.000050	< 0.000050	< 0.010	0.010	< 0.050	0.0176	0.0271	50.8	1.80	1.78
4/13/2022	200393	EV_ER1			183	0.0013	0.0177	< 0.10	< 0.10	0.14	0.19	0.0884	0.0872	< 0.020	< 0.020		< 0.000050	< 0.000050	< 0.010	0.010	< 0.050	0.0153	0.0175	73.4	1.03	0.99
4/13/2022	E321812	F2_BPO																								
4/14/2022	E321791	F2_NWPI			284	0.0016		2.12		0.16		0.0301		< 0.020		< 2.0	< 0.000050		0.046		< 0.250	0.895			< 0.50	
4/14/2022	E300091	EV_MC2			194																< 0.050					
4/14/2022	0200097	EV_EC1			388																< 0.250					
4/14/2022	E321812	F2_BPO			495	0.0017		0.28		0.49		0.0108		< 0.020		< 2.0	< 0.000050		0.030		0.364	0.262			0.77	
4/14/2022	E321812	F2_BPO																								
4/14/2022	E321812	F2_BPO																								
4/15/2022	E321791	F2_NWPI			287																< 0.250				0.58	
4/15/2022	E300091	EV_MC2			198																< 0.050					
4/15/2022	0200097	EV_EC1			402																< 0.250					
4/15/2022	E321812	F2_BPO			480											< 2.0					0.317				1.12	
4/15/2022	E321812	F2_BPO																								
4/15/2022	E321812	F2_BPO																								
4/16/2022	0200097	EV_EC1			378																< 0.250					
4/16/2022	E300091	EV_MC2			182																< 0.050					
4/16/2022	E321791	F2_NWPI			291																< 0.250				1.94	
4/16/2022	E321812	F2_BPO			481											< 2.0					0.290				1.14	
4/16/2022	E321812	F2_BPO																								
4/16/2022	E321812	F2_BPO																								
4/16/2022	E321812	F2_BPO																								
4/17/2022	E300091	EV_MC2			183																< 0.050					
4/17/2022	E321791	F2_NWPI			285																< 0.250				< 0.50	
4/17/2022	0200097	EV_EC1			394																< 0.250					
4/17/2022	E321812	F2_BPO																								
4/17/2022	E321812	F2_BPO			482											< 2.0					< 0.250				0.99	
4/17/2022	E321812	F2_BPO																								

		Parameter	48-h Static acute lethality test using Daphnia ma	96-Hr 100% Conc. Acute lethality test for R. Trout	Alkalinity, Total (As CaCO3)	Aluminum	Aluminum	Antimony	Antimony	Arsenic	Arsenic	Barium	Barium	Beryllium	Beryllium	BOD	Bismuth	Bismuth	Boron	Boron	Bromide	Cadmium	Cadmium	Calcium	Carbon, Dissolved Organic	Carbon, Total Organic
		Fraction	N	N	N	D	T	D	T	D	T	D	T	D	T	N	D	T	D	T	N	D	T	T	D	T
		Unit	%	%	mg/l	mg/l	mg/l	ug/l	ug/l	ug/l	ug/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
4/18/2022	E321812	F2_BPO	0	0	474	< 0.0010	0.0038	0.25	0.27	0.49	0.74	0.0106	0.0109	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.028	0.032	0.269	0.234	0.341	265	0.86	0.85
4/18/2022	E321791	F2_NWPI			286	0.0014	0.0098	2.11	2.19	0.16	0.19	0.0281	0.0349	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.044	0.050	< 0.250	0.903	0.960	242	0.91	0.82
4/18/2022	E300091	EV_MC2			178	0.0022	0.0277	0.10	0.11	0.17	0.17	0.112	0.114	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.011	0.012	< 0.050	0.0192	0.0326	71.4	1.18	1.26
4/18/2022	E300091	EV_MC2																								
4/18/2022	0200097	EV_EC1			395	< 0.0010	0.0042	0.22	0.24	0.26	0.26	0.0405	0.0404	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.014	0.016	< 0.250	0.0066	0.0152	238	0.63	0.89
4/18/2022	0200097	EV_EC1																								
4/18/2022	0200203	EV_MC3			157	0.0024	0.0321	< 0.10	< 0.10	0.17	0.18	0.103	0.110	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	< 0.010	0.010	< 0.050	0.0187	0.0274	50.6	1.33	1.44
4/18/2022	E321814	EV_ECOUT			443	0.0030	0.0049	0.19	0.21	0.23	0.26	0.0612	0.0639	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.012	0.014	< 0.250	0.0911	0.0930	258	< 0.50	0.52
4/18/2022	310168	EV_MC2A			172	0.0021	0.0300	< 0.10	< 0.10	0.14	0.16	0.107	0.113	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	< 0.010	0.011	< 0.050	0.0172	0.0280	66.8	1.30	1.29
4/18/2022	200393	EV_ER1			181	0.0017	0.0143	< 0.10	< 0.10	0.20	0.20	0.0857	0.0864	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	< 0.010	< 0.010	< 0.050	0.0168	0.0194	72.2	0.68	0.75
4/18/2022	E321812	F2_BPO																								
4/19/2022	E300091	EV_MC2			183																< 0.050					
4/19/2022	0200097	EV_EC1			399																< 0.250					
4/19/2022	E206231	EV_GT1			337	0.0023	0.0212	0.65	0.74	0.28	0.36	0.256	0.218	< 0.020	< 0.040	< 2.0	< 0.000050	< 0.000100	0.029	0.034	< 0.250	0.143	0.174	236	1.13	1.06
4/19/2022	E102685	EV_BC1			320	0.0029	0.0040	0.80	0.89	< 0.20	0.24	0.0678	0.0751	< 0.040	< 0.020	< 2.0	< 0.000100	< 0.000050	0.038	0.041	< 0.250	< 0.0100	< 0.0150	229	0.92	1.14
4/19/2022	E321812	F2_BPO			477	0.0013		0.22		0.56		0.0104		< 0.020		< 2.0	< 0.000050		0.026		< 0.250	0.177			1.03	
4/19/2022	E321812	F2_BPO																								
4/19/2022	E321791	F2_NWPI			285	0.0018		2.11		0.16		0.0272		< 0.020		< 2.0	< 0.000050		0.044		< 0.250	0.912			0.58	
4/19/2022	E321814	EV_ECOUT			443	< 0.0010	0.0033	0.18	0.23	0.25	0.27	0.0633	0.0722	< 0.020	< 0.020		< 0.000050	< 0.000050	0.012	0.014	< 0.250	0.0905	0.106	275	0.98	1.63
4/19/2022	0200203	EV_MC3			155	0.0014	0.0513	< 0.10	< 0.10	0.16	0.23	0.117	0.119	< 0.020	< 0.020		< 0.000050	< 0.000050	< 0.010	< 0.010	< 0.050	0.0177	0.0288	51.6	2.01	1.92
4/19/2022	E206231	EV_GT1																								
4/19/2022	E102685	EV_BC1																								
4/19/2022	E300091	EV_MC2			183	0.0016	0.0322	< 0.10	0.12	0.16	0.20	0.115	0.121	< 0.020	< 0.020		< 0.000050	< 0.000050	0.011	0.012	< 0.050	0.0252	0.0372	71.8	1.97	1.50
4/19/2022	200393	EV_ER1			192	0.0020	0.0181	< 0.10	< 0.10	0.15	0.20	0.0910	0.0923	< 0.020	< 0.020		< 0.000050	< 0.000050	< 0.010	0.010	< 0.050	0.0149	0.0237	78.0	1.22	1.53
4/19/2022	E321812	F2_BPO																								
4/20/2022	E300091	EV_MC2			184																< 0.050					
4/20/2022	0200097	EV_EC1			367																< 0.250					
4/20/2022	E321791	F2_NWPI			285																< 0.250				0.76	
4/20/2022	E321812	F2_BPO			475											< 2.0					< 0.250				0.84	
4/20/2022	E321812	F2_BPO																								
4/20/2022	0200097	EV_EC1																								
4/21/2022	E300091	EV_MC2			180																< 0.050					
4/21/2022	0200097	EV_EC1			370																< 0.250					
4/21/2022	E321812	F2_BPO																								
4/21/2022	E321791	F2_NWPI			299	< 0.0010		2.37		0.20		0.0260		< 0.020		< 2.0	< 0.000050		0.046		< 0.250	0.867			0.66	
4/21/2022	E321812	F2_BPO			456	< 0.0010		0.26		0.57		0.00966		< 0.020		< 2.0	< 0.000050		0.029		< 0.250	0.218			0.57	
4/21/2022	E321812	F2_BPO																								
4/22/2022	E300091	EV_MC2			189																< 0.050					
4/22/2022	0200097	EV_EC1			390																< 0.250					
4/22/2022	E321791	F2_NWPI			290																< 0.250				< 0.50	
4/22/2022	E321812	F2_BPO																								
4/22/2022	E321812	F2_BPO			485											< 2.0					< 0.250				0.94	
4/22/2022	E321812	F2_BPO																								
4/23/2022	0200097	EV_EC1			375																< 0.250					
4/23/2022	E300091	EV_MC2			187																< 0.050					
4/23/2022	E321791	F2_NWPI			288																< 0.250				0.71	
4/23/2022	E321812	F2_BPO			486											< 2.0					0.332				1.26	
4/23/2022	E321812	F2_BPO																								

Parameter			48-h Static acute lethality test using Daphnia ma	96-Hr 100% Conc. Acute lethality test for R. Trout	Alkalinity, Total (As CaCO3)	Aluminum	Aluminum	Antimony	Antimony	Arsenic	Arsenic	Barium	Barium	Beryllium	Beryllium	BOD	Bismuth	Bismuth	Boron	Boron	Bromide	Cadmium	Cadmium	Calcium	Carbon, Dissolved Organic	Carbon, Total Organic
Fraction			N	N	N	D	T	D	T	D	T	D	T	D	T	N	D	T	D	T	N	D	T	T	D	T
Unit			%	%	mg/l	mg/l	mg/l	ug/l	ug/l	ug/l	ug/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
4/24/2022	E300091	EV_MC2			197																< 0.050					
4/24/2022	0200097	EV_EC1			376																< 0.250					
4/24/2022	E321791	F2_NWPI			291																< 0.250				2.05	
4/24/2022	E321812	F2_BPO																								
4/24/2022	E321812	F2_BPO			487											< 2.0					1.43				2.70	
4/24/2022	E321812	F2_BPO																								
4/25/2022	E300091	EV_MC2																								
4/25/2022	E300091	EV_MC2			177	0.0031	0.0612	0.10	0.12	0.17	0.19	0.110	0.104	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.012	0.012	< 0.050	0.0298	0.0370	68.8	1.90	2.41
4/25/2022	200393	EV_ER1			185	0.0010	0.0287	< 0.10	0.16	0.15	0.20	0.0876	0.0828	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	< 0.010	< 0.010	< 0.050	0.0161	0.0225	74.2	1.22	1.18
4/25/2022	310168	EV_MC2A			168	0.0702	0.0610	0.20	0.11	0.16	0.21	0.108	0.106	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.011	0.010	< 0.050	0.0340	0.0313	61.8	2.12	2.16
4/25/2022	E321812	F2_BPO	0	0	494	0.0057	0.0033	0.24	0.24	0.49	0.76	0.0106	0.00981	< 0.040	< 0.020	< 2.0	< 0.000100	< 0.000050	0.031	0.029	0.260	0.261	0.403	258	1.57	1.48
4/25/2022	0200203	EV_MC3			149	0.0029	0.0898	< 0.10	< 0.10	0.14	0.18	0.105	0.104	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	< 0.010	0.010	< 0.050	0.0147	0.0378	47.3	2.46	2.79
4/25/2022	E321812	F2_BPO																								
4/25/2022	0200097	EV_EC1	0	0	370	< 0.0010	< 0.0030	0.22	0.23	0.23	0.26	0.0428	0.0412	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.014	0.013	< 0.250	0.0068	0.0072	231	1.05	1.20
4/25/2022	0200097	EV_EC1																								
4/25/2022	E321791	F2_NWPI			291	0.0023	0.0101	2.15	2.15	< 0.20	0.26	0.0286	0.0336	< 0.040	< 0.020	< 2.0	< 0.000100	< 0.000050	0.044	0.042	< 0.250	0.893	0.895	244	0.80	0.69
4/25/2022	E321814	EV_ECOUT	0	0	437	0.0011	< 0.0030	0.20	0.19	0.26	0.28	0.0654	0.0594	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.013	0.012	< 0.250	0.0918	0.0773	260	0.79	1.02
4/25/2022	E321812	F2_BPO																								
4/26/2022	E321791	F2_NWPI			282	< 0.0010		2.19		0.15		0.0259		< 0.020		< 2.0	< 0.000050		0.045		< 0.250	0.852			0.57	
4/26/2022	E300091	EV_MC2			174																< 0.050					
4/26/2022	E300091	EV_MC2																								
4/26/2022	E300091	EV_MC2																								
4/26/2022	0200097	EV_EC1			372																< 0.250					
4/26/2022	E206231	EV_GT1	0	0	333	0.0016	0.0060	0.74	0.75	0.26	0.33	0.316	0.241	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.032	0.031	< 0.250	0.113	0.143	215	1.14	1.13
4/26/2022	E321812	F2_BPO			478	0.0014		0.24		0.54		0.00957		< 0.020		< 2.0	< 0.000050		0.033		0.402	0.266			1.69	
4/26/2022	E321812	F2_BPO																								
4/26/2022	0200203	EV_MC3			138	0.0032	0.232	< 0.10	0.10	0.15	0.29	0.102	0.105	< 0.020	< 0.020		< 0.000050	< 0.000050	< 0.010	0.010	< 0.050	0.0152	0.0519	45.3	2.53	2.90
4/26/2022	E206231	EV_GT1																								
4/26/2022	E102685	EV_BC1	0	0	307	0.0017	0.0045	0.84	0.89	0.20	0.27	0.0577	0.0626	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.037	0.037	< 0.250	< 0.0050	0.0071	209	0.96	0.79
4/26/2022	E102685	EV_BC1																								
4/26/2022	E300091	EV_MC2			174	0.0034	0.0821	< 0.10	0.13	0.16	0.19	0.109	0.104	< 0.020	< 0.020		< 0.000050	< 0.000050	0.010	0.012	< 0.050	0.0378	0.0298	59.2	2.32	2.41
4/26/2022	200393	EV_ER1			188	0.0018	0.156	< 0.10	< 0.10	0.17	0.33	0.0850	0.0899	< 0.020	< 0.020		< 0.000050	< 0.000050	< 0.010	< 0.010	< 0.050	0.0136	0.0546	70.6	1.32	1.38
4/26/2022	E321812	F2_BPO																								
4/27/2022	E321791	F2_NWPI			299											< 2.0					< 0.250				< 0.50	
4/27/2022	0200097	EV_EC1			384																< 0.250					
4/27/2022	E300091	EV_MC2			158																< 0.050					
4/27/2022	E300091	EV_MC2																								
4/27/2022	E300091	EV_MC2																								
4/27/2022	E321812	F2_BPO			481											< 2.0					0.357				1.41	
4/27/2022	E321812	F2_BPO																								
4/27/2022	0200097	EV_EC1																								
4/27/2022	E321812	F2_BPO																								
4/28/2022	E300091	EV_MC2			153																< 0.050					
4/28/2022	0200097	EV_EC1			372																< 0.250					
4/28/2022	E321791	F2_NWPI			284	< 0.0010		2.14		0.16		0.0287		< 0.020		< 2.0	< 0.000050		0.042		< 0.250	0.909			0.52	
4/28/2022	E321812	F2_BPO			502	< 0.0010		0.19		0.63		0.0111		< 0.020		< 2.0	< 0.000050		0.038		0.486	0.332			< 0.50	
4/28/2022	E321812	F2_BPO																								
4/28/2022	E321812	F2_BPO																								

		Parameter	48-h Static acute lethality test using Daphnia ma	96-Hr 100% Conc. Acute lethality test for R. Trout	Alkalinity, Total (As CaCO3)	Aluminum	Aluminum	Antimony	Antimony	Arsenic	Arsenic	Barium	Barium	Beryllium	Beryllium	BOD	Bismuth	Bismuth	Boron	Boron	Bromide	Cadmium	Cadmium	Calcium	Carbon, Dissolved Organic	Carbon, Total Organic
		Fraction	N	N	N	D	T	D	T	D	T	D	T	D	T	N	D	T	D	T	N	D	T	T	D	T
		Unit	%	%	mg/l	mg/l	mg/l	ug/l	ug/l	ug/l	ug/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
4/29/2022	E321791	F2_NWPI			280																< 0.250				0.59	
4/29/2022	E300091	EV_MC2			161																< 0.050					
4/29/2022	0200097	EV_EC1			360																< 0.250					
4/29/2022	E321812	F2_BPO			480											< 2.0					0.296				1.22	1.24
4/29/2022	E321812	F2_BPO																								
4/29/2022	E321812	F2_BPO																								
4/30/2022	E300091	EV_MC2			173																< 0.050					
4/30/2022	0200097	EV_EC1			367																< 0.250					
4/30/2022	E321791	F2_NWPI			282																< 0.250				0.62	
4/30/2022	E321812	F2_BPO			507											< 2.0					0.547				1.07	1.21
4/30/2022	E321812	F2_BPO																								
4/30/2022	E321812	F2_BPO																								
5/1/2022	E300091	EV_MC2			166																< 0.050					
5/1/2022	E300091	EV_MC2																								
5/1/2022	E300091	EV_MC2																								
5/1/2022	0200097	EV_EC1			373																< 0.250					
5/1/2022	E321791	F2_NWPI			285																< 0.250				0.55	
5/1/2022	E321812	F2_BPO			488											< 2.0					0.663				1.02	0.96
5/1/2022	E321812	F2_BPO																								
5/1/2022	E321812	F2_BPO																								
5/1/2022	E321812	F2_BPO																								
5/1/2022	E321812	F2_BPO																								
5/2/2022	0200097	EV_EC1			360	0.0010	< 0.0030	0.20	0.22	0.24	0.36	0.0422	0.0433	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.014	0.015	< 0.250	0.0068	0.0073	236	0.85	1.07
5/2/2022	0200097	EV_EC1																								
5/2/2022	310168	EV_MC2A			151	0.0054	0.169	< 0.10	< 0.10	0.16	0.30	0.0895	0.0997	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	< 0.010	0.010	< 0.050	0.0125	0.0428	49.4	2.45	2.78
5/2/2022	0200203	EV_MC3			127	0.0054	0.227	< 0.10	0.10	0.17	0.31	0.0905	0.0997	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	< 0.010	0.011	< 0.050	0.0169	0.0490	44.1	2.80	2.76
5/2/2022	200393	EV_ER1			161	0.0029	0.0900	< 0.10	< 0.10	0.14	0.27	0.0782	0.0801	< 0.020	< 0.020	2.1	< 0.000050	< 0.000050	< 0.010	< 0.010	< 0.050	0.0145	0.0253	64.7	1.41	1.45
5/2/2022	E321812	F2_BPO	0	0	494	0.0016	0.0038	0.19	0.21	0.47	0.71	0.0102	0.0108	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.040	0.042	0.639	0.392	0.677	288	0.86	0.93
5/2/2022	E300091	EV_MC2			151	0.0040	0.146	< 0.10	0.10	0.18	0.26	0.0862	0.101	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	< 0.010	0.011	< 0.050	0.0183	0.0392	53.7	2.28	2.46
5/2/2022	E300091	EV_MC2																								
5/2/2022	E321814	EV_ECOUT			452	< 0.0010	0.0093	0.20	0.20	0.22	0.34	0.0620	0.0633	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.013	0.014	< 0.250	0.0857	0.0903	270	0.65	0.70
5/2/2022	E321812	F2_BPO																								
5/2/2022	E321791	F2_NWPI			271	< 0.0010	0.0147	2.17	2.26	0.18	0.28	0.0278	0.0353	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.046	0.047	< 0.250	0.912	0.952	250	0.56	0.68
5/2/2022	E321812	F2_BPO																								
5/3/2022	E300091	EV_MC2			153																< 0.050					
5/3/2022	0200097	EV_EC1			352																< 0.250					
5/3/2022	E206231	EV_GT1			329	0.0018	0.0088	0.72	0.77	0.29	0.44	0.116	0.0997	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.035	0.034	0.282	0.118	0.140	241	1.08	1.10
5/3/2022	E321812	F2_BPO			493	0.0018		0.20		0.45		0.0101		< 0.020		< 2.0	< 0.000050		0.037		0.672	0.360			1.31	1.48
5/3/2022	E321812	F2_BPO																								
5/3/2022	0200203	EV_MC3			125	0.0068	0.423	< 0.10	0.12	0.16	0.39	0.0840	0.0954	< 0.020	0.023		< 0.000050	< 0.000050	< 0.010	0.010	< 0.050	0.0144	0.0842	41.4	3.73	4.56
5/3/2022	E102685	EV_BC1			293	0.0035	0.0030	0.81	0.85	0.22	0.30	0.0541	0.0620	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.037	0.038	< 0.250	< 0.0100	< 0.0150	216	0.92	1.03
5/3/2022	E102685	EV_BC1			284	0.0014	< 0.0060	0.78	0.81	0.23	0.26	0.0541	0.0544	< 0.020	< 0.020		< 0.000050	< 0.000050	0.037	0.040	< 0.250	< 0.0100	< 0.0100	219	0.99	0.94
5/3/2022	E321791	F2_NWPI			281	0.0051		2.15		0.15		0.0274		< 0.020		< 2.0	< 0.000050		0.043		< 0.250	0.858			0.94	
5/3/2022	E206231	EV_GT1			289	0.0024	< 0.0120	0.70	0.72	0.27	0.34	0.117	0.0881	< 0.020	< 0.020		< 0.000050	< 0.000050	0.032	0.035	0.267	0.108	0.130	238	1.34	1.40
5/3/2022	E300091	EV_MC2			136	0.0050	0.307	< 0.10	0.11	0.17	0.29	0.0822	0.0945	< 0.020	0.022		< 0.000050	< 0.000050	< 0.010	0.011	< 0.050	0.0167	0.0696	51.0	3.01	5.25
5/3/2022	E321814	EV_ECOUT			434	0.0014	< 0.0090	0.20	0.21	0.21	0.28	0.0615	0.0633	< 0.020	< 0.020		< 0.000050	< 0.000050	0.012	0.014	< 0.250	0.0834	0.0936	273	< 0.50	0.52
5/3/2022	200393	EV_ER1			162	0.0024	0.130	< 0.10	< 0.10	0.15	0.29	0.0747	0.0804	< 0.020	< 0.020		< 0.000050	< 0.000050	< 0.010	< 0.010	< 0.050	0.0166	0.0444	65.5	1.76	2.15
5/3/2022	E321812	F2_BPO																								
5/4/2022	0200097	EV_EC1					18		42		< 409		8.8							0.269			140	2046		
5/4/2022	E300091	EV_MC2			126																< 0.050					

		Parameter	48-h Static acute lethality test using Daphnia ma	96-Hr 100% Conc. Acute lethality test for R. Trout	Alkalinity, Total (As CaCO3)	Aluminum	Aluminum	Antimony	Antimony	Arsenic	Arsenic	Barium	Barium	Beryllium	Beryllium	BOD	Bismuth	Bismuth	Boron	Boron	Bromide	Cadmium	Cadmium	Calcium	Carbon, Dissolved Organic	Carbon, Total Organic
		Fraction	N	N	N	D	T	D	T	D	T	D	T	D	T	N	D	T	D	T	N	D	T	T	D	T
		Unit	%	%	mg/l	mg/l	mg/l	ug/l	ug/l	ug/l	ug/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
5/4/2022	0200097	EV_EC1			363																< 0.250					
5/4/2022	E321812	F2_BPO			517											< 2.0					0.674				1.08	1.01
5/4/2022	E321812	F2_BPO																								
5/4/2022	E321791	F2_NWPI			289																< 0.250				0.76	
5/4/2022	0200097	EV_EC1	0	0	373	< 0.0010	< 0.0030	0.21	0.24	0.25	0.28	0.0455	0.0478	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.013	0.015	< 0.250	< 0.0050	0.0054	242	1.03	1.05
5/4/2022	E321812	F2_BPO																								
5/4/2022	0200203	EV_MC3	0	0	111	0.0316	0.960	< 0.10	0.14	0.18	0.50	0.0792	0.0956	< 0.020	0.037	< 2.0	< 0.000050	< 0.000050	< 0.010	0.010	< 0.050	0.0294	0.106	35.4	4.21	4.63
5/4/2022	E321814	EV_ECOUT	0	0	463	< 0.0010	< 0.0030	0.19	0.24	0.23	0.22	0.0606	0.0603	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.012	0.013	< 0.250	0.0825	0.0873	268	0.66	0.71
5/5/2022	0200097	EV_EC1					1.2		5		< 409		0.143							< 0.056			< 43	1001		
5/5/2022	E300091	EV_MC2			128																< 0.050					
5/5/2022	0200097	EV_EC1			357																< 0.250					
5/5/2022	E321812	F2_BPO																								
5/5/2022	E321812	F2_BPO			496	< 0.0010	0.0047	0.20	0.22	0.49	0.60	0.00997	0.0108	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.039	0.045	0.671	0.312	0.548	290	1.20	1.34
5/5/2022	0200097	EV_EC1	0	0	343	0.0014	< 0.0030	0.22	0.21	0.22	0.28	0.0422	0.0420	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.014	0.014	< 0.250	< 0.0050	< 0.0050	234	0.78	0.96
5/5/2022	0200203	EV_MC3			106	0.0124	0.993	< 0.10	0.15	0.21	0.61	0.0692	0.0899	< 0.020	0.066	< 2.0	< 0.000050	< 0.000050	< 0.010	< 0.010	< 0.050	0.0186	0.143	33.8	4.94	6.10
5/5/2022	E321814	EV_ECOUT	0	0	466	0.0012	0.0033	0.20	0.22	0.22	0.26	0.0601	0.0605	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.013	0.014	< 0.250	0.0836	0.0880	269	0.54	0.56
5/5/2022	E321812	F2_BPO																								
5/6/2022	0200097	EV_EC1			363																< 0.250					
5/6/2022	0200097	EV_EC1	0	0	374	0.0010	< 0.0030	0.22	0.24	0.21	0.26	0.0400	0.0474	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.011	0.014	< 0.250	< 0.0050	0.0057	227	1.06	1.08
5/6/2022	E321812	F2_BPO			492											< 2.0					0.542				0.82	0.94
5/6/2022	0200203	EV_MC3			82.7	0.0215	0.502	< 0.10	0.13	0.23	0.57	0.0586	0.103	< 0.020	0.084	< 2.0	< 0.000050	< 0.000050	< 0.010	< 0.010	< 0.050	0.0312	0.379	31.6	5.35	10.5
5/6/2022	E300091	EV_MC2			105																< 0.050					
5/6/2022	E321814	EV_ECOUT	0	0	469	< 0.0010	< 0.0030	0.21	0.23	0.22	0.24	0.0585	0.0657	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.011	0.014	< 0.250	0.0858	0.0897	279	0.90	0.71
5/6/2022	E321812	F2_BPO																								
5/6/2022	E321791	F2_NWPI			285	0.0019		2.11		0.16		0.0287		< 0.020		< 2.0	< 0.000050		0.046		< 0.250	0.873			0.55	
5/7/2022	E321791	F2_NWPI			284																< 0.250				< 0.50	
5/7/2022	0200097	EV_EC1			361																< 0.250					
5/7/2022	0200097	EV_EC1	3	0	345	< 0.0010	< 0.0060	0.19	0.22	0.26	0.27	0.0441	0.0430	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.013	0.014	< 0.250	< 0.0050	0.0050	227	0.90	0.99
5/7/2022	0200203	EV_MC3			89.8	0.0183	0.905	< 0.10	0.15	0.25	0.69	0.0629	0.0832	< 0.020	0.069	< 2.0	< 0.000050	< 0.000050	< 0.010	< 0.010	< 0.050	0.0226	0.167	30.4	4.58	7.11
5/7/2022	E300091	EV_MC2			110																< 0.050					
5/7/2022	E321812	F2_BPO			484											2.3					0.604				0.95	1.00
5/7/2022	E321812	F2_BPO																								
5/7/2022	E321814	EV_ECOUT	0	0	440	< 0.0010	< 0.0060	0.18	0.20	0.26	0.26	0.0621	0.0615	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.013	0.013	< 0.250	0.0871	0.0817	271	0.97	0.62
5/7/2022	E321812	F2_BPO																								
5/8/2022	E321791	F2_NWPI			294																< 0.250				0.72	
5/8/2022	0200097	EV_EC1			364																< 0.250					
5/8/2022	0200097	EV_EC1	0	0	364	< 0.0010	< 0.0060	0.19	0.21	0.26	0.29	0.0447	0.0430	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.012	0.013	< 0.250	< 0.0050	< 0.0050	224	0.95	1.06
5/8/2022	0200203	EV_MC3			98.8	0.0349	0.548	< 0.10	0.12	0.21	0.48	0.0660	0.0755	< 0.020	0.043	< 2.0	< 0.000050	< 0.000050	< 0.010	< 0.010	< 0.050	0.0274	0.0987	31.7	5.05	5.57
5/8/2022	E300091	EV_MC2			126																< 0.050					
5/8/2022	E321812	F2_BPO			487											< 2.0					0.594				1.03	1.12
5/8/2022	E321812	F2_BPO																								
5/8/2022	E321814	EV_ECOUT	0	0	444	0.0020	< 0.0060	0.19	0.20	0.22	0.25	0.0619	0.0614	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.012	0.013	< 0.250	0.0793	0.0858	266	0.74	1.11
5/8/2022	E321812	F2_BPO																								
5/9/2022	E300091	EV_MC2			131	0.0113	0.310	< 0.10	0.12	0.18	0.31	0.0717	0.0758	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	< 0.010	< 0.010	< 0.050	0.0249	0.0556	42.7	3.30	3.47
5/9/2022	E321791	F2_NWPI			257	0.0054	0.0261	2.20	2.31	0.21	0.25	0.0292	0.0377	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.043	0.046	< 0.250	0.861	0.930	237	< 0.50	0.52
5/9/2022	E321812	F2_BPO	0	0	473	0.0065	< 0.0030	0.26	0.28	0.57	0.76	0.0105	0.0108	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.037	0.039	0.625	0.366	0.653	266	1.03	1.09
5/9/2022	310168	EV_MC2A			108	0.0114	0.368	< 0.10	0.11	0.19	0.31	0.0695	0.0755	< 0.020	0.022	< 2.0	< 0.000050	< 0.000050	< 0.010	< 0.010	< 0.050	0.0262	0.0571	36.0	3.60	3.60
5/9/2022	E321812	F2_BPO																								

		Parameter	48-h Static acute lethality test using Daphnia ma	96-Hr 100% Conc. Acute lethality test for R. Trout	Alkalinity, Total (As CaCO3)	Aluminum	Aluminum	Antimony	Antimony	Arsenic	Arsenic	Barium	Barium	Beryllium	Beryllium	BOD	Bismuth	Bismuth	Boron	Boron	Bromide	Cadmium	Cadmium	Calcium	Carbon, Dissolved Organic	Carbon, Total Organic
		Fraction	N	N	N	D	T	D	T	D	T	D	T	D	T	N	D	T	D	T	N	D	T	T	D	T
		Unit	%	%	mg/l	mg/l	mg/l	ug/l	ug/l	ug/l	ug/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
5/9/2022	0200097	EV_EC1	0	0	334	< 0.0010	< 0.0060	0.19	0.20	0.23	0.28	0.0417	0.0416	< 0.020	< 0.020		< 0.000050	< 0.000050	0.012	0.013	< 0.250	< 0.0050	< 0.0050	221	0.87	0.92
5/9/2022	0200203	EV_MC3			106	0.0297	0.572	< 0.10	0.12	0.22	0.35	0.0673	0.0743	< 0.020	0.022		< 0.000050	< 0.000050	< 0.010	< 0.010	< 0.050	0.0233	0.0650	32.5	3.87	4.45
5/9/2022	0200097	EV_EC1	0	0	331	0.0058	0.0034	0.21	0.25	0.27	0.26	0.0442	0.0439	< 0.020	< 0.020	2.6	< 0.000050	< 0.000050	0.014	0.014	< 0.250	0.0093	0.0084	218	0.83	0.96
5/9/2022	200393	EV_ER1			136	0.0062	0.266	0.14	0.10	0.17	0.27	0.0673	0.0728	< 0.020	< 0.020	2.9	< 0.000050	< 0.000050	< 0.010	< 0.010	< 0.050	0.0169	0.0426	50.9	2.17	2.33
5/9/2022	E321814	EV_ECOUT	0	0	430	0.0037	< 0.0060	0.19	0.20	0.22	0.28	0.0616	0.0604	< 0.020	< 0.020		< 0.000050	< 0.000050	0.012	0.013	< 0.250	0.0900	0.0857	262	0.73	0.78
5/9/2022	E321814	EV_ECOUT	3	0	432	< 0.0010	0.0031	0.21	0.21	0.24	0.21	0.0641	0.0650	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.013	0.014	< 0.250	0.0858	0.0853	259	< 0.50	0.62
5/9/2022	E321812	F2_BPO																								
5/10/2022	E300091	EV_MC2			140																< 0.050					
5/10/2022	0200097	EV_EC1			377																< 0.250					
5/10/2022	0200097	EV_EC1			372																					
5/10/2022	E321812	F2_BPO																								
5/10/2022	E321791	F2_NWPI			284	0.0022		2.25		0.20		0.0303		< 0.020		< 2.0	< 0.000050		0.046		< 0.250	0.824			0.62	
5/10/2022	E321812	F2_BPO			490	< 0.0010		0.28		0.61		0.0109		< 0.020		< 2.0	< 0.000050		0.040		0.601	0.398			0.93	0.98
5/10/2022	E206231	EV_GT1	0	0	342	0.0015	0.0100	0.71	0.82	0.31	0.36	0.251	0.251	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.031	0.034	0.384	0.116	0.132	244	1.12	1.22
5/10/2022	E206231	EV_GT1																								
5/10/2022	E321812	F2_BPO																								
5/10/2022	0200097	EV_EC1	0	0	340	< 0.0010	< 0.0030	0.20	0.21	0.24	0.27	0.0422	0.0430	< 0.020	< 0.020		< 0.000050	< 0.000050	0.012	0.012	< 0.250	< 0.0050	0.0054	213	0.83	1.09
5/10/2022	0200203	EV_MC3			112	0.0100	0.521	< 0.10	0.12	0.17	0.37	0.0692	0.0774	< 0.020	0.028		< 0.000050	< 0.000050	< 0.010	< 0.010	< 0.050	0.0233	0.0577	32.9	3.26	3.60
5/10/2022	E102685	EV_BC1	0	0	281	< 0.0010	0.0042	0.77	0.85	0.22	0.23	0.0591	0.0592	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.036	0.037	0.323	< 0.0100	< 0.0100	222	1.00	0.97
5/10/2022	E102685	EV_BC1																								
5/10/2022	E321814	EV_ECOUT	0	0	473	< 0.0010	0.0039	0.19	0.20	0.24	0.27	0.0601	0.0609	< 0.020	< 0.020		< 0.000050	< 0.000050	0.011	0.012	< 0.250	0.0743	0.0857	248	0.74	0.75
5/10/2022	E321814	EV_ECOUT																								
5/10/2022	E321812	F2_BPO																								
5/11/2022	E300091	EV_MC2																								
5/11/2022	0200097	EV_EC1																								
5/11/2022	E321812	F2_BPO																								
5/11/2022	E321791	F2_NWPI			282																< 0.250				0.56	
5/11/2022	E321812	F2_BPO			510											< 2.0					0.644				0.90	1.00
5/11/2022	310168	EV_MC2A																								
5/11/2022	0200203	EV_MC3			96.7	0.180	0.369	< 0.10	0.12	0.26	0.35	0.0747	0.0742	< 0.020	0.024	< 2.0	< 0.000050	< 0.000050	< 0.010	< 0.010	< 0.050	0.0533	0.0612	32.0	3.62	4.05
5/11/2022	E300091	EV_MC2			135	0.0072	0.212	< 0.10	0.11	0.19	0.25	0.0810	0.0791	< 0.020	< 0.020		< 0.000050	< 0.000050	0.010	0.010	< 0.050	0.0216	0.0423	45.0	3.26	3.13
5/11/2022	E102685	EV_BC1																								
5/11/2022	E206231	EV_GT1																								
5/11/2022	E321812	F2_BPO																								
5/12/2022	E300091	EV_MC2																								
5/12/2022	0200097	EV_EC1																								
5/12/2022	E321791	F2_NWPI			279	0.0015		2.34		0.19		0.0277		< 0.020		< 2.0	< 0.000050		0.041		< 0.250	0.804			0.74	
5/12/2022	E321812	F2_BPO																								
5/12/2022	E321812	F2_BPO			484	0.0024		0.30		0.55		0.00980		< 0.020		< 2.0	< 0.000050		0.035		0.512	0.328			< 0.50	0.58
5/12/2022	200393	EV_ER1			153	0.0044	0.135	< 0.10	< 0.10	0.17	0.22	0.0765	0.0706	< 0.020	< 0.020		< 0.000050	< 0.000050	0.012	< 0.010	< 0.050	0.0153	0.0350	57.9	1.72	1.75
5/12/2022	E321812	F2_BPO																								
5/13/2022	E321791	F2_NWPI			288																< 0.250				< 0.50	
5/13/2022	0200097	EV_EC1																								
5/13/2022	E321812	F2_BPO			500											< 2.0					0.503				< 0.50	< 0.50
5/13/2022	E300091	EV_MC2																								
5/13/2022	E321812	F2_BPO																								
5/13/2022	E321812	F2_BPO																								
5/14/2022	E321791	F2_NWPI			266																< 0.250				0.60	

		Parameter	48-h Static acute lethality test using Daphnia ma	96-Hr 100% Conc. Acute lethality test for R. Trout	Alkalinity, Total (As CaCO3)	Aluminum	Aluminum	Antimony	Antimony	Arsenic	Arsenic	Barium	Barium	Beryllium	Beryllium	BOD	Bismuth	Bismuth	Boron	Boron	Bromide	Cadmium	Cadmium	Calcium	Carbon, Dissolved Organic	Carbon, Total Organic
		Fraction	N	N	N	D	T	D	T	D	T	D	T	D	T	N	D	T	D	T	N	D	T	T	D	T
		Unit	%	%	mg/l	mg/l	mg/l	ug/l	ug/l	ug/l	ug/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
5/14/2022	0200097	EV_EC1																								
5/14/2022	E321812	F2_BPO			489											< 2.0					0.591				0.57	0.60
5/14/2022	E321812	F2_BPO																								
5/14/2022	E300091	EV_MC2																								
5/14/2022	E321812	F2_BPO																								
5/15/2022	E300091	EV_MC2																								
5/15/2022	0200097	EV_EC1																								
5/15/2022	E321812	F2_BPO			516											< 2.0					0.618				< 0.50	< 0.50
5/15/2022	E321791	F2_NWPI			283																< 0.250				< 0.50	
5/15/2022	E321812	F2_BPO																								
5/15/2022	E321812	F2_BPO																								
5/16/2022	E321791	F2_NWPI			286	0.0017	0.0208	2.21	2.22	0.18	0.22	0.0302	0.0370	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.047	0.046	< 0.250	0.884	0.918	233	0.68	
5/16/2022	E300091	EV_MC2			130	0.0078	0.105	0.14	< 0.10	0.15	0.23	0.0780	0.0821	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	< 0.010	0.010	< 0.050	0.0222	0.0423	42.9	3.14	2.95
5/16/2022	E300091	EV_MC2																								
5/16/2022	E321812	F2_BPO	13	0	495	0.0011	0.0035	0.27	0.28	0.54	0.70	0.0111	0.0108	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.041	0.040	0.528	0.309	0.635	268	0.84	0.75
5/16/2022	E321812	F2_BPO																								
5/16/2022	0200097	EV_EC1			358	0.0013	< 0.0030	0.21	0.22	0.24	0.25	0.0487	0.0471	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.014	0.014	< 0.250	0.0067	0.0058	228	1.19	2.53
5/16/2022	0200097	EV_EC1																								
5/16/2022	0200203	EV_MC3			114	0.0098	0.183	< 0.10	0.10	0.18	0.25	0.0754	0.0792	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	< 0.010	< 0.010	< 0.050	0.0242	0.0495	33.4	3.32	3.26
5/16/2022	310168	EV_MC2A			126	0.0085	0.119	0.11	< 0.10	0.17	0.25	0.0767	0.0778	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	< 0.010	< 0.010	< 0.050	0.0183	0.0425	39.4	3.09	2.63
5/16/2022	E321814	EV_ECOUT			438	0.0016	0.0037	0.20	0.20	0.22	0.22	0.0625	0.0631	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.011	0.013	< 0.250	0.0850	0.0907	258	2.02	3.16
5/16/2022	200393	EV_ER1			153	0.0042	0.0566	< 0.10	< 0.10	0.17	0.20	0.0710	0.0708	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	< 0.010	< 0.010	< 0.050	0.0179	0.0316	52.1	2.10	1.97
5/17/2022	E300091	EV_MC2			105	0.0223	0.233	< 0.10	< 0.10	0.18	0.31	0.0690	0.0820	< 0.020	0.024		< 0.000050	< 0.000050	< 0.010	< 0.010	< 0.050	0.0256	0.110	44.3	3.00	3.08
5/17/2022	E321791	F2_NWPI			285	0.0010		2.29		0.20		0.0278		< 0.020		< 2.0	< 0.000050		0.044		< 0.250	0.867			< 0.50	
5/17/2022	0200097	EV_EC1																								
5/17/2022	E206231	EV_GT1			251	0.0022	0.0235	0.53	0.55	0.29	0.39	0.195	0.191	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.029	0.029	< 0.250	0.0610	0.0818	208	1.97	2.15
5/17/2022	E321812	F2_BPO			487	0.0028		0.28		0.56		0.0117		< 0.020		< 2.0	< 0.000050		0.041		0.507	0.151			< 0.50	< 0.50
5/17/2022	E300091	EV_MC2																								
5/17/2022	E102685	EV_BC1			278	0.0028	0.0039	0.80	0.82	0.24	0.26	0.0595	0.0584	< 0.040	< 0.020	< 2.0	< 0.000100	< 0.000050	0.046	0.044	0.335	0.0158	< 0.0100	207	1.23	1.19
5/17/2022	200393	EV_ER1			133	0.0128	0.226	< 0.10	0.10	0.18	0.28	0.0661	0.0676	< 0.020	0.020		< 0.000050	< 0.000050	< 0.010	< 0.010	< 0.050	0.0157	0.0550	54.9	2.19	2.10
5/17/2022	0200203	EV_MC3			87.3	0.0195	0.362	< 0.10	0.12	0.22	0.36	0.0653	0.0684	< 0.020	0.025		< 0.000050	< 0.000050	< 0.010	< 0.010	< 0.050	0.0257	0.0892	34.8	3.41	3.54
5/17/2022	E206231	EV_GT1																								
5/17/2022	E102685	EV_BC1																								
5/18/2022	E321791	F2_NWPI			286																< 0.250				0.55	
5/18/2022	0200097	EV_EC1																								
5/18/2022	E321812	F2_BPO			492											< 2.0					0.420				< 0.50	< 0.50
5/18/2022	E321812	F2_BPO																								
5/18/2022	E300091	EV_MC2																								
5/18/2022	0200097	EV_EC1																								
5/19/2022	E321791	F2_NWPI			285	0.0012		2.38		0.16		0.0274		< 0.020		< 2.0	< 0.000050		0.044		< 0.250	0.806			< 0.50	
5/19/2022	E300091	EV_MC2																								
5/19/2022	E321812	F2_BPO																								
5/19/2022	0200097	EV_EC1																								
5/19/2022	E321812	F2_BPO			491	< 0.0010		0.28		0.56		0.0105		< 0.020		< 2.0	< 0.000050		0.036		0.418	0.379			< 0.50	< 0.50
5/20/2022	E321791	F2_NWPI			288																< 0.250				0.67	
5/20/2022	E321791	F2_NWPI			288																				0.67	
5/20/2022	E300091	EV_MC2																								
5/20/2022	0200097	EV_EC1																								

Parameter			48-h Static acute lethality test using Daphnia ma	96-Hr 100% Conc. Acute lethality test for R. Trout	Alkalinity, Total (As CaCO3)	Aluminum	Aluminum	Antimony	Antimony	Arsenic	Arsenic	Barium	Barium	Beryllium	Beryllium	BOD	Bismuth	Bismuth	Boron	Boron	Bromide	Cadmium	Cadmium	Calcium	Carbon, Dissolved Organic	Carbon, Total Organic
Fraction			N	N	N	D	T	D	T	D	T	D	T	D	T	N	D	T	D	T	N	D	T	T	D	T
Unit			%	%	mg/l	mg/l	mg/l	ug/l	ug/l	ug/l	ug/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
5/20/2022	E321812	F2_BPO																									
5/20/2022	E321812	F2_BPO																			0.534						
5/20/2022	E321812	F2_BPO			463											< 2.0										< 0.50	< 0.50
5/20/2022	E321812	F2_BPO																									
5/21/2022	E321791	F2_NWPI			286																< 0.250					< 0.50	
5/21/2022	E300091	EV_MC2																									
5/21/2022	0200097	EV_EC1																									
5/21/2022	E321812	F2_BPO																									
5/21/2022	E321812	F2_BPO			493											< 2.0					0.503					0.97	1.04
5/21/2022	E321812	F2_BPO																									
5/22/2022	E321791	F2_NWPI			302																< 0.250					1.00	
5/22/2022	E300091	EV_MC2																									
5/22/2022	0200097	EV_EC1																									
5/22/2022	E321812	F2_BPO																									
5/22/2022	E321812	F2_BPO			492											< 2.0					0.548					1.00	0.93
5/23/2022	E321791	F2_NWPI			293	0.0017	0.0180	2.23	2.39	0.20	0.26	0.0289	0.0354	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.042	0.045	< 0.250	0.834	0.922	254	< 0.50	
5/23/2022	E321812	F2_BPO	0	0	501	0.0017	< 0.0030	0.26	0.30	0.52	0.71	0.0106	0.0108	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.035	0.038	0.516	0.299	0.609	281	1.01	1.06
5/23/2022	E321812	F2_BPO																									
5/23/2022	E300091	EV_MC2			126	0.0059	0.103	< 0.10	0.10	0.16	0.22	0.0728	0.0823	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	< 0.010	0.011	< 0.050	0.0219	0.0356	48.5	2.06	2.04
5/23/2022	310168	EV_MC2A			121	0.0060	0.121	< 0.10	< 0.10	0.16	0.20	0.0706	0.0710	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	< 0.010	< 0.010	< 0.050	0.0189	0.0333	40.2	2.24	2.11
5/23/2022	0200203	EV_MC3			106	0.0074	0.0916	< 0.10	< 0.10	0.18	0.24	0.0694	0.0746	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	< 0.010	< 0.010	< 0.050	0.0246	0.0340	36.5	2.60	2.35
5/23/2022	E321812	F2_BPO																									
5/23/2022	0200097	EV_EC1	3	0	369	0.0025	0.0104	0.21	0.24	0.23	0.24	0.0459	0.0478	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.013	0.014	< 0.250	0.0111	0.0061	233	0.80	0.57
5/23/2022	0200097	EV_EC1			310.37																						
5/23/2022	200393	EV_ER1			157	0.0027	0.0623	< 0.10	< 0.10	0.17	0.19	0.0675	0.0668	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	< 0.010	< 0.010	< 0.050	0.0175	0.0225	56.4	1.34	1.41
5/23/2022	E321814	EV_ECOUT	7	0	441	< 0.0010	< 0.0030	0.22	0.22	0.24	0.26	0.0616	0.0637	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.012	0.013	< 0.250	0.0904	0.0953	263	< 0.50	< 0.50
5/23/2022	E321814	EV_ECOUT																									
5/23/2022	E321812	F2_BPO																									
5/24/2022	0200097	EV_EC1																									
5/24/2022	E321791	F2_NWPI			299	0.0011		2.53		0.17		0.0294		< 0.020		< 2.0	< 0.000050		0.044		< 0.250	0.883			< 0.50	
5/24/2022	E300091	EV_MC2			126	0.0070	0.126	< 0.10	0.11	0.17	0.24	0.0702	0.0748	< 0.020	< 0.020		< 0.000050	< 0.000050	0.010	< 0.010	< 0.050	0.0222	0.0397	45.4	2.27	2.20
5/24/2022	E102685	EV_BC1	0	0	268	< 0.0010	< 0.0060	0.87	0.84	0.24	0.28	0.0529	0.0583	< 0.020	< 0.040	< 2.0	< 0.000050	< 0.000100	0.043	0.048	< 0.250	< 0.0100	< 0.0100	228	1.02	1.19
5/24/2022	E102685	EV_BC1																									
5/24/2022	E300091	EV_MC2																									
5/24/2022	E321812	F2_BPO			493	< 0.0010		0.29		0.60		0.0102		< 0.020		< 2.0	< 0.000050		0.036		0.508	0.288			0.97	0.96
5/24/2022	E321812	F2_BPO																									
5/24/2022	E206231	EV_GT1	0	0	365	0.0023	0.0054	1.00	0.98	0.30	0.40	0.230	0.217	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.033	0.037	0.317	0.140	0.135	258	1.06	1.07
5/24/2022	E206231	EV_GT1																									
5/24/2022	0200203	EV_MC3			100	0.0121	0.140	< 0.10	< 0.10	0.18	0.26	0.0689	0.0694	< 0.020	< 0.020		< 0.000050	< 0.000050	< 0.010	< 0.010	< 0.050	0.0244	0.0401	35.0	2.90	2.94
5/24/2022	E206231	EV_GT1																									
5/24/2022	E102685	EV_BC1																									
5/24/2022	200393	EV_ER1			152	0.0040	0.0515	< 0.10	< 0.10	0.17	0.22	0.0650	0.0659	< 0.020	< 0.020		< 0.000050	< 0.000050	< 0.010	< 0.010	< 0.050	0.0146	0.0246	54.3	1.86	1.62
5/24/2022	E321812	F2_BPO																									
5/25/2022	E321791	F2_NWPI			288																< 0.250					0.95	
5/25/2022	E300091	EV_MC2																									
5/25/2022	0200097	EV_EC1																									
5/25/2022	E321812	F2_BPO																									
5/25/2022	E321812	F2_BPO			488											< 2.0					0.702					1.06	1.01

		Parameter	48-h Static acute lethality test using Daphnia ma	96-Hr 100% Conc. Acute lethality test for R. Trout	Alkalinity, Total (As CaCO3)	Aluminum	Aluminum	Antimony	Antimony	Arsenic	Arsenic	Barium	Barium	Beryllium	Beryllium	BOD	Bismuth	Bismuth	Boron	Boron	Bromide	Cadmium	Cadmium	Calcium	Carbon, Dissolved Organic	Carbon, Total Organic
		Fraction	N	N	N	D	T	D	T	D	T	D	T	D	T	N	D	T	D	T	N	D	T	T	D	T
		Unit	%	%	mg/l	mg/l	mg/l	ug/l	ug/l	ug/l	ug/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
5/25/2022	0200097	EV_EC1																								
5/25/2022	E321812	F2_BPO																								
5/26/2022	E321791	F2_NWPI			298	0.0012		2.19		0.15		0.0288		< 0.020		< 2.0	< 0.000050		0.046		< 0.250	0.830			< 0.50	
5/26/2022	E300091	EV_MC2																								
5/26/2022	0200097	EV_EC1																								
5/26/2022	E321812	F2_BPO			505	< 0.0010		0.27		0.56		0.0108		< 0.020		< 2.0	< 0.000050		0.039		0.548	0.350			0.77	0.76
5/26/2022	E321812	F2_BPO																								
5/26/2022	E321812	F2_BPO																								
5/27/2022	E321791	F2_NWPI			286																< 0.250				0.55	
5/27/2022	E300091	EV_MC2																								
5/27/2022	0200097	EV_EC1																								
5/27/2022	E321812	F2_BPO			521											< 2.0					0.514				0.92	0.91
5/27/2022	E321812	F2_BPO																								
5/27/2022	E321812	F2_BPO																								
5/28/2022	E321791	F2_NWPI			296																< 0.250				0.69	
5/28/2022	0200097	EV_EC1																								
5/28/2022	E300091	EV_MC2																								
5/28/2022	E321812	F2_BPO			514											< 2.0					0.498				1.16	1.03
5/28/2022	E321812	F2_BPO																								
5/28/2022	E321812	F2_BPO																								
5/28/2022	E321812	F2_BPO																								
5/28/2022	E321812	F2_BPO																								
5/29/2022	E321791	F2_NWPI			295																< 0.250				0.59	
5/29/2022	0200097	EV_EC1																								
5/29/2022	E300091	EV_MC2																								
5/29/2022	E321812	F2_BPO			528											< 2.0					0.513				1.28	1.26
5/29/2022	E321812	F2_BPO																								
5/29/2022	E321812	F2_BPO																								
5/30/2022	E321791	F2_NWPI			294	0.0018	0.0187	2.28	2.36	0.18	0.23	0.0285	0.0346	< 0.020	0.038	< 2.0	< 0.000050	< 0.000050	0.044	0.042	< 0.250	0.861	0.922	236	0.62	0.60
5/30/2022	E321814	EV_ECOUT			444	< 0.0020	< 0.0030	< 0.20	0.19	0.20	0.22	0.0625	0.0628	< 0.040	< 0.020	< 2.0	< 0.000100	< 0.000050	< 0.020	0.013	< 0.250	0.0878	0.0832	289	0.60	0.66
5/30/2022	E321812	F2_BPO	0	0	521	< 0.0010	< 0.0060	0.27	0.30	0.52	0.64	0.0107	0.0110	< 0.020	< 0.040	< 2.0	< 0.000050	< 0.000100	0.037	0.036	0.593	0.278	0.648	269	1.13	1.17
5/30/2022	E321812	F2_BPO																								
5/30/2022	E300091	EV_MC2			107	0.0123	0.317	< 0.10	0.10	0.19	0.29	0.0588	0.0672	< 0.020	0.022	< 2.0	< 0.000050	< 0.000050	< 0.010	< 0.010	< 0.050	0.0210	0.0538	42.3	2.74	2.81
5/30/2022	E300091	EV_MC2																								
5/30/2022	200393	EV_ER1			131	0.0071	0.278	< 0.10	< 0.10	0.15	0.34	0.0554	0.0606	< 0.020	0.023	< 2.0	< 0.000050	< 0.000050	< 0.010	< 0.010	< 0.050	0.0187	0.0653	54.2	1.95	2.05
5/30/2022	0200097	EV_EC1			357	0.0013	< 0.0030	0.21	0.22	0.24	0.25	0.0478	0.0490	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.012	0.013	< 0.250	0.0058	0.0064	259	0.90	0.98
5/30/2022	0200097	EV_EC1																								
5/30/2022	0200203	EV_MC3			91.9	0.0143	0.277	< 0.10	0.11	0.23	0.35	0.0562	0.0638	< 0.020	0.025	< 2.0	< 0.000050	< 0.000050	< 0.010	< 0.010	< 0.050	0.0250	0.0579	33.3	3.24	3.27
5/30/2022	310168	EV_MC2A			103	0.0124	0.240	< 0.10	< 0.10	0.19	0.25	0.0575	0.0620	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	< 0.010	< 0.010	< 0.050	0.0271	0.0506	37.3	2.49	2.68
5/30/2022	E321812	F2_BPO																								
5/31/2022	E321791	F2_NWPI			296	0.0011		2.39		0.18		0.0294		< 0.020		< 2.0	< 0.000050		0.048		< 0.250	0.858			0.69	
5/31/2022	E300091	EV_MC2			109	0.0112	0.342	< 0.10	0.11	0.16	0.34	0.0584	0.0675	< 0.020	0.025		< 0.000050	< 0.000050	< 0.010	< 0.010	< 0.050	0.0226	0.0707	39.3	2.51	2.92
5/31/2022	E102685	EV_BC1			278	0.0018	< 0.0060	0.87	0.92	0.23	0.23	0.0670	0.0637	< 0.020	< 0.040	< 2.0	< 0.000050	< 0.000100	0.043	0.045	< 0.250	< 0.0100	< 0.0100	205	1.25	1.24
5/31/2022	E300091	EV_MC2																								
5/31/2022	E321812	F2_BPO			515	0.0019		0.26		0.50		0.0104		< 0.020		< 2.0	< 0.000050		0.039		0.549	0.355			1.25	1.32
5/31/2022	E321812	F2_BPO																								
5/31/2022	E206231	EV_GT1			366	0.0022	0.0044	0.86	0.91	0.36	0.41	0.357	0.345	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.035	0.038	0.271	0.145	0.215	227	1.09	1.13
5/31/2022	0200097	EV_EC1																								
5/31/2022	0200097	EV_EC1																								
5/31/2022	0200203	EV_MC3			89.2	0.0144	0.394	< 0.10	0.11	0.20	0.41	0.0580	0.0627	< 0.020	0.026		< 0.000050	< 0.000050	< 0.010	< 0.010	< 0.050	0.0254	0.0669	30.0	2.88	3.25

Parameter			48-h Static acute lethality test using Daphnia ma	96-Hr 100% Conc. Acute lethality test for R. Trout	Alkalinity, Total (As CaCO3)	Aluminum	Aluminum	Antimony	Antimony	Arsenic	Arsenic	Barium	Barium	Beryllium	Beryllium	BOD	Bismuth	Bismuth	Boron	Boron	Bromide	Cadmium	Cadmium	Calcium	Carbon, Dissolved Organic	Carbon, Total Organic
Fraction			N	N	N	D	T	D	T	D	T	D	T	D	T	N	D	T	D	T	N	D	T	T	D	T
Unit			%	%	mg/l	mg/l	mg/l	ug/l	ug/l	ug/l	ug/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
5/31/2022	E206231	EV_GT1																									
5/31/2022	E102685	EV_BC1																									
5/31/2022	200393	EV_ER1			145	0.0075	0.334	< 0.10	< 0.10	0.15	0.40	0.0566	0.0641	< 0.020	0.022		< 0.000050	< 0.000050	< 0.010	< 0.010	< 0.050	0.0246	0.0638	47.8	1.94	2.41
5/31/2022	E321812	F2_BPO																									
6/1/2022	E321791	F2_NWPI			295																< 0.250				0.85		
6/1/2022	E300091	EV_MC2																									
6/1/2022	E321812	F2_BPO			470											< 2.0					0.625				1.17	1.18
6/1/2022	0200097	EV_EC1																									
6/1/2022	E321812	F2_BPO																									
6/1/2022	E321812	F2_BPO																									
6/2/2022	0200097	EV_EC1	0	10	359	0.0017	< 0.0030	0.20	0.23	0.20	0.26	0.0392	0.0458	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.011	0.013	< 0.250	< 0.0050	0.0070	222	0.59	0.55
6/2/2022	E300091	EV_MC2																									
6/2/2022	E321791	F2_NWPI			290	0.0016		2.32		0.16		0.0270		< 0.020		< 2.0	< 0.000050		0.045		< 0.250	0.785			< 0.50		
6/2/2022	E321812	F2_BPO																									
6/2/2022	E321814	EV_ECOUT	0	0	422	0.0015	< 0.0030	0.21	0.21	0.22	0.25	0.0659	0.0610	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.012	0.012	< 0.250	0.0788	0.0920	249	0.60	0.58
6/2/2022	E321812	F2_BPO			480	0.0012		0.28		0.55		0.0103		< 0.020		< 2.0	< 0.000050		0.038		0.558	0.311			0.77	0.91
6/2/2022	E321812	F2_BPO																									
6/3/2022	E321791	F2_NWPI			291																< 0.250				0.79		
6/3/2022	E300091	EV_MC2																									
6/3/2022	0200097	EV_EC1																									
6/3/2022	E300091	EV_MC2																									
6/3/2022	0200097	EV_EC1																									
6/3/2022	E321812	F2_BPO																									
6/3/2022	E321812	F2_BPO			503											< 2.0					0.609				1.14	1.18
6/3/2022	E321812	F2_BPO																									
6/4/2022	E321791	F2_NWPI			298																< 0.250				< 0.50		
6/4/2022	E300091	EV_MC2																									
6/4/2022	0200097	EV_EC1																									
6/4/2022	E321812	F2_BPO																									
6/4/2022	E321812	F2_BPO			491											< 2.0					0.541				0.87	0.92
6/4/2022	E321812	F2_BPO																									
6/5/2022	E321791	F2_NWPI			296																< 0.250				< 0.50		
6/5/2022	E300091	EV_MC2																									
6/5/2022	0200097	EV_EC1																									
6/5/2022	E321812	F2_BPO			510											< 2.0					0.497				0.69	0.83
6/5/2022	E321812	F2_BPO																									
6/5/2022	E321812	F2_BPO																									
6/6/2022	E321791	F2_NWPI			272	0.0019	< 0.0030	2.16	2.30	0.19	0.18	0.0290	0.0289	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.045	0.047	< 0.250	0.862	0.877	235	< 0.50	< 0.50
6/6/2022	E300091	EV_MC2			94.1	0.0139	0.956	< 0.10	0.14	0.21	0.78	0.0485	0.0693	< 0.020	0.063	< 2.0	< 0.000050	< 0.000050	< 0.010	< 0.010	< 0.050	0.0227	0.167	31.9	2.27	6.23
6/6/2022	E321812	F2_BPO	0	0	495	0.0032	< 0.0030	0.26	0.30	0.46	0.66	0.0105	0.0106	< 0.040	< 0.020	< 2.0	< 0.000100	< 0.000050	0.038	0.039	0.696	0.268	0.622	260	0.85	0.73
6/6/2022	E321812	F2_BPO																									
6/6/2022	E321812	F2_BPO																									
6/6/2022	200393	EV_ER1			120	0.0084	0.898	< 0.10	0.14	0.18	0.86	0.0472	0.0644	< 0.020	0.077	< 2.0	< 0.000050	< 0.000050	< 0.010	< 0.010	< 0.050	0.0149	0.159	40.0	1.99	3.14
6/6/2022	0200203	EV_MC3			82.0	0.0161	0.898	< 0.10	0.13	0.25	0.70	0.0455	0.0720	< 0.020	0.071		< 0.000050	< 0.000050	< 0.010	< 0.010	< 0.050	0.0221	0.220	26.8	2.90	3.35
6/6/2022	310168	EV_MC2A			91.1	0.0139	0.776	< 0.10	0.14	0.22	0.61	0.0471	0.0657	< 0.020	0.058	< 2.0	< 0.000050	< 0.000050	< 0.010	< 0.010	< 0.050	0.0170	0.155	31.0	2.33	3.17
6/6/2022	0200203	EV_MC3			80.0	0.0146	0.696	< 0.10	0.13	0.22	0.66	0.0452	0.0584	< 0.020	0.060	< 2.0	< 0.000050	< 0.000050	< 0.010	< 0.010	< 0.050	0.0196	0.147	24.6	2.48	4.24
6/6/2022	0200097	EV_EC1			369	< 0.0010	< 0.0030	0.20	0.21	0.22	0.23	0.0476	0.0475	< 0.020	< 0.020		< 0.000050	< 0.000050	0.012	0.013	< 0.250	0.0066	0.0060	236	< 0.50	< 0.50
6/6/2022	0200097	EV_EC1	53	0	361	0.0383	< 0.0030	0.22	0.23	0.26	0.28	0.0494	0.0478	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.013	0.013	< 0.250	0.0435	0.0060	225	1.08	1.09
6/6/2022	0200097	EV_EC1			367.94																					
6/6/2022	E206231	EV_GT1			362	< 0.0010	0.0049	0.74	0.74	0.33	0.35	0.305	0.290	< 0.020	< 0.020		< 0.000050	< 0.000050	0.033	0.036	0.338	0.112	0.142	234	1.11	1.26

		Parameter	48-h Static acute lethality test using Daphnia ma	96-Hr 100% Conc. Acute lethality test for R. Trout	Alkalinity, Total (As CaCO3)	Aluminum	Aluminum	Antimony	Antimony	Arsenic	Arsenic	Barium	Barium	Beryllium	Beryllium	BOD	Bismuth	Bismuth	Boron	Boron	Bromide	Cadmium	Cadmium	Calcium	Carbon, Dissolved Organic	Carbon, Total Organic
		Fraction	N	N	N	D	T	D	T	D	T	D	T	D	T	N	D	T	D	T	N	D	T	T	D	T
		Unit	%	%	mg/l	mg/l	mg/l	ug/l	ug/l	ug/l	ug/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
6/6/2022	E102685	EV_BC1			371	< 0.0010	0.0033	0.80	0.80	0.31	0.31	0.217	0.236	< 0.020	< 0.020		< 0.000050	< 0.000050	0.040	0.042	0.417	0.0732	0.0862	234	< 0.50	0.56
6/6/2022	E300091	EV_MC2			101	0.0119	0.685	< 0.10	0.11	0.21	0.49	0.0495	0.0697	< 0.020	0.050		< 0.000050	< 0.000050	< 0.010	< 0.010	< 0.050	0.0202	0.147	33.4	2.39	3.85
6/6/2022	E321814	EV_ECOUT	0	0	436	< 0.0010	0.0044	0.19	0.21	0.24	0.25	0.0602	0.0598	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.012	0.012	< 0.250	0.0842	0.0868	246	0.56	0.52
6/6/2022	E321814	EV_ECOUT																								
6/6/2022	200393	EV_ER1			120	0.0080	1.32	< 0.10	0.15	0.18	0.94	0.0470	0.0786	< 0.020	0.096		< 0.000050	< 0.000050	< 0.010	< 0.010	< 0.050	0.0170	0.239	47.0	2.09	2.53
6/6/2022	E321812	F2_BPO																								
6/7/2022	E321791	F2_NWPI			306	0.0017		2.29		0.17		0.0292		< 0.020		< 2.0	< 0.000050		0.044		< 0.250	0.853			< 0.50	
6/7/2022	E300091	EV_MC2			98.4	0.0138	1.03	< 0.10	0.17	0.17	0.85	0.0455	0.0751	< 0.020	0.063		< 0.000050	< 0.000050	< 0.010	< 0.010	< 0.050	0.0204	0.207	37.5	2.64	4.51
6/7/2022	E321812	F2_BPO			510	< 0.0010		0.27		0.54		0.0111		< 0.020		< 2.0	< 0.000050		0.037		0.584	0.327			0.74	0.85
6/7/2022	E321812	F2_BPO																								
6/7/2022	E102685	EV_BC1	0	0	376	0.0015	0.0030	0.80	0.85	0.27	0.35	0.186	0.209	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.044	0.047	0.316	0.0675	0.0863	241	0.87	0.82
6/7/2022	E102685	EV_BC1																								
6/7/2022	E300091	EV_MC2																								
6/7/2022	0200097	EV_EC1																								
6/7/2022	E206231	EV_GT1	0	0	358	0.0014	0.0064	0.71	0.77	0.33	0.40	0.313	0.310	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.035	0.038	0.264	0.114	0.169	239	1.06	1.12
6/7/2022	E206231	EV_GT1																								
6/7/2022	E321812	F2_BPO																								
6/8/2022	E321791	F2_NWPI			307																< 0.250				1.01	
6/8/2022	E300091	EV_MC2																								
6/8/2022	E321812	F2_BPO			457											< 2.0					0.540				1.22	1.29
6/8/2022	E300091	EV_MC2																								
6/8/2022	E321812	F2_BPO			457											< 2.0					0.540				1.22	1.29
6/8/2022	0200097	EV_EC1																								
6/8/2022	E321812	F2_BPO																								
6/8/2022	E321814	EV_ECOUT			461	< 0.0010	< 0.0030	0.21	0.20	0.27	0.23	0.0585	0.0631	< 0.020	< 0.020		< 0.000050	< 0.000050	0.012	0.012	< 0.250	0.0777	0.0918	249	< 0.50	< 0.50
6/8/2022	E321812	F2_BPO																								
6/9/2022	E321791	F2_NWPI			283	0.0072		2.21		0.18		0.0255		< 0.020		< 2.0	< 0.000050		0.043		< 0.250	0.821			< 0.50	< 0.50
6/9/2022	0200097	EV_EC1																								
6/9/2022	E300091	EV_MC2																								
6/9/2022	E321812	F2_BPO			478	0.0012		0.26		0.47		0.00963		< 0.020		< 2.0	< 0.000050		0.038		0.491	0.265			1.47	1.24
6/9/2022	E321812	F2_BPO																								
6/9/2022	E321812	F2_BPO																								
6/9/2022	0200203	EV_MC3	0	0	86.3	0.0157	0.632	< 0.10	0.10	0.20	0.45	0.0490	0.0555	< 0.020	0.038	< 2.0	< 0.000050	< 0.000050	< 0.010	< 0.010	< 0.050	0.0238	0.347	23.3	2.82	3.55
6/9/2022	0200097	EV_EC1	0	10	378	0.0010	< 0.0030	0.23	0.21	0.25	0.21	0.0481	0.0449	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.013	0.013	< 0.050	< 0.0050	< 0.0050	209	0.87	0.82
6/9/2022	E321814	EV_ECOUT	0	10	442	< 0.0010	0.0084	0.20	0.19	0.23	0.24	0.0632	0.0616	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.012	0.013	< 0.250	0.0895	0.0861	240	0.74	0.81
6/10/2022	E321791	F2_NWPI			297																< 0.250				0.93	
6/10/2022	E300091	EV_MC2																								
6/10/2022	0200097	EV_EC1																								
6/10/2022	E321812	F2_BPO																								
6/10/2022	0200097	EV_EC1	4	20	357	< 0.0010	< 0.0030	0.21	0.22	0.23	0.26	0.0504	0.0476	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.012	0.014	< 0.250	< 0.0050	0.0066	218	0.80	0.73
6/10/2022	E321812	F2_BPO			533											< 2.0					0.496				1.23	1.30
6/10/2022	E321812	F2_BPO																								
6/11/2022	0200097	EV_EC1	0	0	372	< 0.0010	< 0.0030	0.21	0.22	0.21	0.25	0.0514	0.0488	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.012	0.013	< 0.250	0.0052	0.0064	223	0.64	0.85
6/11/2022	0200097	EV_EC1																								
6/11/2022	E300091	EV_MC2																								
6/11/2022	E321791	F2_NWPI			296																< 0.250				< 0.50	
6/11/2022	E321812	F2_BPO			517											< 2.0					0.455				0.92	0.88
6/11/2022	E321812	F2_BPO																								
6/11/2022	E321812	F2_BPO																								
6/12/2022	E321791	F2_NWPI			303																< 0.250				< 0.50	

Parameter			48-h Static acute lethality test using Daphnia ma	96-Hr 100% Conc. Acute lethality test for R. Trout	Alkalinity, Total (As CaCO3)	Aluminum	Aluminum	Antimony	Antimony	Arsenic	Arsenic	Barium	Barium	Beryllium	Beryllium	BOD	Bismuth	Bismuth	Boron	Boron	Bromide	Cadmium	Cadmium	Calcium	Carbon, Dissolved Organic	Carbon, Total Organic
Fraction			N	N	N	D	T	D	T	D	T	D	T	D	T	N	D	T	D	T	N	D	T	T	D	T
Unit			%	%	mg/l	mg/l	mg/l	ug/l	ug/l	ug/l	ug/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
6/12/2022	0200097	EV_EC1	0	0	368	< 0.0010	< 0.0030	0.21	0.23	0.29	0.29	0.0567	0.0551	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.013	0.014	< 0.250	0.0086	0.0076	234	0.51	< 0.50
6/12/2022	0200097	EV_EC1																								
6/12/2022	E300091	EV_MC2																								
6/12/2022	E321812	F2_BPO																								
6/12/2022	E321812	F2_BPO			480											< 2.0					0.388				0.99	1.23
6/12/2022	E321812	F2_BPO																								
6/13/2022	E321791	F2_NWPI			330	0.0020	0.0109	2.21	2.28	< 0.20	0.21	0.0286	0.0328	< 0.040	< 0.020	< 2.0	< 0.000100	< 0.000050	0.043	0.047	< 0.250	0.806	0.918	251	< 0.50	< 0.50
6/13/2022	E321814	EV_ECOUT			442	< 0.0010	0.0033	0.19	0.20	0.22	0.23	0.0643	0.0627	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.011	0.012	< 0.250	0.0866	0.0888	257	< 0.50	< 0.50
6/13/2022	E300091	EV_MC2			97.3	0.0123	0.499	< 0.10	0.11	0.19	0.61	0.0484	0.0754	< 0.020	0.059	< 2.0	< 0.000050	< 0.000050	< 0.010	< 0.010	< 0.050	0.0230	0.226	33.9	2.15	2.72
6/13/2022	E321812	F2_BPO	0	0	529	0.0021	< 0.0060	0.25	0.30	0.49	0.56	0.0112	0.0112	< 0.040	< 0.040	< 2.0	< 0.000100	< 0.000100	0.035	0.040	0.423	0.310	0.604	266	0.74	1.14
6/13/2022	E321812	F2_BPO																								
6/13/2022	0200097	EV_EC1	0	0	367	0.0034	< 0.0030	0.19	0.20	0.24	0.24	0.0501	0.0495	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.012	0.013	< 0.250	0.0058	0.0095	234	0.95	0.83
6/13/2022	0200203	EV_MC3			75.9	0.0138	0.188	< 0.10	< 0.10	0.22	0.35	0.0436	0.0566	< 0.020	0.035	< 2.0	< 0.000050	< 0.000050	< 0.010	< 0.010	< 0.050	0.0313	0.141	24.8	2.41	2.50
6/13/2022	310168	EV_MC2A			86.1	0.0113	0.235	< 0.10	< 0.10	0.19	0.37	0.0450	0.0591	< 0.020	0.032	< 2.0	< 0.000050	< 0.000050	< 0.010	< 0.010	< 0.050	0.0184	0.114	28.7	2.05	2.57
6/13/2022	0200203	EV_MC3			73.9	0.868	1.37	< 0.10	0.19	0.37	1.01	0.0557	0.0796	0.037	0.115		< 0.000050	< 0.000050	< 0.010	< 0.010	< 0.050	0.0882	0.266	25.9	3.06	5.44
6/13/2022	200393	EV_ER1			117	0.0085	0.402	< 0.10	< 0.10	0.18	0.52	0.0457	0.0605	< 0.020	0.044	< 2.0	< 0.000050	< 0.000050	< 0.010	< 0.010	< 0.050	0.0145	0.142	39.6	1.88	2.58
6/13/2022	E206231	EV_GT1																								
6/13/2022	E102685	EV_BC1																								
6/13/2022	E300091	EV_MC2			94.8	0.0225	1.20	< 0.10	0.17	0.22	0.96	0.0485	0.0779	< 0.020	0.101		< 0.000050	< 0.000050	< 0.010	< 0.010	< 0.050	0.0247	0.219	34.8	2.76	5.95
6/13/2022	200393	EV_ER1			112	0.0166	1.53	< 0.10	0.19	0.22	1.34	0.0480	0.0888	< 0.020	0.143		< 0.000050	< 0.000050	< 0.010	< 0.010	< 0.050	0.0164	0.291	50.5	2.12	6.12
6/13/2022	E321812	F2_BPO																								
6/14/2022	E206231	EV_GT1																								
6/14/2022	0200097	EV_EC1	0	0	364	0.0049	0.0030	0.21	0.21	0.26	0.36	0.0562	0.0573	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.010	0.011	< 0.250	0.0178	0.0125	206	2.66	2.75
6/14/2022	E102685	EV_BC1			318	0.0041	0.0476	0.74	0.82	0.28	0.36	0.262	0.163	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.041	0.046	0.390	0.0298	0.0712	217	1.38	0.81
6/14/2022	E206231	EV_GT1			336	0.0032	0.290	0.67	0.78	0.32	0.72	0.345	0.322	< 0.020	0.039	< 2.0	< 0.000050	< 0.000050	0.029	0.032	< 0.250	0.200	0.393	191	1.35	5.12
6/14/2022	E206231	EV_GT1																								
6/14/2022	E300091	EV_MC2																								
6/14/2022	E321791	F2_NWPI			292	0.0041		2.29		0.19		0.0393		< 0.020		< 2.0	< 0.000050		0.043		< 0.250	0.688			< 0.50	
6/14/2022	E321812	F2_BPO			454	< 0.0020		0.26		0.51		0.0104		< 0.040		< 2.0	< 0.000100		0.036		0.445	0.254			0.88	0.90
6/14/2022	E321812	F2_BPO																								
6/14/2022	E300091	EV_MC2			98.0	0.0138	0.785	< 0.10	0.16	0.19	0.71	0.0459	0.0690	< 0.020	0.066		< 0.000050	< 0.000050	< 0.010	< 0.010	< 0.050	0.0226	0.157	31.4	3.39	4.55
6/14/2022	E206231	EV_GT1																								
6/15/2022	0200097	EV_EC1	0	0	386	< 0.0010	< 0.0030	0.21	0.22	0.31	0.40	0.0541	0.0574	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.012	0.013	< 0.250	0.0137	0.0130	216	1.45	1.53
6/15/2022	0200097	EV_EC1																								
6/15/2022	E300091	EV_MC2																								
6/15/2022	E321791	F2_NWPI			297																< 0.250				0.86	
6/15/2022	E321812	F2_BPO			472											< 2.0					0.499				0.94	1.13
6/15/2022	E321812	F2_BPO																								
6/15/2022	E321812	F2_BPO																								
6/16/2022	0200097	EV_EC1	0	0	361	0.0010	< 0.0030	0.20	0.22	0.25	0.31	0.0558	0.0549	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.011	0.014	< 0.250	0.0077	0.0094	234	1.45	1.32
6/16/2022	0200203	EV_MC3	0	0	85.2	0.0154	0.539	< 0.10	0.13	0.22	0.51	0.0482	0.0578	< 0.020	0.034	< 2.0	< 0.000050	< 0.000050	< 0.010	< 0.010	< 0.050	0.0269	0.0692	26.6	2.90	3.39
6/16/2022	E300091	EV_MC2																								
6/16/2022	E321812	F2_BPO																								
6/16/2022	E321791	F2_NWPI			296	0.0039		2.11		0.28		0.0353		< 0.020		< 2.0	< 0.000050		0.040		< 0.250	0.731			0.85	
6/16/2022	E321814	EV_ECOUT	0	0	460	< 0.0010	< 0.0030	0.19	0.22	0.22	0.41	0.0633	0.0641	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.011	0.012	< 0.250	0.0873	0.0891	250	0.55	0.55
6/16/2022	E321812	F2_BPO			493	0.0018		0.26		0.45		0.0110		< 0.020		< 2.0	< 0.000050		0.034		0.550	0.280			1.70	1.20
6/16/2022	E321812	F2_BPO																								
6/17/2022	E321791	F2_NWPI			310																< 0.250				0.98	

		Parameter	48-h Static acute lethality test using Daphnia ma	96-Hr 100% Conc. Acute lethality test for R. Trout	Alkalinity, Total (As CaCO3)	Aluminum	Aluminum	Antimony	Antimony	Arsenic	Arsenic	Barium	Barium	Beryllium	Beryllium	BOD	Bismuth	Bismuth	Boron	Boron	Bromide	Cadmium	Cadmium	Calcium	Carbon, Dissolved Organic	Carbon, Total Organic
		Fraction	N	N	N	D	T	D	T	D	T	D	T	D	T	N	D	T	D	T	N	D	T	T	D	T
		Unit	%	%	mg/l	mg/l	mg/l	ug/l	ug/l	ug/l	ug/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
6/17/2022	E300091	EV_MC2																								
6/17/2022	0200097	EV_EC1																								
6/17/2022	E321812	F2_BPO																								
6/17/2022	E321812	F2_BPO			459											< 2.0					0.434				0.85	0.81
6/17/2022	E321812	F2_BPO																								
6/18/2022	E321791	F2_NWPI			318																< 0.250				0.62	
6/18/2022	E300091	EV_MC2																								
6/18/2022	0200097	EV_EC1																								
6/18/2022	E321812	F2_BPO																								
6/18/2022	E321812	F2_BPO			475											< 2.0					0.578				1.32	1.25
6/18/2022	E321812	F2_BPO																								
6/19/2022	E321791	F2_NWPI			301																< 0.250				< 0.50	
6/19/2022	E300091	EV_MC2																								
6/19/2022	0200097	EV_EC1																								
6/19/2022	E321812	F2_BPO																								
6/19/2022	E321812	F2_BPO			476											< 2.0					0.549				0.55	0.55
6/19/2022	E321812	F2_BPO																								
6/20/2022	E321791	F2_NWPI			286	0.0049	0.0323	2.28	2.33	0.19	0.22	0.0354	0.0367	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.046	0.046	< 0.250	0.675	0.777	244	0.65	0.64
6/20/2022	E321812	F2_BPO	0	0	468	0.0010	< 0.0030	0.27	0.30	0.52	0.60	0.0104	0.0106	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.039	0.039	0.477	0.295	0.604	269	0.91	0.99
6/20/2022	E321812	F2_BPO																								
6/20/2022	200393	EV_ER1			77.7	0.0111	0.464	< 0.10	0.11	0.20	0.46	0.0439	0.0556	< 0.020	0.031	< 2.0	< 0.000050	< 0.000050	< 0.010	< 0.010	< 0.050	0.0296	0.0765	24.0	2.60	3.52
6/20/2022	E321812	F2_BPO																								
6/20/2022	E300091	EV_MC2			107	0.0093	0.567	< 0.10	0.11	0.20	0.53	0.0470	0.0622	< 0.020	0.039	< 2.0	< 0.000050	< 0.000050	< 0.010	< 0.010	< 0.050	0.0167	0.0867	34.3	2.33	2.66
6/20/2022	310168	EV_MC2A			96.0	0.0104	0.524	< 0.10	0.11	0.19	0.49	0.0448	0.0568	< 0.020	0.036	< 2.0	< 0.000050	< 0.000050	< 0.010	< 0.010	< 0.050	0.0216	0.0790	32.1	2.40	3.39
6/20/2022	0200203	EV_MC3			419	< 0.0010	0.0045	0.20	0.20	0.22	0.26	0.0623	0.0628	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.012	0.012	< 0.250	0.0847	0.0845	240	0.78	0.80
6/20/2022	0200097	EV_EC1	0	0	380 375.25	0.0090	< 0.0030	0.21	0.21	0.24	0.25	0.0549	0.0552	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.011	0.012	< 0.250	0.0096	0.0082	224	1.42	1.17
6/20/2022	E321814	EV_ECOUT	0	0	121	0.0076	2.02	< 0.10	0.21	0.19	1.71	0.0451	0.108	< 0.020	0.155	< 2.0	< 0.000050	< 0.000050	< 0.010	< 0.010	< 0.050	0.0135	0.302	53.1	2.17	3.74
6/20/2022	E321814	EV_ECOUT																								
6/20/2022	E321812	F2_BPO																								
6/21/2022	E321791	F2_NWPI			285	0.0061		2.16		< 0.20		0.0350		< 0.040		< 2.0	< 0.000100		0.042		< 0.250	0.704			< 0.50	
6/21/2022	E321812	F2_BPO			485	0.0020		0.29		0.49		0.0104		< 0.040		< 2.0	< 0.000100		0.038		0.471	0.286			0.85	0.97
6/21/2022	E321812	F2_BPO																								
6/21/2022	E206231	EV_GT1	0	0	360	0.0032	0.0164	0.80	0.77	0.34	0.38	0.364	0.316	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.036	0.038	0.250	0.148	0.190	218	1.15	1.22
6/21/2022	0200203	EV_MC3			86.7	0.0110	0.706	< 0.10	0.11	0.20	0.52	0.0464	0.0590	< 0.020	0.045		< 0.000050	< 0.000050	< 0.010	< 0.010	< 0.050	0.0231	0.102	26.8	2.33	3.09
6/21/2022	E300091	EV_MC2																								
6/21/2022	E206231	EV_GT1																								
6/21/2022	E102685	EV_BC1	0	0	326	0.0038	0.0069	0.86	0.82	0.23	0.31	0.226	0.224	< 0.040	< 0.020	< 2.0	< 0.000100	< 0.000050	0.045	0.044	0.321	0.0232	0.0301	219	0.71	0.76
6/21/2022	E102685	EV_BC1																								
6/21/2022	E300091	EV_MC2			109	0.0084	0.429	< 0.10	< 0.10	0.20	0.45	0.0479	0.0611	< 0.020	0.028		< 0.000050	< 0.000050	< 0.010	< 0.010	< 0.050	0.0213	0.0675	35.7	2.28	2.84
6/21/2022	200393	EV_ER1			122	0.0061	1.15	< 0.10	0.16	0.18	1.25	0.0464	0.0745	< 0.020	0.096		< 0.000050	< 0.000050	< 0.010	< 0.010	< 0.050	0.0162	0.229	51.9	1.98	5.00
6/21/2022	E321812	F2_BPO																								
6/22/2022	0200097	EV_EC1																								
6/22/2022	E321791	F2_NWPI			305																< 0.250				0.72	
6/22/2022	E300091	EV_MC2																								
6/22/2022	E321812	F2_BPO			515											< 2.0					0.504				1.23	1.22
6/22/2022	E321812	F2_BPO																								
6/22/2022	0200097	EV_EC1																								

		Parameter	48-h Static acute lethality test using Daphnia ma	96-Hr 100% Conc. Acute lethality test for R. Trout	Alkalinity, Total (As CaCO3)	Aluminum	Aluminum	Antimony	Antimony	Arsenic	Arsenic	Barium	Barium	Beryllium	Beryllium	BOD	Bismuth	Bismuth	Boron	Boron	Bromide	Cadmium	Cadmium	Calcium	Carbon, Dissolved Organic	Carbon, Total Organic
		Fraction	N	N	N	D	T	D	T	D	T	D	T	D	T	N	D	T	D	T	N	D	T	T	D	T
		Unit	%	%	mg/l	mg/l	mg/l	ug/l	ug/l	ug/l	ug/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
6/22/2022	E321812	F2_BPO																								
6/23/2022	E321791	F2_NWPI			288	0.0041		2.19		0.22		0.0382		< 0.040		< 2.0	< 0.000100		0.047		< 0.250	0.671			0.60	
6/23/2022	0200097	EV_EC1																								
6/23/2022	E300091	EV_MC2																								
6/23/2022	E321812	F2_BPO			474	0.0030		0.27		0.52		0.0107		< 0.020		< 2.0	< 0.000050		0.037		0.477	0.313			1.03	0.97
6/23/2022	E321812	F2_BPO																								
6/23/2022	0200097	EV_EC1																								
6/23/2022	E321812	F2_BPO																								
6/24/2022	E321791	F2_NWPI			293																< 0.250				0.59	
6/24/2022	0200097	EV_EC1																								
6/24/2022	E300091	EV_MC2																								
6/24/2022	E321812	F2_BPO																								
6/24/2022	E321812	F2_BPO			465											< 2.0					0.458				1.16	
6/24/2022	E321812	F2_BPO																								
6/25/2022	E321791	F2_NWPI			286																< 0.250				0.82	
6/25/2022	0200097	EV_EC1																								
6/25/2022	E300091	EV_MC2																								
6/25/2022	E321812	F2_BPO			512											< 2.0					0.436				1.16	1.14
6/25/2022	E321812	F2_BPO																								
6/25/2022	E321812	F2_BPO																								
6/25/2022	E321812	F2_BPO																								
6/25/2022	E321812	F2_BPO																								
6/26/2022	E321791	F2_NWPI			294																< 0.250				0.71	
6/26/2022	0200097	EV_EC1																								
6/26/2022	E300091	EV_MC2																								
6/26/2022	E321812	F2_BPO			468											< 2.0					0.601				1.40	1.19
6/26/2022	E321812	F2_BPO																								
6/26/2022	E321812	F2_BPO																								
6/27/2022	E321791	F2_NWPI			310	0.0058	0.0355	2.42	2.28	0.19	0.22	0.0405	0.0404	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.047	0.045	< 0.250	0.704	0.711	234	0.63	0.77
6/27/2022	E321814	EV_ECOUT			394	0.0014	0.0287	0.17	0.21	0.22	0.35	0.0627	0.0639	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.011	0.012	< 0.050	0.0830	0.102	244	0.72	0.83
6/27/2022	E321812	F2_BPO	0	0	476	< 0.0010	0.0042	0.26	0.27	0.55	0.65	0.0112	0.0114	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.036	0.039	0.512	0.284	0.585	263	1.20	1.84
6/27/2022	E321812	F2_BPO																								
6/27/2022	200393	EV_ER1			136	0.0043	0.338	< 0.10	0.11	0.16	0.47	0.0501	0.0538	< 0.020	0.023	< 2.0	< 0.000050	< 0.000050	< 0.010	< 0.010	< 0.050	0.0115	0.0674	45.0	1.23	1.84
6/27/2022	310168	EV_MC2A			113	0.0061	0.114	< 0.10	< 0.10	0.20	0.29	0.0528	0.0540	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	< 0.010	< 0.010	< 0.050	0.0161	0.0307	36.0	1.44	1.64
6/27/2022	0200203	EV_MC3			98.4	0.0081	0.110	< 0.10	< 0.10	0.22	0.32	0.0531	0.0555	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	< 0.010	< 0.010	< 0.050	0.0258	0.0387	31.8	1.83	1.73
6/27/2022	0200097	EV_EC1			355	< 0.0010	< 0.0030	0.17	0.22	0.23	0.30	0.0501	0.0519	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.011	0.012	< 0.250	0.0059	0.0069	220	0.74	1.06
6/27/2022	E300091	EV_MC2			128	0.0053	0.115	< 0.10	< 0.10	0.18	0.29	0.0548	0.0555	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	< 0.010	< 0.010	< 0.050	0.0250	0.0423	45.2	1.52	1.36
6/27/2022	E321812	F2_BPO																								
6/28/2022	E321791	F2_NWPI			282	0.0044		2.37		0.22		0.0380		< 0.020		< 2.0	< 0.000050		0.044		< 0.250	0.667			0.60	
6/28/2022	E300091	EV_MC2																								
6/28/2022	0200097	EV_EC1																								
6/28/2022	E321812	F2_BPO			458	0.0011		0.27		0.50		0.0111		< 0.020		< 2.0	< 0.000050		0.037		0.450	0.295			0.94	1.10
6/28/2022	E321812	F2_BPO																								
6/28/2022	E206231	EV_GT1			315	0.0016	0.0082	0.81	0.82	0.32	0.44	0.301	0.305	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.032	0.038	0.295	0.137	0.152	238	1.22	1.26
6/28/2022	E102685	EV_BC1			315	0.0030	0.0045	0.88	0.94	0.25	0.32	0.234	0.246	< 0.040	< 0.020	< 2.0	< 0.000100	< 0.000050	0.043	0.044	0.350	< 0.0200	< 0.0200	246	0.91	0.91
6/28/2022	0200203	EV_MC3			96.4	0.0093	0.183	< 0.10	0.11	0.22	0.34	0.0533	0.0589	< 0.020	< 0.020		< 0.000050	< 0.000050	< 0.010	< 0.010	< 0.050	0.0196	0.0522	31.6	1.85	2.16
6/28/2022	E206231	EV_GT1																								
6/28/2022	E102685	EV_BC1																								
6/28/2022	E300091	EV_MC2			123	0.0085	0.266	< 0.10	0.11	0.17	0.40	0.0562	0.0691	< 0.020	0.035		< 0.000050	< 0.000050	< 0.010	< 0.010	< 0.050	0.0246	0.116	47.9	2.04	1.77
6/28/2022	200393	EV_ER1			133	0.0045	0.464	< 0.10	0.11	0.19	0.51	0.0515	0.0631	< 0.020	0.036		< 0.000050	< 0.000050	< 0.010	< 0.010	< 0.050	0.0128	0.0847	49.4	1.52	1.79

		Parameter	48-h Static acute lethality test using Daphnia ma	96-Hr 100% Conc. Acute lethality test for R. Trout	Alkalinity, Total (As CaCO3)	Aluminum	Aluminum	Antimony	Antimony	Arsenic	Arsenic	Barium	Barium	Beryllium	Beryllium	BOD	Bismuth	Bismuth	Boron	Boron	Bromide	Cadmium	Cadmium	Calcium	Carbon, Dissolved Organic	Carbon, Total Organic
		Fraction	N	N	N	D	T	D	T	D	T	D	T	D	T	N	D	T	D	T	N	D	T	T	D	T
		Unit	%	%	mg/l	mg/l	mg/l	ug/l	ug/l	ug/l	ug/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
6/28/2022	E321812	F2_BPO																								
6/29/2022	E321791	F2_NWPI			266																< 0.250				< 0.50	
6/29/2022	E300091	EV_MC2																								
6/29/2022	0200097	EV_EC1																								
6/29/2022	E321812	F2_BPO			494											< 2.0					0.574				1.01	1.26
6/29/2022	E321812	F2_BPO																								
6/29/2022	0200097	EV_EC1																								
6/29/2022	E321812	F2_BPO																								
6/30/2022	E321791	F2_NWPI			301	0.0037		2.16		0.17		0.0370		< 0.020		< 2.0	< 0.000050		0.042		< 0.250	0.618			0.59	
6/30/2022	E300091	EV_MC2																								
6/30/2022	0200097	EV_EC1																								
6/30/2022	E321812	F2_BPO			484	< 0.0010		0.29		0.46		0.0107		< 0.020		< 2.0	< 0.000050		0.038		0.476	0.402			1.12	1.17
6/30/2022	E321812	F2_BPO																								
6/30/2022	E321791	F2_NWPI																								
6/30/2022	E321812	F2_BPO																								
7/1/2022	E321812	F2_BPO			520											< 2.0					0.536				< 0.50	
7/1/2022	E321791	F2_NWPI			295																< 0.250				0.53	
7/1/2022	E300091	EV_MC2																								
7/1/2022	0200097	EV_EC1																								
7/2/2022	E300091	EV_MC2																								
7/2/2022	0200097	EV_EC1																								
7/2/2022	E321791	F2_NWPI			277																< 0.250				0.54	
7/2/2022	E321812	F2_BPO			471											< 2.0					0.498				1.22	
7/2/2022	E321812	F2_BPO																								
7/2/2022	E321812	F2_BPO																								
7/3/2022	0200097	EV_EC1																								
7/3/2022	E300091	EV_MC2																								
7/3/2022	E321791	F2_NWPI			306																< 0.250				< 0.50	
7/3/2022	E321812	F2_BPO																								
7/3/2022	E321812	F2_BPO			474											< 2.0					0.681				1.04	0.99
7/3/2022	E321812	F2_BPO																								
7/4/2022	E321791	F2_NWPI			293	0.0042	0.0412	2.19	2.29	0.17	0.25	0.0374	0.0408	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.043	0.049	< 0.250	0.631	0.695	238	< 0.50	0.75
7/4/2022	E321812	F2_BPO	0	0	472	< 0.0010	< 0.0030	0.29	0.30	0.43	0.55	0.0111	0.0116	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.040	0.041	0.441	0.306	0.580	256	0.77	1.03
7/4/2022	E321812	F2_BPO																								
7/4/2022	200393	EV_ER1			132	0.0036	0.145	< 0.10	< 0.10	0.18	0.30	0.0527	0.0539	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	< 0.010	< 0.010	< 0.050	0.0139	0.0487	45.5	1.05	1.61
7/4/2022	E321812	F2_BPO																								
7/4/2022	310168	EV_MC2A			122	0.0051	0.0570	< 0.10	< 0.10	0.18	0.22	0.0595	0.0582	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	< 0.010	< 0.010	< 0.050	0.0167	0.0281	38.4	1.28	1.43
7/4/2022	0200203	EV_MC3			106	0.0085	0.0788	< 0.10	< 0.10	0.25	0.28	0.0602	0.0572	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	< 0.010	< 0.010	< 0.050	0.0287	0.0371	33.5	1.48	1.64
7/4/2022	0200097	EV_EC1	3	0	367	< 0.0010	< 0.0030	0.17	0.22	0.26	0.27	0.0543	0.0515	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.012	0.013	< 0.250	0.0071	0.0067	222	1.10	0.97
7/4/2022	0200097	EV_EC1			380.99																					
7/4/2022	E300091	EV_MC2			129	0.0067	0.0487	< 0.10	< 0.10	0.20	0.21	0.0632	0.0610	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	< 0.010	< 0.010	< 0.050	0.0223	0.0295	44.8	1.29	1.30
7/4/2022	E321814	EV_ECOUT	0	0	422	< 0.0010	0.0037	0.17	0.22	0.27	0.26	0.0652	0.0622	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.012	0.012	< 0.250	0.0910	0.0874	238	0.75	0.76
7/4/2022	E321814	EV_ECOUT																								
7/4/2022	E321812	F2_BPO																								
7/5/2022	E300091	EV_MC2																								
7/5/2022	E321791	F2_NWPI			275	0.0045		2.12		0.20		0.0388		< 0.020		< 2.0	< 0.000050		0.046		< 0.250	0.648			0.82	
7/5/2022	0200097	EV_EC1																								
7/5/2022	E321812	F2_BPO			487	0.0013		0.27		0.42		0.0114		< 0.020		< 2.0	< 0.000050		0.039		0.533	0.315			1.07	0.9775

		Parameter	48-h Static acute lethality test using Daphnia ma	96-Hr 100% Conc. Acute lethality test for R. Trout	Alkalinity, Total (As CaCO3)	Aluminum	Aluminum	Antimony	Antimony	Arsenic	Arsenic	Barium	Barium	Beryllium	Beryllium	BOD	Bismuth	Bismuth	Boron	Boron	Bromide	Cadmium	Cadmium	Calcium	Carbon, Dissolved Organic	Carbon, Total Organic
		Fraction	N	N	N	D	T	D	T	D	T	D	T	D	T	N	D	T	D	T	N	D	T	T	D	T
		Unit	%	%	mg/l	mg/l	mg/l	ug/l	ug/l	ug/l	ug/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
7/5/2022	E321812	F2_BPO																								
7/5/2022	E206231	EV_GT1	0	0	353	0.0052	0.0202	0.88	0.91	0.32	0.39	0.296	0.305	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.034	0.042	< 0.250	0.153	0.177	251	1.02	1.08
7/5/2022	E206231	EV_GT1																								
7/5/2022	E102685	EV_BC1	0	0	336	0.0016	0.0086	0.86	0.86	0.26	0.28	0.158	0.122	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.044	0.050	< 0.250	0.0243	0.0327	234	0.78	0.72
7/5/2022	E102685	EV_BC1																								
7/5/2022	E321814	EV_ECOUT			433	< 0.0010	< 0.0030	0.20	0.20	0.25	0.23	0.0608	0.0637	< 0.020	< 0.020		< 0.000050	< 0.000050	0.012	0.012	< 0.250	0.0775	0.0816	239	0.75	0.75
7/5/2022	0200203	EV_MC3			104	0.0065	0.0853	< 0.10	< 0.10	0.24	0.30	0.0531	0.0559	< 0.020	< 0.020		< 0.000050	< 0.000050	< 0.010	< 0.010	< 0.050	0.0198	0.0394	33.0	1.54	1.78
7/5/2022	E206231	EV_GT1			332	0.0016	0.0239	0.82	0.84	0.31	0.34	0.230	0.357	< 0.020	< 0.020		< 0.000050	< 0.000050	0.038	0.041	0.284	0.155	0.194	231	1.18	1.31
7/5/2022	E300091	EV_MC2			121	0.0055	0.0624	< 0.10	< 0.10	0.20	0.25	0.0569	0.0590	< 0.020	< 0.020		< 0.000050	< 0.000050	< 0.010	< 0.010	< 0.050	0.0181	0.0302	42.0	1.57	1.51
7/5/2022	E321812	F2_BPO																								
7/5/2022	E102685	EV_BC1			348	0.0012	0.0105	0.81	0.84	0.26	0.29	0.134	0.126	< 0.020	< 0.020		< 0.000050	< 0.000050	0.049	0.051	0.332	0.0216	0.0235	226	0.96	0.84
7/6/2022	0200097	EV_EC1																								
7/6/2022	E321812	F2_BPO			468											< 2.0					0.523				0.79	0.87
7/6/2022	E300091	EV_MC2																								
7/6/2022	E321812	F2_BPO																								
7/6/2022	E321791	F2_NWPI			294																< 0.250				0.60	
7/6/2022	200393	EV_ER1			138	0.0030	0.402	< 0.10	0.10	0.18	0.48	0.0502	0.0576	< 0.020	0.030		< 0.000050	< 0.000050	< 0.010	< 0.010	< 0.050	0.0120	0.0744	50.9	0.66	0.95
7/6/2022	0200097	EV_EC1			378	< 0.0010	< 0.0030	0.20	0.22	0.25	0.26	0.0507	0.0508	< 0.020	< 0.020		< 0.000050	< 0.000050	0.011	0.012	< 0.250	< 0.0050	< 0.0050	211	< 0.50	< 0.50
7/6/2022	E321812	F2_BPO																								
7/7/2022	E300091	EV_MC2																								
7/7/2022	E321812	F2_BPO																								
7/7/2022	0200097	EV_EC1																								
7/7/2022	E321791	F2_NWPI			293	0.0050		2.22		0.18		0.0379		< 0.020		< 2.0	< 0.000050		0.041		< 0.250	0.619			< 0.50	
7/7/2022	E321812	F2_BPO			486	< 0.0010		0.29		0.38		0.0112		< 0.020		< 2.0	< 0.000050		0.036		0.488	0.326			0.97	0.88
7/7/2022	E321812	F2_BPO																								
7/7/2022	E321812	F2_BPO																								
7/8/2022	E300091	EV_MC2																								
7/8/2022	0200097	EV_EC1																								
7/8/2022	E321791	F2_NWPI			284																< 0.250				0.55	
7/8/2022	E321812	F2_BPO			465											< 2.0					0.510				1.07	
7/8/2022	E321812	F2_BPO																								
7/8/2022	E321812	F2_BPO																								
7/9/2022	0200097	EV_EC1																								
7/9/2022	E300091	EV_MC2																								
7/9/2022	E321812	F2_BPO			491											< 2.0					0.393				0.71	
7/9/2022	E321791	F2_NWPI			282																< 0.250				< 0.50	
7/9/2022	E321812	F2_BPO																								
7/9/2022	E321812	F2_BPO																								
7/10/2022	0200097	EV_EC1																								
7/10/2022	E300091	EV_MC2																								
7/10/2022	E321791	F2_NWPI			282																< 0.250				< 0.50	
7/10/2022	E321812	F2_BPO			469											< 2.0					0.651				1.18	1.10
7/10/2022	E321812	F2_BPO																								
7/10/2022	E321812	F2_BPO																								
7/11/2022	200393	EV_ER1			140	0.0025	0.159	< 0.10	< 0.10	0.18	0.32	0.0538	0.0562	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	< 0.010	< 0.010	< 0.050	0.0165	0.0503	49.5	1.21	1.43
7/11/2022	E321791	F2_NWPI			302	0.0038	0.0364	2.28	2.52	0.17	0.23	0.0403	0.0436	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.046	0.049	< 0.250	0.632	0.702	253	0.96	0.96
7/11/2022	E321812	F2_BPO	0	0	480	< 0.0010	< 0.0030	0.29	0.35	0.43	0.54	0.0118	0.0120	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.038	0.042	0.581	0.318	0.547	277	1.43	1.44
7/11/2022	E321812	F2_BPO																								
7/11/2022	0200097	EV_EC1			369	< 0.0010	< 0.0030	0.21	0.22	0.25	0.25	0.0506	0.0501	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.011	0.013	< 0.250	0.0058	0.0059	222	1.22	1.05

Parameter			48-h Static acute lethality test using Daphnia ma	96-Hr 100% Conc. Acute lethality test for R. Trout	Alkalinity, Total (As CaCO3)	Aluminum	Aluminum	Antimony	Antimony	Arsenic	Arsenic	Barium	Barium	Beryllium	Beryllium	BOD	Bismuth	Bismuth	Boron	Boron	Bromide	Cadmium	Cadmium	Calcium	Carbon, Dissolved Organic	Carbon, Total Organic
Fraction			N	N	N	D	T	D	T	D	T	D	T	D	T	N	D	T	D	T	N	D	T	T	D	T
Unit			%	%	mg/l	mg/l	mg/l	ug/l	ug/l	ug/l	ug/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
7/11/2022	0200203	EV_MC3			120	0.0034	0.0251	0.10	< 0.10	0.20	0.26	0.0647	0.0654	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	< 0.010	< 0.010	< 0.050	0.0166	0.0262	38.2	1.42	1.61
7/11/2022	E321814	EV_ECOUT			446	< 0.0010	0.0030	0.21	0.22	0.22	0.24	0.0637	0.0606	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.011	0.013	< 0.250	0.0808	0.0791	254	1.02	1.06
7/11/2022	310168	EV_MC2A			134	0.0029	0.0340	< 0.10	< 0.10	0.18	0.26	0.0638	0.0650	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	< 0.010	< 0.010	< 0.050	0.0159	0.0268	45.9	1.65	1.34
7/11/2022	E300091	EV_MC2			150	0.0028	0.0235	< 0.10	< 0.10	0.17	0.23	0.0689	0.0677	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	< 0.010	0.011	< 0.050	0.0249	0.0391	54.6	1.29	1.32
7/11/2022	E321812	F2_BPO																								
7/12/2022	E321791	F2_NWPI			288	0.0058		2.23		0.18		0.0394		< 0.020		< 2.0	< 0.000050		0.046		< 0.250	0.636			< 0.50	
7/12/2022	0200097	EV_EC1																								
7/12/2022	E206231	EV_GT1			356	0.0014	0.0092	0.84	0.88	0.28	0.36	0.237	0.377	< 0.020	< 0.040	< 2.0	< 0.000050	< 0.000100	0.040	0.044	0.412	0.0983	0.120	246	1.15	1.05
7/12/2022	E300091	EV_MC2																								
7/12/2022	E321812	F2_BPO			474	0.0018		0.30		0.40		0.0119		< 0.020		< 2.0	< 0.000050		0.040		0.609	0.299			1.28	0.63
7/12/2022	E321812	F2_BPO																								
7/12/2022	E102685	EV_BC1			354	0.0018	< 0.0030	0.80	0.83	0.25	0.24	0.117	0.117	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.053	0.054	0.530	0.0134	0.0128	217	0.83	0.85
7/12/2022	200393	EV_ER1			161	0.0022	0.212	< 0.10	< 0.10	0.16	0.34	0.0563	0.0594	< 0.020	< 0.020		< 0.000050	< 0.000050	< 0.010	< 0.010	< 0.050	0.0156	0.0417	44.9	0.87	1.37
7/12/2022	0200203	EV_MC3			139	0.0041	0.0363	< 0.10	< 0.10	0.22	0.27	0.0696	0.0685	< 0.020	< 0.020		< 0.000050	< 0.000050	< 0.010	< 0.010	< 0.050	0.0163	0.0166	34.8	1.18	1.27
7/12/2022	E206231	EV_GT1																								
7/12/2022	E102685	EV_BC1																								
7/12/2022	E300091	EV_MC2			169	0.0038	0.0282	< 0.10	< 0.10	0.19	0.22	0.0735	0.0698	< 0.020	< 0.020		< 0.000050	< 0.000050	< 0.010	< 0.010	< 0.050	0.0173	0.0251	47.4	1.23	1.20
7/12/2022	E321812	F2_BPO																								
7/13/2022	E321791	F2_NWPI			282																< 0.250				0.63	
7/13/2022	E300091	EV_MC2																								
7/13/2022	E321812	F2_BPO			474											< 2.0					0.634				0.57	
7/13/2022	0200097	EV_EC1																								
7/13/2022	E321812	F2_BPO																								
7/13/2022	0200097	EV_EC1																								
7/13/2022	E321812	F2_BPO																								
7/14/2022	E321791	F2_NWPI			307	0.0104		2.16		< 0.50		0.0394		< 0.100		< 2.0	< 0.000250		< 0.050			0.661			< 0.50	
7/14/2022	E300091	EV_MC2																								
7/14/2022	0200097	EV_EC1																								
7/14/2022	E321812	F2_BPO			476	< 0.0050		< 0.50		< 0.50		0.0123		< 0.100		< 2.0	< 0.000250		< 0.050			0.458			0.88	
7/14/2022	E321812	F2_BPO																								
7/14/2022	E321812	F2_BPO																								
7/15/2022	E321791	F2_NWPI			306																< 0.250				< 0.50	
7/15/2022	E300091	EV_MC2																								
7/15/2022	0200097	EV_EC1																								
7/15/2022	E321812	F2_BPO			482											< 2.0					0.653				1.02	
7/15/2022	E321812	F2_BPO																								
7/15/2022	E321812	F2_BPO																								
7/16/2022	E321791	F2_NWPI			324																< 0.250				< 0.50	
7/16/2022	E300091	EV_MC2																								
7/16/2022	0200097	EV_EC1																								
7/16/2022	E321812	F2_BPO																								
7/16/2022	E321812	F2_BPO			474											< 2.0					0.631				0.67	
7/16/2022	E321812	F2_BPO																								
7/17/2022	E300091	EV_MC2																								
7/17/2022	0200097	EV_EC1																								
7/17/2022	E321791	F2_NWPI			321																< 0.250				< 0.50	
7/17/2022	E321812	F2_BPO			482											< 2.0					0.413				0.86	
7/17/2022	E321812	F2_BPO																								

		Parameter	48-h Static acute lethality test using Daphnia ma	96-Hr 100% Conc. Acute lethality test for R. Trout	Alkalinity, Total (As CaCO3)	Aluminum	Aluminum	Antimony	Antimony	Arsenic	Arsenic	Barium	Barium	Beryllium	Beryllium	BOD	Bismuth	Bismuth	Boron	Boron	Bromide	Cadmium	Cadmium	Calcium	Carbon, Dissolved Organic	Carbon, Total Organic
		Fraction	N	N	N	D	T	D	T	D	T	D	T	D	T	N	D	T	D	T	N	D	T	T	D	T
		Unit	%	%	mg/l	mg/l	mg/l	ug/l	ug/l	ug/l	ug/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
7/17/2022	E321812	F2_BPO																								
7/18/2022	200393	EV_ER1			158	0.0018	0.0476	< 0.10	< 0.10	0.17	0.22	0.0583	0.0592	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	< 0.010	< 0.010	< 0.050	0.0123	0.0300	52.4	0.63	0.81
7/18/2022	E321791	F2_NWPI			317	0.0052	0.0286	2.15	2.18	< 0.20	0.28	0.0393	0.0425	< 0.040	< 0.020	< 2.0	< 0.000100	< 0.000050	0.048	0.042	< 0.250	0.643	0.662	255	1.16	0.76
7/18/2022	310168	EV_MC2A			158	0.0031	0.0206	< 0.10	< 0.10	0.18	0.21	0.0771	0.0716	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	< 0.010	< 0.010	< 0.050	0.0196	0.0243	51.2	0.94	0.95
7/18/2022	0200203	EV_MC3			143	0.0023	0.0145	< 0.10	< 0.10	0.22	0.24	0.0810	0.0777	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.010	< 0.010	< 0.050	0.0224	0.0258	43.8	1.03	1.05
7/18/2022	E321812	F2_BPO	0	0	473	0.0020	0.0037	0.33	0.28	0.40	0.54	0.0116	0.0121	< 0.040	< 0.020	< 2.0	< 0.000100	< 0.000050	0.041	0.037	0.609	0.360	0.510	292	1.05	0.89
7/18/2022	E321812	F2_BPO																								
7/18/2022	E321812	F2_BPO																								
7/18/2022	0200097	EV_EC1	3	0	398	0.0025	< 0.0030	0.20	0.22	0.28	0.28	0.0529	0.0520	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.012	0.011	< 0.250	0.0092	< 0.0050	235	0.67	0.84
7/18/2022	0200097	EV_EC1			419.48																					
7/18/2022	E321814	EV_ECOUT	7	0	493	< 0.0020	< 0.0030	0.20	0.21	0.23	0.32	0.0622	0.0619	< 0.040	< 0.020	< 2.0	< 0.000100	< 0.000050	< 0.020	0.012	< 0.250	0.0882	0.0767	255	0.72	0.78
7/18/2022	E321814	EV_ECOUT																								
7/18/2022	E300091	EV_MC2			175	0.0027	0.0149	< 0.10	< 0.10	0.18	0.21	0.0823	0.0806	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.012	0.011	< 0.050	0.0226	0.0242	61.0	1.16	0.99
7/18/2022	E321812	F2_BPO																								
7/19/2022	0200097	EV_EC1																								
7/19/2022	E300091	EV_MC2																								
7/19/2022	E321791	F2_NWPI			327	0.0041		2.21		0.23		0.0364		< 0.020		< 2.0	< 0.000050		0.041		< 0.250	0.655			< 0.50	
7/19/2022	E321812	F2_BPO			484	< 0.0010		0.27		0.43		0.0115		< 0.020		< 2.0	< 0.000050		0.039		0.660	0.406			< 0.50	
7/19/2022	E321812	F2_BPO																								
7/19/2022	E206231	EV_GT1	0	0	401	< 0.0010	0.0052	0.93	1.02	0.36	0.46	0.237	0.402	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.042	0.048	0.490	0.110	0.139	236	1.03	1.13
7/19/2022	E321812	F2_BPO																								
7/19/2022	E206231	EV_GT1	0	0	401	< 0.0010	0.0052	0.93	1.02	0.36	0.46	0.237	0.402	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.042	0.048	0.490	0.110	0.139	236	1.03	1.13
7/19/2022	E206231	EV_GT1																								
7/19/2022	E102685	EV_BC1	0	0	371	< 0.0010	0.0038	0.86	0.92	0.24	0.37	0.0782	0.0827	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.051	0.058	0.512	0.0087	0.0168	207	0.79	1.05
7/19/2022	E102685	EV_BC1																								
7/19/2022	E321812	F2_BPO																								
7/20/2022	E300091	EV_MC2																								
7/20/2022	0200097	EV_EC1																								
7/20/2022	E321812	F2_BPO			501											< 2.0					0.410				0.92	
7/20/2022	E321812	F2_BPO																								
7/20/2022	E321791	F2_NWPI			317																< 0.250				0.65	
7/20/2022	E321812	F2_BPO																								
7/21/2022	0200097	EV_EC1																								
7/21/2022	E300091	EV_MC2																								
7/21/2022	E321791	F2_NWPI			300	0.0091		2.50		< 0.50		0.0482		< 0.100		< 2.0	< 0.000250		0.054		< 0.250	0.742			< 0.50	
7/21/2022	E321812	F2_BPO																								
7/21/2022	E321812	F2_BPO			479	< 0.0050		< 0.50		< 0.50		0.0125		< 0.100		< 2.0	< 0.000250		< 0.050		0.616	0.446			1.21	1.32
7/21/2022	E321812	F2_BPO			498	< 0.0010	0.0036	0.29	0.29	0.49	0.66	0.0120	0.0123	< 0.020	< 0.020		< 0.000050	< 0.000050	0.043	0.040	0.376	0.446	0.529	253	1.49	1.32
7/21/2022	E321812	F2_BPO			480	< 0.0010	0.0040	0.29	0.32	0.47	0.71	0.0122	0.0126	< 0.020	< 0.020		< 0.000050	< 0.000050	0.040	0.044	0.373	0.402	0.548	271	0.82	0.95
7/21/2022	E321812	F2_BPO																								
7/22/2022	0200097	EV_EC1																								
7/22/2022	E300091	EV_MC2																								
7/22/2022	E321791	F2_NWPI			292																< 0.250				< 0.50	
7/22/2022	E321812	F2_BPO																								
7/22/2022	E321812	F2_BPO			470											< 2.0					0.376				< 0.50	< 0.50
7/22/2022	E321812	F2_BPO																								
7/23/2022	0200097	EV_EC1																								
7/23/2022	E300091	EV_MC2																								
7/23/2022	E321791	F2_NWPI			292																< 0.250				< 0.50	
7/23/2022	E321812	F2_BPO																								

Parameter			48-h Static acute lethality test using Daphnia ma	96-Hr 100% Conc. Acute lethality test for R. Trout	Alkalinity, Total (As CaCO3)	Aluminum	Aluminum	Antimony	Antimony	Arsenic	Arsenic	Barium	Barium	Beryllium	Beryllium	BOD	Bismuth	Bismuth	Boron	Boron	Bromide	Cadmium	Cadmium	Calcium	Carbon, Dissolved Organic	Carbon, Total Organic
Fraction			N	N	N	D	T	D	T	D	T	D	T	D	T	N	D	T	D	T	N	D	T	T	D	T
Unit			%	%	mg/l	mg/l	mg/l	ug/l	ug/l	ug/l	ug/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
7/23/2022	E321812	F2_BPO			468											< 2.0					0.597				0.76	
7/23/2022	E321812	F2_BPO																								
7/24/2022	0200097	EV_EC1																								
7/24/2022	E300091	EV_MC2																								
7/24/2022	E321791	F2_NWPI			300																< 0.250				0.63	
7/24/2022	E321812	F2_BPO			473											< 2.0					0.569				1.49	
7/24/2022	E321812	F2_BPO																								
7/24/2022	E321812	F2_BPO																								
7/25/2022	0200097	EV_EC1																								
7/25/2022	E300091	EV_MC2																								
7/25/2022	E321791	F2_NWPI			306	0.0092	0.0335	2.24	2.22	< 0.50	0.35	0.0384	0.0422	< 0.100	< 0.020	< 2.0	< 0.000250	< 0.000050	< 0.050	0.049	< 0.250	0.649	0.684	230	< 0.50	< 0.50
7/25/2022	E321812	F2_BPO	0	0	463	< 0.0050	0.0039	< 0.50	0.26	< 0.50	0.66	0.0123	0.0118	< 0.100	< 0.020	< 2.0	< 0.000250	< 0.000050	< 0.050	0.042	0.675	0.381	0.517	250	0.78	0.71
7/25/2022	E321812	F2_BPO																								
7/25/2022	E321812	F2_BPO																								
7/26/2022	0200097	EV_EC1																								
7/26/2022	E321812	F2_BPO			458	0.0022		0.28		0.38		0.0114		< 0.040		< 2.0	< 0.000100		0.039		0.652	0.362			0.92	
7/26/2022	E321812	F2_BPO																								
7/26/2022	E300091	EV_MC2																								
7/26/2022	E321791	F2_NWPI			286	0.0045		2.24		< 0.20		0.0383		< 0.040		< 2.0	< 0.000100		0.045		< 0.250	0.640			< 0.50	
7/26/2022	E321812	F2_BPO																								
7/27/2022	0200097	EV_EC1																								
7/27/2022	E300091	EV_MC2																								
7/27/2022	E321791	F2_NWPI			294																< 0.250				< 0.50	
7/27/2022	E321812	F2_BPO			471											< 2.0					0.568				0.61	0.65
7/27/2022	E321812	F2_BPO																								
7/27/2022	E321812	F2_BPO																								
7/28/2022	E321791	F2_NWPI			292	0.0036		3.12		0.21		0.0440		< 0.020		< 2.0	< 0.000050		0.053		< 0.250	0.710			< 0.50	
7/28/2022	0200097	EV_EC1																								
7/28/2022	E300091	EV_MC2																								
7/28/2022	E321812	F2_BPO																								
7/28/2022	E321812	F2_BPO			442	< 0.0010		0.26		0.44		0.0123		< 0.020		< 2.0	< 0.000050		0.042		0.649	0.374			< 0.50	
7/28/2022	E321812	F2_BPO																								
7/29/2022	0200097	EV_EC1																								
7/29/2022	E300091	EV_MC2																								
7/29/2022	E321791	F2_NWPI			283																< 0.250				< 0.50	
7/29/2022	E321812	F2_BPO			435											< 2.0					0.652				< 0.50	
7/29/2022	E321812	F2_BPO																								
7/29/2022	E321812	F2_BPO																								
7/30/2022	E300091	EV_MC2																								
7/30/2022	0200097	EV_EC1																								
7/30/2022	E321791	F2_NWPI			274																< 0.250				< 0.50	
7/30/2022	E321812	F2_BPO			439											< 2.0					0.649				< 0.50	
7/30/2022	E321812	F2_BPO																								
7/30/2022	E321812	F2_BPO																								
7/31/2022	0200097	EV_EC1																								
7/31/2022	E300091	EV_MC2																								
7/31/2022	E321791	F2_NWPI			283																< 0.250				0.59	
7/31/2022	E321812	F2_BPO			444											< 2.0					0.615				< 0.50	

		Parameter	48-h Static acute lethality test using Daphnia ma	96-Hr 100% Conc. Acute lethality test for R. Trout	Alkalinity, Total (As CaCO3)	Aluminum	Aluminum	Antimony	Antimony	Arsenic	Arsenic	Barium	Barium	Beryllium	Beryllium	BOD	Bismuth	Bismuth	Boron	Boron	Bromide	Cadmium	Cadmium	Calcium	Carbon, Dissolved Organic	Carbon, Total Organic
		Fraction	N	N	N	D	T	D	T	D	T	D	T	D	T	N	D	T	D	T	N	D	T	T	D	T
		Unit	%	%	mg/l	mg/l	mg/l	ug/l	ug/l	ug/l	ug/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
7/31/2022	E321812	F2_BPO																								
7/31/2022	E321812	F2_BPO																								
8/1/2022	200393	EV_ER1			159	< 0.0010	0.0367	< 0.10	< 0.10	0.20	0.18	0.0638	0.0615	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	< 0.010	< 0.010	< 0.050	0.0125	0.0231	57.3	< 0.50	< 0.50
8/1/2022	310168	EV_MC2A			168	< 0.0010	0.0080	< 0.10	< 0.10	0.17	0.16	0.0824	0.0869	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	< 0.010	0.011	< 0.050	0.0187	0.0212	60.5	0.74	0.66
8/1/2022	E321812	F2_BPO	13	0	446	< 0.0010	< 0.0030	0.30	0.30	0.51	0.52	0.0117	0.0113	< 0.040	< 0.020	< 2.0	< 0.000100	< 0.000050	0.043	0.040	0.633	0.478	0.474	266	< 0.50	< 0.50
8/1/2022	E321812	F2_BPO																								
8/1/2022	E321812	F2_BPO																								
8/1/2022	0200203	EV_MC3			158	0.0031	0.0096	< 0.10	0.12	0.22	0.24	0.0999	0.102	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.010	0.014	< 0.050	0.0220	0.0298	62.4	0.60	0.80
8/1/2022	E300091	EV_MC2			178	< 0.0010	0.0066	< 0.10	< 0.10	0.14	0.16	0.0898	0.0863	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.010	0.012	< 0.050	0.0198	0.0233	62.3	0.59	0.63
8/1/2022	E321791	F2_NWPI			280	0.0034	0.0214	2.22	2.26	0.21	0.21	0.0411	0.0407	< 0.040	< 0.020	< 2.0	< 0.000100	< 0.000050	0.049	0.050	< 0.250	0.653	0.663	239	< 0.50	< 0.50
8/1/2022	0200097	EV_EC1	13	0	382	< 0.0020	< 0.0030	< 0.20	0.22	0.31	0.19	0.0540	0.0458	< 0.040	< 0.020	< 2.0	< 0.000100	< 0.000050	< 0.020	0.012	< 0.250	< 0.0100	0.0098	220	< 0.50	< 0.50
8/1/2022	E321814	EV_ECOUT	3	0	461	< 0.0020	< 0.0030	< 0.20	0.21	0.29	0.23	0.0615	0.0574	< 0.040	< 0.020	< 2.0	< 0.000100	< 0.000050	< 0.020	0.011	< 0.250	0.0901	0.0718	249	< 0.50	< 0.50
8/1/2022	E321814	EV_ECOUT																								
8/1/2022	E321812	F2_BPO																								
8/2/2022	E206231	EV_GT1																								
8/2/2022	E102685	EV_BC1																								
8/2/2022	E321791	F2_NWPI			286	0.0038		2.33		0.21		0.0415		< 0.020		< 2.0	< 0.000050		0.050		< 0.250	0.690			< 0.50	
8/2/2022	E321812	F2_BPO			473	0.0015		0.26		0.48		0.0124		< 0.020		< 2.0	< 0.000050		0.039		0.405	0.428			< 0.50	
8/2/2022	E321812	F2_BPO																								
8/2/2022	0200097	EV_EC1																								
8/2/2022	E321812	F2_BPO																								
8/2/2022	0200097	EV_EC1																								
8/2/2022	E300091	EV_MC2																								
8/2/2022	E206231	EV_GT1	0	0	274	0.0036	0.0144	0.67	0.71	0.26	0.34	0.158	0.142	< 0.040	< 0.020	< 2.0	< 0.000100	< 0.000050	0.046	0.045	< 0.250	< 0.0100	0.0168	226	1.45	1.39
8/2/2022	E206231	EV_GT1																								
8/2/2022	E102685	EV_BC1	0	0	314	0.0025	0.0038	0.92	0.89	0.22	0.22	0.0698	0.0684	< 0.040	< 0.020	< 2.0	< 0.000100	< 0.000050	0.056	0.050	0.312	< 0.0100	0.0065	217	0.76	0.77
8/2/2022	E102685	EV_BC1																								
8/2/2022	E321812	F2_BPO																								
8/3/2022	E300091	EV_MC2																								
8/3/2022	0200097	EV_EC1																								
8/3/2022	E321812	F2_BPO			456											< 2.0					0.632				< 0.50	
8/3/2022	E321812	F2_BPO																								
8/3/2022	E321791	F2_NWPI			280																< 0.250				< 0.50	
8/4/2022	E300091	EV_MC2																								
8/4/2022	E321791	F2_NWPI			304	0.0045		2.32		< 0.20		0.0371		< 0.040		< 2.0	< 0.000100		0.047		< 0.250	0.667			< 0.50	
8/4/2022	E321812	F2_BPO			467	0.0022		0.32		0.42		0.0118		< 0.040		< 2.0	< 0.000100		0.042		0.535	0.402			1.04	1.22
8/4/2022	E321812	F2_BPO																								
8/4/2022	0200097	EV_EC1																								
8/4/2022	E321812	F2_BPO																								
8/5/2022	0200097	EV_EC1																								
8/5/2022	E300091	EV_MC2																								
8/5/2022	E321791	F2_NWPI			284																< 0.250				0.67	
8/5/2022	E321812	F2_BPO			443											< 2.0					0.571				1.40	
8/5/2022	E321812	F2_BPO																								
8/5/2022	E321812	F2_BPO																								
8/6/2022	0200097	EV_EC1																								
8/6/2022	E300091	EV_MC2																								
8/6/2022	E321791	F2_NWPI			290																< 0.250				0.62	
8/6/2022	E321812	F2_BPO			455											< 2.0					0.521				1.22	
8/6/2022	E321812	F2_BPO																								

		Parameter	48-h Static acute lethality test using Daphnia ma	96-Hr 100% Conc. Acute lethality test for R. Trout	Alkalinity, Total (As CaCO3)	Aluminum	Aluminum	Antimony	Antimony	Arsenic	Arsenic	Barium	Barium	Beryllium	Beryllium	BOD	Bismuth	Bismuth	Boron	Boron	Bromide	Cadmium	Cadmium	Calcium	Carbon, Dissolved Organic	Carbon, Total Organic
		Fraction	N	N	N	D	T	D	T	D	T	D	T	D	T	N	D	T	D	T	N	D	T	T	D	T
		Unit	%	%	mg/l	mg/l	mg/l	ug/l	ug/l	ug/l	ug/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
8/6/2022	E321812	F2_BPO																								
8/7/2022	E300091	EV_MC2																								
8/7/2022	0200097	EV_EC1																								
8/7/2022	E321791	F2_NWPI			276																< 0.250				0.89	
8/7/2022	E321812	F2_BPO			443											< 2.0					0.631				1.23	
8/7/2022	E321812	F2_BPO																								
8/7/2022	E321812	F2_BPO																								
8/8/2022	E300091	EV_MC2																								
8/8/2022	0200097	EV_EC1																								
8/8/2022	E321791	F2_NWPI			278	0.0044	0.0239	2.65	2.30	< 0.20	0.30	0.0448	0.0395	< 0.040	< 0.020	< 2.0	< 0.000100	< 0.000050	0.061	0.048	< 0.250	0.815	0.740	238	< 0.50	< 0.50
8/8/2022	E321812	F2_BPO	0	0	456	< 0.0020	0.0064	0.25	0.30	0.50	0.65	0.0120	0.0120	< 0.040	< 0.020	< 2.0	< 0.000100	< 0.000050	0.043	0.042	0.528	0.392	0.522	270	1.00	0.99
8/8/2022	E321812	F2_BPO																								
8/8/2022	E321812	F2_BPO																								
8/9/2022	E321791	F2_NWPI			300	0.0031		2.29		< 0.20		0.0404		< 0.040		< 2.0	< 0.000100		0.057		< 0.250	0.692			< 0.50	
8/9/2022	E300091	EV_MC2																								
8/9/2022	0200097	EV_EC1																								
8/9/2022	E321814	EV_ECOUT			411	0.0012	< 0.0030	0.22	0.22	0.26	0.32	0.0649	0.0640	< 0.020	< 0.020		< 0.000050	< 0.000050	0.014	0.013	< 0.250	0.0874	0.0810	247	0.68	0.67
8/9/2022	E321812	F2_BPO			452	< 0.0020		0.25		0.40		0.0118		< 0.040		< 2.0	< 0.000100		0.045		0.504	0.424			< 0.50	
8/9/2022	E321812	F2_BPO																								
8/9/2022	0200097	EV_EC1	0	0	330	< 0.0010	< 0.0030	0.21	0.22	0.26	0.34	0.0482	0.0481	< 0.020	< 0.020		< 0.000050	< 0.000050	0.013	0.014	< 0.250	< 0.0050	0.0072	205	0.64	0.77
8/9/2022	E321812	F2_BPO																								
8/9/2022	0200097	EV_EC1	0	0	330	< 0.0010	< 0.0030	0.21	0.22	0.26	0.34	0.0482	0.0481	< 0.020	< 0.020		< 0.000050	< 0.000050	0.013	0.014	< 0.250	< 0.0050	0.0072	205	0.64	0.77
8/9/2022	0200203	EV_MC3			155	0.0013	0.0085	< 0.10	< 0.10	0.23	0.22	0.104	0.102	< 0.020	< 0.020		< 0.000050	< 0.000050	0.012	0.013	< 0.050	0.0208	0.0246	51.8	1.08	1.02
8/9/2022	E321812	F2_BPO																								
8/10/2022	E300091	EV_MC2																								
8/10/2022	0200097	EV_EC1																								
8/10/2022	E321812	F2_BPO																								
8/10/2022	E321812	F2_BPO			454											< 2.0					0.615				1.06	
8/10/2022	E321791	F2_NWPI			282																< 0.250				0.51	
8/10/2022	E206231	EV_GT1	0	0	366	0.0014	0.0037	0.82	0.73	0.30	0.34	0.246	0.264	< 0.020	< 0.040		< 0.000050	< 0.000100	0.040	0.040	0.476	0.112	0.131	227	0.62	0.71
8/10/2022	E102685	EV_BC1	10	0	278	< 0.0010	< 0.0060	0.84	0.82	0.24	0.40	0.0739	0.0745	< 0.020	< 0.040		< 0.000050	< 0.000100	0.048	0.051	0.375	0.0078	< 0.0100	211	0.85	0.96
8/10/2022	200393	EV_ER1			155	0.0015	0.0201	< 0.10	< 0.10	0.20	0.30	0.0754	0.0671	< 0.020	< 0.020		< 0.000050	< 0.000050	< 0.010	< 0.010	< 0.050	0.0136	0.0286	56.5	< 0.50	< 0.50
8/10/2022	E300091	EV_MC2			212	0.0011	0.0065	0.11	< 0.10	0.19	0.22	0.111	0.0905	< 0.020	< 0.020		< 0.000050	< 0.000050	0.015	0.014	0.078	0.0444	0.0341	77.4	0.68	0.58
8/10/2022	E321812	F2_BPO																								
8/11/2022	E321791	F2_NWPI			282	0.0033		1.96		< 0.20		0.0319		< 0.040		< 2.0	< 0.000100		0.044		< 0.250	0.639			0.65	
8/11/2022	E300091	EV_MC2																								
8/11/2022	0200097	EV_EC1																								
8/11/2022	E321812	F2_BPO																								
8/11/2022	E321812	F2_BPO			426	< 0.0020	< 0.0030	0.22	0.24	0.41	0.60	0.0103	0.0111	< 0.040	< 0.020	< 2.0	< 0.000100	< 0.000050	0.039	0.036	0.576	0.379	0.462	260	0.94	
8/11/2022	E206231	EV_GT1					5911		267		4900		4603							8.2			2800	59758		
8/11/2022	E206231	EV_GT1					643		30		< 374		490							0.9			880	9432		
8/11/2022	E206231	EV_GT1					11938		476		2900		11298							15			5900	64133		
8/11/2022	E206231	EV_GT1					7003		302		7800		5521							8.9			3800	58233		
8/11/2022	E102685	EV_BC1					3587		222		1200		1898							5.6			< 283	33210		
8/11/2022	E102685	EV_BC1					2521		170		1200		1840							3.5			516	34267		
8/11/2022	E102685	EV_BC1					2693		227		2100		2823							4.7			516	81787		
8/11/2022	E102685	EV_BC1																								
8/11/2022	E321812	F2_BPO																								
8/12/2022	E300091	EV_MC2																								
8/12/2022	0200097	EV_EC1																								

		Parameter	48-h Static acute lethality test using Daphnia ma	96-Hr 100% Conc. Acute lethality test for R. Trout	Alkalinity, Total (As CaCO3)	Aluminum	Aluminum	Antimony	Antimony	Arsenic	Arsenic	Barium	Barium	Beryllium	Beryllium	BOD	Bismuth	Bismuth	Boron	Boron	Bromide	Cadmium	Cadmium	Calcium	Carbon, Dissolved Organic	Carbon, Total Organic
		Fraction	N	N	N	D	T	D	T	D	T	D	T	D	T	N	D	T	D	T	N	D	T	T	D	T
		Unit	%	%	mg/l	mg/l	mg/l	ug/l	ug/l	ug/l	ug/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
8/12/2022	E321791	F2_NWPI			285																< 0.250				< 0.50	
8/12/2022	E321812	F2_BPO			466											< 2.0					0.628				< 0.50	
8/12/2022	E321812	F2_BPO																								
8/12/2022	E321812	F2_BPO																								
8/13/2022	E300091	EV_MC2																								
8/13/2022	0200097	EV_EC1																								
8/13/2022	E321791	F2_NWPI			273																< 0.250				< 0.50	
8/13/2022	E321812	F2_BPO			437											< 2.0					0.558				< 0.50	
8/13/2022	E321812	F2_BPO																								
8/13/2022	E321812	F2_BPO																								
8/14/2022	E300091	EV_MC2																								
8/14/2022	0200097	EV_EC1																								
8/14/2022	E321791	F2_NWPI			287																< 0.250				< 0.50	
8/14/2022	E321812	F2_BPO			437											< 2.0					0.540				0.90	
8/14/2022	E321812	F2_BPO																								
8/14/2022	E321812	F2_BPO																								
8/15/2022	E300091	EV_MC2			210	0.0027	0.0081	0.11	0.12	0.17	0.19	0.109	0.104	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.014	0.014	< 0.050	0.0274	0.0292	74.3	0.60	0.68
8/15/2022	200393	EV_ER1			186	0.0020	0.0191	< 0.10	0.18	0.18	0.22	0.0698	0.0702	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	< 0.010	< 0.010	< 0.050	0.0120	0.0218	58.7	< 0.50	< 0.50
8/15/2022	E321812	F2_BPO	0	0	429	0.0016	0.0058	0.24	0.26	0.43	0.50	0.0112	0.0118	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.041	0.038	0.628	0.352	0.460	274	< 0.50	< 0.50
8/15/2022	E321812	F2_BPO																								
8/15/2022	310168	EV_MC2A			201	0.0016	0.0080	< 0.10	< 0.10	0.17	0.19	0.103	0.0989	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.012	0.012	< 0.050	0.0227	0.0226	62.3	0.63	0.66
8/15/2022	0200203	EV_MC3			179	0.0043	0.0086	< 0.10	0.12	0.20	0.20	0.109	0.104	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.012	0.012	< 0.050	0.0223	0.0204	53.3	0.65	0.64
8/15/2022	E321791	F2_NWPI			280	0.0028	0.0208	2.14	2.14	0.16	0.20	0.0332	0.0371	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.049	0.045	< 0.250	0.700	0.692	244	< 0.50	< 0.50
8/15/2022	0200097	EV_EC1	0	0	385	0.0012	0.0043	0.21	0.22	0.23	0.24	0.0447	0.0442	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.012	0.013	< 0.250	0.0068	0.0078	203	< 0.50	< 0.50
8/15/2022	0200097	EV_EC1																								
8/15/2022	E321814	EV_ECOUT	0	0	458	< 0.0020	0.0061	0.22	0.23	0.22	0.24	0.0615	0.0602	< 0.040	< 0.020	< 2.0	< 0.000100	< 0.000050	< 0.020	0.013	< 0.250	0.0845	0.0865	236	< 0.50	< 0.50
8/15/2022	E321814	EV_ECOUT																								
8/15/2022	E321812	F2_BPO																								
8/16/2022	E206231	EV_GT1	0	0	344	0.0013	0.0068	0.78	0.77	0.24	0.29	0.343	0.329	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.040	0.042	0.405	0.0781	0.0814	255	< 0.50	< 0.50
8/16/2022	E206231	EV_GT1																								
8/16/2022	E321812	F2_BPO			448	0.0048		0.28		0.48		0.0119		< 0.020		< 2.0	< 0.000050		0.040		0.609	0.391			0.84	
8/16/2022	E300091	EV_MC2																								
8/16/2022	E321791	F2_NWPI			301	0.0027		2.27		0.18		0.0343		< 0.020		< 2.0	< 0.000050		0.042		< 0.250	0.730			0.67	
8/16/2022	E102685	EV_BC1	0	0	304	< 0.0010	0.0055	0.82	0.80	0.19	0.25	0.0744	0.0782	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.049	0.052	0.307	0.0051	< 0.0050	221	< 0.50	< 0.50
8/16/2022	E102685	EV_BC1																								
8/16/2022	E300091	EV_MC2			199	< 0.0010	0.0071	0.11	< 0.10	0.20	0.19	0.106	0.104	< 0.020	< 0.020		< 0.000050	< 0.000050	0.013	0.015	< 0.050	0.0323	0.0311	85.2	< 0.50	< 0.50
8/16/2022	0200097	EV_EC1																								
8/16/2022	E321812	F2_BPO																								
8/17/2022	E300091	EV_MC2																								
8/17/2022	0200097	EV_EC1																								
8/17/2022	E321791	F2_NWPI			310																< 0.250				0.70	
8/17/2022	E321812	F2_BPO			473											< 2.0					0.619				1.25	
8/17/2022	E321812	F2_BPO																								
8/17/2022	E321812	F2_BPO																								
8/18/2022	E300091	EV_MC2																								
8/18/2022	0200097	EV_EC1																								
8/18/2022	E321791	F2_NWPI			298	0.0037		2.08		0.20		0.0320		< 0.040		< 2.0	< 0.000100		0.046		< 0.250	0.705			< 0.50	
8/18/2022	E321812	F2_BPO																								

		Parameter	48-h Static acute lethality test using Daphnia ma	96-Hr 100% Conc. Acute lethality test for R. Trout	Alkalinity, Total (As CaCO3)	Aluminum	Aluminum	Antimony	Antimony	Arsenic	Arsenic	Barium	Barium	Beryllium	Beryllium	BOD	Bismuth	Bismuth	Boron	Boron	Bromide	Cadmium	Cadmium	Calcium	Carbon, Dissolved Organic	Carbon, Total Organic
		Fraction	N	N	N	D	T	D	T	D	T	D	T	D	T	N	D	T	D	T	N	D	T	T	D	T
		Unit	%	%	mg/l	mg/l	mg/l	ug/l	ug/l	ug/l	ug/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
8/18/2022	E321812	F2_BPO			429											< 2.0					0.617				< 0.50	
8/18/2022	E321812	F2_BPO																								
8/19/2022	E300091	EV_MC2																								
8/19/2022	0200097	EV_EC1																								
8/19/2022	E321791	F2_NWPI			304	0.0029		2.20		0.23		0.0334		< 0.020		< 2.0	< 0.000050		0.050		< 0.250	0.766			0.54	0.57
8/19/2022	E321812	F2_BPO			448											< 2.0					0.598				0.96	1.01
8/19/2022	E321812	F2_BPO																								
8/19/2022	E321812	F2_BPO																								
8/20/2022	0200097	EV_EC1																								
8/20/2022	E321791	F2_NWPI			289																< 0.250				0.57	
8/20/2022	E300091	EV_MC2																								
8/20/2022	E321812	F2_BPO			454											< 2.0					0.675				0.92	
8/20/2022	E321812	F2_BPO																								
8/21/2022	E300091	EV_MC2																								
8/21/2022	0200097	EV_EC1																								
8/21/2022	E321791	F2_NWPI			292																< 0.250				0.52	
8/21/2022	E321812	F2_BPO			423											< 2.0					0.707				1.20	
8/21/2022	E321812	F2_BPO																								
8/21/2022	E321812	F2_BPO																								
8/22/2022	E300091	EV_MC2																								
8/22/2022	E300091	EV_MC2																								
8/22/2022	0200097	EV_EC1																								
8/22/2022	E321812	F2_BPO	0	20	446	< 0.0010	< 0.0030	0.24	0.25	0.45	0.58	0.0120	0.0117	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.037	0.042	0.794	0.395	0.426	291	0.85	0.74
8/22/2022	E321791	F2_NWPI			294	0.0025	0.0192	2.23	2.13	0.19	0.28	0.0348	0.0352	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.045	0.050	0.331	0.817	0.737	264	< 0.50	< 0.50
8/22/2022	E321812	F2_BPO																								
8/23/2022	E300091	EV_MC2																								
8/23/2022	0200097	EV_EC1																								
8/23/2022	E321791	F2_NWPI			294	0.0036		2.11		< 0.20		0.0323		< 0.040		< 2.0	< 0.000100		0.044		< 0.250	0.690			< 0.50	
8/23/2022	E321812	F2_BPO			453	< 0.0020		0.24		0.43		0.0120		< 0.040		< 2.0	< 0.000100		0.040		0.544	0.328			< 0.50	
8/23/2022	E300091	EV_MC2			201	< 0.0010	0.0040	0.11	0.13	0.20	0.18	0.115	0.106	< 0.020	< 0.020		< 0.000050	< 0.000050	0.016	0.016	< 0.050	0.0354	0.0313	87.1	0.72	0.76
8/23/2022	E321812	F2_BPO																								
8/24/2022	E300091	EV_MC2																								
8/24/2022	0200097	EV_EC1																								
8/24/2022	E321812	F2_BPO			437											< 2.0					0.452				0.98	
8/24/2022	E321791	F2_NWPI			289																< 0.250				0.60	
8/24/2022	E321812	F2_BPO																								
8/25/2022	E321791	F2_NWPI			272	0.0026		2.21		0.19		0.0360		< 0.020		< 2.0	< 0.000050		0.040		< 0.250	0.783			0.72	
8/25/2022	0200097	EV_EC1																								
8/25/2022	E300091	EV_MC2																								
8/25/2022	E321812	F2_BPO			429	0.0014		0.22		0.50		0.0120		< 0.020		< 2.0	< 0.000050		0.032		0.721	0.389			0.86	
8/25/2022	E321812	F2_BPO																								
8/25/2022	E321812	F2_BPO																								
8/26/2022	E300091	EV_MC2																								
8/26/2022	0200097	EV_EC1																								
8/26/2022	E321812	F2_BPO			407											< 2.0					0.670				1.00	
8/26/2022	E321791	F2_NWPI			307																< 0.250				0.55	
8/26/2022	E321812	F2_BPO																								
8/27/2022	E300091	EV_MC2																								
8/27/2022	0200097	EV_EC1																								

		Parameter	48-h Static acute lethality test using Daphnia ma	96-Hr 100% Conc. Acute lethality test for R. Trout	Alkalinity, Total (As CaCO3)	Aluminum	Aluminum	Antimony	Antimony	Arsenic	Arsenic	Barium	Barium	Beryllium	Beryllium	BOD	Bismuth	Bismuth	Boron	Boron	Bromide	Cadmium	Cadmium	Calcium	Carbon, Dissolved Organic	Carbon, Total Organic
		Fraction	N	N	N	D	T	D	T	D	T	D	T	D	T	N	D	T	D	T	N	D	T	T	D	T
		Unit	%	%	mg/l	mg/l	mg/l	ug/l	ug/l	ug/l	ug/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
8/27/2022	E321791	F2_NWPI			280																< 0.250				< 0.50	
8/27/2022	E321812	F2_BPO			425											< 2.0					0.568				< 0.50	
8/27/2022	E321812	F2_BPO																								
8/28/2022	E300091	EV_MC2																								
8/28/2022	0200097	EV_EC1																								
8/28/2022	E321791	F2_NWPI			300																< 0.250				< 0.50	
8/28/2022	E321812	F2_BPO	0	0	412	< 0.0020	< 0.0060	0.30	0.40	0.46	0.53	0.0114	0.0116	< 0.040	< 0.040	< 2.0	< 0.000100	< 0.000100	0.040	0.036	0.526	0.379	0.404	266	< 0.50	0.56
8/28/2022	E321812	F2_BPO																								
8/28/2022	E321812	F2_BPO			444	< 0.0020	< 0.0060	0.30	0.40	0.46	0.53	0.0114	0.0116	< 0.040	< 0.040	< 2.0	< 0.000100	< 0.000100	0.040	0.036	0.617	0.379	0.404	266	< 0.50	0.56
8/29/2022	E300091	EV_MC2			193	0.0014	0.0066	< 0.10	0.12	0.16	0.24	0.141	0.133	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.014	0.015	< 0.050	0.0331	0.0296	83.3	0.66	0.67
8/29/2022	0200203	EV_MC3			160	0.0018	0.0094	< 0.10	< 0.10	0.19	0.24	0.138	0.133	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.013	0.012	< 0.050	0.0184	0.0261	62.1	0.58	0.67
8/29/2022	310168	EV_MC2A			188	0.0023	0.0076	< 0.10	< 0.10	0.16	0.22	0.131	0.124	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.012	0.013	< 0.050	0.0250	0.0256	72.8	0.69	0.65
8/29/2022	E321812	F2_BPO	0	0	456	0.0021	< 0.0060	0.23	0.24	0.44	0.66	0.0117	0.0116	< 0.020	< 0.040	< 2.0	< 0.000050	< 0.000100	0.033	0.036	0.475	0.398	0.410	266	1.05	1.01
8/29/2022	200393	EV_ER1			161	0.0017	0.0245	< 0.10	< 0.10	0.16	0.23	0.0845	0.0703	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	< 0.010	< 0.010	< 0.050	0.0156	0.0226	67.0	< 0.50	< 0.50
8/29/2022	E321791	F2_NWPI			299	0.0025	0.0160	1.94	1.98	0.18	0.28	0.0340	0.0331	< 0.020	< 0.040	< 2.0	< 0.000050	< 0.000100	0.040	0.045	< 0.250	0.932	0.820	248	< 0.50	< 0.50
8/29/2022	0200097	EV_EC1	0	0	362	< 0.0010	0.0164	0.19	0.22	0.24	0.29	0.0456	0.0444	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.014	0.014	< 0.250	0.0052	< 0.0050	235	< 0.50	< 0.50
8/29/2022	0200097	EV_EC1																								
8/29/2022	E321814	EV_ECOUT	0	0	475	0.0080	0.0041	0.19	0.23	0.23	0.26	0.0611	0.0609	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.014	0.014	< 0.250	0.0925	0.0867	266	0.62	0.62
8/29/2022	E321814	EV_ECOUT																								
8/29/2022	E321812	F2_BPO																								
8/29/2022	E321814	EV_ECOUT																								
8/29/2022	E321812	F2_BPO																								
8/30/2022	E321791	F2_NWPI			284	0.0027		1.73		< 0.20		0.0299		< 0.040		< 2.0	< 0.000100		0.045		< 0.250	0.759			< 0.50	
8/30/2022	E321812	F2_BPO			419	0.0035		0.26		0.43		0.0110		< 0.040		< 2.0	< 0.000100		0.035		0.521	0.338			0.91	
8/30/2022	E300091	EV_MC2																								
8/30/2022	0200097	EV_EC1																								
8/30/2022	E300091	EV_MC2			202	0.0010	0.0048	0.10	0.11	0.20	0.23	0.114	0.123	< 0.020	< 0.020		< 0.000050	< 0.000050	0.013	0.015	< 0.050	0.0259	0.0298	80.1	0.69	0.70
8/30/2022	E206231	EV_GT1	0	0	371	0.0046	0.0094	0.79	0.78	0.28	0.35	0.107	0.206	< 0.040	< 0.040	< 2.0	< 0.000100	< 0.000100	0.039	0.047	0.457	0.0603	0.0845	275	1.14	0.98
8/30/2022	E206231	EV_GT1																								
8/30/2022	E102685	EV_BC1	0	0	313	0.0024	< 0.0060	0.78	0.75	0.24	0.32	0.0690	0.0793	< 0.040	< 0.040	< 2.0	< 0.000100	< 0.000100	0.046	0.054	0.574	< 0.0100	< 0.0100	215	0.86	0.79
8/30/2022	E102685	EV_BC1																								
8/30/2022	E321812	F2_BPO																								
8/31/2022	E321791	F2_NWPI			269																< 0.250				0.56	
8/31/2022	E300091	EV_MC2																								
8/31/2022	E321812	F2_BPO																								
8/31/2022	0200097	EV_EC1																								
8/31/2022	E321812	F2_BPO																								
8/31/2022	E321812	F2_BPO			445											< 2.0					0.508				1.31	
8/31/2022	E321812	F2_BPO																								
9/1/2022	E300091	EV_MC2																								
9/1/2022	0200097	EV_EC1																								
9/1/2022	E321791	F2_NWPI			293	0.0023		2.17		0.21		0.0327		< 0.040		< 2.0	< 0.000100		0.041		< 0.250	0.818			< 0.50	
9/1/2022	E321812	F2_BPO			443	< 0.0020		0.29		0.52		0.0118		< 0.040		< 2.0	< 0.000100		0.036		0.496	0.373			0.63	
9/1/2022	E321812	F2_BPO																								
9/1/2022	E321812	F2_BPO																								
9/2/2022	0200097	EV_EC1																								
9/2/2022	E300091	EV_MC2																								
9/2/2022	E321791	F2_NWPI			297																< 0.250				< 0.50	
9/2/2022	E321812	F2_BPO			440											< 2.0					0.532				0.68	
9/2/2022	E321812	F2_BPO																								

		Parameter	48-h Static acute lethality test using Daphnia ma	96-Hr 100% Conc. Acute lethality test for R. Trout	Alkalinity, Total (As CaCO3)	Aluminum	Aluminum	Antimony	Antimony	Arsenic	Arsenic	Barium	Barium	Beryllium	Beryllium	BOD	Bismuth	Bismuth	Boron	Boron	Bromide	Cadmium	Cadmium	Calcium	Carbon, Dissolved Organic	Carbon, Total Organic
		Fraction	N	N	N	D	T	D	T	D	T	D	T	D	T	N	D	T	D	T	N	D	T	T	D	T
		Unit	%	%	mg/l	mg/l	mg/l	ug/l	ug/l	ug/l	ug/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
9/3/2022	E300091	EV_MC2																								
9/3/2022	0200097	EV_EC1																								
9/3/2022	E321791	F2_NWPI			299																< 0.250				< 0.50	
9/3/2022	E321812	F2_BPO			458											< 2.0					0.544				0.98	
9/3/2022	E321812	F2_BPO																								
9/4/2022	E300091	EV_MC2																								
9/4/2022	0200097	EV_EC1																								
9/4/2022	E321791	F2_NWPI			295																< 0.250				< 0.50	
9/4/2022	E321812	F2_BPO			451											< 2.0					0.531				0.88	
9/4/2022	E321812	F2_BPO																								
9/4/2022	E321812	F2_BPO																								
9/5/2022	E300091	EV_MC2																								
9/5/2022	0200097	EV_EC1																								
9/5/2022	E321812	F2_BPO	0	0	452	0.0011	0.0097	0.23	0.22	0.40	0.61	0.0117	0.0115	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.040	0.042	0.540	0.407	0.454	266	0.76	0.83
9/5/2022	E321812	F2_BPO																								
9/5/2022	E321791	F2_NWPI			298	0.0014	0.0175	2.20	2.04	0.15	0.29	0.0288	0.0309	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.044	0.046	< 0.250	0.899	0.900	239	< 0.50	< 0.50
9/5/2022	E321812	F2_BPO																								
9/6/2022	E300091	EV_MC2																								
9/6/2022	0200097	EV_EC1																								
9/6/2022	E321812	F2_BPO			429	< 0.0020		0.21		0.41		0.0121		< 0.040		< 2.0	< 0.000100		0.040		0.469	0.398			0.71	
9/6/2022	0200097	EV_EC1																								
9/6/2022	E321812	F2_BPO			429	< 0.0020		0.21		0.41		0.0121		< 0.040		< 2.0	< 0.000100		0.040		0.469	0.398			0.71	
9/6/2022	E321791	F2_NWPI			292	0.0138		2.12		< 0.20		0.0324		< 0.040		< 2.0	< 0.000100		0.045		< 0.250	0.990			< 0.50	
9/6/2022	E300091	EV_MC2			191	0.0028	0.0119	< 0.10	0.11	0.15	0.22	0.140	0.126	< 0.020	< 0.020		< 0.000050	< 0.000050	0.017	0.018	< 0.050	0.0258	0.0244	83.3	< 0.50	< 0.50
9/6/2022	200393	EV_ER1			171	0.0031	0.0180	< 0.10	< 0.10	0.18	0.23	0.0818	0.0684	< 0.020	< 0.020		< 0.000050	< 0.000050	< 0.010	< 0.010	< 0.050	0.0146	0.0150	65.9	< 0.50	< 0.50
9/6/2022	E206231	EV_GT1			341	0.0035	0.0106	0.75	0.70	0.29	0.40	0.401	0.320	< 0.020	< 0.020		< 0.000050	< 0.000050	0.042	0.045	0.337	0.0887	0.0890	265	0.70	0.64
9/6/2022	E102685	EV_BC1			314	0.0026	0.0081	0.71	0.71	0.20	0.34	0.0750	0.0771	< 0.020	< 0.020		< 0.000050	< 0.000050	0.049	0.052	0.385	0.0082	0.0078	216	0.72	0.84
9/6/2022	E321812	F2_BPO																								
9/7/2022	E300091	EV_MC2																								
9/7/2022	0200097	EV_EC1																								
9/7/2022	E321812	F2_BPO			461											< 2.0					0.553				< 0.50	
9/7/2022	E321791	F2_NWPI			310																< 0.250				< 0.50	
9/7/2022	E321812	F2_BPO																								
9/8/2022	E300091	EV_MC2																								
9/8/2022	0200097	EV_EC1																								
9/8/2022	E321812	F2_BPO			444	< 0.0010		0.26		0.46		0.0113		< 0.020		< 2.0	< 0.000050		0.038		0.476	0.347			0.76	
9/8/2022	E321791	F2_NWPI			303	0.0014		2.12		0.16		0.0281		< 0.020		< 2.0	< 0.000050		0.043		< 0.250	0.884			< 0.50	
9/8/2022	E321814	EV_ECOUT			497	0.0014	0.0063	0.22	0.20	0.26	0.25	0.0663	0.0631	< 0.020	< 0.020		< 0.000050	< 0.000050	0.014	0.013	< 0.250	0.0752	0.0792	262	< 0.50	0.63
9/8/2022	0200097	EV_EC1			357	0.0014	0.0055	0.24	0.19	0.23	0.26	0.0493	0.0455	< 0.020	< 0.020		< 0.000050	< 0.000050	0.014	0.014	< 0.250	0.0070	0.0056	213	< 0.50	0.62
9/8/2022	0200203	EV_MC3			164	0.0208	0.0096	< 0.10	< 0.10	0.17	0.20	0.127	0.124	< 0.020	< 0.020		< 0.000050	< 0.000050	0.012	0.010	< 0.050	0.0164	0.0202	58.3	0.84	0.76
9/8/2022	E300091	EV_MC2			190	0.0018	0.0062	0.10	0.14	0.18	0.32	0.129	0.123	< 0.020	< 0.020		< 0.000050	< 0.000050	0.014	0.015	< 0.050	0.0208	0.0239	74.9	0.80	0.57
9/8/2022	E321812	F2_BPO																								
9/9/2022	E300091	EV_MC2																								
9/9/2022	0200097	EV_EC1																								
9/9/2022	E321812	F2_BPO			417											< 2.0					0.504				0.75	
9/9/2022	E321791	F2_NWPI			282																< 0.250				< 0.50	
9/9/2022	E300091	EV_MC2			202	0.0010	0.0038	< 0.10	0.11	0.15	0.25	0.135	0.108	< 0.020	< 0.020		< 0.000050	< 0.000050	0.018	0.017	< 0.050	0.0234	0.0223	78.2	0.58	0.60
9/9/2022	E102685	EV_BC1			290	0.0013	< 0.0030	0.70	0.73	0.22	0.27	0.0657	0.0623	< 0.020	< 0.020		< 0.000050	< 0.000050	0.047	0.056	0.454	0.0066	0.0143	204	1.03	1.01
9/9/2022	E206231	EV_GT1			373	0.0021	0.0039	0.69	0.75	0.25	0.38	0.439	0.374	< 0.040	< 0.020		< 0.000100	< 0.000050	0.040	0.045	0.399	0.0680	0.0150	238	0.55	0.73
9/9/2022	310168	EV_MC2A			187	0.0014	0.0044	< 0.10	0.17	0.16	0.23	0.128	0.106	< 0.020	< 0.020		< 0.000050	< 0.000050	0.011	0.013	< 0.050	0.0164	0.0166	66.6	0.72	< 0.50

		Parameter	48-h Static acute lethality test using Daphnia ma	96-Hr 100% Conc. Acute lethality test for R. Trout	Alkalinity, Total (As CaCO3)	Aluminum	Aluminum	Antimony	Antimony	Arsenic	Arsenic	Barium	Barium	Beryllium	Beryllium	BOD	Bismuth	Bismuth	Boron	Boron	Bromide	Cadmium	Cadmium	Calcium	Carbon, Dissolved Organic	Carbon, Total Organic
		Fraction	N	N	N	D	T	D	T	D	T	D	T	D	T	N	D	T	D	T	N	D	T	T	D	T
		Unit	%	%	mg/l	mg/l	mg/l	ug/l	ug/l	ug/l	ug/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
9/9/2022	E321812	F2_BPO																								
9/10/2022	E300091	EV_MC2																								
9/10/2022	0200097	EV_EC1																								
9/10/2022	E321791	F2_NWPI			294																< 0.250				< 0.50	
9/10/2022	E321812	F2_BPO			457											< 2.0					0.537				< 0.50	
9/10/2022	E321812	F2_BPO																								
9/11/2022	E300091	EV_MC2																								
9/11/2022	0200097	EV_EC1																								
9/11/2022	E321791	F2_NWPI			294																< 0.250				< 0.50	
9/11/2022	E321812	F2_BPO			447											< 2.0					0.556				0.75	
9/11/2022	E321812	F2_BPO																								
9/12/2022	E300091	EV_MC2			202	< 0.0010	0.0038	< 0.10	0.11	0.14	0.26	0.0936	0.134	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.011	0.015	< 0.050	0.0215	0.0254	82.5	0.72	0.66
9/12/2022	310168	EV_MC2A			192	0.0012	0.0072	< 0.10	< 0.10	0.16	0.26	0.126	0.129	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.013	0.013	< 0.050	0.0181	0.0258	69.8	0.58	0.64
9/12/2022	0200203	EV_MC3			173	0.0016	0.0075	< 0.10	< 0.10	0.15	0.25	0.111	0.132	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.010	0.012	< 0.050	0.0153	0.0222	58.2	0.56	0.63
9/12/2022	200393	EV_ER1			172	< 0.0010	0.0116	< 0.10	< 0.10	0.13	0.29	0.0647	0.0823	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	< 0.010	< 0.010	< 0.050	0.0123	0.0163	62.0	< 0.50	< 0.50
9/12/2022	E321812	F2_BPO																								
9/12/2022	E321812	F2_BPO	0	0	445	0.0016	0.0041	0.23	0.23	0.38	0.63	0.0106	0.0120	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.031	0.044	0.488	0.326	0.483	265	0.79	0.70
9/12/2022	E321812	F2_BPO																								
9/12/2022	E321791	F2_NWPI			295	0.0022	0.0124	2.27	2.09	0.15	0.28	0.0306	0.0316	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.041	0.049	< 0.250	0.823	0.900	241	0.81	< 0.50
9/12/2022	0200097	EV_EC1	0	0	364	0.0010	0.0034	0.20	0.20	0.21	0.34	0.0434	0.0470	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.011	0.015	< 0.250	< 0.0050	0.0074	213	0.53	0.50
9/12/2022	0200097	EV_EC1			395.49																					
9/12/2022	E321814	EV_ECOUT	0	10	469	< 0.0010	0.0043	0.20	0.22	0.16	0.35	0.0477	0.0648	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.011	0.015	< 0.250	0.0520	0.0828	255	0.57	0.60
9/12/2022	E321814	EV_ECOUT																								
9/12/2022	E321812	F2_BPO																								
9/13/2022	E300091	EV_MC2																								
9/13/2022	0200097	EV_EC1																								
9/13/2022	E321812	F2_BPO			418	< 0.0020	0.0131	0.24	0.29	0.28	0.63	0.00854	0.0113	< 0.040	< 0.020	< 2.0	< 0.000100	< 0.000050	0.039	0.040	0.319	0.318	0.446	254	< 0.50	
9/13/2022	E206231	EV_GT1	0	0	364	< 0.0020	0.0078	0.71	0.72	0.25	0.36	0.287	0.262	< 0.040	< 0.040	< 2.0	< 0.000100	< 0.000100	0.042	0.046	0.370	0.0733	0.0948	267	< 0.50	< 0.50
9/13/2022	E206231	EV_GT1																								
9/13/2022	E102685	EV_BC1	0	0	300	< 0.0020	< 0.0060	0.68	0.72	0.20	0.24	0.0557	0.0617	< 0.040	< 0.040	< 2.0	< 0.000100	< 0.000100	0.048	0.054	0.410	< 0.0100	< 0.0100	222	< 0.50	< 0.50
9/13/2022	E102685	EV_BC1																								
9/13/2022	E300091	EV_MC2			190	0.0018	0.0054	0.12	0.11	0.17	0.16	0.124	0.122	< 0.020	< 0.020		< 0.000050	< 0.000050	0.016	0.016	< 0.050	0.0364	0.0360	89.3	< 0.50	< 0.50
9/13/2022	E321791	F2_NWPI			295	0.0025		1.94		< 0.20		0.0288		< 0.040		< 2.0	< 0.000100		0.048		< 0.250	0.846			< 0.50	
9/13/2022	E321812	F2_BPO																								
9/14/2022	E300091	EV_MC2																								
9/14/2022	0200097	EV_EC1																								
9/14/2022	E321791	F2_NWPI			299																< 0.250				< 0.50	
9/14/2022	E321812	F2_BPO			443											< 2.0					0.529				0.66	
9/14/2022	E321812	F2_BPO																								
9/14/2022	E321812	F2_BPO																								
9/15/2022	E300091	EV_MC2																								
9/15/2022	0200097	EV_EC1																								
9/15/2022	E321791	F2_NWPI			301	< 0.0020		2.13		< 0.20		0.0257		< 0.040		< 2.0	< 0.000100		0.045		< 0.250	0.798			< 0.50	
9/15/2022	E321812	F2_BPO			419	< 0.0020		0.20		0.42		0.0113		< 0.040		< 2.0	< 0.000100		0.040		0.539	0.372			0.93	
9/15/2022	0200097	EV_EC1																								
9/15/2022	310168	EV_MC2A																								
9/15/2022	0200203	EV_MC3																								
9/15/2022	E206231	EV_GT1																								

		Parameter	48-h Static acute lethality test using Daphnia ma	96-Hr 100% Conc. Acute lethality test for R. Trout	Alkalinity, Total (As CaCO3)	Aluminum	Aluminum	Antimony	Antimony	Arsenic	Arsenic	Barium	Barium	Beryllium	Beryllium	BOD	Bismuth	Bismuth	Boron	Boron	Bromide	Cadmium	Cadmium	Calcium	Carbon, Dissolved Organic	Carbon, Total Organic
		Fraction	N	N	N	D	T	D	T	D	T	D	T	D	T	N	D	T	D	T	N	D	T	T	D	T
		Unit	%	%	mg/l	mg/l	mg/l	ug/l	ug/l	ug/l	ug/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
9/15/2022	E102685	EV_BC1																								
9/15/2022	E300091	EV_MC2																								
9/15/2022	E321812	F2_BPO																								
9/16/2022	E300091	EV_MC2																								
9/16/2022	0200097	EV_EC1																								
9/16/2022	E321791	F2_NWPI			295																< 0.250				< 0.50	
9/16/2022	E321812	F2_BPO			417											< 2.0					0.540				0.97	
9/16/2022	E321812	F2_BPO																								
9/16/2022	E321812	F2_BPO																								
9/17/2022	E300091	EV_MC2																								
9/17/2022	0200097	EV_EC1																								
9/17/2022	E321791	F2_NWPI			286																< 0.250				< 0.50	
9/17/2022	E321812	F2_BPO			438											< 2.0					0.501				0.85	
9/17/2022	E321812	F2_BPO																								
9/18/2022	E300091	EV_MC2																								
9/18/2022	0200097	EV_EC1																								
9/18/2022	E321791	F2_NWPI			318																< 0.250				< 0.50	
9/18/2022	E321812	F2_BPO			460											< 2.0					0.499				1.42	
9/18/2022	E321812	F2_BPO																								
9/19/2022	E300091	EV_MC2																								
9/19/2022	E321812	F2_BPO																								
9/19/2022	0200097	EV_EC1																								
9/19/2022	E321791	F2_NWPI			293	0.0024	0.0161	2.08	2.10	< 0.20	< 0.20	0.0264	0.0302	< 0.040	< 0.040	< 2.0	< 0.000100	< 0.000100	0.045	0.046	< 0.250	0.915	0.911	254	< 0.50	< 0.50
9/19/2022	E321812	F2_BPO	0	0	461	0.0035	0.0068	0.21	0.24	0.35	0.50	0.0113	0.0126	< 0.040	< 0.040	< 2.0	< 0.000100	< 0.000100	0.038	0.038	0.492	0.378	0.427	279	0.62	0.98
9/19/2022	E321812	F2_BPO																								
9/19/2022	E321812	F2_BPO																								
9/20/2022	E300091	EV_MC2																								
9/20/2022	0200097	EV_EC1																								
9/20/2022	E321812	F2_BPO			471	0.0027		0.23		0.42		0.0124		< 0.040		< 2.0	< 0.000100		0.039		0.557	0.371			0.65	
9/20/2022	E321791	F2_NWPI			296	< 0.0020		2.03		< 0.20		0.0285		< 0.040		< 2.0	< 0.000100		0.044		< 0.250	0.917			< 0.50	
9/20/2022	E321812	F2_BPO																								
9/21/2022	E300091	EV_MC2																								
9/21/2022	0200097	EV_EC1																								
9/21/2022	E321812	F2_BPO			431											< 2.0					0.500				0.86	
9/21/2022	E321812	F2_BPO																								
9/21/2022	E321791	F2_NWPI			284																< 0.250				< 0.50	
9/21/2022	E321812	F2_BPO																								
9/22/2022	E300091	EV_MC2																								
9/22/2022	0200097	EV_EC1																								
9/22/2022	E321791	F2_NWPI			290	0.0027		2.18		< 0.20		0.0274		< 0.040		< 2.0	< 0.000100		0.046		< 0.250	0.999			< 0.50	
9/22/2022	E321812	F2_BPO			440	0.0040		0.24		0.44		0.0117		< 0.040		< 2.0	< 0.000100		0.040		0.519	0.378			0.70	
9/23/2022	E300091	EV_MC2																								
9/23/2022	0200097	EV_EC1																								
9/23/2022	E321791	F2_NWPI			294																< 0.250				< 0.50	
9/23/2022	E321812	F2_BPO			434											< 2.0					0.535				0.63	
9/23/2022	E321812	F2_BPO																								
9/24/2022	E300091	EV_MC2																								
9/24/2022	0200097	EV_EC1																								
9/24/2022	E321791	F2_NWPI			294																< 0.250				< 0.50	

		Parameter	48-h Static acute lethality test using Daphnia ma	96-Hr 100% Conc. Acute lethality test for R. Trout	Alkalinity, Total (As CaCO3)	Aluminum	Aluminum	Antimony	Antimony	Arsenic	Arsenic	Barium	Barium	Beryllium	Beryllium	BOD	Bismuth	Bismuth	Boron	Boron	Bromide	Cadmium	Cadmium	Calcium	Carbon, Dissolved Organic	Carbon, Total Organic
		Fraction	N	N	N	D	T	D	T	D	T	D	T	D	T	N	D	T	D	T	N	D	T	T	D	T
		Unit	%	%	mg/l	mg/l	mg/l	ug/l	ug/l	ug/l	ug/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
9/24/2022	E321812	F2_BPO			450											< 2.0					0.416				< 0.50	
9/24/2022	E321812	F2_BPO																								
9/25/2022	E300091	EV_MC2																								
9/25/2022	0200097	EV_EC1																								
9/25/2022	E321791	F2_NWPI			292																< 0.250				< 0.50	
9/25/2022	E321812	F2_BPO			447											< 2.0					0.580				0.90	
9/25/2022	E321812	F2_BPO																								
9/26/2022	200393	EV_ER1			173	0.0018	0.0115	< 0.10	0.10	0.14	0.20	0.0883	0.0894	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	< 0.010	< 0.010	< 0.050	0.0107	0.0168	69.8	< 0.50	< 0.50
9/26/2022	310168	EV_MC2A			196	0.0019	0.0081	< 0.10	0.11	0.13	0.23	0.120	0.130	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.012	0.014	< 0.050	0.0197	0.0187	78.4	0.66	0.62
9/26/2022	E321812	F2_BPO	0	10	442	< 0.0020	0.0047	< 0.20	0.29	0.45	0.61	0.0124	0.0113	< 0.040	< 0.020	< 2.0	< 0.000100	< 0.000050	0.044	0.040	0.417	0.404	0.481	254	< 0.50	< 0.50
9/26/2022	E300091	EV_MC2			200	0.0019	0.0066	0.11	0.13	0.10	0.20	0.123	0.125	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.015	0.015	< 0.050	0.0177	0.0258	84.5	0.71	0.91
9/26/2022	0200203	EV_MC3			162	0.0018	0.0079	< 0.10	< 0.10	0.16	0.19	0.127	0.123	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.011	0.011	< 0.050	0.0190	0.0289	57.3	0.67	0.63
9/26/2022	E321791	F2_NWPI			292	0.0038	0.0126	1.98	2.20	0.23	0.19	0.0284	0.0269	< 0.040	< 0.020	< 2.0	< 0.000100	< 0.000050	0.047	0.051	< 0.250	0.958	0.927	239	< 0.50	< 0.50
9/26/2022	0200097	EV_EC1	0	0	351	0.0020	0.0079	0.23	0.23	0.25	0.27	0.0498	0.0481	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.014	0.013	< 0.250	0.0074	0.0098	209	< 0.50	0.52
9/26/2022	E321814	EV_ECOUT	0	10	441	0.0038	0.0083	0.21	0.24	0.19	0.31	0.0668	0.0674	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.014	0.015	< 0.250	0.0807	0.0803	264	0.54	0.60
9/26/2022	E321812	F2_BPO																								
9/27/2022	E300091	EV_MC2																								
9/27/2022	0200097	EV_EC1																								
9/27/2022	E321812	F2_BPO			439	0.0020		0.23		0.40		0.0119		< 0.020		< 2.0	< 0.000050		0.040		0.572	0.361			1.02	
9/27/2022	E206231	EV_GT1	0	0	386	0.0020	0.0061	0.74	0.72	0.29	0.31	0.316	0.288	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.040	0.035	0.440	0.0893	0.135	210	0.92	0.95
9/27/2022	E102685	EV_BC1	0	0	271	0.0013	0.0045	0.76	0.74	0.18	0.24	0.0649	0.0569	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.052	0.046	1.08	< 0.0050	0.0117	200	1.21	0.96
9/27/2022	E321791	F2_NWPI			292	0.0030		2.17		0.12		0.0270		< 0.020		< 2.0	< 0.000050		0.044		< 0.250	0.898			< 0.50	
9/27/2022	E321812	F2_BPO																								
9/28/2022	E300091	EV_MC2																								
9/28/2022	0200097	EV_EC1																								
9/28/2022	E321791	F2_NWPI			284																< 0.250				< 0.50	
9/28/2022	E321812	F2_BPO			437											< 2.0					0.373				1.23	
9/28/2022	E321812	F2_BPO																								
9/29/2022	E300091	EV_MC2																								
9/29/2022	E321791	F2_NWPI			244	0.0036		2.18		< 0.20		0.0270		< 0.040		< 2.0	< 0.000100		0.043		< 0.250	1.01			0.58	
9/29/2022	E321812	F2_BPO			436	0.0027		0.22		0.38		0.0109		< 0.040		< 2.0	< 0.000100		0.037		0.368	0.348			0.78	
9/29/2022	0200097	EV_EC1																								
9/29/2022	E321812	F2_BPO																								
9/30/2022	E300091	EV_MC2																								
9/30/2022	0200097	EV_EC1																								
9/30/2022	E321812	F2_BPO			441											< 2.0					0.417				0.56	
9/30/2022	E321812	F2_BPO																								
9/30/2022	E321791	F2_NWPI			298																< 0.250				< 0.50	
10/1/2022	E300091	EV_MC2																								
10/1/2022	0200097	EV_EC1																								
10/1/2022	E321812	F2_BPO			437											< 2.0					0.552				< 0.50	
10/1/2022	E321791	F2_NWPI			290																< 0.250				< 0.50	
10/1/2022	E321812	F2_BPO																								
10/2/2022	E300091	EV_MC2																								
10/2/2022	0200097	EV_EC1																								
10/2/2022	E321791	F2_NWPI			289																< 0.250				< 0.50	
10/2/2022	E321812	F2_BPO			441											< 2.0					0.521				0.70	
10/2/2022	E321812	F2_BPO																								

		Parameter	48-h Static acute lethality test using Daphnia ma	96-Hr 100% Conc. Acute lethality test for R. Trout	Alkalinity, Total (As CaCO3)	Aluminum	Aluminum	Antimony	Antimony	Arsenic	Arsenic	Barium	Barium	Beryllium	Beryllium	BOD	Bismuth	Bismuth	Boron	Boron	Bromide	Cadmium	Cadmium	Calcium	Carbon, Dissolved Organic	Carbon, Total Organic
		Fraction	N	N	N	D	T	D	T	D	T	D	T	D	T	N	D	T	D	T	N	D	T	T	D	T
		Unit	%	%	mg/l	mg/l	mg/l	ug/l	ug/l	ug/l	ug/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
10/3/2022	E300091	EV_MC2			223	< 0.0010	0.0051	0.11	0.11	0.14	0.16	0.135	0.115	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.013	0.013	< 0.050	0.0254	0.0215	90.1	0.68	0.70
10/3/2022	200393	EV_ER1			171	0.0012	0.0077	< 0.10	< 0.10	0.19	0.21	0.0928	0.0764	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	< 0.010	< 0.010	< 0.050	0.0204	0.0178	69.8	0.63	< 0.50
10/3/2022	0200203	EV_MC3			166	0.0013	0.0054	< 0.10	< 0.10	0.17	0.17	0.122	0.119	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.010	0.010	< 0.050	0.0104	0.0191	62.6	0.57	0.58
10/3/2022	310168	EV_MC2A			206	0.0018	0.0046	0.10	< 0.10	0.16	0.15	0.146	0.114	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.012	0.012	< 0.050	0.0195	0.0182	80.8	0.63	0.74
10/3/2022	E321812	F2_BPO	0	0	442	0.0021	< 0.0060	0.29	0.22	0.47	0.50	0.0112	0.0116	< 0.040	< 0.040	< 2.0	< 0.000100	< 0.000100	0.031	0.039	0.394	0.423	0.472	271	1.07	1.00
10/3/2022	E321791	F2_NWPI			308	< 0.0020	0.0113	1.92	2.05	< 0.20	< 0.20	0.0247	0.0259	< 0.040	< 0.040	< 2.0	< 0.000100	< 0.000100	0.033	0.048	< 0.250	0.894	1.04	232	< 0.50	< 0.50
10/3/2022	0200097	EV_EC1	0	0	429	0.0020	0.0063	0.19	0.20	0.30	0.24	0.0476	0.0456	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.014	0.013	< 0.250	0.0074	0.0073	241	< 0.50	< 0.50
10/3/2022	E321814	EV_ECOUT	0	20	462	0.0013	0.0041	0.24	0.21	0.27	0.24	0.0691	0.0607	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.014	0.013	< 0.250	0.0837	0.0796	284	0.64	< 0.50
10/3/2022	E321812	F2_BPO																								
10/4/2022	E300091	EV_MC2																								
10/4/2022	E321791	F2_NWPI			314																< 0.250				0.59	
10/4/2022	0200097	EV_EC1																								
10/4/2022	E321812	F2_BPO			447											< 2.0					0.588				1.11	
10/4/2022	E206231	EV_GT1	0	0	340	0.0027	0.0184	0.74	0.75	0.37	0.29	0.287	0.249	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.039	0.037	0.390	0.115	0.141	258	< 0.50	< 0.50
10/4/2022	E321814	EV_ECOUT			488	< 0.0010	< 0.0030	0.21	0.20	0.23	0.23	0.0598	0.0634	< 0.020	< 0.020		< 0.000050	< 0.000050	0.014	0.013	< 0.250	0.0858	0.0639	260	0.55	< 0.50
10/4/2022	E102685	EV_BC1	0	0	328	0.0022	0.0049	0.76	0.70	0.26	0.24	0.247	0.239	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.049	0.045	0.813	0.0242	0.0273	236	< 0.50	< 0.50
10/4/2022	E321811	F2_ECIN			464	0.0020	0.0071	0.25	0.21	0.32	0.80	0.0132	0.0131	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.042	0.035	0.577	0.428	0.502	222	0.79	
10/5/2022	E321791	F2_NWPI			292	< 0.0020		1.89		< 0.20		0.0245		< 0.040		< 2.0	< 0.000100		0.042		< 0.250	0.966			< 0.50	< 0.50
10/5/2022	E321811	F2_ECIN			479	< 0.0020		< 0.20		< 0.20		0.0562		< 0.040		< 2.0	< 0.000100		< 0.020		< 0.250	0.0628			< 0.50	< 0.50
10/5/2022	E321812	F2_BPO			461	< 0.0020		< 0.20		0.37		0.0107		< 0.040		< 2.0	< 0.000100		0.036		0.594	0.321			< 0.50	0.63
10/5/2022	0200097	EV_EC1	0	0	365	< 0.0010	0.0038	0.21	0.21	0.34	0.30	0.0460	0.0487	< 0.020	< 0.020		< 0.000050	< 0.000050	0.021	0.021	< 0.250	< 0.0050	< 0.0050	252	0.54	0.62
10/6/2022	E321791	F2_NWPI			306																< 0.250				< 0.50	
10/6/2022	E321812	F2_BPO			454											< 2.0					0.590				1.03	
10/6/2022	E102685	EV_BC1																								
10/6/2022	0200097	EV_EC1																								
10/6/2022	E300091	EV_MC2																								
10/6/2022	0200203	EV_MC3			163	< 0.0010	0.0062	< 0.10	< 0.10	0.15	0.18	0.121	0.117	< 0.020	< 0.020		< 0.000050	< 0.000050	0.012	0.011	< 0.050	0.0106	0.0113	62.6	< 0.50	< 0.50
10/6/2022	E321811	F2_ECIN			462																< 0.250				0.57	
10/6/2022	200393	EV_ER1			176	< 0.0010	0.0097	< 0.10	< 0.10	0.18	0.16	0.0855	0.0837	< 0.020	< 0.020		< 0.000050	< 0.000050	< 0.010	0.010	< 0.050	0.0118	0.0122	82.9	< 0.50	< 0.50
10/6/2022	E206231	EV_GT1	0	0	351	0.0010	0.0119	0.74	0.73	0.35	0.38	0.277	0.272	< 0.020	< 0.020		< 0.000050	< 0.000050	0.045	0.040	0.405	0.118	0.222	269	0.85	0.71
10/6/2022	E102685	EV_BC1	0	0	347	< 0.0010	0.0055	0.76	0.73	0.22	0.28	0.232	0.215	< 0.020	< 0.020		< 0.000050	< 0.000050	0.055	0.050	0.718	0.0184	0.0198	262	< 0.50	< 0.50
10/6/2022	E300091	EV_MC2			195	< 0.0010	0.0058	0.11	0.11	0.21	0.19	0.128	0.122	< 0.020	< 0.020		< 0.000050	< 0.000050	0.015	0.014	< 0.050	0.0240	0.0294	92.5	< 0.50	< 0.50
10/6/2022	E321812	F2_BPO																								
10/7/2022	E321791	F2_NWPI			300	0.0011		2.14		0.14		0.0265		< 0.020		< 2.0	< 0.000050		0.043		< 0.250	1.00			0.56	0.68
10/7/2022	E321811	F2_ECIN			488	0.0024		0.20		0.23		0.0636		< 0.020		< 2.0	< 0.000050		0.013		< 0.250	0.0683			0.79	0.74
10/7/2022	E321812	F2_BPO			450	< 0.0010		0.25		0.46		0.0116		< 0.020		< 2.0	< 0.000050		0.041		0.596	0.426			0.93	0.98
10/7/2022	E321812	F2_BPO																								
10/8/2022	E321791	F2_NWPI			306																< 0.250				< 0.50	
10/8/2022	E321811	F2_ECIN			477																< 0.250				< 0.50	
10/8/2022	E321812	F2_BPO			462											2.7					0.622				0.61	
10/8/2022	E321812	F2_BPO																								
10/9/2022	E321791	F2_NWPI			289																< 0.250				0.82	
10/9/2022	E321811	F2_ECIN			472																< 0.250				0.81	
10/9/2022	E321812	F2_BPO			437											< 2.0					0.625				1.26	
10/9/2022	E321814	EV_ECOUT	0	0	488	< 0.0010	0.0048	0.20	0.19	0.32	0.26	0.0627	0.0647	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.014	0.016	< 0.250	0.0990	0.0970	231	< 0.50	0.55
10/9/2022	E321812	F2_BPO																								
10/10/2022	E321811	F2_ECIN			483	0.0014	< 0.0060	0.21	0.20	0.27	0.22	0.0630	0.0659	< 0.020	< 0.040	< 2.0	< 0.000050	< 0.000100	0.013	< 0.020	< 0.250	0.0624	0.0825	266	< 0.50	< 0.50
10/10/2022	E321791	F2_NWPI			312	0.0029	0.0163	2.10	2.14	0.15	< 0.20	0.0262	0.0291	< 0.020	< 0.040	< 2.0	< 0.000050	< 0.000100	0.042	0.049	< 0.250	0.985	1.08	248	< 0.50	< 0.50

		Parameter	48-h Static acute lethality test using Daphnia ma	96-Hr 100% Conc. Acute lethality test for R. Trout	Alkalinity, Total (As CaCO3)	Aluminum	Aluminum	Antimony	Antimony	Arsenic	Arsenic	Barium	Barium	Beryllium	Beryllium	BOD	Bismuth	Bismuth	Boron	Boron	Bromide	Cadmium	Cadmium	Calcium	Carbon, Dissolved Organic	Carbon, Total Organic
		Fraction	N	N	N	D	T	D	T	D	T	D	T	D	T	N	D	T	D	T	N	D	T	T	D	T
		Unit	%	%	mg/l	mg/l	mg/l	ug/l	ug/l	ug/l	ug/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
10/10/2022	E321812	F2_BPO	0	0	435	0.0015	0.0064	0.24	0.24	0.47	0.58	0.0119	0.0117	< 0.020	< 0.040	< 2.0	< 0.000050	< 0.000100	0.038	0.047	0.617	0.408	0.463	256	0.76	0.63
10/10/2022	E321812	F2_BPO																								
10/11/2022	E321811	F2_ECIN			474																< 0.250				0.55	
10/11/2022	E321791	F2_NWPI			299																< 0.250				< 0.50	
10/11/2022	E321812	F2_BPO			454											< 2.0					0.521				1.06	
10/11/2022	E300091	EV_MC2			210	< 0.0010	0.0036	0.10	0.12	0.12	0.16	0.119	0.125	< 0.020	< 0.020		< 0.000050	< 0.000050	0.015	0.014	< 0.050	0.0245	0.0254	81.0	< 0.50	< 0.50
10/11/2022	E321812	F2_BPO																								
10/12/2022	E321811	F2_ECIN			478	< 0.0020		0.22		0.22		0.0627		< 0.040		< 2.0	< 0.000100		< 0.020		< 0.250	0.0821			< 0.50	0.53
10/12/2022	E321791	F2_NWPI			292	0.0021		2.06		< 0.20		0.0236		< 0.040		< 2.0	< 0.000100		0.045		< 0.250	0.892			< 0.50	0.52
10/12/2022	E321812	F2_BPO			479	< 0.0020		0.32		0.40		0.0106		< 0.040		2.2	< 0.000100		0.043		0.608	0.390			0.77	0.77
10/12/2022	E300091	EV_MC2					0.0072		< 0.10		0.18		0.107		< 0.020			< 0.000050		0.013	< 0.050		0.0184	81.2		
10/12/2022	E321812	F2_BPO																								
10/13/2022	E321811	F2_ECIN			461																< 0.250				< 0.50	
10/13/2022	E321791	F2_NWPI			295																< 0.250				< 0.50	
10/13/2022	E321812	F2_BPO			463											< 2.0					0.499				1.28	
10/13/2022	E321812	F2_BPO																								
10/14/2022	E300091	EV_MC2					0.0120		< 0.10		0.20		0.127		< 0.020			< 0.000050		0.016	< 0.050		0.0314	99.2		
10/14/2022	E321811	F2_ECIN			477	< 0.0020		0.22		0.23		0.0691		< 0.040		< 2.0	< 0.000100		< 0.020		< 0.250	0.0822			< 0.50	< 0.50
10/14/2022	E321791	F2_NWPI			301	0.0027		1.84		< 0.20		0.0232		< 0.040		< 2.0	< 0.000100		0.046		< 0.250	0.949			< 0.50	< 0.50
10/14/2022	E321812	F2_BPO			452	< 0.0020		0.23		0.45		0.0115		< 0.040		< 2.0	< 0.000100		0.044		0.500	0.371			0.62	0.76
10/14/2022	E321812	F2_BPO																								
10/15/2022	E321811	F2_ECIN			496																< 0.250				0.57	
10/15/2022	E321791	F2_NWPI			309																< 0.250				0.78	
10/15/2022	E321812	F2_BPO			435											< 2.0					0.567				0.86	
10/15/2022	E321812	F2_BPO																								
10/16/2022	E321791	F2_NWPI			300																< 0.250				0.52	
10/16/2022	E321811	F2_ECIN			450																< 0.250				0.65	
10/16/2022	E321812	F2_BPO			431											< 2.0					0.568				1.18	
10/16/2022	E321812	F2_BPO																								
10/17/2022	200393	EV_ER1			176	< 0.0020	0.0053	< 0.20	< 0.10	< 0.20	0.22	0.0764	0.0812	< 0.040	< 0.020	< 2.0	< 0.000100	< 0.000050	< 0.020	< 0.010	< 0.050	0.0148	0.0150	68.9	< 0.50	< 0.50
10/17/2022	E300091	EV_MC2			210	< 0.0020	0.0034	< 0.20	0.11	< 0.20	0.13	0.102	0.113	< 0.040	< 0.020	< 2.0	< 0.000100	< 0.000050	< 0.020	0.014	< 0.050	0.0267	0.0330	86.5	< 0.50	< 0.50
10/17/2022	310168	EV_MC2A			200	0.0042	0.0031	< 0.20	< 0.10	< 0.20	0.20	0.111	0.114	< 0.040	< 0.020	< 2.0	< 0.000100	< 0.000050	< 0.020	0.012	< 0.050	0.0187	0.0260	76.4	< 0.50	< 0.50
10/17/2022	0200203	EV_MC3			175	< 0.0020	0.0030	< 0.20	< 0.10	< 0.20	0.15	0.115	0.118	< 0.040	< 0.020	< 2.0	< 0.000100	< 0.000050	< 0.020	0.010	< 0.050	0.0187	0.0180	59.0	< 0.50	< 0.50
10/17/2022	E321812	F2_BPO	0	0	430	0.0026	< 0.0060	0.25	0.25	0.46	0.56	0.0115	0.0119	< 0.040	< 0.040	< 2.0	< 0.000100	< 0.000100	0.043	0.041	0.479	0.423	0.528	294	0.94	0.59
10/17/2022	E321791	F2_NWPI			307	0.0021	0.0094	2.26	2.27	< 0.20	< 0.20	0.0252	0.0267	< 0.040	< 0.040	< 2.0	< 0.000100	< 0.000100	0.053	0.042	< 0.250	1.11	1.21	272	< 0.50	< 0.50
10/17/2022	E321811	F2_ECIN			477	< 0.0020	< 0.0060	0.22	0.23	0.28	0.24	0.0710	0.0636	< 0.040	< 0.040	< 2.0	< 0.000100	< 0.000100	< 0.020	< 0.020	< 0.250	0.0874	0.0886	283	< 0.50	< 0.50
10/17/2022	0200097	EV_EC1	0	0	384	< 0.0020	< 0.0030	0.22	0.23	0.28	0.30	0.0374	0.0392	< 0.040	< 0.020	< 2.0	< 0.000100	< 0.000050	0.022	0.023	< 0.250	< 0.0100	0.0130	266	< 0.50	0.60
10/17/2022	E321814	EV_ECOUT	0	0	481	< 0.0020	< 0.0030	0.22	0.22	0.28	0.28	0.0468	0.0508	< 0.040	< 0.020	< 2.0	< 0.000100	< 0.000050	0.022	0.021	< 0.250	0.168	0.195	270	< 0.50	< 0.50
10/17/2022	E321812	F2_BPO																								
10/18/2022	E321791	F2_NWPI			294																< 0.250				< 0.50	
10/18/2022	E321811	F2_ECIN			472																< 0.250				0.66	
10/18/2022	E206231	EV_GT1	0	0	317	< 0.0020	< 0.0060	0.58	0.64	< 0.20	0.34	0.222	0.170	< 0.040	< 0.040	< 2.0	< 0.000100	< 0.000100	0.038	0.045	0.315	0.0534	0.0614	265	1.01	1.02
10/18/2022	E321812	F2_BPO			443											< 2.0					0.461				1.23	
10/18/2022	E102685	EV_BC1	0	0	304	0.0027	< 0.0060	0.63	0.70	< 0.20	0.23	0.0686	0.0716	< 0.040	< 0.040	< 2.0	< 0.000100	< 0.000100	0.044	0.050	0.481	< 0.0100	< 0.0100	235	0.77	0.80
10/18/2022	E300091	EV_MC2			216	0.0082	< 0.0030	< 0.10	< 0.10	0.17	0.11	0.115	0.105	< 0.020	< 0.020		< 0.000050	< 0.000050	0.015	0.014	< 0.050	0.0182	0.0170	83.1	0.57	0.86
10/18/2022	E321812	F2_BPO																								
10/19/2022	E300091	EV_MC2					0.0034		< 0.10		0.21		0.111		< 0.020			< 0.000050		0.014	< 0.050		0.0373	86.6		
10/19/2022	E321811	F2_ECIN				< 0.0010		0.22		0.22		0.0626		< 0.020		< 2.0	< 0.000050		0.013		< 0.250	0.0780			0.59	0.54

Parameter			48-h Static acute lethality test using Daphnia ma	96-Hr 100% Conc. Acute lethality test for R. Trout	Alkalinity, Total (As CaCO3)	Aluminum	Aluminum	Antimony	Antimony	Arsenic	Arsenic	Barium	Barium	Beryllium	Beryllium	BOD	Bismuth	Bismuth	Boron	Boron	Bromide	Cadmium	Cadmium	Calcium	Carbon, Dissolved Organic	Carbon, Total Organic
Fraction			N	N	N	D	T	D	T	D	T	D	T	D	T	N	D	T	D	T	N	D	T	T	D	T
Unit			%	%	mg/l	mg/l	mg/l	ug/l	ug/l	ug/l	ug/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
10/19/2022	E321812	F2_BPO				0.0015		0.23		0.51		0.0117		< 0.020		< 2.0	< 0.000050		0.038		0.530	0.361			0.92	0.84
10/19/2022	E321812	F2_BPO																								
10/20/2022	E321811	F2_ECIN			467																< 0.250				< 0.50	
10/20/2022	E321812	F2_BPO			439											< 2.0					0.448				1.06	
10/20/2022	E321812	F2_BPO																								
10/20/2022	E321812	F2_BPO																								
10/20/2022	E321812	F2_BPO																								
10/21/2022	E300091	EV_MC2					0.0092		< 0.20		0.22		0.127		< 0.040			< 0.000100		< 0.020	< 0.050		0.0249	88.0		
10/21/2022	E321811	F2_ECIN			506	< 0.0020		< 0.20		< 0.20		0.0654		< 0.040		< 2.0	< 0.000100		< 0.020		< 0.250	0.0719			< 0.50	< 0.50
10/21/2022	E321812	F2_BPO			465	0.0030		< 0.20		0.49		0.0120		< 0.040		< 2.0	< 0.000100		0.039		0.438	0.370			0.81	0.95
10/21/2022	E321812	F2_BPO																								
10/22/2022	E321811	F2_ECIN			459																< 0.250				< 0.50	
10/22/2022	E321812	F2_BPO			431											< 2.0					0.452				< 0.50	
10/22/2022	E321812	F2_BPO																								
10/23/2022	E321811	F2_ECIN			463																< 0.250				< 0.50	
10/23/2022	E321812	F2_BPO			426											< 2.0					0.440				0.66	
10/23/2022	E321812	F2_BPO																								
10/24/2022	E300091	EV_MC2					0.0055		< 0.10		0.20		0.106		< 0.020			< 0.000050		0.014	< 0.050		0.0202	84.1		
10/24/2022	0200097	EV_EC1																								
10/24/2022	E321811	F2_ECIN			504	0.0028	< 0.0060	< 0.20	0.22	0.25	0.25	0.0619	0.0614	< 0.040	< 0.040	< 2.0	< 0.000100	< 0.000100	< 0.020	< 0.020	< 0.250	0.0734	0.0946	277	< 0.50	< 0.50
10/24/2022	E321812	F2_BPO	0	0	441	0.0032	< 0.0060	0.20	0.22	0.42	0.60	0.0113	0.0115	< 0.040	< 0.040	< 2.0	< 0.000100	< 0.000100	0.035	0.044	0.463	0.375	0.500	282	0.51	< 0.50
10/24/2022	E321814	EV_ECOUT																								
10/24/2022	E321812	F2_BPO																								
10/25/2022	E321811	F2_ECIN			438																< 0.250				0.51	
10/25/2022	E321812	F2_BPO			497											< 2.0					0.449				0.59	
10/25/2022	E300091	EV_MC2			194	< 0.0010	0.0041	< 0.10	< 0.10	0.18	0.15	0.114	0.120	< 0.020	< 0.020		< 0.000050	< 0.000050	0.012	0.013	< 0.050	0.0206	0.0149	83.0	< 0.50	< 0.50
10/25/2022	E321812	F2_BPO																								
10/25/2022	E321812	F2_BPO																								
10/26/2022	E300091	EV_MC2					0.0053		< 0.10		0.12		0.137		< 0.020			< 0.000050		0.013	< 0.050		0.0225	73.4		
10/26/2022	E321812	F2_BPO			462	0.0089		0.22		0.48		0.0105		< 0.020		< 2.0	< 0.000050		0.031		0.437	0.387			0.76	0.69
10/26/2022	E321811	F2_ECIN			417	< 0.0010		0.21		0.22		0.0547		< 0.020		< 2.0	< 0.000050		0.011		< 0.250	0.0872			< 0.50	< 0.50
10/26/2022	E321812	F2_BPO																								
10/27/2022	E321811	F2_ECIN			460																< 0.250				< 0.50	
10/27/2022	E321812	F2_BPO			436											< 2.0					0.430				1.08	
10/27/2022	E321812	F2_BPO																								
10/28/2022	E300091	EV_MC2					0.0058		< 0.10		0.15		0.107		< 0.020			< 0.000050		0.014	< 0.050		0.0258	90.2		
10/28/2022	E321811	F2_ECIN			476	< 0.0020		< 0.20		0.23		0.0639		< 0.040		< 2.0	< 0.000100		< 0.020		< 0.250	0.0807			0.58	0.53
10/28/2022	E321812	F2_BPO			443	0.0040		< 0.20		0.38		0.0102		< 0.040		< 2.0	< 0.000100		0.036		0.446	0.321			0.70	0.79
10/28/2022	E321812	F2_BPO																								
10/29/2022	E321811	F2_ECIN			473																< 0.250				< 0.50	
10/29/2022	E321812	F2_BPO			438											< 2.0					0.512				< 0.50	
10/29/2022	E321812	F2_BPO																								
10/30/2022	E321811	F2_ECIN			464																< 0.250				< 0.50	
10/30/2022	E321812	F2_BPO			457											< 2.0					0.513				< 0.50	
10/30/2022	E321812	F2_BPO																								
10/31/2022	0200203	EV_MC3			163	0.0064	0.0587	< 0.10	< 0.10	0.19	0.17	0.118	0.110	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	< 0.010	< 0.010	< 0.050	0.0205	0.0294	57.4	1.63	1.48
10/31/2022	310168	EV_MC2A			211	0.0014	0.0242	< 0.10	< 0.10	0.18	0.20	0.111	0.106	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.010	0.012	< 0.050	0.0149	0.0234	73.0	0.64	0.84
10/31/2022	200393	EV_ER1			174	0.0018	0.0158	< 0.10	< 0.10	0.18	0.20	0.0814	0.0740	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	< 0.010	< 0.010	< 0.050	0.0138	0.0193	67.9	< 0.50	< 0.50

		Parameter	48-h Static acute lethality test using Daphnia ma	96-Hr 100% Conc. Acute lethality test for R. Trout	Alkalinity, Total (As CaCO3)	Aluminum	Aluminum	Antimony	Antimony	Arsenic	Arsenic	Barium	Barium	Beryllium	Beryllium	BOD	Bismuth	Bismuth	Boron	Boron	Bromide	Cadmium	Cadmium	Calcium	Carbon, Dissolved Organic	Carbon, Total Organic
		Fraction	N	N	N	D	T	D	T	D	T	D	T	D	T	N	D	T	D	T	N	D	T	T	D	T
		Unit	%	%	mg/l	mg/l	mg/l	ug/l	ug/l	ug/l	ug/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
10/31/2022	E321812	F2_BPO	0	10	465	< 0.0020	< 0.0060	< 0.20	0.25	0.40	0.61	0.0115	0.0134	< 0.040	< 0.040	< 2.0	< 0.000100	< 0.000100	0.041	0.046	0.463	0.373	0.491	257	< 0.50	< 0.50
10/31/2022	E300091	EV_MC2			180	0.0022	0.0269	< 0.10	< 0.10	0.20	0.20	0.108	0.102	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.012	0.013	< 0.050	0.0257	0.0259	76.3	0.77	0.81
10/31/2022	E321811	F2_ECIN			458	< 0.0020	0.0230	< 0.20	0.26	0.23	0.26	0.0607	0.0677	< 0.040	< 0.040	< 2.0	< 0.000100	< 0.000100	< 0.020	< 0.020	< 0.250	0.0749	0.0873	256	< 0.50	< 0.50
10/31/2022	0200097	EV_EC1	0	0	407	0.0020	0.0071	0.21	0.21	0.36	0.29	0.0368	0.0363	< 0.020	< 0.040	< 2.0	< 0.000050	< 0.000100	0.022	0.024	< 0.250	0.0079	0.0106	260	0.86	0.84
10/31/2022	E321791	F2_NWPI			283	0.255	0.0076	1.88	1.95	0.20	< 0.20	0.0255	0.0279	< 0.040	< 0.040	< 2.0	< 0.000100	< 0.000100	0.045	0.049	< 0.250	1.05	1.04	222	< 0.50	< 0.50
10/31/2022	E321814	EV_ECOUT	0	10	470	0.0025	< 0.0060	0.23	0.22	0.33	0.33	0.0612	0.0564	< 0.020	< 0.040	< 2.0	< 0.000050	< 0.000100	0.018	0.021	< 0.250	0.160	0.126	306	0.66	0.61
10/31/2022	E321812	F2_BPO																								
11/1/2022	E321811	F2_ECIN			445																< 0.250				< 0.50	
11/1/2022	E321791	F2_NWPI			274																< 0.250				< 0.50	
11/1/2022	E102685	EV_BC1	0	0	268	0.0024	0.0058	0.70	0.65	< 0.20	0.19	0.0434	0.0446	< 0.040	< 0.020	< 2.0	< 0.000100	< 0.000050	0.053	0.046	0.428	< 0.0100	< 0.0050	202	1.02	1.07
11/1/2022	E321812	F2_BPO			426											< 2.0					0.456				0.61	
11/1/2022	E206231	EV_GT1	0	0	286	0.0040	0.0353	0.61	0.49	0.30	0.31	0.132	0.122	< 0.040	< 0.020	< 2.0	< 0.000100	< 0.000050	0.035	0.030	< 0.250	0.0888	0.0954	215	2.26	2.67
11/1/2022	E300091	EV_MC2			163	0.0018	0.160	< 0.10	0.12	0.20	0.23	0.104	0.109	< 0.020	< 0.020		< 0.000050	< 0.000050	0.011	0.012	< 0.050	0.0219	0.0421	59.9	1.79	2.03
11/2/2022	E321811	F2_ECIN			479	0.0019		0.21		0.28		0.0664		< 0.020		< 2.0	< 0.000050		0.015		< 0.250	0.0884			< 0.50	< 0.50
11/2/2022	E321791	F2_NWPI			293	0.0014		2.10		0.16		0.0260		< 0.020		< 2.0	< 0.000050		0.048		< 0.250	1.10			< 0.50	< 0.50
11/2/2022	E321812	F2_BPO			439	0.0011		0.22		0.55		0.0116		< 0.020		< 2.0	< 0.000050		0.043		0.440	0.404			0.62	0.65
11/2/2022	E321812	F2_BPO																								
11/3/2022	E321811	F2_ECIN			280																< 0.250				< 0.50	
11/3/2022	E321791	F2_NWPI			300																< 0.250				< 0.50	
11/3/2022	E321812	F2_BPO			470											< 2.0					0.438				0.79	
11/3/2022	E321812	F2_BPO																								
11/4/2022	E321811	F2_ECIN			465	0.0026		0.21		0.23		0.0645		< 0.040		< 2.0	< 0.000100		< 0.020		< 0.250	0.0710			0.73	< 0.50
11/4/2022	E321791	F2_NWPI			288	0.0022		2.12		< 0.20		0.0267		< 0.040		< 2.0	< 0.000100		0.044		< 0.250	1.08			< 0.50	< 0.50
11/4/2022	E321812	F2_BPO			453	0.0024		0.21		0.45		0.0112		< 0.040		< 2.0	< 0.000100		0.040		0.447	0.383			0.86	0.88
11/4/2022	E321812	F2_BPO																								
11/5/2022	E321791	F2_NWPI			281																< 0.250				0.80	
11/5/2022	E321811	F2_ECIN			457																< 0.250				0.78	
11/5/2022	E321812	F2_BPO			442											< 2.0					0.521				0.66	
11/5/2022	E321812	F2_BPO																								
11/6/2022	E321811	F2_ECIN			460																< 0.250				0.66	
11/6/2022	E321791	F2_NWPI			286																< 0.250				< 0.50	
11/6/2022	E321812	F2_BPO			459											< 2.0					0.518				0.76	
11/6/2022	E321812	F2_BPO																								
11/7/2022	E321811	F2_ECIN			492	< 0.0010	0.0039	0.23	0.20	0.32	0.31	0.0649	0.0620	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.014	0.014	< 0.250	0.0846	0.0700	264	< 0.50	< 0.50
11/7/2022	E321791	F2_NWPI			303	< 0.0010	0.0043	2.22	1.92	0.12	0.18	0.0272	0.0264	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.047	0.044	< 0.250	1.14	1.03	234	< 0.50	< 0.50
11/7/2022	0200097	EV_EC1																								
11/7/2022	E321814	EV_ECOUT																								
11/7/2022	E321812	F2_BPO	0	0	484	0.0100	0.0090	0.25	0.26	0.64	0.79	0.0129	0.0118	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.046	0.043	0.454	0.461	0.481	283	0.84	1.03
11/7/2022	E321812	F2_BPO																								
11/8/2022	E321791	F2_NWPI			288																< 0.250				< 0.50	
11/8/2022	E321812	F2_BPO			458											< 2.0					0.461				0.52	
11/8/2022	E300091	EV_MC2			212	0.0012	0.0041	< 0.10	0.11	0.15	0.16	0.119	0.118	< 0.020	< 0.020		< 0.000050	< 0.000050	0.014	0.015	< 0.050	0.0198	0.0220	86.0	< 0.50	< 0.50
11/8/2022	0200203	EV_MC3			166	< 0.0010	0.0672	< 0.10	< 0.10	0.16	0.21	0.110	0.121	< 0.020	< 0.020		< 0.000050	< 0.000050	< 0.010	0.010	< 0.050	0.0176	0.0630	64.0	0.63	1.18
11/8/2022	E321812	F2_BPO																								
11/8/2022	E321811	F2_ECIN			460																< 0.250				< 0.50	
11/9/2022	E321811	F2_ECIN			464	< 0.0010		0.21		0.22		0.0634		< 0.020		< 2.0	< 0.000050		0.013		< 0.250	0.0716			< 0.50	< 0.50
11/9/2022	E321791	F2_NWPI			291	0.0016		2.10		0.14		0.0256		< 0.020		< 2.0	< 0.000050		0.042		< 0.250	1.07			< 0.50	< 0.50
11/9/2022	E321812	F2_BPO			450	< 0.0010	< 0.0060	0.23	0.25	0.50	0.53	0.0116	0.0118	< 0.020	< 0.040	< 2.0	< 0.000050	< 0.000100	0.037	0.040	0.493	0.385	0.466	248	< 0.50	0.64

		Parameter	48-h Static acute lethality test using Daphnia ma	96-Hr 100% Conc. Acute lethality test for R. Trout	Alkalinity, Total (As CaCO3)	Aluminum	Aluminum	Antimony	Antimony	Arsenic	Arsenic	Barium	Barium	Beryllium	Beryllium	BOD	Bismuth	Bismuth	Boron	Boron	Bromide	Cadmium	Cadmium	Calcium	Carbon, Dissolved Organic	Carbon, Total Organic
		Fraction	N	N	N	D	T	D	T	D	T	D	T	D	T	N	D	T	D	T	N	D	T	T	D	T
		Unit	%	%	mg/l	mg/l	mg/l	ug/l	ug/l	ug/l	ug/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
11/9/2022	E321812	F2_BPO																								
11/10/2022	E321791	F2_NWPI			288																< 0.250				< 0.50	
11/10/2022	E321811	F2_ECIN			463																< 0.250				< 0.50	
11/10/2022	E321812	F2_BPO			463											< 2.0					0.430				1.43	
11/10/2022	E321812	F2_BPO																								
11/11/2022	E321791	F2_NWPI			291	0.0014		2.12		0.13		0.0309		< 0.020		< 2.0	< 0.000050		0.047		< 0.250	1.02			< 0.50	0.64
11/11/2022	E321811	F2_ECIN			486	< 0.0010		0.21		0.21		0.0621		< 0.020		< 2.0	< 0.000050		0.014		< 0.250	0.0921			< 0.50	< 0.50
11/11/2022	E321812	F2_BPO			486	0.0015		0.24		0.56		0.0116		< 0.020		< 2.0	< 0.000050		0.043		0.438	0.409			1.15	1.26
11/11/2022	E321812	F2_BPO																								
11/12/2022	E321811	F2_ECIN			473																< 0.250				< 0.50	
11/12/2022	E321791	F2_NWPI			298																< 0.250				< 0.50	
11/12/2022	E321812	F2_BPO			498											< 2.0					0.516				0.89	
11/12/2022	E321812	F2_BPO																								
11/13/2022	E321811	F2_ECIN			470																< 0.250				< 0.50	
11/13/2022	E321812	F2_BPO			468											< 2.0					0.470				1.10	
11/13/2022	E321791	F2_NWPI			301																< 0.250				< 0.50	
11/13/2022	E321812	F2_BPO																								
11/14/2022	200393	EV_ER1			178	0.0011	0.0034	< 0.10	< 0.10	0.19	0.16	0.0802	0.0814	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	< 0.010	< 0.010	< 0.050	0.0149	0.0135	67.0	< 0.50	< 0.50
11/14/2022	0200203	EV_MC3			166	< 0.0010	0.0086	< 0.10	< 0.10	0.12	0.15	0.112	0.116	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	< 0.010	< 0.010	< 0.050	0.0139	0.0135	56.4	< 0.50	0.55
11/14/2022	310168	EV_MC2A			192	< 0.0010	0.0052	< 0.10	< 0.10	0.12	0.24	0.111	0.116	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.011	0.012	< 0.050	0.0169	0.0265	71.9	< 0.50	< 0.50
11/14/2022	E300091	EV_MC2			205	< 0.0010	0.0067	< 0.10	0.11	0.16	0.16	0.114	0.117	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.013	0.014	0.053	0.0178	0.0282	83.0	< 0.50	< 0.50
11/14/2022	E321812	F2_BPO	0	0	478	0.0026	0.0032	0.27	0.25	0.64	0.72	0.0134	0.0115	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.042	0.046	0.441	0.463	0.486	276	0.88	0.90
11/14/2022	E321811	F2_ECIN			481	< 0.0010	< 0.0030	0.22	0.20	0.26	0.25	0.0626	0.0647	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.014	0.015	< 0.250	0.0696	0.0776	259	0.76	< 0.50
11/14/2022	E321791	F2_NWPI			296	< 0.0010	0.0067	2.18	2.05	0.10	0.21	0.0418	0.0393	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.048	0.046	< 0.250	0.933	0.962	224	< 0.50	< 0.50
11/14/2022	0200097	EV_EC1	0	0	398	< 0.0010	< 0.0030	0.22	0.20	0.25	0.30	0.0350	0.0333	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.025	0.023	< 0.250	0.0151	0.0094	217	< 0.50	< 0.50
11/14/2022	E300091	EV_MC2			208	< 0.0010	0.0042	< 0.10	0.11	0.16	0.17	0.117	0.112	< 0.020	< 0.020		< 0.000050	< 0.000050	0.014	0.015	< 0.050	0.0282	0.0312	86.0	< 0.50	< 0.50
11/14/2022	E321814	EV_ECOUT	0	0	469	0.0012	0.0056	0.22	0.23	0.30	0.30	0.0533	0.0523	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.019	0.021	< 0.250	0.155	0.148	250	< 0.50	< 0.50
11/14/2022	200393	EV_ER1			185	0.0010	0.0061	< 0.10	< 0.10	0.18	0.20	0.0800	0.0767	< 0.020	< 0.020		< 0.000050	< 0.000050	< 0.010	< 0.010	< 0.050	0.0120	0.0139	69.1	< 0.50	< 0.50
11/14/2022	E102685	EV_BC1			324	0.0013	0.0086	0.68	0.68	0.26	0.28	0.0816	0.0832	< 0.020	< 0.020		< 0.000050	< 0.000050	0.045	0.051	0.461	0.0260	0.0240	269	0.99	1.06
11/14/2022	E206231	EV_GT1			400	0.0013	0.0133	0.60	0.58	0.33	0.38	0.304	0.280	< 0.020	< 0.020		< 0.000050	< 0.000050	0.034	0.042	0.340	0.114	0.108	261	< 0.50	0.55
11/14/2022	E321812	F2_BPO																								
11/15/2022	E206231	EV_GT1	0	0	368	0.0012	< 0.0060	0.65	0.63	0.30	0.39	0.288	0.248	< 0.020	< 0.040	< 2.0	< 0.000050	< 0.000100	0.041	0.041	0.355	0.0942	0.107	270	0.57	0.61
11/15/2022	E321812	F2_BPO			490											< 2.0					0.472				1.02	
11/15/2022	E321811	F2_ECIN			436																< 0.250				< 0.50	
11/15/2022	E321791	F2_NWPI			281																< 0.250				< 0.50	
11/15/2022	E102685	EV_BC1	0	0	323	0.0012	0.0061	0.76	0.70	0.26	0.25	0.0938	0.0905	< 0.020	< 0.040	< 2.0	< 0.000050	< 0.000100	0.046	0.045	0.461	0.0317	0.0302	279	0.87	0.99
11/15/2022	0200097	EV_EC1			342	< 0.0010	< 0.0030	0.22	0.23	0.32	0.29	0.0340	0.0325	< 0.020	< 0.020		< 0.000050	< 0.000050	0.026	0.025	< 0.250	0.0085	0.0142	239	0.60	0.58
11/15/2022	E321814	EV_ECOUT			435	< 0.0010	< 0.0060	0.27	0.24	0.23	0.21	0.0612	0.0609	< 0.020	< 0.040		< 0.000050	< 0.000100	0.015	< 0.020	< 0.250	0.113	0.0942	257	< 0.50	0.91
11/15/2022	E321812	F2_BPO																								
11/16/2022	E321811	F2_ECIN			416	< 0.0010		0.19		0.26		0.0642		< 0.020		< 2.0	< 0.000050		0.014		< 0.250	0.0749			< 0.50	< 0.50
11/16/2022	E321791	F2_NWPI			272	< 0.0010		2.08		0.14		0.0428		< 0.020		< 2.0	< 0.000050		0.043		< 0.250	0.892			< 0.50	< 0.50
11/16/2022	E321812	F2_BPO			474	0.0012		0.19		0.69		0.0116		< 0.020		< 2.0	< 0.000050		0.032		0.373	0.223			0.90	0.94
11/16/2022	E321812	F2_BPO																								
11/17/2022	E321811	F2_ECIN			430																< 0.250				< 0.50	
11/17/2022	E321791	F2_NWPI			275																< 0.250				< 0.50	
11/17/2022	E321812	F2_BPO			477											< 2.0					0.350				0.70	
11/17/2022	E321812	F2_BPO																								
11/18/2022	E321811	F2_ECIN			386	< 0.0010		0.22		0.26		0.0620		< 0.020		< 2.0	< 0.000050		0.014		< 0.250	0.0898			< 0.50	< 0.50

		Parameter	48-h Static acute lethality test using Daphnia ma	96-Hr 100% Conc. Acute lethality test for R. Trout	Alkalinity, Total (As CaCO3)	Aluminum	Aluminum	Antimony	Antimony	Arsenic	Arsenic	Barium	Barium	Beryllium	Beryllium	BOD	Bismuth	Bismuth	Boron	Boron	Bromide	Cadmium	Cadmium	Calcium	Carbon, Dissolved Organic	Carbon, Total Organic
		Fraction	N	N	N	D	T	D	T	D	T	D	T	D	T	N	D	T	D	T	N	D	T	T	D	T
		Unit	%	%	mg/l	mg/l	mg/l	ug/l	ug/l	ug/l	ug/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
11/18/2022	E321791	F2_NWPI			267	0.0014		2.16		< 0.10		0.0407		< 0.020		< 2.0	< 0.000050		0.048		< 0.250	0.881			< 0.50	< 0.50
11/18/2022	E321812	F2_BPO			473	< 0.0010		0.22		0.61		0.0112		< 0.020		< 2.0	< 0.000050		0.041		0.348	0.257			< 0.50	0.86
11/18/2022	E321812	F2_BPO																								
11/19/2022	E321811	F2_ECIN			410																< 0.250				0.89	
11/19/2022	E321791	F2_NWPI			273																< 0.250				< 0.50	
11/19/2022	E321812	F2_BPO			450											< 2.0					0.481				0.84	
11/19/2022	E321812	F2_BPO																								
11/20/2022	E321811	F2_ECIN			408																< 0.250				< 0.50	
11/20/2022	E321791	F2_NWPI			275																< 0.250				< 0.50	
11/20/2022	E321812	F2_BPO			447											< 2.0					0.495				0.85	
11/20/2022	E321812	F2_BPO																								
11/21/2022	0200097	EV_EC1																			< 0.250					
11/21/2022	E321814	EV_ECOUT																			< 0.250					
11/21/2022	E321811	F2_ECIN			446	< 0.0010	0.0033	0.19	0.20	0.29	0.27	0.0650	0.0608	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.015	0.016	< 0.250	0.0810	0.0887	259	< 0.50	< 0.50
11/21/2022	E321791	F2_NWPI			277	0.0014	0.0068	2.03	1.96	0.13	0.20	0.0445	0.0414	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.044	0.044	< 0.250	0.852	0.830	228	< 0.50	< 0.50
11/21/2022	E321812	F2_BPO																								
11/21/2022	E321812	F2_BPO	0	0	458	< 0.0010	< 0.0030	0.23	0.23	0.59	0.69	0.0124	0.0112	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.040	0.042	0.420	0.396	0.452	275	0.75	0.77
11/21/2022	E321812	F2_BPO																								
11/22/2022	E321811	F2_ECIN			458																< 0.250				< 0.50	
11/22/2022	E321791	F2_NWPI			269																< 0.250				< 0.50	
11/22/2022	E321812	F2_BPO			458											< 2.0					0.479				0.56	
11/22/2022	E321812	F2_BPO																								
11/23/2022	E321811	F2_ECIN			460	< 0.0020		0.20		0.25		0.0667		< 0.040		< 2.0	< 0.000100		< 0.020		< 0.250	0.0964			0.62	< 0.50
11/23/2022	E321791	F2_NWPI			290	0.0029		1.96		< 0.20		0.0435		< 0.040		< 2.0	< 0.000100		0.046		< 0.250	0.876			0.80	< 0.50
11/23/2022	E321812	F2_BPO			489	< 0.0020		0.22		0.60		0.0114		< 0.040		< 2.0	< 0.000100		0.042		0.476	0.340			0.70	0.75
11/23/2022	E321812	F2_BPO																								
11/24/2022	E321791	F2_NWPI			258																< 0.250				< 0.50	
11/24/2022	E321811	F2_ECIN			449																< 0.250				< 0.50	
11/24/2022	E321812	F2_BPO			430											< 2.0					0.469				0.76	
11/24/2022	E321812	F2_BPO																								
11/25/2022	E321811	F2_ECIN			467	0.0023		0.20		< 0.20		0.0621		< 0.040		< 2.0	< 0.000100		< 0.020		< 0.250	0.0898			0.54	< 0.50
11/25/2022	E321791	F2_NWPI			283	0.0041		1.83		< 0.20		0.0403		< 0.040		< 2.0	< 0.000100		0.033		< 0.250	0.803			< 0.50	< 0.50
11/25/2022	E321812	F2_BPO			485	< 0.0020		< 0.20		0.56		0.0108		< 0.040		< 2.0	< 0.000100		0.028		0.458	0.327			0.62	0.73
11/25/2022	E321812	F2_BPO																								
11/26/2022	E321811	F2_ECIN			470																< 0.250				< 0.50	
11/26/2022	E321791	F2_NWPI			278																< 0.250				< 0.50	
11/26/2022	E321812	F2_BPO			464											< 2.0					0.387				0.68	
11/26/2022	E321812	F2_BPO																								
11/27/2022	E321811	F2_ECIN			454																< 0.250				0.52	
11/27/2022	E321791	F2_NWPI			306																< 0.250				< 0.50	
11/27/2022	E321812	F2_BPO			482											< 2.0					0.384				1.07	
11/27/2022	E321812	F2_BPO																								
11/28/2022	200393	EV_ER1			182	< 0.0010	0.0077	< 0.10	< 0.10	0.21	0.22	0.0810	0.0728	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	< 0.010	< 0.010	< 0.050	0.0108	0.0146	65.8	< 0.50	< 0.50
11/28/2022	0200203	EV_MC3			176	< 0.0010	0.0057	< 0.10	< 0.10	0.14	0.17	0.110	0.100	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	< 0.010	< 0.010	< 0.050	0.0194	0.0258	55.6	< 0.50	0.66
11/28/2022	E321812	F2_BPO	0	0	484	0.0033	0.0040	0.22	0.22	0.57	0.79	0.0116	0.0113	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.036	0.037	0.439	0.365	0.452	254	0.84	0.98
11/28/2022	310168	EV_MC2A			211	< 0.0010	0.0040	< 0.10	< 0.10	0.13	0.17	0.118	0.107	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.011	0.011	< 0.050	0.0154	0.0170	70.5	< 0.50	< 0.50
11/28/2022	E300091	EV_MC2			220	< 0.0010	0.0036	< 0.10	< 0.10	0.21	0.19	0.121	0.106	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.013	0.014	< 0.050	0.0278	0.0263	86.0	< 0.50	< 0.50
11/28/2022	E321811	F2_ECIN			409	0.0023	< 0.0030	0.18	0.20	0.30	0.26	0.0769	0.0634	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.013	0.014	< 0.250	0.0859	0.0896	256	< 0.50	0.69

		Parameter	48-h Static acute lethality test using Daphnia ma	96-Hr 100% Conc. Acute lethality test for R. Trout	Alkalinity, Total (As CaCO3)	Aluminum	Aluminum	Antimony	Antimony	Arsenic	Arsenic	Barium	Barium	Beryllium	Beryllium	BOD	Bismuth	Bismuth	Boron	Boron	Bromide	Cadmium	Cadmium	Calcium	Carbon, Dissolved Organic	Carbon, Total Organic
		Fraction	N	N	N	D	T	D	T	D	T	D	T	D	T	N	D	T	D	T	N	D	T	T	D	T
		Unit	%	%	mg/l	mg/l	mg/l	ug/l	ug/l	ug/l	ug/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
11/28/2022	E321791	F2_NWPI			283	0.0086	0.0118	1.93	2.16	< 0.10	0.20	0.0514	0.0444	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.038	0.050	< 0.250	0.880	0.942	246	< 0.50	< 0.50
11/28/2022	0200097	EV_EC1	0	0	350	< 0.0020	< 0.0060	< 0.20	< 0.20	0.31	0.38	0.0313	0.0292	< 0.040	< 0.040	< 2.0	< 0.000100	< 0.000100	0.023	0.024	< 0.250	0.0118	0.0221	224	0.60	0.62
11/28/2022	E321814	EV_ECOUT	0	0	450	< 0.0020	< 0.0060	< 0.20	< 0.20	0.24	0.35	0.0609	0.0535	< 0.040	< 0.040	< 2.0	< 0.000100	< 0.000100	< 0.020	< 0.020	< 0.250	0.165	0.166	254	< 0.50	< 0.50
11/28/2022	E321812	F2_BPO																								
11/29/2022	E206231	EV_GT1	0	0	411	< 0.0010	0.0066	0.53	0.47	0.30	0.38	0.309	0.302	< 0.020	< 0.040	< 2.0	< 0.000050	< 0.000100	0.036	0.039	0.348	0.0945	0.117	244	0.52	0.67
11/29/2022	E321791	F2_NWPI			251																< 0.250				0.56	
11/29/2022	E321811	F2_ECIN			356																< 0.250				< 0.50	
11/29/2022	E321812	F2_BPO			476											< 2.0					0.464				1.06	
11/29/2022	E102685	EV_BC1	0	0	380	< 0.0010	0.0092	0.62	0.53	0.25	0.29	0.198	0.192	< 0.020	< 0.040	< 2.0	< 0.000050	< 0.000100	0.038	0.041	0.404	0.0455	0.0582	245	< 0.50	0.60
11/29/2022	E321812	F2_BPO																								
11/30/2022	E321811	F2_ECIN			452	< 0.0010		0.22		0.17		0.0666		< 0.020		< 2.0	< 0.000050		0.013		< 0.250	0.0785			< 0.50	< 0.50
11/30/2022	E321791	F2_NWPI			284	0.0044		2.15		0.12		0.0462		< 0.020		< 2.0	< 0.000050		0.041		< 0.250	0.876			< 0.50	< 0.50
11/30/2022	E321812	F2_BPO			459	0.0041		0.23		0.60		0.0122		< 0.020		< 2.0	< 0.000050		0.036		0.450	0.350			0.77	0.89
11/30/2022	E321812	F2_BPO																								
12/1/2022	E321811	F2_ECIN			484																< 0.250				< 0.50	
12/1/2022	E321791	F2_NWPI			300																< 0.250				< 0.50	
12/1/2022	E321812	F2_BPO			491											< 2.0					0.403				1.01	
12/1/2022	E321812	F2_BPO																								
12/2/2022	E321811	F2_ECIN			465	0.0030		0.23		0.27		0.0644		< 0.020		< 2.0	< 0.000050		0.014		< 0.250	0.0964			< 0.50	< 0.50
12/2/2022	E321791	F2_NWPI			280	0.0034		2.21		0.16		0.0487		< 0.020		< 2.0	< 0.000050		0.049		< 0.250	0.899			< 0.50	< 0.50
12/2/2022	E321812	F2_BPO			470	0.0042		0.25		0.68		0.0128		< 0.020		< 2.0	< 0.000050		0.041		0.438	0.350			0.61	0.62
12/2/2022	E321812	F2_BPO																								
12/3/2022	E321791	F2_NWPI			283																< 0.250				< 0.50	
12/3/2022	E321811	F2_ECIN			458																< 0.250				< 0.50	
12/3/2022	E321812	F2_BPO			458											< 2.0					0.404				0.51	
12/3/2022	E321812	F2_BPO																								
12/4/2022	E321811	F2_ECIN			463																< 0.250				< 0.50	
12/4/2022	E321791	F2_NWPI			282																< 0.250				< 0.50	
12/4/2022	E321812	F2_BPO			464											< 2.0					0.403				0.67	
12/4/2022	E321812	F2_BPO																								
12/5/2022	0200097	EV_EC1																			< 0.250					
12/5/2022	E321812	F2_BPO	0	0	488	0.0043	0.0075	0.21	0.22	0.63	0.69	0.0121	0.0116	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.037	0.041	0.438	0.340	0.423	262	0.59	0.64
12/5/2022	E321811	F2_ECIN			466	0.0026	0.0048	0.20	0.21	0.28	0.31	0.0677	0.0622	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.013	0.015	< 0.250	0.0928	0.0914	261	< 0.50	< 0.50
12/5/2022	E321791	F2_NWPI			292	0.0029	0.0093	2.03	2.08	0.12	0.16	0.0457	0.0425	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.039	0.047	< 0.250	0.902	0.891	226	< 0.50	< 0.50
12/5/2022	E321814	EV_ECOUT																			< 0.250					
12/5/2022	E321812	F2_BPO																								
12/5/2022	E321812	F2_BPO																								
12/6/2022	E321811	F2_ECIN			439																< 0.500				0.65	
12/6/2022	E321791	F2_NWPI			264																< 0.500				0.52	
12/6/2022	E321812	F2_BPO			432											< 2.0					< 0.500				0.94	
12/6/2022	E321814	EV_ECOUT			472	< 0.0010	0.0037	0.24	0.21	0.35	0.44	0.0478	0.0416	< 0.020	< 0.020		< 0.000050	< 0.000050	0.021	0.024	< 0.250	0.208	0.209	265	< 0.50	< 0.50
12/6/2022	0200203	EV_MC3			199	< 0.0010	0.0067	< 0.10	< 0.10	0.13	0.14	0.120	0.102	< 0.020	< 0.020		< 0.000050	< 0.000050	< 0.010	< 0.010	< 0.050	0.0155	0.0149	59.6	< 0.50	< 0.50
12/6/2022	E206231	EV_GT1			402	< 0.0010	0.0044	0.53	0.46	0.34	0.30	0.378	0.312	< 0.020	< 0.020		< 0.000050	< 0.000050	0.035	0.037	< 0.250	0.118	0.117	261	0.52	0.54
12/6/2022	E300091	EV_MC2			242	< 0.0010	0.0070	0.11	< 0.10	0.14	0.15	0.127	0.112	< 0.020	< 0.020		< 0.000050	< 0.000050	0.013	0.015	< 0.050	0.0239	0.0280	88.2	< 0.50	< 0.50
12/6/2022	E321812	F2_BPO																								
12/6/2022	E102685	EV_BC1			415	< 0.0010	0.0047	0.58	0.51	0.30	0.28	0.242	0.213	< 0.020	< 0.020		< 0.000050	< 0.000050	0.037	0.038	0.355	0.0333	0.0257	256	< 0.50	< 0.50
12/7/2022	E321811	F2_ECIN			450	0.0052		0.19		0.24		0.0602		< 0.020		< 2.0	< 0.000050		0.015		< 0.250	0.0740			0.87	0.53
12/7/2022	E321791	F2_NWPI			277	0.0020		2.08		0.16		0.0414		< 0.020		< 2.0	< 0.000050		0.038		< 0.250	0.881			< 0.50	< 0.50

		Parameter	48-h Static acute lethality test using Daphnia ma	96-Hr 100% Conc. Acute lethality test for R. Trout	Alkalinity, Total (As CaCO3)	Aluminum	Aluminum	Antimony	Antimony	Arsenic	Arsenic	Barium	Barium	Beryllium	Beryllium	BOD	Bismuth	Bismuth	Boron	Boron	Bromide	Cadmium	Cadmium	Calcium	Carbon, Dissolved Organic	Carbon, Total Organic
		Fraction	N	N	N	D	T	D	T	D	T	D	T	D	T	N	D	T	D	T	N	D	T	T	D	T
		Unit	%	%	mg/l	mg/l	mg/l	ug/l	ug/l	ug/l	ug/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
12/7/2022	E321812	F2_BPO			460	0.0059		0.19		0.55		0.0124		< 0.020		< 2.0	< 0.000050		0.037		0.376	0.338			0.94	0.89
12/7/2022	200393	EV_ER1			176	< 0.0010	0.0106	< 0.10	< 0.10	0.20	0.19	0.0851	0.0854	< 0.020	< 0.020		< 0.000050	< 0.000050	< 0.010	< 0.010	< 0.050	0.0104	0.0201	74.1	< 0.50	< 0.50
12/7/2022	E321812	F2_BPO																								
12/8/2022	E321811	F2_ECIN			481																< 0.250				< 0.50	
12/8/2022	E321791	F2_NWPI			296																< 0.250				0.64	
12/8/2022	E321812	F2_BPO			493											< 2.0					0.436				0.70	
12/8/2022	0200097	EV_EC1			398	0.0012	< 0.0030	0.19	0.20	0.34	0.35	0.0332	0.0326	< 0.020	< 0.020		< 0.000050	< 0.000050	0.025	0.024	< 0.250	0.0151	0.0190	243	< 0.50	< 0.50
12/8/2022	E321812	F2_BPO																								
12/9/2022	E321811	F2_ECIN			482	< 0.0020		< 0.20		< 0.20		0.0518		< 0.040		< 2.0	< 0.000100		< 0.020		< 0.250	0.0763			< 0.50	< 0.50
12/9/2022	E321791	F2_NWPI			304	0.0024		1.72		< 0.20		0.0368		< 0.040		< 2.0	< 0.000100		0.048		< 0.250	0.973			< 0.50	< 0.50
12/9/2022	E321812	F2_BPO			488	0.0023		0.23		0.49		0.00874		< 0.040		< 2.0	< 0.000100		0.038		0.379	0.352			< 0.50	0.54
12/9/2022	E321812	F2_BPO																								
12/10/2022	E321811	F2_ECIN			464																< 0.250				< 0.50	
12/10/2022	E321791	F2_NWPI			280																< 0.250				< 0.50	
12/10/2022	E321812	F2_BPO			460											< 2.0					0.362				0.88	
12/10/2022	E321812	F2_BPO																								
12/11/2022	E321811	F2_ECIN			480																< 0.250				1.81	
12/11/2022	E321791	F2_NWPI			284																< 0.250				< 0.50	
12/11/2022	E321812	F2_BPO			475											< 2.0					0.364				1.09	
12/11/2022	E321812	F2_BPO																								
12/12/2022	E321811	F2_ECIN			330	< 0.0010	< 0.0060	0.22	< 0.20	0.26	< 0.20	0.0641	0.0612	< 0.020	< 0.040	< 2.0	< 0.000050	< 0.000100	0.014	< 0.020	< 0.250	0.0784	0.0960	273	< 0.50	< 0.50
12/12/2022	E321791	F2_NWPI			245	0.0024	< 0.0060	2.23	2.39	0.16	< 0.20	0.0412	0.0407	< 0.020	< 0.040	< 2.0	< 0.000050	< 0.000100	0.045	0.042	< 0.250	0.907	0.896	227	< 0.50	< 0.50
12/12/2022	200393	EV_ER1			171	0.0022	0.0128	< 0.10	< 0.10	0.18	0.24	0.0863	0.0836	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	< 0.010	< 0.010	< 0.050	0.0098	0.0143	67.8	< 0.50	< 0.50
12/12/2022	E321812	F2_BPO	0	0	449	0.0025	0.0076	0.23	< 0.20	0.61	0.86	0.0118	0.00988	< 0.020	< 0.040	< 2.0	< 0.000050	< 0.000100	0.041	0.036	0.338	0.340	0.467	267	0.68	0.65
12/12/2022	E300091	EV_MC2			199	0.0020	0.0068	0.12	0.10	0.16	0.16	0.121	0.120	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.014	0.014	0.052	0.0234	0.0258	91.3	< 0.50	< 0.50
12/12/2022	0200203	EV_MC3			162	0.0023	0.0068	< 0.10	< 0.10	0.16	0.17	0.117	0.109	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	< 0.010	< 0.010	< 0.050	0.0122	0.0193	54.8	< 0.50	< 0.50
12/12/2022	0200097	EV_EC1	0	0	302	0.0027	0.0086	0.21	0.22	0.30	0.40	0.0330	0.0325	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.026	0.026	< 0.250	0.0058	0.0173	242	< 0.50	< 0.50
12/12/2022	E321814	EV_ECOUT	0	0	337	0.0028	0.0078	0.22	0.21	0.27	0.31	0.0534	0.0563	< 0.020	< 0.040	< 2.0	< 0.000050	< 0.000100	0.020	< 0.020	< 0.250	0.156	0.170	260	< 0.50	< 0.50
12/12/2022	E321812	F2_BPO																								
12/13/2022	E321811	F2_ECIN			459																< 0.250				< 0.50	
12/13/2022	E321791	F2_NWPI			278																< 0.250				< 0.50	
12/13/2022	E206231	EV_GT1	0	0	408	0.0051	< 0.0060	0.54	0.50	0.33	0.35	0.406	0.336	< 0.020	< 0.040	< 2.0	< 0.000050	< 0.000100	0.042	0.040	< 0.250	0.105	0.122	260	0.57	< 0.50
12/13/2022	E102685	EV_BC1	0	0	410	< 0.0010	0.0090	0.55	0.55	0.34	0.28	0.226	0.236	< 0.020	< 0.040	< 2.0	< 0.000050	< 0.000100	0.044	0.041	< 0.250	0.0572	0.0473	261	< 0.50	< 0.50
12/13/2022	E321812	F2_BPO			463											< 2.0					0.374				1.10	
12/13/2022	E321812	F2_BPO																								
12/14/2022	E321791	F2_NWPI			249	< 0.0020		1.95		< 0.20		0.0426		< 0.040		< 2.0	< 0.000100		0.041		< 0.250	0.840			< 0.50	< 0.50
12/14/2022	E321811	F2_ECIN			372	< 0.0020		0.20		0.20		0.0609		< 0.040		< 2.0	< 0.000100		< 0.020		< 0.250	0.0765			< 0.50	0.55
12/14/2022	E321812	F2_BPO			458	< 0.0020		< 0.20		0.57		0.0104		< 0.040		< 2.0	< 0.000100		0.036		0.354	0.274			0.92	0.93
12/14/2022	E321812	F2_BPO																								
12/14/2022	E321812	F2_BPO																								
12/15/2022	E321811	F2_ECIN			492																< 0.250				< 0.50	
12/15/2022	E321791	F2_NWPI			294																< 0.250				< 0.50	
12/15/2022	E321812	F2_BPO			485											< 2.0					0.369				0.78	
12/15/2022	E321812	F2_BPO																								
12/16/2022	E321791	F2_NWPI			273	< 0.0020		2.02		< 0.20		0.0450		< 0.040		< 2.0	< 0.000100		0.054		< 0.250	0.884			< 0.50	< 0.50
12/16/2022	E321811	F2_ECIN			456	0.0021		< 0.20		< 0.20		0.0631		< 0.040		< 2.0	< 0.000100		< 0.020		< 0.250	0.0598			< 0.50	< 0.50
12/16/2022	E321812	F2_BPO			462	< 0.0020		< 0.20		0.46		0.0110		< 0.040		< 2.0	< 0.000100		0.041		0.413	0.329			0.57	0.58
12/16/2022	E321812	F2_BPO																								

		Parameter	48-h Static acute lethality test using Daphnia ma	96-Hr 100% Conc. Acute lethality test for R. Trout	Alkalinity, Total (As CaCO3)	Aluminum	Aluminum	Antimony	Antimony	Arsenic	Arsenic	Barium	Barium	Beryllium	Beryllium	BOD	Bismuth	Bismuth	Boron	Boron	Bromide	Cadmium	Cadmium	Calcium	Carbon, Dissolved Organic	Carbon, Total Organic
		Fraction	N	N	N	D	T	D	T	D	T	D	T	D	T	N	D	T	D	T	N	D	T	T	D	T
		Unit	%	%	mg/l	mg/l	mg/l	ug/l	ug/l	ug/l	ug/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
12/17/2022	E321811	F2_ECIN			492																< 0.250				< 0.50	
12/17/2022	E321791	F2_NWPI			294																< 0.250				0.52	
12/17/2022	E321812	F2_BPO			455											< 2.0					0.417				0.79	
12/17/2022	E321812	F2_BPO																								
12/18/2022	E321811	F2_ECIN			482																< 0.250				< 0.50	
12/18/2022	E321791	F2_NWPI			284																< 0.250				< 0.50	
12/18/2022	E321812	F2_BPO			469											< 2.0					0.394				0.94	
12/18/2022	E321812	F2_BPO																								
12/19/2022	0200097	EV_EC1																			< 0.250					
12/19/2022	E321814	EV_ECOUT																			< 0.250					
12/19/2022	E321811	F2_ECIN			486	< 0.0010	0.0033	0.25	0.20	0.20	0.24	0.0588	0.0605	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.016	0.013	< 0.250	0.0837	0.0892	236	< 0.50	< 0.50
12/19/2022	E321812	F2_BPO	0	0	482	< 0.0010	< 0.0030	0.24	0.20	0.52	0.73	0.0105	0.0113	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.042	0.037	0.354	0.315	0.429	232	0.80	0.83
12/19/2022	E321791	F2_NWPI			289	0.0014	0.0056	2.58	1.98	< 0.10	0.20	0.0405	0.0417	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.057	0.044	< 0.250	0.885	0.924	215	< 0.50	< 0.50
12/19/2022	E321812	F2_BPO																								
12/20/2022	E321811	F2_ECIN			528																< 0.250				< 0.50	
12/20/2022	E321791	F2_NWPI			321																< 0.250				< 0.50	
12/20/2022	E321812	F2_BPO			468											< 2.0					0.410				0.83	
12/20/2022	E321812	F2_BPO																								
12/21/2022	E321811	F2_ECIN			475	0.0023		0.20		0.21		0.0646		< 0.040		< 2.0	< 0.000100		< 0.020		< 0.250	0.0748			< 0.50	< 0.50
12/21/2022	E321812	F2_BPO			476	0.0024		0.20		0.63		0.0112		< 0.040		< 2.0	< 0.000100		0.039		0.346	0.300			< 0.50	0.74
12/21/2022	E321812	F2_BPO																								
12/21/2022	E321791	F2_NWPI			286	0.0026		1.99		< 0.20		0.0446		< 0.040		< 2.0	< 0.000100		0.045		< 0.250	0.854			< 0.50	< 0.50
12/22/2022	E321791	F2_NWPI			319																< 0.250				< 0.50	
12/22/2022	E321812	F2_BPO			495											< 2.0					0.258				0.76	
12/22/2022	E321811	F2_ECIN			491																< 0.250				< 0.50	
12/22/2022	E321812	F2_BPO																								
12/23/2022	E321791	F2_NWPI			284	0.0013		2.20		0.15		0.0478		< 0.020		< 2.0	< 0.000050		0.047		< 0.250	0.903			< 0.50	< 0.50
12/23/2022	E321811	F2_ECIN			450	< 0.0010		0.23		0.25		0.0706		< 0.020		< 2.0	< 0.000050		0.014		< 0.250	0.0941			< 0.50	< 0.50
12/23/2022	E321812	F2_BPO			444	< 0.0010		0.22		0.66		0.0120		< 0.020		< 2.0	< 0.000050		0.039		0.307	0.334			0.80	1.06
12/23/2022	E321812	F2_BPO																								
12/24/2022	E321811	F2_ECIN			454																< 0.250				< 0.50	
12/24/2022	E321791	F2_NWPI			278																< 0.250				0.78	
12/24/2022	E321812	F2_BPO			450											< 2.0					0.317				1.15	
12/24/2022	E321812	F2_BPO																								
12/25/2022	E321811	F2_ECIN			447																< 0.250				< 0.50	
12/25/2022	E321791	F2_NWPI			278																< 0.250				< 0.50	
12/25/2022	E321812	F2_BPO			448											< 2.0					0.352				0.61	
12/25/2022	E321812	F2_BPO																								
12/26/2022	E321811	F2_ECIN			456	< 0.0010		0.22		0.28		0.0633		< 0.020		< 2.0	< 0.000050		0.017		< 0.250	0.0841			0.57	< 0.50
12/26/2022	E321791	F2_NWPI			282	< 0.0010		2.25		0.25		0.0437		< 0.020		< 2.0	< 0.000050		0.063		< 0.250	0.887			< 0.50	< 0.50
12/26/2022	E321812	F2_BPO			460	< 0.0010		0.21		0.62		0.0109		< 0.020		< 2.0	< 0.000050		0.046		0.345	0.276			0.76	0.93
12/26/2022	E321812	F2_BPO																								
12/27/2022	200393	EV_ER1			172	< 0.0010	0.0116	< 0.10	< 0.10	0.17	0.26	0.0808	0.0800	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.011	< 0.010	< 0.050	0.0194	0.0177	69.8	< 0.50	< 0.50
12/27/2022	0200203	EV_MC3			160	< 0.0010	0.0072	< 0.10	< 0.10	0.22	0.17	0.114	0.113	0.021	< 0.020	< 2.0	< 0.000050	< 0.000050	0.010	< 0.010	< 0.050	0.0215	0.0145	56.0	< 0.50	< 0.50
12/27/2022	E321812	F2_BPO	0	0	453	< 0.0010	< 0.0030	0.21	0.20	0.64	0.78	0.0109	0.0119	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.048	0.038	0.338	0.318	0.428	257	< 0.50	0.82
12/27/2022	E300091	EV_MC2			192	< 0.0010	0.0088	< 0.10	0.10	0.21	0.19	0.115	0.114	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.016	0.014	< 0.050	0.0325	0.0336	80.4	< 0.50	< 0.50
12/27/2022	E321811	F2_ECIN			453	< 0.0010	< 0.0030	0.23	0.26	0.27	0.35	0.0638	0.0665	0.022	< 0.020	< 2.0	< 0.000050	< 0.000050	0.017	0.014	< 0.250	0.0833	0.0773	264	< 0.50	< 0.50
12/27/2022	E321791	F2_NWPI			280	< 0.0010	0.0039	2.34	2.00	0.22	0.25	0.0440	0.0435	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.066	0.050	< 0.250	0.666	0.896	227	< 0.50	< 0.50

Parameter			48-h Static acute lethality test using Daphnia ma	96-Hr 100% Conc. Acute lethality test for R. Trout	Alkalinity, Total (As CaCO3)	Aluminum	Aluminum	Antimony	Antimony	Arsenic	Arsenic	Barium	Barium	Beryllium	Beryllium	BOD	Bismuth	Bismuth	Boron	Boron	Bromide	Cadmium	Cadmium	Calcium	Carbon, Dissolved Organic	Carbon, Total Organic
Fraction			N	N	N	D	T	D	T	D	T	D	T	D	T	N	D	T	D	T	N	D	T	T	D	T
Unit			%	%	mg/l	mg/l	mg/l	ug/l	ug/l	ug/l	ug/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
12/27/2022	0200097	EV_EC1	0	0	377	< 0.0020	< 0.0060	0.22	0.22	0.40	0.35	0.0312	0.0332	< 0.040	< 0.040	< 2.0	< 0.000100	< 0.000100	0.037	0.029	< 0.250	0.0138	0.0158	237	0.81	0.84
12/27/2022	E321814	EV_ECOUT	0	0	466	< 0.0020	0.0082	0.23	0.21	0.54	0.36	0.0503	0.0523	< 0.040	< 0.040	< 2.0	< 0.000100	< 0.000100	0.030	0.022	< 0.250	0.177	0.192	264	0.62	0.58
12/27/2022	E321812	F2_BPO																								
12/28/2022	E206231	EV_GT1	0	0	387	0.0020	0.0166	0.43	0.42	0.32	0.39	0.314	0.287	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.037	0.038	0.274	0.105	0.127	225	< 0.50	0.61
12/28/2022	E321811	F2_ECIN			473																< 0.250				< 0.50	
12/28/2022	E321791	F2_NWPI			288																< 0.250				< 0.50	
12/28/2022	E102685	EV_BC1	0	0	406	0.0011	0.0337	0.44	0.45	0.31	0.45	0.262	0.212	< 0.020	< 0.020	< 2.0	< 0.000050	< 0.000050	0.040	0.039	0.303	0.0668	0.0754	212	0.82	0.70
12/28/2022	E321812	F2_BPO			482											< 2.0					0.415				0.65	
12/28/2022	E321812	F2_BPO																								
12/29/2022	E321811	F2_ECIN			500																< 0.250				< 0.50	
12/29/2022	E321791	F2_NWPI			302																< 0.250				< 0.50	
12/29/2022	E321812	F2_BPO			474											< 2.0					0.284				0.77	
12/29/2022	E321812	F2_BPO																								
12/30/2022	E321791	F2_NWPI			292	0.0013		1.95		0.16		0.0438		< 0.020		< 2.0	< 0.000050		0.050		< 0.250	0.923			< 0.50	0.52
12/30/2022	E321811	F2_ECIN			498	0.0018		0.20		0.22		0.0654		< 0.020		< 2.0	< 0.000050		0.015		< 0.250	0.0824			< 0.50	< 0.50
12/30/2022	E321812	F2_BPO			472	< 0.0010		0.18		0.64		0.0112		< 0.020		< 2.0	< 0.000050		0.039		0.332	0.342			0.81	0.68
12/30/2022	E321812	F2_BPO																								
12/31/2022	E321811	F2_ECIN			466																< 0.250				0.60	
12/31/2022	E321791	F2_NWPI			294																< 0.250				< 0.50	
12/31/2022	E321812	F2_BPO			496											< 2.0					0.337				0.98	
12/31/2022	E321812	F2_BPO																								

		Parameter	Chloride	Chromium	Chromium	Cobalt	Cobalt	COD	Conductivity, Lab	Copper	Copper	Dimethylseleneoxide	Dissolved Oxygen, Field	Fluoride	Hardness, Total or Dissolved CaCO3	Iron	Iron	Lead	Lead	Lithium	Lithium	Magnesium	Magnesium	Manganese	Manganese	Mercury	Mercury
		Fraction	D	D	T	D	T	N	N	D	T	D	N	N	D	D	T	D	T	D	T	T	T	D	T	D	T
		Unit	mg/l	ug/l	ug/l	ug/l	ug/l	mg/l	us/cm	ug/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	ppm	mg/l	mg/l	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
1/1/2022	E321811	F2_ECIN	5.34						1980				10.52	< 0.100													
1/1/2022	E321791	F2_NWPI	13.6						1820				9.18	0.267													
1/1/2022	E321812	F2_BPO	7.53					< 10	1950				8.26	0.174													
1/1/2022	E321812	F2_BPO											8.43														
1/2/2022	E321812	F2_BPO											8.69														
1/2/2022	E321811	F2_ECIN	6.49						1990				10.38	0.105													
1/2/2022	E321791	F2_NWPI	15.0						1830				8.99	0.343													
1/2/2022	E321812	F2_BPO	8.64					< 10	1960				8.44	0.220													
1/2/2022	E321812	F2_BPO											8.55														
1/3/2022	E321811	F2_ECIN	6.38	0.26		< 0.20		< 10	1990	< 0.40			10.84	0.102	1270	< 0.020		< 0.100		0.0258				0.00058		< 0.0050	< 0.00050
1/3/2022	E321791	F2_NWPI	15.0	0.15		7.51		< 10	1840	0.44			9.35	0.338	1150	0.017		< 0.050		0.176				0.0430		< 0.0050	0.00072
1/3/2022	E206231	EV_GT1	3.31	< 0.20	< 0.20	< 0.20	< 0.20	< 10	1850	< 0.40	< 1.00	0.013	11.6	0.242	1100	< 0.020	0.020	< 0.100	< 0.100	0.0576	0.0648	154		0.00299	0.00431	0.0050	0.00068
1/3/2022	E321812	F2_BPO	8.54	< 0.10		15.2		< 10	1960	< 0.20			7.89	0.221	1310	0.017		< 0.050		0.0607				0.423		< 0.0050	< 0.00050
1/3/2022	E321812	F2_BPO											7.77														
1/3/2022	E102685	EV_BC1	30.5	< 0.20	< 0.20	0.53	0.53	< 10	2150	0.63	< 1.00	< 0.010	10.83	0.226	1380	< 0.020	0.089	< 0.100	< 0.100	0.166	0.173	184		0.0316	0.0334	< 0.0050	< 0.00050
1/3/2022	E321812	F2_BPO											7.72														
1/4/2022	E321812	F2_BPO											8.01														
1/4/2022	E321812	F2_BPO											8.11														
1/4/2022	E321812	F2_BPO	7.29	0.64	< 0.20	16.7	15.1	< 10	1960	1.10	< 1.00	< 0.010	7.89	0.190	1400	0.023	0.232	< 0.100	< 0.100	0.0648	0.0627	147		0.451	0.415	< 0.0050	< 0.00050
1/4/2022	E321811	F2_ECIN	5.30	0.26	0.19	< 0.10	< 0.10	< 10	1980	< 0.20	< 0.50	< 0.010	11.67	< 0.100	1420	< 0.010	< 0.010	< 0.050	< 0.050	0.0283	0.0288	157		0.00035	0.00022	< 0.0050	< 0.00050
1/4/2022	E321791	F2_NWPI	13.8	0.29	0.10	8.26	8.30	< 10	1840	0.51	0.85	0.085	9.6	0.282	1240	0.012	0.043	< 0.050	0.086	0.192	0.201	137		0.0477	0.0477	< 0.0050	0.00085
1/4/2022	E321812	F2_BPO											8.33														
1/5/2022	E321812	F2_BPO	6.98					< 10	1950				8.47	0.188													
1/5/2022	E321812	F2_BPO											8.68														
1/5/2022	E321811	F2_ECIN	4.27						2000				12.22	< 0.100													
1/5/2022	E321791	F2_NWPI	12.7						1820				9.66	0.257													
1/5/2022	0200097	EV_EC1	7.79	0.58	< 0.20		4.77	< 10	1860	< 0.20	< 1.00	< 0.010	13.56	0.188	1390	< 0.010	< 0.020		< 0.100	0.0585	0.0560	188		0.108	0.104	< 0.0050	< 0.00050
1/5/2022	E321812	F2_BPO											8.62														
1/5/2022	0200203	EV_MC3	1.63	0.15	0.17		< 0.10	< 10	385	0.22	< 0.50	< 0.010	13.79	0.129	219	< 0.010	0.020		< 0.050	0.0062	0.0059	18.7		0.00037	0.00084	< 0.0050	0.00053
1/6/2022	E321811	F2_ECIN	5.44	0.20		< 0.10		< 10	1970	< 0.20		< 0.010	11.59	< 0.100	1380	< 0.010		< 0.050		0.0298				< 0.00020		< 0.0050	< 0.00050
1/6/2022	E321791	F2_NWPI	13.6	< 0.10		7.37		< 10	1830	0.45			9.7	0.268	1180	< 0.010		< 0.050		0.195				0.0442		< 0.0050	0.00083
1/6/2022	E321812	F2_BPO	7.66	< 0.20		14.9		< 10	1940	< 0.40		< 0.010	8.67	0.242	1340	0.027		< 0.100		0.0640				0.429		< 0.0050	< 0.00050
1/6/2022	E321814	EV_ECOUT	6.74	< 0.10	< 0.10	10.8	11.0	< 10	1950	< 0.20	< 0.50	< 0.010	11.82	0.154	1320	0.014	0.135	< 0.050	< 0.050	0.0549	0.0551	174		0.314	0.315	< 0.0050	< 0.00050
1/6/2022	310168	EV_MC2A	2.17	0.12	0.17	0.14	0.16	< 10	498	0.23	< 0.50	< 0.010	14.55	0.106	267	< 0.010	0.013	< 0.050	< 0.050	0.0092	0.0090	26.5		0.00375	0.00435	< 0.0050	< 0.00050
1/6/2022	E300091	EV_MC2	3.46	0.13	0.25	0.13	0.14	< 10	538	0.27	< 0.50	< 0.010	13.91	0.102	296	< 0.010	0.018	< 0.050	< 0.050	0.0121	0.0112	29.0		0.00347	0.00411	< 0.0050	< 0.00050
1/6/2022	E321812	F2_BPO											8.23														
1/6/2022	200393	EV_ER1	3.52	0.55	1.72	< 0.10	< 0.10	< 10	496	< 0.20	< 0.50		10.45	0.148	272	< 0.010	0.020	< 0.050	0.055	0.0101	0.0094	25.6		0.00181	0.00292	0.0053	< 0.00050
1/7/2022	E321811	F2_ECIN	6.18						1990				11.18	0.130													
1/7/2022	E321791	F2_NWPI	15.0						1850				9.81	0.358													
1/7/2022	E321812	F2_BPO	8.25					< 10	1930				8.04	0.249													
1/7/2022	E321812	F2_BPO											8														
1/7/2022	E321812	F2_BPO											8														
1/8/2022	E321811	F2_ECIN	5.26						1980				12.8	< 0.100													
1/8/2022	E321791	F2_NWPI	13.7						1820				11.08	0.276													
1/8/2022	E321812	F2_BPO	7.21					< 10	1940				8.28	0.177													
1/8/2022	E321812	F2_BPO											8.13														
1/8/2022	E321812	F2_BPO											8.4														
1/9/2022	E321811	F2_ECIN	5.39						1980				11.78	< 0.100													

Parameter			Chloride	Chromium	Chromium	Cobalt	Cobalt	COD	Conductivity, Lab	Copper	Copper	Dimethylseleneoxide	Dissolved Oxygen, Field	Fluoride	Hardness, Total or Dissolved CaCO3	Iron	Iron	Lead	Lead	Lithium	Lithium	Magnesium	Magnesium	Manganese	Manganese	Mercury	Mercury
Fraction			D	D	T	D	T	N	N	D	T	D	N	N	D	D	T	D	T	D	T	T	T	D	T	D	T
Unit			mg/l	ug/l	ug/l	ug/l	ug/l	mg/l	us/cm	ug/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	ppm	mg/l	mg/l	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
1/9/2022	E321791	F2_NWPI	13.7						1830				10.05	0.274													
1/9/2022	E321812	F2_BPO	7.24					< 10	1960				10.37	0.241													
1/9/2022	E321812	F2_BPO											8.98														
1/9/2022	E321812	F2_BPO											8.81														
1/10/2022	E321811	F2_ECIN	6.26	0.27	0.15	< 0.20	< 0.10	< 10	1980	< 0.40	< 0.50	< 0.010	10.4	< 0.100	1430	< 0.020	< 0.010	< 0.100	< 0.050	0.0274	0.0262	159		< 0.00020	0.00013	< 0.0050	< 0.00050
1/10/2022	E321791	F2_NWPI	15.0	< 0.10	< 0.10	7.47	8.12	< 10	1830	0.44	0.67	< 0.010	8.35	0.350	1240	< 0.010	0.039	< 0.050	0.067	0.196	0.193	147		0.0445	0.0508	< 0.0050	0.00077
1/10/2022	E321814	EV_ECOUT										< 0.010															
1/10/2022	E321812	F2_BPO											8.61														
1/10/2022	E321812	F2_BPO	8.18	< 0.20	< 0.10	15.4	14.7	< 10	1960	< 0.40	< 0.50	< 0.010	10.07	0.217	1430	< 0.020	0.212	< 0.100	0.075	0.0622	0.0660	163		0.417	0.416	< 0.0050	< 0.00050
1/10/2022	E321812	F2_BPO											8.51														
1/11/2022	E321811	F2_ECIN	7.74	0.19		< 0.10		< 10	2000	< 0.20			12.11	< 0.100	1260	< 0.010		< 0.050		0.0260				0.00025		< 0.0050	< 0.00050
1/11/2022	E321791	F2_NWPI	19.2	< 0.10		7.67		< 10	1840	0.44			10.04	0.220	1140	< 0.010		< 0.050		0.176				0.0451		< 0.0050	0.00077
1/11/2022	0200097	EV_EC1										0.019															
1/11/2022	E321812	F2_BPO											8.68														
1/11/2022	E321812	F2_BPO	10.6	< 0.10		14.4		< 10	1960	< 0.20			8.65	0.144	1220	0.029		< 0.050		0.0571				0.395		< 0.0050	< 0.00050
1/11/2022	E321812	F2_BPO											8.57														
1/12/2022	E321811	F2_ECIN	6.31						2000				10.16	< 0.100													
1/12/2022	E321791	F2_NWPI	15.2						1880				8.43	0.327													
1/12/2022	E321812	F2_BPO											8.39														
1/12/2022	E321812	F2_BPO	8.17					< 10	1970				8.3	0.217													
1/12/2022	E321812	F2_BPO											8.29														
1/13/2022	E321811	F2_ECIN	5.93	0.20		< 0.10		< 10	1990	< 0.20		< 0.010	9.89	< 0.100	1280	< 0.010		< 0.050		0.0284				0.00015		< 0.0050	< 0.00050
1/13/2022	E321791	F2_NWPI	14.4	< 0.10		7.46		< 10	1850	0.42			8.28	0.292	1130	< 0.010		< 0.050		0.179				0.0459		< 0.0050	0.00068
1/13/2022	E321814	EV_ECOUT										< 0.010	9.65														
1/13/2022	E321812	F2_BPO	7.62	< 0.10		14.5		< 10	1940	< 0.20		< 0.010	8.29	0.186	1290	0.020		< 0.050		0.0600				0.414		< 0.0050	< 0.00050
1/13/2022	E321814	EV_ECOUT	5.80	0.10	0.25	5.94	5.53		1980	< 0.20	< 0.50		10.65	0.127	1320	0.013	0.061	< 0.050	< 0.050	0.0414	0.0397	167		0.165	0.150	< 0.0050	< 0.00050
1/13/2022	E321812	F2_BPO											8.16														
1/13/2022	0200097	EV_EC1										0.019	11.44														
1/14/2022	E321811	F2_ECIN	5.32						1960				10.24	< 0.100													
1/14/2022	E321791	F2_NWPI	13.8						1820				8.56	0.273													
1/14/2022	E321812	F2_BPO											8.25														
1/14/2022	E321812	F2_BPO	7.14					12	1930				8.25	0.176													
1/14/2022	E321812	F2_BPO											8.12														
1/15/2022	E321811	F2_ECIN	6.13						1990				10.59	< 0.100													
1/15/2022	E321791	F2_NWPI	15.0						1840				8.8	0.323													
1/15/2022	E321812	F2_BPO	8.16					12	1970				8.39	0.204													
1/15/2022	E321812	F2_BPO											8.9														
1/16/2022	E321811	F2_ECIN	6.32						1980				11.37	< 0.100													
1/16/2022	E321791	F2_NWPI	15.3						1840				9.26	0.328													
1/16/2022	E321812	F2_BPO	8.14					11	1940				9.28	0.201													
1/16/2022	E321812	F2_BPO											8.63														
1/17/2022	E321812	F2_BPO	8.30	< 0.20	< 0.10	15.0	14.9	< 10	1940	< 0.40	< 0.50	< 0.010	9.85	0.204	1260	0.020	0.211	< 0.100	0.093	0.0615	0.0676	160		0.397	0.399	< 0.0050	< 0.00050
1/17/2022	E321811	F2_ECIN	9.66	0.18	0.18	< 0.10	< 0.10	< 10	1990	< 0.20	< 0.50	< 0.010	10.04	0.118	1250	0.016	0.017	< 0.050	< 0.050	0.0266	0.0282	152		0.00029	0.00031	< 0.0050	< 0.00050
1/17/2022	E321791	F2_NWPI	15.7	< 0.20	< 0.10	7.88	8.26	< 10	1830	0.51	0.67	0.057	8.18	0.335	1110	0.023	0.060	< 0.100	0.128	0.185	0.180	140		0.0476	0.0516	< 0.0050	0.00051
1/17/2022	0200097	EV_EC1	6.55	< 0.10	< 0.10	3.77	3.80		1900	< 0.20	< 0.50		10.98	0.144	1220	< 0.010	< 0.010	< 0.050	< 0.050	0.0516	0.0548	157		0.0762	0.0779	< 0.0050	< 0.00050
1/17/2022	E321812	F2_BPO											8.65														
1/17/2022	0200097	EV_EC1	6.75	< 0.10	< 0.10		3.70	< 10	1870	< 0.20	< 0.50	0.012	12.68	0.154	1200	< 0.010	< 0.010		< 0.050	0.0535	0.0527	152		0.0754	0.0752	< 0.0050	< 0.00050
1/17/2022	0200203	EV_MC3	1.09	0.13	0.16		< 0.10	< 10	396	0.24	< 0.50	< 0.010	14.14	0.093	196	< 0.010	0.017		< 0.050	0.0058	0.0060	16.7		0.00033	0.00081	< 0.0050	< 0.00050

		Parameter	Chloride	Chromium	Chromium	Cobalt	Cobalt	COD	Conductivity, Lab	Copper	Copper	Dimethylseleneoxide	Dissolved Oxygen, Field	Fluoride	Hardness, Total or Dissolved CaCO3	Iron	Iron	Lead	Lead	Lithium	Lithium	Magnesium	Magnesium	Manganese	Manganese	Mercury	Mercury
		Fraction	D	D	T	D	T	N	N	D	T	D	N	N	D	D	T	D	T	D	T	T	T	D	T	D	T
		Unit	mg/l	ug/l	ug/l	ug/l	ug/l	mg/l	us/cm	ug/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	ppm	mg/l	mg/l	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
1/17/2022	310168	EV_MC2A	1.82	0.14	0.15		0.16	< 10	495	0.22	< 0.50	< 0.010	14.4	0.103	267	< 0.010	0.015		< 0.050	0.0090	0.0090	23.6		0.00368	0.00420	< 0.0050	< 0.00050
1/17/2022	0200203	EV_MC3	1.06	0.15	0.17	< 0.10	< 0.10		395	0.49	< 0.50		12.36	0.092	208	< 0.010	0.042	< 0.050	0.054	0.0062	0.0061	16.7		0.00038	0.00227	< 0.0050	0.00098
1/17/2022	E321814	EV_ECOUT	5.89	0.16	0.52		6.73	< 10	1970	0.21	< 0.50	< 0.010	10.51	0.108	1260	0.013	0.085		< 0.050	0.0391	0.0454	154		0.136	0.180	< 0.0050	< 0.00050
1/17/2022	200393	EV_ER1	3.20	0.22	0.24		< 0.10	< 10	496	< 0.20	< 0.50		14.33	0.143	251	< 0.010	0.020		< 0.050	0.0097	0.0101	22.6		0.00148	0.00278	< 0.0050	< 0.00050
1/17/2022	E300091	EV_MC2	2.79	0.12	0.16		0.17	< 10	516	0.20	< 0.50	< 0.010	13.9	0.105	273	< 0.010	0.046		0.064	0.0112	0.0110	25.1		0.00271	0.00579	< 0.0050	< 0.00050
1/17/2022	E206231	EV_GT1	2.49	< 0.20	0.33	< 0.20	0.21		1870	< 0.40	< 1.00		9.62	0.187	1200	< 0.020	0.023	< 0.100	< 0.100	0.0675	0.0703	159		0.00866	0.0116	< 0.0050	0.00083
1/17/2022	E321812	F2_BPO											8.68														
1/18/2022	E321812	F2_BPO		< 0.20		14.4		< 10	1960	< 0.40			9.28		1310	0.031		< 0.100		0.0613				0.388		< 0.0050	< 0.00050
1/18/2022	E321811	F2_ECIN		0.23		< 0.20		< 10	1980	< 0.40			11.86		1290	< 0.020		< 0.100		0.0254				< 0.00020		< 0.0050	< 0.00050
1/18/2022	E321791	F2_NWPI		< 0.20		7.47		< 10	1840	0.46			9.63		1120	< 0.020		< 0.100		0.169				0.0463		< 0.0050	0.00069
1/18/2022	E206231	EV_GT1	2.84	< 0.10	< 0.20	0.19	< 0.20	12	1880	0.48	< 1.00	0.030	10.32	0.169	1230	< 0.010	0.026	< 0.050	< 0.100	0.0638	0.0664	169		0.00869	0.00950	< 0.0050	0.00056
1/18/2022	E102685	EV_BC1	27.9	< 0.20	< 0.20	0.44	0.43	< 10	2290	< 0.40	< 1.00	< 0.010	11.05	0.204	1550	< 0.020	0.064	< 0.100	< 0.100	0.160	0.167	212		0.0265	0.0253	< 0.0050	< 0.00050
1/18/2022	200393	EV_ER1	3.49	0.24	0.27	< 0.10	< 0.10		468	< 0.20	< 0.50		12.69	0.167	266	< 0.010	0.015	< 0.050	< 0.050	0.0104	0.0101	24.4		0.00150	0.00250	< 0.0050	< 0.00050
1/18/2022	E102685	EV_BC1	28.5	< 0.20	< 0.20	0.38	0.40		2250	< 0.40	< 1.00		9.58	0.271	1530	< 0.020	0.060	< 0.100	< 0.100	0.170	0.168	211		0.0232	0.0239	< 0.0050	< 0.00050
1/18/2022	E300091	EV_MC2	4.11	0.13	0.16	0.13	0.16		541	< 0.20	< 0.50		12.12	0.122	292	< 0.010	0.027	< 0.050	< 0.050	0.0125	0.0128	29.2		0.00298	0.00430	< 0.0050	< 0.00050
1/18/2022	E321812	F2_BPO											9.19														
1/19/2022	E321811	F2_ECIN	5.89						1980				11.58	0.101													
1/19/2022	E321791	F2_NWPI	14.7						1840				9.78	0.324													
1/19/2022	E321812	F2_BPO											9.66														
1/19/2022	E321812	F2_BPO	7.76					< 10	1950				9.62	0.203													
1/19/2022	E321812	F2_BPO											9.83														
1/20/2022	E321811	F2_ECIN	6.16	0.20		< 0.10		< 10	2000	0.21		< 0.010	12.15	0.100	1390	0.014		< 0.050		0.0266				0.00034		< 0.0050	< 0.00050
1/20/2022	E321791	F2_NWPI	15.2	< 0.10		7.85		< 10	1850	0.50			9.68	0.352	1190	< 0.010		< 0.050		0.180				0.0478		< 0.0050	0.00075
1/20/2022	E321814	EV_ECOUT										< 0.010	12.48														
1/20/2022	E321812	F2_BPO	8.21	< 0.10		14.5		< 10	1960	< 0.20		< 0.010	8.83	0.201	1370	0.016		< 0.050		0.0616				0.390		< 0.0050	< 0.00050
1/20/2022	E321812	F2_BPO											8.93														
1/20/2022	0200097	EV_EC1										0.012	14.02														
1/20/2022	E321812	F2_BPO											8.98														
1/21/2022	E321811	F2_ECIN	5.53						1960				11.98	< 0.100													
1/21/2022	E321811	F2_ECIN	5.53											< 0.100													
1/21/2022	E321791	F2_NWPI	14.2						1840				9.46	0.291													
1/21/2022	E321812	F2_BPO	7.30					< 10	1930				8.69	0.185													
1/21/2022	E321812	F2_BPO	7.30											0.185													
1/21/2022	E321812	F2_BPO											8.57														
1/21/2022	E321812	F2_BPO											8.54														
1/22/2022	E321811	F2_ECIN	6.44						1990				11.97	0.103													
1/22/2022	E321791	F2_NWPI	15.5						1850				9.53	0.351													
1/22/2022	E321812	F2_BPO	8.41					< 10	1990				10.09	0.224													
1/22/2022	E321812	F2_BPO											8.65														
1/22/2022	E321812	F2_BPO											8.52														
1/23/2022	E321811	F2_ECIN	5.55						1980				11.92	< 0.100													
1/23/2022	E321791	F2_NWPI	14.2						1860				9.24	0.273													
1/23/2022	E321812	F2_BPO											8.69														
1/23/2022	E321812	F2_BPO	7.44					< 10	1990				8.72	0.175													
1/23/2022	E321812	F2_BPO											8.88														
1/24/2022	E321811	F2_ECIN	5.86	0.20	0.25	< 0.10	< 0.10	< 10	2010	< 0.20	< 0.50	< 0.010	10.21	< 0.100	1340	0.011	0.015	< 0.050	< 0.050	0.0288	0.0282	150		0.00021	0.00020	< 0.0050	< 0.00050
1/24/2022	E321791	F2_NWPI	14.4	< 0.10	0.13	7.86	8.00	< 10	1840	0.50	0.78	0.051	7.95	0.302	1190	< 0.010	0.042	< 0.050	0.086	0.187	0.169	138		0.0460	0.0482	< 0.0050	0.00067
1/24/2022	E321814	EV_ECOUT										< 0.010															

Parameter			Chloride	Chromium	Chromium	Cobalt	Cobalt	COD	Conductivity, Lab	Copper	Copper	Dimethylseleneoxide	Dissolved Oxygen, Field	Fluoride	Hardness, Total or Dissolved CaCO3	Iron	Iron	Lead	Lead	Lithium	Lithium	Magnesium	Magnesium	Manganese	Manganese	Mercury	Mercury
Fraction			D	D	T	D	T	N	N	D	T	D	N	N	D	D	T	D	T	D	T	T	T	D	T	D	T
Unit			mg/l	ug/l	ug/l	ug/l	ug/l	mg/l	us/cm	ug/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	ppm	mg/l	mg/l	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
1/24/2022	E321812	F2_BPO	7.53	< 0.10	< 0.20	14.6	15.3	< 10	1970	< 0.20	< 1.00	< 0.010	8.38	0.184	1330	0.016	0.203	< 0.050	< 0.100	0.0646	0.0622	159		0.391	0.410	< 0.0050	< 0.00050
1/24/2022	0200097	EV_EC1										0.017															
1/24/2022	E321812	F2_BPO											8.57														
1/25/2022	E321811	F2_ECIN	6.10	0.20		< 0.10		< 10	2000	< 0.20			11.13	0.101	1300	0.013		< 0.050		0.0254				0.00030		< 0.0050	< 0.00050
1/25/2022	E321791	F2_NWPI	14.8	< 0.10		7.15		< 10	1850	0.46			8.53	0.346	1140	< 0.010		< 0.050		0.165				0.0402		< 0.0050	0.00068
1/25/2022	E321812	F2_BPO	8.09	< 0.10		14.3		< 10	1990	< 0.20			8.75	0.220	1300	0.033		< 0.050		0.0611				0.408		< 0.0050	< 0.00050
1/25/2022	E321812	F2_BPO											9.16														
1/26/2022	E321811	F2_ECIN	5.20						1980				12.49	< 0.100													
1/26/2022	E321791	F2_NWPI	13.7						1820				9.95	0.249													
1/26/2022	E321812	F2_BPO	7.02					< 10	1970				8.82	0.159													
1/26/2022	E321812	F2_BPO											8.8														
1/26/2022	E321812	F2_BPO											8.84														
1/27/2022	E321811	F2_ECIN	6.07	0.20		< 0.10		< 10	1970	< 0.20		< 0.010	11.51	< 0.100	1330	0.014		< 0.050		0.0274				0.00044		< 0.0050	< 0.00050
1/27/2022	E321791	F2_NWPI	14.8	< 0.10		6.85		< 10	1830	0.49			9.14	0.345	1160	< 0.010		< 0.050		0.175				0.0395		< 0.0050	0.00074
1/27/2022	E321814	EV_ECOUT										< 0.010	11.6														
1/27/2022	E321812	F2_BPO	8.05	< 0.10		13.9		< 10	1970	< 0.20		< 0.010	8.86	0.216	1300	0.018		< 0.050		0.0622				0.371		< 0.0050	< 0.00050
1/27/2022	E321812	F2_BPO																									
1/27/2022	0200097	EV_EC1										< 0.010	13.72														
1/27/2022	E321812	F2_BPO											8.33														
1/28/2022	E321811	F2_ECIN	4.91						1970				11.85	< 0.100													
1/28/2022	E321791	F2_NWPI	15.1						1840				9.29	0.252													
1/28/2022	E321812	F2_BPO											9.05														
1/28/2022	E321812	F2_BPO	6.54					< 10	1950				9.25	0.154													
1/28/2022	E321812	F2_BPO											9.34														
1/29/2022	E321811	F2_ECIN	7.67						1980				12.08	< 0.100													
1/29/2022	E321791	F2_NWPI	12.4						1850				9.11	0.244													
1/29/2022	E321812	F2_BPO	6.54					< 10	1940				9.36	0.156													
1/29/2022	E321812	F2_BPO											9.36														
1/29/2022	E321812	F2_BPO											9.25														
1/30/2022	E321811	F2_ECIN	6.50						2000				11.08	0.111													
1/30/2022	E321791	F2_NWPI	14.6						1870				9.07	0.352													
1/30/2022	E321812	F2_BPO	8.16					< 10	1950				9.3	0.225													
1/30/2022	E321812	F2_BPO											9.3														
1/30/2022	E321812	F2_BPO											9.36														
1/31/2022	E300091	EV_MC2	3.83	0.12	0.18	0.12	0.16	< 10	550	< 0.20	< 0.50	< 0.010	12.44	0.102	278	< 0.010	0.037	< 0.050	< 0.050	0.0111	0.0121	27.8		0.00258	0.00432	< 0.0050	< 0.00050
1/31/2022	E321812	F2_BPO	8.46	< 0.10	< 0.20	14.4	15.1	12	1940	< 0.20	< 1.00	< 0.010	9.59	0.234	1270	0.018	0.188	< 0.050	< 0.100	0.0589	0.0610	162		0.373	0.396	< 0.0050	< 0.00050
1/31/2022	E321812	F2_BPO											8.85														
1/31/2022	0200097	EV_EC1	6.32	< 0.10	< 0.20	3.87	4.19	< 10	1860	< 0.20	< 1.00	< 0.010	12.79	0.140	1200	< 0.010	< 0.020	< 0.050	< 0.100	0.0489	0.0532	160		0.0769	0.0811	< 0.0050	< 0.00050
1/31/2022	0200203	EV_MC3	0.98	0.13	0.18	< 0.10	< 0.10	< 10	400	< 0.20	< 0.50	< 0.010	12.87	0.091	210	< 0.010	0.016	< 0.050	< 0.050	0.0058	0.0060	17.9		0.00027	0.00071	< 0.0050	< 0.00050
1/31/2022	310168	EV_MC2A	1.70	0.13	0.19	0.13	0.17	< 10	506	< 0.20	< 0.50	< 0.010	12.83	0.105	258	< 0.010	0.026	< 0.050	< 0.050	0.0083	0.0090	26.6		0.00369	0.00522	< 0.0050	< 0.00050
1/31/2022	E321811	F2_ECIN	6.04	0.21	0.24	< 0.10	< 0.10	< 10	1990	< 0.20	< 0.50	< 0.010	11.82	0.100	1260	< 0.010	< 0.010	0.648	0.141	0.0247	0.0274	159		0.00016	0.00021	< 0.0050	< 0.00050
1/31/2022	E321791	F2_NWPI	14.6	< 0.10	< 0.10	6.54	7.76	< 10	1850	0.46	0.69	0.030	8.93	0.336	1130	0.011	0.038	< 0.050	0.057	0.175	0.179	148		0.0352	0.0426	< 0.0050	0.00066
1/31/2022	E321814	EV_ECOUT	5.78	0.13	< 0.20	5.95	6.54	< 10	1960	< 0.20	< 1.00	< 0.010	12.07	0.115	1280	< 0.010	0.071	< 0.050	< 0.100	0.0408	0.0417	168		0.158	0.175	< 0.0050	< 0.00050
1/31/2022	200393	EV_ER1	3.22	0.19	0.27	< 0.10	< 0.10	< 10	504	< 0.20	< 0.50		12.7	0.144	245	< 0.010	0.012	< 0.050	< 0.050	0.0091	0.0104	24.8		0.00136	0.00226	< 0.0050	0.00071
1/31/2022	E321812	F2_BPO											9.05														
2/1/2022	E321812	F2_BPO											9.81														
2/1/2022	E206231	EV_GT1	2.14	< 0.20	0.22	< 0.20	< 0.20	< 10	1930	< 0.40	< 1.00	< 0.010	10.96	0.176	1310	< 0.020	< 0.020	< 0.100	< 0.100	0.0646	0.0653	169		0.00064	0.00107	< 0.0050	0.00074
2/1/2022	E321812	F2_BPO	7.99	< 0.10		14.1		< 10	1940	< 0.20			10.11	0.226	1340	0.014		< 0.050		0.0617				0.366		< 0.0050	< 0.00050

		Parameter	Chloride	Chromium	Chromium	Cobalt	Cobalt	COD	Conductivity, Lab	Copper	Copper	Dimethylseleneoxide	Dissolved Oxygen, Field	Fluoride	Hardness, Total or Dissolved CaCO3	Iron	Iron	Lead	Lead	Lithium	Lithium	Magnesium	Magnesium	Manganese	Manganese	Mercury	Mercury
		Fraction	D	D	T	D	T	N	N	D	T	D	N	N	D	D	T	D	T	D	T	T	T	D	T	D	T
		Unit	mg/l	ug/l	ug/l	ug/l	ug/l	mg/l	us/cm	ug/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	ppm	mg/l	mg/l	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2/1/2022	E102685	EV_BC1	30.0	< 0.20	< 0.20	0.39	0.40	< 10	2360	< 0.40	< 1.00	< 0.010	10.86	0.226	1630	< 0.020	0.068	< 0.100	< 0.100	0.166	0.172	212		0.0250	0.0274	< 0.0050	< 0.00050
2/1/2022	E300091	EV_MC2	4.45	0.13	0.20	0.15	0.16		599	< 0.20	< 0.50		11.89	0.112	325	< 0.010	0.016	< 0.050	< 0.050	0.0143	0.0146	30.6		0.00326	0.00396	< 0.0050	< 0.00050
2/1/2022	E321811	F2_ECIN	6.00	0.20		< 0.10		< 10	2000	< 0.20			28.14	0.102	1360	< 0.010		< 0.050		0.0269				0.00033		< 0.0050	< 0.00050
2/1/2022	E321791	F2_NWPI	14.5	< 0.10		6.11		< 10	1860	0.45			8.75	0.340	1150	0.016		< 0.050		0.172				0.0323		< 0.0050	0.00070
2/1/2022	E321812	F2_BPO											9.21														
2/2/2022	E321791	F2_NWPI	14.5						1840				8.74	0.309													
2/2/2022	E321812	F2_BPO											8.77														
2/2/2022	E321812	F2_BPO	8.02					< 10	1960				9.6	0.196													
2/2/2022	E321812	F2_BPO											8.82														
2/2/2022	E321811	F2_ECIN	14.2						1990				11.59	0.150													
2/3/2022	E321811	F2_ECIN	5.63	0.28		< 0.10		< 10	2000	0.71		< 0.010	10.57	< 0.100	1340	< 0.010		< 0.050		0.0280				0.00012		< 0.0050	< 0.00050
2/3/2022	E321791	F2_NWPI	14.8	< 0.10		6.93		< 10	1890	0.46			8.29	0.281	1180	< 0.010		< 0.050		0.172				0.0380		< 0.0050	0.00064
2/3/2022	E321812	F2_BPO	7.65	< 0.10		14.5		< 10	1970	< 0.20		< 0.010	8.47	0.174	1250	0.032		< 0.050		0.0515				0.375		< 0.0050	< 0.00050
2/3/2022	E321812	F2_BPO											8.36														
2/3/2022	E321814	EV_ECOUT										< 0.010	11.23														
2/3/2022	0200097	EV_EC1											13.26														
2/3/2022	0200097	EV_EC1										< 0.010															
2/3/2022	E321812	F2_BPO											9.3														
2/4/2022	E321811	F2_ECIN	6.35						2010				10.31	< 0.100													
2/4/2022	E321791	F2_NWPI	15.1						1870				8.51	0.318													
2/4/2022	E321812	F2_BPO	8.46					< 10	1990				8.22	0.205													
2/4/2022	E321812	F2_BPO											8.22														
2/4/2022	E321812	F2_BPO											8.25														
2/5/2022	E321811	F2_ECIN	6.04						1960				10.07	< 0.100													
2/5/2022	E321791	F2_NWPI	14.7						1830				8.04	0.301													
2/5/2022	E321812	F2_BPO	7.92					< 10	1930				8.55	0.186													
2/5/2022	E321812	F2_BPO											8.42														
2/5/2022	E321812	F2_BPO											8.66														
2/6/2022	E321811	F2_ECIN	6.16						1980				10.34	< 0.100													
2/6/2022	E321791	F2_NWPI	14.8						1860				8.2	0.296													
2/6/2022	E321812	F2_BPO	8.00					< 10	1950				9.18	0.189													
2/6/2022	E321812	F2_BPO											9.17														
2/6/2022	E321812	F2_BPO											9.35														
2/7/2022	E321811	F2_ECIN	9.32	0.18	0.21	< 0.10	< 0.10	< 10	1960	< 0.20	1.19	< 0.010	10.24	0.119	1380	< 0.010	< 0.010	< 0.050	< 0.050	0.0291	0.0272	154		0.00017	0.00014	< 0.0050	< 0.00050
2/7/2022	E321791	F2_NWPI	14.9	< 0.10	< 0.10	6.91	7.71	< 10	1850	0.44	0.62	0.051	7.91	0.301	1120	< 0.010	0.037	< 0.050	0.060	0.161	0.156	144		0.0369	0.0434	< 0.0050	0.00059
2/7/2022	E321812	F2_BPO	8.18	< 0.20	< 0.20	16.1	17.0	< 10	1960	< 0.40	< 1.00	< 0.010	9.57	0.192	1450	0.022	0.178	< 0.100	< 0.100	0.0665	0.0641	181		0.438	0.409	< 0.0050	< 0.00050
2/7/2022	E321812	F2_BPO											9.61														
2/7/2022	E321812	F2_BPO											9.57														
2/8/2022	E321811	F2_ECIN	5.57	0.21		< 0.10		< 10	1970	< 0.20			11.3	< 0.100	1280	< 0.010		< 0.050		0.0276				0.00017		< 0.0050	0.00054
2/8/2022	E321791	F2_NWPI	14.8	< 0.10		6.80		< 10	1840	0.44			8.28	0.278	1120	< 0.010		< 0.050		0.165				0.0389		< 0.0050	0.00074
2/8/2022	E321814	EV_ECOUT	6.83	< 0.10	0.12	12.8	14.0		1980	< 0.20	< 0.50		10.51	< 0.100	1280	0.023	0.154	< 0.050	0.056	0.0545	0.0628	163		0.333	0.361	< 0.0050	< 0.00050
2/8/2022	E321812	F2_BPO											9.09														
2/8/2022	E321812	F2_BPO	7.78	< 0.10		16.1		< 10	1960	< 0.20			9.2	0.179	1300	0.028		< 0.050		0.0619				0.437		< 0.0050	< 0.00050
2/8/2022	0200203	EV_MC3	1.18	0.14	0.17	< 0.10	< 0.10		393	< 0.20	< 0.50		12.01	0.134	200	< 0.010	0.016	< 0.050	< 0.050	0.0054	0.0061	17.4		0.00027	0.00088	< 0.0050	< 0.00050
2/8/2022	200393	EV_ER1	3.60	0.25	0.30	< 0.10	< 0.10		511	< 0.20	< 0.50	< 0.010	12.6	0.188	280	< 0.010	0.013	< 0.050	< 0.050	0.0109	0.0110	24.1		0.00142	0.00199	< 0.0050	< 0.00050
2/8/2022	E206231	EV_GT1	6.64	< 0.10	< 0.20	0.11	< 0.20		1780	0.35	< 1.00		10.52	0.211	1110	< 0.010	0.034	< 0.050	< 0.100	0.0677	0.0761	155		0.00413	0.00465	< 0.0050	0.00050
2/8/2022	E102685	EV_BC1	16.2	< 0.20	< 0.20	0.21	0.24		2070	0.48	< 1.00		11.05	< 0.100	1310	< 0.020	0.055	< 0.100	< 0.100	0.119	0.129	190		0.0110	0.0123	< 0.0050	< 0.00050
2/8/2022	E300091	EV_MC2	3.56	0.28	0.21	0.13	0.14		555	< 0.20	< 0.50	< 0.010	12.23	0.133	326	< 0.010	0.025	< 0.050	< 0.050	0.0138	0.0128	29.7		0.00272	0.00366	< 0.0050	0.00063

Parameter			Chloride	Chromium	Chromium	Cobalt	Cobalt	COD	Conductivity, Lab	Copper	Copper	Dimethylseleneoxide	Dissolved Oxygen, Field	Fluoride	Hardness, Total or Dissolved CaCO3	Iron	Iron	Lead	Lead	Lithium	Lithium	Magnesium	Magnesium	Manganese	Manganese	Mercury	Mercury
Fraction			D	D	T	D	T	N	N	D	T	D	N	N	D	D	T	D	T	D	T	T	T	D	T	D	T
Unit			mg/l	ug/l	ug/l	ug/l	ug/l	mg/l	us/cm	ug/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	ppm	mg/l	mg/l	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2/8/2022	E321812	F2_BPO											9.2														
2/9/2022	E321811	F2_ECIN	5.95						1970				13.15	0.152													
2/9/2022	E321791	F2_NWPI	15.2						1840				10.66	0.411													
2/9/2022	E321812	F2_BPO	8.56					< 10	1990				9.24	0.288													
2/9/2022	E321812	F2_BPO											9.31														
2/9/2022	E321812	F2_BPO											8.59														
2/10/2022	E321811	F2_ECIN	5.60	0.18		< 0.10		< 10	1990	0.27			11.13	0.174	1390	0.022		< 0.050		0.0277				0.00042		< 0.0050	< 0.00050
2/10/2022	E321791	F2_NWPI	15.0	< 0.20		7.90		< 10	1870	0.51			9.26	0.320	1270	< 0.020		< 0.100		0.195				0.0478		< 0.0050	0.00093
2/10/2022	E321812	F2_BPO	7.92	< 0.20		17.0		< 10	1980	< 0.40			9.11	0.264	1480	0.025		< 0.100		0.0759				0.434		< 0.0050	< 0.00050
2/10/2022	E321812	F2_BPO											8.8														
2/10/2022	E321812	F2_BPO											8.72														
2/11/2022	E321811	F2_ECIN	6.42						1940				13.78	0.182													
2/11/2022	E321791	F2_NWPI	15.4						1820				9.39	0.376													
2/11/2022	E321812	F2_BPO	8.39					< 10	1960				10.34	0.285													
2/11/2022	E321812	F2_BPO											8.81														
2/11/2022	E321812	F2_BPO											8.78														
2/12/2022	E321811	F2_ECIN	5.56						1980				12.21	< 0.100													
2/12/2022	E321791	F2_NWPI	14.9						1850				9.74	0.264													
2/12/2022	E321812	F2_BPO	7.81					< 10	2020				8.72	0.172													
2/12/2022	E321812	F2_BPO											8.84														
2/12/2022	E321812	F2_BPO											8.55														
2/13/2022	E321811	F2_ECIN	6.02						1980				12.54	< 0.100													
2/13/2022	E321791	F2_NWPI	14.9						1860				9.5	0.305													
2/13/2022	E321812	F2_BPO	8.06					< 10	1990				8.45	0.194													
2/13/2022	E321812	F2_BPO											8.89														
2/13/2022	E321812	F2_BPO											8.32														
2/14/2022	E321812	F2_BPO	7.71	< 0.10	< 0.10	15.5	16.4	< 10	1920	< 0.20	< 0.50	< 0.010	8.41	0.161	1330	0.029	0.209	< 0.050	0.095	0.0634	0.0695	175		0.416	0.432	< 0.0050	< 0.00050
2/14/2022	E321811	F2_ECIN	4.33		0.26	< 0.10	< 0.10	< 10	1920	0.25	< 0.50	< 0.010	13.05	< 0.100	1300	< 0.010	< 0.010	< 0.050	< 0.050	0.0269	0.0295	172		0.00052	0.00015	< 0.0050	< 0.00050
2/14/2022	E321791	F2_NWPI	14.9	< 0.10	< 0.20	7.42	9.12	< 10	1790	0.48	< 1.00	0.039	9.54	0.260	1140	0.014	0.055	< 0.050	0.111	0.175	0.198	161		0.0455	0.0563	< 0.0050	0.00063
2/14/2022	E321812	F2_BPO											8.52														
2/14/2022	0200097	EV_EC1	8.27	0.11	< 0.20	3.16	3.90	< 10	1860	< 0.20	< 1.00	< 0.010	14.23	0.168	1200	< 0.010	< 0.020	< 0.050	< 0.100	0.0490	0.0596	186		0.0569	0.0700	< 0.0050	< 0.00050
2/14/2022	0200203	EV_MC3	1.30	0.14	0.20	< 0.10	< 0.10	< 10	394	< 0.20	< 0.50	< 0.010	15.61	0.122	197	< 0.010	0.016	< 0.050	< 0.050	0.0052	0.0059	18.5		0.00029	0.00072	< 0.0050	0.00054
2/14/2022	310168	EV_MC2A	2.12	0.11	0.16	0.13	0.16	< 10	518	< 0.20	< 0.50	< 0.010	16.44	0.131	259	< 0.010	0.011	< 0.050	< 0.050	0.0082	0.0097	28.0		0.00332	0.00480	< 0.0050	< 0.00050
2/14/2022	200393	EV_ER1	3.93	0.33	0.28	< 0.10	< 0.10	< 10	514	< 0.20	< 0.50		16.9	0.186	253	0.010	0.028	< 0.050	< 0.050	0.0091	0.0104	25.9		0.00176	0.00222	< 0.0050	< 0.00050
2/14/2022	E321814	EV_ECOUT	6.76	0.14	0.20	4.58	5.54	< 10	1970	< 0.20	< 1.00	< 0.010	10.61	0.135	1240	< 0.010	0.063	< 0.050	< 0.100	0.0342	0.0424	175		0.117	0.138	< 0.0050	< 0.00050
2/14/2022	E300091	EV_MC2	4.15	0.13	0.14	< 0.10	0.13	< 10	592	0.29	< 0.50	< 0.010	14.92	0.136	299	< 0.010	0.012	< 0.050	< 0.050	0.0120	0.0138	33.6		0.00219	0.00268	< 0.0050	< 0.00050
2/14/2022	E321812	F2_BPO											8.37														
2/15/2022	E321811	F2_ECIN	5.13	0.18		< 0.10		< 10	1980	< 0.20			11.8	< 0.100	1310	< 0.010		< 0.050		0.0287				0.00018		< 0.0050	< 0.00050
2/15/2022	E321791	F2_NWPI	13.9	< 0.10		7.50		< 10	1850	0.51			8.9	0.268	1160	0.012		< 0.050		0.182				0.0461		< 0.0050	0.00075
2/15/2022	E321812	F2_BPO	7.11	< 0.10		15.2		< 10	1960	< 0.20			8.26	0.171	1310	0.020		< 0.050		0.0648				0.404		< 0.0050	< 0.00050
2/15/2022	E321812	F2_BPO											8.26														
2/15/2022	E102685	EV_BC1	13.7	< 0.20	< 0.20	< 0.20	< 0.20	< 10	1980	< 0.40	< 1.00	< 0.010	12.03	0.203	1360	< 0.020	0.025	< 0.100	< 0.100	0.102	0.106	192		0.00568	0.00570	< 0.0050	< 0.00050
2/15/2022	E206231	EV_GT1	9.40	< 0.20	< 0.20	< 0.20	< 0.20	< 10	1920	0.55	< 1.00	< 0.010	11.8	0.213	1310	0.026	0.067	< 0.100	< 0.100	0.0880	0.0882	181		0.00575	0.00634	< 0.0050	< 0.00050
2/15/2022	E300091	EV_MC2	6.29	0.15	0.19	0.10	0.11		626	< 0.20	< 0.50		11.51	0.124	347	< 0.010	0.016	0.080	< 0.050	0.0156	0.0159	35.9		0.00222	0.00303	< 0.0050	< 0.00050
2/15/2022	E321812	F2_BPO											8.41														
2/16/2022	E321811	F2_ECIN	5.09						2000				11.08	< 0.100													
2/16/2022	E321791	F2_NWPI	13.6						1880				8.56	0.262													
2/16/2022	E321812	F2_BPO	6.99					< 10	1940				8.56	0.171													

Parameter			Chloride	Chromium	Chromium	Cobalt	Cobalt	COD	Conductivity, Lab	Copper	Copper	Dimethylseleneoxide	Dissolved Oxygen, Field	Fluoride	Hardness, Total or Dissolved CaCO3	Iron	Iron	Lead	Lead	Lithium	Lithium	Magnesium	Magnesium	Manganese	Manganese	Mercury	Mercury
Fraction			D	D	T	D	T	N	N	D	T	D	N	N	D	D	T	D	T	D	T	T	T	D	T	D	T
Unit			mg/l	ug/l	ug/l	ug/l	ug/l	mg/l	us/cm	ug/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	ppm	mg/l	mg/l	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2/16/2022	E321812	F2_BPO											8.56														
2/16/2022	0200097	EV_EC1	7.22	0.12	0.22	2.56	3.11		1860	1.31	< 0.50		11.73	0.142	1240	0.012	< 0.010	0.068	< 0.050	0.0506	0.0501	172		0.0462	0.0543	< 0.0050	< 0.00050
2/16/2022	E321812	F2_BPO											8.65														
2/17/2022	E321811	F2_ECIN	5.24	0.16		< 0.10		< 10	1990	< 0.20			11.49	< 0.100	1240	< 0.010		< 0.050		0.0266				0.00029		< 0.0050	< 0.00050
2/17/2022	E321791	F2_NWPI	14.2	< 0.10		7.65		< 10	1870	0.40			11.29	0.266	1170	< 0.010		< 0.050		0.181				0.0490		< 0.0050	0.00084
2/17/2022	E321812	F2_BPO	7.15	< 0.10		15.1		< 10	1950	< 0.20			10.54	0.163	1400	0.019		< 0.050		0.0653				0.394		< 0.0050	< 0.00050
2/17/2022	E321812	F2_BPO											9.43														
2/17/2022	E321812	F2_BPO											9.47														
2/18/2022	E321811	F2_ECIN	5.34						1980				11.26	0.131													
2/18/2022	E321791	F2_NWPI	14.6						1860				8.61	0.413													
2/18/2022	E321812	F2_BPO	7.39					< 10	1950				9.39	0.210													
2/18/2022	E321812	F2_BPO											8.95														
2/18/2022	E321812	F2_BPO											8.67														
2/19/2022	E321811	F2_ECIN	5.10						1970				11.2	< 0.100													
2/19/2022	E321791	F2_NWPI	13.9						1840				7.91	0.258													
2/19/2022	E321812	F2_BPO	7.20					< 10	1980				9.39	0.166													
2/19/2022	E321812	F2_BPO											8.89														
2/19/2022	E321812	F2_BPO											9.09														
2/20/2022	E321811	F2_ECIN	6.15						1990				11.12	< 0.100													
2/20/2022	E321791	F2_NWPI	15.8						1860				7.85	0.303													
2/20/2022	E321812	F2_BPO	8.46					< 10	1980				9.42	0.192													
2/20/2022	E321812	F2_BPO											8.79														
2/20/2022	E321812	F2_BPO											9.12														
2/21/2022	E321811	F2_ECIN	6.23	0.14	< 0.20	< 0.10	< 0.10	< 10	1990	< 0.20	< 0.50	< 0.010	10.92	< 0.100	1350	< 0.010	< 0.010	< 0.050	< 0.050	0.0298	0.0279	167		0.00023	0.00026	< 0.0050	< 0.00050
2/21/2022	E321791	F2_NWPI	15.9	< 0.10	< 0.10	7.44	8.19	< 10	1850	0.44	0.60	0.048	7.52	0.306	1180	< 0.010	0.033	< 0.050	0.053	0.180	0.181	151		0.0473	0.0535	< 0.0050	0.00065
2/21/2022	E321812	F2_BPO	8.66	< 0.10	< 0.10	15.4	17.0	< 10	1990	< 0.20	< 0.50	< 0.010	9.34	0.190	1380	0.017	0.199	< 0.050	0.100	0.0681	0.0667	175		0.427	0.443	< 0.0050	< 0.00050
2/21/2022	E321812	F2_BPO											9.54														
2/21/2022	E321812	F2_BPO											9.83														
2/22/2022	E321811	F2_ECIN	5.06	0.20		< 0.10		< 10	1910	< 0.20			10.53	< 0.100	1320	< 0.010		< 0.050		0.0256				0.00027		< 0.0050	< 0.00050
2/22/2022	E321791	F2_NWPI	13.9	< 0.10		8.64		< 10	1800	0.48			6.9	0.259	1200	< 0.010		< 0.050		0.176				0.0528		< 0.0050	0.00074
2/22/2022	E321812	F2_BPO											9.44														
2/22/2022	E321812	F2_BPO	7.31	< 0.10		16.7		10	1940	< 0.20			9.32	0.151	1330	0.021		< 0.050		0.0603				0.409		< 0.0050	< 0.00050
2/22/2022	E300091	EV_MC2	9.12	0.14	0.27	0.23	0.24		788	0.22	< 0.50		12.26	0.142	434	< 0.010	0.017	< 0.050	< 0.050	0.0202	0.0249	46.7		0.00554	0.00613	< 0.0050	0.00064
2/22/2022	E321812	F2_BPO											9.4														
2/22/2022	E321812	F2_BPO											9.39														
2/23/2022	E321811	F2_ECIN	5.98						1980				11.46	< 0.100													
2/23/2022	E321791	F2_NWPI	15.5						1870				7.58	0.309													
2/23/2022	E321812	F2_BPO	8.34					< 10	1960				8.9	0.190													
2/23/2022	E321812	F2_BPO											8.98														
2/23/2022	E321812	F2_BPO											9.66														
2/24/2022	E321811	F2_ECIN	5.32	0.22		< 0.10		< 10	1970	< 0.20			10.35	< 0.100	1370	< 0.010		< 0.050		0.0293				0.00015		< 0.0050	< 0.00050
2/24/2022	E321791	F2_NWPI	14.7	< 0.10		7.65		21	1840	0.43			7.03	0.272	1140	< 0.010		< 0.050		0.180				0.0495		< 0.0050	0.00088
2/24/2022	E321812	F2_BPO											8.75														
2/24/2022	E321812	F2_BPO	7.74	< 0.10		14.4		11	1950	< 0.20			8.75	0.167	1360	0.031		< 0.050		0.0672				0.371		< 0.0050	< 0.00050
2/24/2022	E321812	F2_BPO											8.39														
2/25/2022	E321811	F2_ECIN	5.57						1970				10.35	< 0.100													
2/25/2022	E321791	F2_NWPI	15.4						1850				7.01	0.271													
2/25/2022	E321812	F2_BPO	7.95					< 10	1940				9.34	0.164													

Parameter			Chloride	Chromium	Chromium	Cobalt	Cobalt	COD	Conductivity, Lab	Copper	Copper	Dimethylseleneoxide	Dissolved Oxygen, Field	Fluoride	Hardness, Total or Dissolved CaCO3	Iron	Iron	Lead	Lead	Lithium	Lithium	Magnesium	Magnesium	Manganese	Manganese	Mercury	Mercury
Fraction			D	D	T	D	T	N	N	D	T	D	N	N	D	D	T	D	T	D	T	T	T	D	T	D	T
Unit			mg/l	ug/l	ug/l	ug/l	ug/l	mg/l	us/cm	ug/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	ppm	mg/l	mg/l	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2/25/2022	E321812	F2_BPO											9.34														
2/25/2022	E321812	F2_BPO											9.32														
2/26/2022	E321811	F2_ECIN	6.01						1980				11.04	< 0.100													
2/26/2022	E321791	F2_NWPI	15.4						1870				7.13	0.311													
2/26/2022	E321812	F2_BPO	8.41					< 10	1970				9.46	0.196													
2/26/2022	E321812	F2_BPO											9.37														
2/27/2022	E321811	F2_ECIN	5.25						1980				10.93	< 0.100													
2/27/2022	E321791	F2_NWPI	14.4						1850				7.07	0.262													
2/27/2022	E321812	F2_BPO											8.85														
2/27/2022	E321812	F2_BPO	7.63					< 10	1960				8.89	0.169													
2/27/2022	E321812	F2_BPO											8.88														
2/28/2022	E321812	F2_BPO	8.38	< 0.10	0.35	15.6	15.8	< 10	1950	< 0.20	< 0.50	< 0.010	8.75	0.194	1410	0.026	0.261	< 0.050	0.103	0.0651	0.0740	166		0.364	0.364	< 0.0050	< 0.00050
2/28/2022	E321811	F2_ECIN	5.97	0.21	1.30	< 0.10	< 0.10	< 10	1960	< 0.20	< 0.50	< 0.010	10.46	< 0.100	1450	0.012	0.022	< 0.050	< 0.050	0.0277	0.0301	164		0.00025	0.00047	< 0.0050	< 0.00050
2/28/2022	E321791	F2_NWPI	15.6	< 0.10	< 0.10	7.98	8.86	< 10	1860	0.48	0.67	0.039	6.87	0.305	1240	0.014	0.039	< 0.050	0.066	0.185	0.194	149		0.0525	0.0576	< 0.0050	0.00070
2/28/2022	E321812	F2_BPO											8.34														
2/28/2022	0200097	EV_EC1	7.29	< 0.20	< 0.10	3.52	3.68	< 10	1880	< 0.40	< 0.50	0.015	11.02	0.145	1330	< 0.020	< 0.010	< 0.100	< 0.050	0.0532	0.0599	162		0.0627	0.0624	< 0.0050	< 0.00050
2/28/2022	200393	EV_ER1	4.03	0.25	0.28	< 0.10	< 0.10	< 10	509	< 0.20	< 0.50		13.05	0.143	299	< 0.010	0.015	< 0.050	< 0.050	0.0104	0.0110	26.1		0.00163	0.00254	< 0.0050	< 0.00050
2/28/2022	E321812	F2_BPO											8.37														
2/28/2022	E321814	EV_ECOUT	8.83	< 0.10	< 0.20	10.2	9.99	< 10	1960	< 0.20	< 1.00	< 0.010	10.14	0.139	1420	0.015	0.143	< 0.050	< 0.100	0.0539	0.0545	168		0.247	0.227	< 0.0050	< 0.00050
3/1/2022	0200203	EV_MC3	2.06	0.21	0.17	< 0.10	< 0.10	< 10	388	0.25	< 0.50	< 0.010	12.78	0.092	225	< 0.010	< 0.010	< 0.050	< 0.050	0.0057	0.0061	17.2		0.00053	0.00057	< 0.0050	< 0.00050
3/1/2022	E321812	F2_BPO	7.56	< 0.10		15.0		< 10	1930	< 0.20			8.71	0.166	1300	< 0.010		< 0.050		0.0676				0.352		< 0.0050	0.00075
3/1/2022	E321811	F2_ECIN	5.37	0.19		< 0.10		< 10	1950	< 0.20			13.54	< 0.100	1290	< 0.010		< 0.050		0.0270				0.00023		< 0.0050	< 0.00050
3/1/2022	E321791	F2_NWPI	14.4	< 0.10		7.94		< 10	1840	0.52			7.09	0.266	1120	0.010		< 0.050		0.174				0.0523		< 0.0050	0.00071
3/1/2022	E300091	EV_MC2	6.21	0.13	0.36	0.12	0.17		568	< 0.20	< 0.50		12.01	0.104	307	< 0.010	0.036	< 0.050	0.050	0.0131	0.0147	32.2		0.00247	0.00368	< 0.0050	< 0.00050
3/1/2022	E321812	F2_BPO											8.41														
3/1/2022	310168	EV_MC2A	2.48	0.13	0.14	0.16	0.17	< 10	515	< 0.20	< 0.50	< 0.010	13.39	0.105	303	< 0.010	0.010	< 0.050	< 0.050	0.0093	0.0099	27.9		0.00336	0.00353	< 0.0050	< 0.00050
3/1/2022	E102685	EV_BC1	18.7	< 0.20	0.21	0.25	0.35	12	2010	< 0.40	< 1.00	< 0.010	11.22	0.185	1350	< 0.020	0.140	< 0.100	0.176	0.107	0.124	211		0.0101	0.0135	< 0.0050	0.00099
3/1/2022	E206231	EV_GT1	7.40	< 0.10	0.94	0.11	< 0.20	10	1870	0.33	< 1.00	0.014	10.23	0.184	1220	< 0.010	0.109	< 0.050	< 0.100	0.0708	0.0902	192		0.00416	0.00522	< 0.0050	0.00064
3/1/2022	E300091	EV_MC2	4.58	0.14	0.17	0.12	0.15	< 10	570	0.26	< 0.50	< 0.010	12.69	0.106	332	< 0.010	0.013	< 0.050	< 0.050	0.0130	0.0138	32.3		0.00260	0.00304	< 0.0050	< 0.00050
3/1/2022	E321812	F2_BPO											8.51														
3/2/2022	E321811	F2_ECIN	5.02	0.17	0.20	< 0.10	< 0.10		1980	< 0.20	< 0.50	< 0.010	10.31	< 0.100	1380	< 0.010	0.012	< 0.050	< 0.050	0.0248	0.0287	156		0.00017	0.00023	< 0.0050	< 0.00050
3/2/2022	E321791	F2_NWPI	13.9	< 0.10	< 0.10	8.11	8.94		1850	0.48	0.62	0.036	6.91	0.265	1220	< 0.010	0.033	< 0.050	0.058	0.174	0.188	142		0.0529	0.0580	< 0.0050	0.00076
3/2/2022	E321812	F2_BPO	7.31	< 0.10	0.57	13.6	15.1	< 10	1940	< 0.20	< 0.50	< 0.010	8.98	0.175	1320	0.021	0.291	< 0.050	0.129	0.0590	0.0702	158		0.322	0.350	< 0.0050	< 0.00050
3/2/2022	E321812	F2_BPO											8.41														
3/2/2022	E321812	F2_BPO											8.65														
3/3/2022	E321811	F2_ECIN	5.51	0.23		< 0.10		< 10	1940	< 0.20			10.39	< 0.100	1390	0.012		< 0.050		0.0303				0.00032		< 0.0050	< 0.00050
3/3/2022	E321791	F2_NWPI	14.7	< 0.10		8.97		< 10	1820	0.50			7	0.245	1220	< 0.010		< 0.050		0.187				0.0588		< 0.0050	0.00061
3/3/2022	E321812	F2_BPO	7.93	< 0.10		15.5		< 10	1900	< 0.20			9.13	0.158	1400	0.026		< 0.050		0.0698				0.354		< 0.0050	0.00075
3/3/2022	E321812	F2_BPO											9.02														
3/3/2022	E321812	F2_BPO											8.43														
3/4/2022	E321811	F2_ECIN	6.20						1980				10.5	< 0.100													
3/4/2022	E321812	F2_BPO	8.47					< 10	1990				8.79	0.189													
3/4/2022	E321812	F2_BPO											8.69														
3/4/2022	E321791	F2_NWPI	16.2						1870				7.1	0.303													
3/4/2022	E321812	F2_BPO											8.7														
3/5/2022	E321811	F2_ECIN	5.44						1950				10.24	< 0.100													
3/5/2022	E321791	F2_NWPI	14.9						1840				6.79	0.289													
3/5/2022	E321812	F2_BPO	7.68					< 10	1880				9.64	0.187													

		Parameter	Chloride	Chromium	Chromium	Cobalt	Cobalt	COD	Conductivity, Lab	Copper	Copper	Dimethylseleneoxide	Dissolved Oxygen, Field	Fluoride	Hardness, Total or Dissolved CaCO3	Iron	Iron	Lead	Lead	Lithium	Lithium	Magnesium	Magnesium	Manganese	Manganese	Mercury	Mercury
		Fraction	D	D	T	D	T	N	N	D	T	D	N	N	D	D	T	D	T	D	T	T	T	D	T	D	T
		Unit	mg/l	ug/l	ug/l	ug/l	ug/l	mg/l	us/cm	ug/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	ppm	mg/l	mg/l	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
3/5/2022	E321812	F2_BPO											9.62														
3/6/2022	E321811	F2_ECIN	5.99						1980				10.25	< 0.100													
3/6/2022	E321791	F2_NWPI	15.6						1870				6.85	0.293													
3/6/2022	E321812	F2_BPO	8.22					< 10	1960				9.26	0.186													
3/6/2022	E321812	F2_BPO											8.6														
3/6/2022	E321812	F2_BPO											9.31														
3/7/2022	E321814	EV_ECOUT	8.04	0.24	0.12	10.2	9.94		1950	< 0.20	< 0.50		10.45	0.152	1280	0.020	0.223	< 0.050	0.096	0.0559	0.0544	163		0.236	0.232	< 0.0050	< 0.00050
3/7/2022	E321812	F2_BPO	9.21	< 0.10	< 0.10	13.8	14.5	< 10	1950	< 0.20	< 0.50		8.62	0.209	1270	0.028	0.306	< 0.050	0.167	0.0642	0.0663	158		0.321	0.336	< 0.0050	< 0.00050
3/7/2022	E321811	F2_ECIN	6.05	0.23	0.28	< 0.10	< 0.10	< 10	1990	< 0.20	< 0.50	< 0.010	10.53	< 0.100	1290	< 0.010	0.010	< 0.050	< 0.050	0.0281	0.0290	164		0.00024	0.00024	< 0.0050	< 0.00050
3/7/2022	E321791	F2_NWPI	15.8	< 0.10	< 0.10	8.33	9.33	< 10	1900	0.45	0.62	0.057	6.84	0.315	1140	< 0.010	0.033	< 0.050	< 0.050	0.176	0.180	146		0.0542	0.0600	< 0.0050	0.00057
3/7/2022	E321812	F2_BPO											8.32														
3/8/2022	E321811	F2_ECIN	5.44	0.22		< 0.10		< 10	1980	< 0.20			11.16	0.100	1330	< 0.010		< 0.050		0.0285				0.00023		< 0.0050	< 0.00050
3/8/2022	E321791	F2_NWPI	14.7	0.11		9.06		< 10	1880	0.54			7.3	0.316	1240	0.010		< 0.050		0.193				0.0578		< 0.0050	0.00084
3/8/2022	E300091	EV_MC2	4.63	0.12	0.15	0.10	0.12		567	< 0.20	< 0.50		12.5	0.114	321	< 0.010	< 0.010	< 0.050	< 0.050	0.0148	0.0137	29.4		0.00227	0.00253	< 0.0050	< 0.00050
3/8/2022	E321812	F2_BPO	7.60	< 0.10		14.7		< 10	1940	< 0.20			9.05	0.208	1320	0.034		< 0.050		0.0653				0.329		< 0.0050	< 0.00050
3/8/2022	E321812	F2_BPO											9.05														
3/8/2022	E321812	F2_BPO											9.25														
3/9/2022	E321811	F2_ECIN	6.76						1990				11.23	< 0.100													
3/9/2022	E321791	F2_NWPI	15.8						1900				7.24	0.302													
3/9/2022	E321812	F2_BPO											9.54														
3/9/2022	E321812	F2_BPO	8.30					< 10	1940				9.31	0.191													
3/9/2022	E321812	F2_BPO											9.74														
3/10/2022	E321791	F2_NWPI	15.9	< 0.10		8.47		< 10	1860	0.43			7.14	0.311	1190	< 0.010		< 0.050		0.186				0.0551		< 0.0050	0.00074
3/10/2022	E321812	F2_BPO	8.33	< 0.10		14.1		12	1930	< 0.20		< 0.010	9.75	0.197	1330	0.032		< 0.050		0.0628				0.326		< 0.0050	< 0.00050
3/10/2022	E321812	F2_BPO											8.99														
3/10/2022	E321811	F2_ECIN	6.01	0.20		< 0.10		< 10	2000	< 0.20			10.63	< 0.100	1440	< 0.010		< 0.050		0.0272				0.00027		< 0.0050	< 0.00050
3/10/2022	E321812	F2_BPO											9														
3/11/2022	E321811	F2_ECIN	6.10						1960				10.96	0.112													
3/11/2022	E321791	F2_NWPI	15.6						1840				6.96	0.314													
3/11/2022	E321812	F2_BPO	8.20					< 10	1920				9.1	0.208													
3/11/2022	E321812	F2_BPO											8.97														
3/12/2022	E321811	F2_ECIN	5.38						1980				10.64	< 0.100													
3/12/2022	E321791	F2_NWPI	14.7						1880				6.9	0.298													
3/12/2022	E321812	F2_BPO											8.79														
3/12/2022	E321812	F2_BPO	7.45					< 10	1960				8.55	0.192													
3/12/2022	E321812	F2_BPO											8.93														
3/13/2022	E321811	F2_ECIN	6.08						1980				10.7	< 0.100													
3/13/2022	E321791	F2_NWPI	15.1						1880				6.88	0.284													
3/13/2022	E321812	F2_BPO	7.90					< 10	1950				8.54	0.180													
3/13/2022	E321812	F2_BPO											8.29														
3/14/2022	E321812	F2_BPO	8.06	< 0.10	< 0.20	14.0	15.2	< 10	1940	< 0.20	< 1.00	< 0.010	8.88	0.183	1290	0.026	0.309	0.052	0.154	0.0614	0.0709	171		0.362	0.384	< 0.0050	< 0.00050
3/14/2022	E321812	F2_BPO											8.45														
3/14/2022	0200097	EV_EC1	7.75	< 0.10	0.12	3.03	3.29	< 10	1840	< 0.20	< 0.50	0.013	11.43	0.168	1130	< 0.010	< 0.010	< 0.050	< 0.050	0.0466	0.0496	166		0.0506	0.0542	< 0.0050	< 0.00050
3/14/2022	0200203	EV_MC3	1.50	0.13	0.17	< 0.10	< 0.10	< 10	368	< 0.20	< 0.50	< 0.010	13.69	0.116	174	< 0.010	0.017	< 0.050	0.084	0.0047	0.0054	15.9		0.00033	0.00089	< 0.0050	< 0.00050
3/14/2022	E321811	F2_ECIN	5.97	0.22	0.24	< 0.10	< 0.10	< 10	2010	< 0.20	1.17	< 0.010	10.67	< 0.100	1300	< 0.010	< 0.010	< 0.050	< 0.050	0.0278	0.0325	175		0.00022	0.00031	< 0.0050	< 0.00050
3/14/2022	310168	EV_MC2A	2.45	0.12	0.18	0.12	0.14	< 10	509	< 0.20	< 0.50	< 0.010	13.32	0.132	240	< 0.010	0.013	< 0.050	< 0.050	0.0080	0.0090	26.9		0.00319	0.00388	< 0.0050	0.00072
3/14/2022	E321791	F2_NWPI	15.4	< 0.10	0.10	8.89	9.87	< 10	1880	0.39	0.67	0.060	6.91	0.294	1140	< 0.010	0.046	< 0.050	0.075	0.182	0.197	148		0.0557	0.0632	< 0.0050	0.00135

		Parameter	Chloride	Chromium	Chromium	Cobalt	Cobalt	COD	Conductivity, Lab	Copper	Copper	Dimethylseleneoxide	Dissolved Oxygen, Field	Fluoride	Hardness, Total or Dissolved CaCO3	Iron	Iron	Lead	Lead	Lithium	Lithium	Magnesium	Magnesium	Manganese	Manganese	Mercury	Mercury
		Fraction	D	D	T	D	T	N	N	D	T	D	N	N	D	D	T	D	T	D	T	T	T	D	T	D	T
		Unit	mg/l	ug/l	ug/l	ug/l	ug/l	mg/l	us/cm	ug/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	ppm	mg/l	mg/l	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
3/14/2022	200393	EV_ER1	4.47	0.25	0.29	< 0.10	< 0.10	< 10	519	< 0.20	< 0.50		13.25	0.183	250	< 0.010	< 0.010	< 0.050	< 0.050	0.0097	0.0105	26.7		0.00153	0.00202	< 0.0050	< 0.00050
3/14/2022	E300091	EV_MC2	5.63	0.12	0.16	0.10	0.12	< 10	599	< 0.20	< 0.50	< 0.010	12.39	0.132	286	< 0.010	0.012	< 0.050	< 0.050	0.0129	0.0142	34.6		0.00209	0.00264	< 0.0050	< 0.00050
3/14/2022	E321814	EV_ECOUT	7.54	< 0.10	< 0.10	9.82	10.5	< 10	1920	< 0.20	< 0.50	< 0.010	10.56	0.152	1140	0.024	0.175	< 0.050	0.086	0.0481	0.0553	161		0.252	0.267	< 0.0050	< 0.00050
3/14/2022	E321812	F2_BPO											8.51														
3/15/2022	E321812	F2_BPO	6.62	< 0.10	< 0.10	12.7	13.4	< 10	1940	< 0.20	< 0.50		9.12	0.164	1140	0.020	0.264	< 0.050	0.100	0.0568	0.0666	160		0.325	0.347	< 0.0050	< 0.00050
3/15/2022	E321812	F2_BPO											8.25														
3/15/2022	E321811	F2_ECIN	4.87	0.17	0.25	< 0.10	< 0.10	< 10	2010	< 0.20	< 0.50		11.61	< 0.100	1150	0.012	< 0.010	< 0.050	< 0.050	0.0222	0.0295	171		0.00026	0.00023	< 0.0050	< 0.00050
3/15/2022	E321791	F2_NWPI	13.6	< 0.10	< 0.10	8.35	8.76	< 10	1900	0.50	0.57		6.9	0.253	1050	0.010	0.029	0.055	< 0.050	0.156	0.194	143		0.0529	0.0572	< 0.0050	0.00098
3/15/2022	E300091	EV_MC2	5.79	0.14	0.16	0.11	0.11		598	< 0.20	< 0.50		11.65	0.138	316	< 0.010	0.018	< 0.050	< 0.050	0.0134	0.0120	27.2		0.00227	0.00279	< 0.0050	< 0.00050
3/15/2022	E102685	EV_BC1	17.0	< 0.20	< 0.20	0.20	0.32	< 10	2020	< 0.40	< 1.00	0.011	11.37	0.188	1200	< 0.020	0.094	< 0.100	0.101	0.0998	0.126	225		0.00989	0.0132	< 0.0050	0.00059
3/15/2022	E206231	EV_GT1	8.92	< 0.10	0.31	0.15	0.34	< 10	1850	0.31	0.84	0.012	10.71	0.183	1010	0.012	0.170	< 0.050	0.246	0.0666	0.0899	204		0.00619	0.0104	< 0.0050	0.00110
3/15/2022	E321812	F2_BPO											8.44														
3/16/2022	E321811	F2_ECIN	5.77						1990				10.86	< 0.100													
3/16/2022	E321791	F2_NWPI	14.9						1880				6.97	0.292													
3/16/2022	E321812	F2_BPO											8.5														
3/16/2022	0200203	EV_MC3	1.64	0.14	0.14	< 0.10	< 0.10		381	0.25	< 0.50		12.75	0.097	211	< 0.010	0.026	< 0.050	< 0.050	0.0055	0.0060	15.4		0.00063	0.00118	< 0.0050	< 0.00050
3/16/2022	E321812	F2_BPO	7.85					< 10	1960				8.64	0.192													
3/16/2022	E206231	EV_GT1	10.3	0.35	0.50	0.24	0.47		1770	0.50	1.05		11.17	0.192	1150	< 0.010	0.223	< 0.050	0.422	0.0754	0.0829	148		0.00843	0.0112	< 0.0050	0.00145
3/16/2022	E102685	EV_BC1	21.7	< 0.10	0.14	0.22	0.36		2010	0.27	0.54		10.92	0.193	1320	< 0.010	0.110	< 0.050	0.168	0.110	0.111	163		0.0100	0.0133	< 0.0050	0.00094
3/16/2022	E300091	EV_MC2	6.04	0.10	0.12	0.10	0.12		583	< 0.20	< 0.50		12.03	0.107	331	< 0.010	0.015	< 0.050	< 0.050	0.0141	0.0154	30.0		0.00226	0.00285	< 0.0050	< 0.00050
3/16/2022	E321812	F2_BPO											8.49														
3/17/2022	E321811	F2_ECIN	5.82	0.18		< 0.10		< 10	1990	< 0.20			11.71	< 0.100	1310	< 0.010		< 0.050		0.0286				0.00018		< 0.0050	< 0.00050
3/17/2022	E321791	F2_NWPI	15.1	< 0.10		9.22		< 10	1880	0.41			7.35	0.305	1180	< 0.010		< 0.050		0.189				0.0587		0.0056	0.00081
3/17/2022	E321812	F2_BPO	7.70	< 0.10		13.7		< 10	1940	< 0.20			9.25	0.192	1300	0.031		< 0.050		0.0661				0.351		< 0.0050	< 0.00050
3/17/2022	E321812	F2_BPO											9.25														
3/17/2022	200393	EV_ER1	4.53	0.22	0.26	< 0.10	< 0.10		520	< 0.20	< 0.50		12.56	0.152	290	< 0.010	0.017	< 0.050	< 0.050	0.0110	0.0117	24.2		0.00169	0.00258	< 0.0050	< 0.00050
3/17/2022	0200097	EV_EC1	7.50	< 0.10	< 0.10	3.01	3.16		1860	< 0.20	< 0.50		11.51	0.146	1260	< 0.010	< 0.010	< 0.050	< 0.050	0.0563	0.0577	170		0.0520	0.0553	< 0.0050	< 0.00050
3/17/2022	E321812	F2_BPO											8.55														
3/18/2022	E321811	F2_ECIN	6.87						2000				10.95	< 0.100													
3/18/2022	E321791	F2_NWPI	15.4						1920				7.01	0.298													
3/18/2022	E321812	F2_BPO	8.54					< 10	1950				9.18	0.176													
3/18/2022	E321812	F2_BPO											8.62														
3/18/2022	E321812	F2_BPO											8.58														
3/19/2022	E321811	F2_ECIN	6.21						2000				10.97	0.109													
3/19/2022	E321791	F2_NWPI	16.1						1900				6.86	0.367													
3/19/2022	E321812	F2_BPO	8.45					< 10	1930				9.05	0.239													
3/19/2022	E321812	F2_BPO											8.45														
3/19/2022	E321812	F2_BPO											8.36														
3/20/2022	E321811	F2_ECIN	6.38	0.18		< 0.10		< 10	1950	< 0.20			10.94	< 0.100	1420	0.013		< 0.050		0.0285				0.00034		< 0.0050	< 0.00050
3/20/2022	E321791	F2_NWPI	16.4	< 0.10		8.98		< 10	1860	0.58			6.8	0.367	1290	0.019		< 0.050		0.194				0.0589			0.00066
3/20/2022	E321812	F2_BPO	8.51	< 0.10		12.5		< 10	1870	< 0.20			8.4	0.234	1420	0.029		< 0.050		0.0656				0.330		< 0.0050	< 0.00050
3/20/2022	E321812	F2_BPO											8.61														
3/20/2022	E321812	F2_BPO											8.64														
3/21/2022	E321812	F2_BPO	8.24	< 0.10	< 0.10	12.0	14.0	< 10	1950	< 0.20	< 0.50		8.81	0.238	1230	0.031	0.026	< 0.050	< 0.050	0.0540	0.0691	171		0.332	0.403	< 0.0050	< 0.00050
3/21/2022	E321811	F2_ECIN	6.13	0.18	0.23	< 0.10	< 0.10	36	1990	< 0.20	< 0.50	< 0.010	10.75	0.102	1240	0.019	0.023	0.064	0.099	0.0232	0.0307	164		0.00046	0.00044	< 0.0050	< 0.00050
3/21/2022	E321791	F2_NWPI	15.7	< 0.10	< 0.10	8.55	9.96	< 10	1890	0.57	0.84	0.034	6.46	0.367	1130	0.016	0.057	< 0.050	0.163	0.175	0.198	147		0.0542	0.0656	< 0.0050	0.00077
3/21/2022	0200097	EV_EC1	7.83	< 0.10	< 0.10	2.88	2.83	< 10	1860	0.42	< 0.50		11.21	0.197	1230	< 0.010	< 0.010	< 0.050	< 0.050	0.0601	0.0581	152		0.0518	0.0510	< 0.0050	< 0.00050
3/21/2022	E321812	F2_BPO											9.01														

		Parameter	Chloride	Chromium	Chromium	Cobalt	Cobalt	COD	Conductivity, Lab	Copper	Copper	Dimethylseleneoxide	Dissolved Oxygen, Field	Fluoride	Hardness, Total or Dissolved CaCO3	Iron	Iron	Lead	Lead	Lithium	Lithium	Magnesium	Magnesium	Manganese	Manganese	Mercury	Mercury
		Fraction	D	D	T	D	T	N	N	D	T	D	N	N	D	D	T	D	T	D	T	T	T	D	T	D	T
		Unit	mg/l	ug/l	ug/l	ug/l	ug/l	mg/l	us/cm	ug/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	ppm	mg/l	mg/l	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
3/21/2022	0200203	EV_MC3	1.97	0.12	0.14	< 0.10	< 0.10	< 10	387	< 0.20	< 0.50		12.28	0.128	203	< 0.010	0.021	< 0.050	< 0.050	0.0058	0.0059	16.5		0.00047	0.00095	< 0.0050	< 0.00050
3/21/2022	310168	EV_MC2A	3.38	0.13	0.18	0.13	0.14	< 10	518	< 0.20	< 0.50		12.13	0.145	276	< 0.010	0.023	< 0.050	< 0.050	0.0102	0.0104	25.9		0.00431	0.00474	< 0.0050	< 0.00050
3/21/2022	E321814	EV_ECOUT	8.27	< 0.10	0.10	9.05	9.19	< 10	1950	< 0.20	< 0.50		10.83	0.205	1310	0.022	0.170	< 0.050	0.064	0.0538	0.0556	161		0.255	0.256	< 0.0050	< 0.00050
3/21/2022	200393	EV_ER1	5.06	0.23	0.31	< 0.10	< 0.10	< 10	525	< 0.20	1.44		12.01	0.203	281	< 0.010	0.018	< 0.050	< 0.050	0.0116	0.0115	25.1		0.00193	0.00265	< 0.0050	< 0.00050
3/21/2022	E300091	EV_MC2	6.48	0.13	0.15	0.10	0.12	< 10	592	< 0.20	< 0.50		11.01	0.147	321	< 0.010	0.019	< 0.050	0.056	0.0152	0.0147	31.0		0.00234	0.00298	< 0.0050	< 0.00050
3/21/2022	E321812	F2_BPO											9.05														
3/22/2022	E321812	F2_BPO	8.25	< 0.10		12.5		< 10	1870	< 0.20			8.8	0.230	1420	0.029		< 0.050		0.0656				0.330		< 0.0050	< 0.00050
3/22/2022	E321811	F2_ECIN	6.17	0.18		< 0.10		< 10	1950	< 0.20			10.1	0.109	1420	0.013		< 0.050		0.0285				0.00034		< 0.0050	< 0.00050
3/22/2022	E321791	F2_NWPI	15.9	< 0.10		8.98		< 10	1860	0.58			6.19	0.360	1290	0.019		< 0.050		0.194				0.0589		< 0.0050	0.00066
3/22/2022	0200097	EV_EC1																									
3/22/2022	E321812	F2_BPO											8.42														
3/22/2022	E102685	EV_BC1	18.9	< 0.10	< 0.10	0.18	0.20	< 10	1900	0.21	< 0.50		10.39	0.201	1320	< 0.010	0.038	< 0.050	< 0.050	0.107	0.107	178		0.00765	0.00870	< 0.0050	< 0.00050
3/22/2022	E206231	EV_GT1	6.82	< 0.10	0.16	0.12	0.18	< 10	1600	0.31	< 0.50		10.2	0.185	1160	< 0.010	0.092	< 0.050	0.116	0.0736	0.0702	146		0.00510	0.00639	< 0.0050	0.00093
3/22/2022	0200203	EV_MC3	1.98	0.12	0.19	< 0.10	< 0.10		390	0.41	< 0.50		12.76	0.123	203	< 0.010	0.027	< 0.050	< 0.050	0.0060	0.0057	16.5		0.00041	0.00091	< 0.0050	< 0.00050
3/22/2022	E206231	EV_GT1																									
3/22/2022	E102685	EV_BC1																									
3/22/2022	E300091	EV_MC2	6.97	0.14	0.31	0.11	0.18		635	0.26	1.00		10.73	0.141	320	0.024	0.108	< 0.050	0.243	0.0159	0.0161	32.7		0.00284	0.00609	< 0.0050	0.00071
3/22/2022	200393	EV_ER1	4.98	0.26	0.36	< 0.10	< 0.10		528	< 0.20	< 0.50		11.95	0.194	273	< 0.010	0.061	< 0.050	0.057	0.0115	0.0117	26.2		0.00168	0.00451	< 0.0050	< 0.00050
3/22/2022	E321812	F2_BPO											8.19														
3/23/2022	E321811	F2_ECIN	6.56						1960				9.84	0.114													
3/23/2022	E321791	F2_NWPI	16.5						1860				6	0.381													
3/23/2022	E321812	F2_BPO	7.63					< 10	1900				8.45	0.225													
3/23/2022	E321812	F2_BPO											8.37														
3/23/2022	E321812	F2_BPO											8.29														
3/24/2022	E321812	F2_BPO											9.31														
3/24/2022	E321812	F2_BPO	9.02	< 0.10		12.0		< 10	1930	< 0.20			9.43	0.265	1280	0.023		< 0.050		0.0636				0.310		< 0.0050	< 0.00050
3/24/2022	E321811	F2_ECIN	6.72	0.22		< 0.10		< 10	1980	0.21			15.51	0.120	1270	0.024		0.060		0.0255				0.00047		< 0.0050	< 0.00050
3/24/2022	E321791	F2_NWPI	17.2	< 0.10		9.22		< 10	1890	0.65			6.92	0.400	1190	0.024		0.084		0.181				0.0573		< 0.0050	0.00110
3/24/2022	E321812	F2_BPO											9.36														
3/25/2022	E321811	F2_ECIN	6.19						1950				10.82	0.111													
3/25/2022	E321791	F2_NWPI	15.9						1890				6.72	0.368													
3/25/2022	E321812	F2_BPO	8.24					< 10	1880			< 0.010	9.72	0.240													
3/25/2022	E321812	F2_BPO											8.86														
3/26/2022	E321811	F2_ECIN	6.50						1980				10.72	0.112													
3/26/2022	E321791	F2_NWPI	17.0						1880				6.71	0.381													
3/26/2022	E321812	F2_BPO	8.58					< 10	1920				8.86	0.236													
3/26/2022	E321812	F2_BPO											8.86														
3/26/2022	E321812	F2_BPO											8.71														
3/28/2022	0200097	EV_EC1	5.80						1880					< 0.100	1460												
3/28/2022	0200203	EV_MC3	1.91	< 0.10	0.40	< 0.10	< 0.10	< 10	381	0.24	< 0.50	< 0.010	13.29	0.090	191	< 0.010	0.146	< 0.050	0.119	0.0051	0.0059	15.0		0.00072	0.00322	< 0.0050	0.00123
3/28/2022	E321814	EV_ECOUT	6.08	0.31	0.27	< 0.10	< 0.10	< 10	1990	0.35	< 0.50	< 0.010	11.85	< 0.100	1280	< 0.010	0.015	< 0.050	< 0.050	0.0248	0.0313	158		0.00037	0.00059	< 0.0050	< 0.00050
3/28/2022	E321812	F2_BPO											9.39														
3/28/2022	200393	EV_ER1	4.73	0.18	0.26	< 0.10	< 0.10	< 10	531	< 0.20	< 0.50		12.88	0.144	269	< 0.010	0.062	0.489	0.055	0.0100	0.0118	25.0		0.00162	0.00444	< 0.0050	< 0.00050
3/28/2022	E321812	F2_BPO	8.34	< 0.10	< 0.10	12.1	12.8	< 10	1940	< 0.20	< 0.50	< 0.010	9.58	0.186	1290	0.024	0.286	< 0.050	0.112	0.0624	0.0739	168		0.326	0.344	< 0.0050	< 0.00050
3/28/2022	310168	EV_MC2A	2.78	0.13	0.30	< 0.10	< 0.10	< 10	471	0.24	< 0.50	< 0.010	13.11	0.098	251	< 0.010	0.092	< 0.050	0.088	0.0070	0.0076	22.9		0.00196	0.00417	< 0.0050	0.00097
3/28/2022	E300091	EV_MC2	4.40	0.20	0.36	< 0.10	< 0.10	< 10	519	0.32	< 0.50	< 0.010	11.72	0.102	268	< 0.010	0.080	< 0.050	0.074	0.0090	0.0108	26.2		0.00133	0.00331	< 0.0050	0.00123
3/28/2022	E300091	EV_MC2	4.69						522					0.131	308												
3/28/2022	E321791	F2_NWPI	15.7						1900				7.41	0.290													

		Parameter	Chloride	Chromium	Chromium	Cobalt	Cobalt	COD	Conductivity, Lab	Copper	Copper	Dimethylseleneoxide	Dissolved Oxygen, Field	Fluoride	Hardness, Total or Dissolved CaCO3	Iron	Iron	Lead	Lead	Lithium	Lithium	Magnesium	Magnesium	Manganese	Manganese	Mercury	Mercury
		Fraction	D	D	T	D	T	N	N	D	T	D	N	N	D	D	T	D	T	D	T	T	T	D	T	D	T
		Unit	mg/l	ug/l	ug/l	ug/l	ug/l	mg/l	us/cm	ug/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	ppm	mg/l	mg/l	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
3/28/2022	E321811	F2_ECIN	5.84						1950				12.33	< 0.100													
3/28/2022	0200097	EV_EC1	5.96	0.18	0.20	0.44	0.47	< 10	1860	< 0.20	< 0.50	< 0.010	12.3	< 0.100	1210	< 0.010	< 0.010	< 0.050	< 0.050	0.0278	0.0321	148		0.00659	0.00707	< 0.0050	< 0.00050
3/29/2022	E321812	F2_BPO											9.8														
3/29/2022	E102685	EV_BC1	16.7	< 0.10	< 0.10	0.13	0.13	< 10	1990	< 0.20	< 0.50	0.011	10.37	0.174	1240	< 0.010	0.032	< 0.050	< 0.050	0.103	0.114	179		0.00416	0.00503	< 0.0050	< 0.00050
3/29/2022	E321812	F2_BPO	8.00	< 0.10		12.6		< 10	1920	0.23			9.75	0.178	1440	0.035		< 0.050		0.0640				0.335		< 0.0050	< 0.00050
3/29/2022	E206231	EV_GT1	2.79	0.12	0.81	< 0.10	0.55	14	1350	0.43	1.93	< 0.010	10.81	0.182	787	< 0.010	0.501	< 0.050	0.631	0.0454	0.0516	104		0.00154	0.0128	< 0.0050	0.00660
3/29/2022	E206231	EV_GT1																									
3/29/2022	0200203	EV_MC3	1.83	< 0.10	2.57	< 0.10	0.39		348	0.32	1.67		11.76	0.113	178	< 0.010	0.900	< 0.050	0.640	0.0050	0.0062	15.8		0.00068	0.0119	< 0.0050	< 0.0100
3/29/2022	E300091	EV_MC2	5.18	0.13	0.55	< 0.10	0.14		506	0.33	0.91		10.97	0.126	265	< 0.010	0.178	< 0.050	0.190	0.0104	0.0110	24.8		0.00139	0.00682	< 0.0050	0.00171
3/29/2022	E206231	EV_GT1																									
3/29/2022	E321811	F2_ECIN	5.96	0.18	0.26	< 0.10	< 0.10	< 10	2000	< 0.20	< 0.50		18.11	< 0.100	1390	0.014	0.036	0.100	< 0.050	0.0284	0.0300	174		0.00137	0.00159	< 0.0050	< 0.00050
3/29/2022	E321791	F2_NWPI	15.5	< 0.10	< 0.10	9.69	9.88	< 10	1930	0.44	1.22		6.47	0.279	1340	< 0.010	0.070	< 0.050	0.069	0.191	0.186	169		0.0610	0.0667	< 0.0050	0.00072
3/29/2022	E102685	EV_BC1																									
3/29/2022	200393	EV_ER1	4.48	0.21	0.47	< 0.10	0.10		519	< 0.20	< 0.50		11.25	0.176	270	< 0.010	0.162	< 0.050	0.160	0.0109	0.0115	26.0		0.00151	0.00753	< 0.0050	0.00093
3/29/2022	E321812	F2_BPO											9.39														
3/30/2022	E321812	F2_BPO	8.39					< 10	1950				9.1	0.229													
3/30/2022	E321811	F2_ECIN	6.29						2000				11.75	0.109													
3/30/2022	E321791	F2_NWPI	16.4						1900				6.41	0.363													
3/30/2022	E321812	F2_BPO											9.03														
3/30/2022	0200097	EV_EC1																									
3/30/2022	E321812	F2_BPO											8.93														
3/31/2022	E321811	F2_ECIN	5.86	0.39		< 0.10		< 10	1980	< 0.20			10.61	< 0.100	1270	0.012		< 0.050		0.0283				0.00041		< 0.0050	< 0.00050
3/31/2022	E321791	F2_NWPI	17.6	< 0.10		8.57		< 10	1930	0.39			6.45	0.306	1110	< 0.010		< 0.050		0.178				0.0542		< 0.0050	< 0.00050
3/31/2022	E321812	F2_BPO	8.73	< 0.10		12.7		< 10	1950	< 0.20			9.14	0.213	1200	0.045		< 0.050		0.0596				0.346		< 0.0050	< 0.00050
3/31/2022	E321812	F2_BPO											9.14														
3/31/2022	E321812	F2_BPO											9.16														
4/1/2022	E321811	F2_ECIN	5.82						1990				10.56	< 0.100													
4/1/2022	E321791	F2_NWPI	14.4						1920				6.21	0.277													
4/1/2022	E321812	F2_BPO	7.54					< 10	1950				9.4	0.169													
4/1/2022	E321812	F2_BPO											9.35														
4/2/2022	E321811	F2_ECIN	6.21						1960				10.71	0.112													
4/2/2022	E321791	F2_NWPI	15.9						1880				6.43	0.373													
4/2/2022	E321812	F2_BPO	8.48					< 10	1890				9.43	0.233													
4/2/2022	E321812	F2_BPO											9.84														
4/2/2022	E321812	F2_BPO											9.1														
4/3/2022	E321811	F2_ECIN	6.26						1970				10.66	0.111													
4/3/2022	E321791	F2_NWPI	16.3						1940				6.18	0.372													
4/3/2022	E321812	F2_BPO	8.37					< 10	1950				9.14	0.232													
4/3/2022	E321812	F2_BPO											9.08														
4/3/2022	E321812	F2_BPO											8.99														
4/4/2022	E321812	F2_BPO	8.50	< 0.10	< 0.10	13.6	14.0	< 10	1930	< 0.20	< 0.50	< 0.010	8.37	0.226	1330	0.038	0.301	< 0.050	0.200	0.0646	0.0656	168		0.358	0.374	< 0.0050	< 0.00050
4/4/2022	0200097	EV_EC1	6.62	< 0.10	0.20	1.10	1.42	< 10	1830	0.28	< 0.50		10.38	< 0.100	1230	< 0.010	< 0.010	< 0.050	< 0.050	0.0470	0.0560	209		0.0142	0.0187	< 0.0050	< 0.00050
4/4/2022	E321812	F2_BPO											8.91														
4/4/2022	0200203	EV_MC3	1.96	< 0.10	0.35	< 0.10	0.10	< 10	362	0.33	0.65		10.81	0.071	190	< 0.010	0.100	< 0.050	0.097	0.0052	0.0056	20.1		0.00064	0.00310	< 0.0050	0.00081
4/4/2022	310168	EV_MC2A	2.81	0.16	0.24	< 0.10	< 0.10	< 10	448	0.46	< 0.50		10.79	0.108	231	0.023	0.063	< 0.050	0.056	0.0071	0.0073	26.1		0.00244	0.00377	< 0.0050	0.00058
4/4/2022	E321811	F2_ECIN	6.20	0.19	0.19	< 0.10	< 0.10	< 10	1980	< 0.20	< 0.50	< 0.010	9.94	0.106	1300	< 0.010	< 0.010	< 0.050	< 0.050	0.0283	0.0278	152		0.00020	0.00016	< 0.0050	< 0.00050
4/4/2022	E321791	F2_NWPI	16.0	< 0.10	< 0.10	8.48	10.2	< 10	1900	0.45	0.68	0.053	6.13	0.361	1180	0.011	0.053	< 0.050	0.077	0.182	0.203	173		0.0497	0.0625	< 0.0050	0.00074
4/4/2022	200393	EV_ER1	4.08	0.18	0.32	< 0.10	< 0.10	< 10	531	< 0.20	< 0.50		10.78	0.082	280	< 0.010	0.045	< 0.050	< 0.050	0.0114	0.0105	28.8		0.00136	0.00337	< 0.0050	< 0.00050

Parameter			Chloride	Chromium	Chromium	Cobalt	Cobalt	COD	Conductivity, Lab	Copper	Copper	Dimethylseleneoxide	Dissolved Oxygen, Field	Fluoride	Hardness, Total or Dissolved CaCO3	Iron	Iron	Lead	Lead	Lithium	Lithium	Magnesium	Magnesium	Manganese	Manganese	Mercury	Mercury
Fraction			D	D	T	D	T	N	N	D	T	D	N	N	D	D	T	D	T	D	T	T	T	D	T	D	T
Unit			mg/l	ug/l	ug/l	ug/l	ug/l	mg/l	us/cm	ug/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	ppm	mg/l	mg/l	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
4/4/2022	E321814	EV_ECOUT	6.32	0.18	0.27	2.18	2.71	< 10	1970	0.44	< 1.00		10.64	< 0.100	1350	< 0.010	0.059	< 0.050	< 0.100	0.0352	0.0356	194		0.0588	0.0685	< 0.0050	< 0.00050
4/4/2022	E300091	EV_MC2	3.71	< 0.10	0.25	< 0.10	< 0.10	< 10	497	0.28	< 0.50		10.34	0.103	262	0.024	0.055	< 0.050	0.052	0.0100	0.0087	27.9		0.00182	0.00293	< 0.0050	0.00059
4/4/2022	E321812	F2_BPO											8.94														
4/5/2022	E321791	F2_NWPI	17.9	< 0.10		11.2		< 10	1910	0.51			5.17	0.326	1170	< 0.010		< 0.050		0.185				0.0714		< 0.0050	< 0.00050
4/5/2022	E321811	F2_ECIN	6.95	0.18		< 0.10		< 10	1970	< 0.20			9.31	< 0.100	1310	0.018		< 0.050		0.0277				0.00022		< 0.0050	< 0.00050
4/5/2022	E206231	EV_GT1	7.24	0.15	0.10	0.12	0.13	< 10	1720	0.40	< 0.50		9.55	0.253	1120	0.014	0.086	< 0.050	< 0.050	0.0682	0.0768	146		0.00472	0.00565	< 0.0050	< 0.00050
4/5/2022	E102685	EV_BC1	16.9	< 0.20	< 0.10	< 0.20	0.14	< 10	2010	< 0.40	< 0.50		9.57	0.255	1340	< 0.020	0.042	< 0.100	< 0.050	0.104	0.115	184		0.00471	0.00495	< 0.0050	< 0.00050
4/5/2022	E321812	F2_BPO	8.90	< 0.10		15.2		< 10	1950	< 0.20			8.88	0.188	1360	0.039		< 0.050		0.0636				0.409		< 0.0050	< 0.00050
4/5/2022	0200203	EV_MC3	1.74	< 0.10	0.31	< 0.10	0.10		370	0.29	0.57		12.29	0.094	192	< 0.010	0.170	< 0.050	0.165	0.0053	0.0057	15.4		0.00058	0.00469	< 0.0050	0.00085
4/5/2022	E321812	F2_BPO											9.1														
4/5/2022	E206231	EV_GT1																									
4/5/2022	E102685	EV_BC1																									
4/5/2022	E300091	EV_MC2	8.83	< 0.10	0.26	< 0.10	0.12		603	0.24	< 0.50		11.73	0.103	284	< 0.010	0.133	< 0.050	0.121	0.0117	0.0158	29.2		0.00142	0.00413	< 0.0050	0.00061
4/5/2022	200393	EV_ER1	4.18	0.20	0.25	< 0.10	< 0.10		540	< 0.20	< 0.50		11.59	0.145	291	< 0.010	0.064	< 0.050	0.055	0.0115	0.0129	26.9		0.00134	0.00438	< 0.0050	< 0.00050
4/5/2022	E321812	F2_BPO											9.15														
4/6/2022	E321811	F2_ECIN	6.28						1980				9.7	0.109													
4/6/2022	E321791	F2_NWPI	16.2						1920				5.55	0.375													
4/6/2022	E321812	F2_BPO	8.55					< 10	1950				9.52	0.235													
4/6/2022	E321812	F2_BPO											9.48														
4/6/2022	0200097	EV_EC1																									
4/6/2022	E321812	F2_BPO											9.48														
4/6/2022	0200097	EV_EC1																									
4/6/2022	E321812	F2_BPO											9.32														
4/7/2022	E321811	F2_ECIN	5.74	0.17		< 0.10		< 10	1990	< 0.20			9.57	< 0.100	1250	0.010		< 0.050		0.0259				0.00027		< 0.0050	< 0.00050
4/7/2022	E321791	F2_NWPI	15.0	< 0.10		10.6		< 10	1920	0.47			5.5	0.300	1140	< 0.010		< 0.050		0.174				0.0673		< 0.0050	< 0.00050
4/7/2022	E321812	F2_BPO											9.53														
4/7/2022	E321812	F2_BPO	7.53	< 0.10		14.1		< 10	1960	< 0.20			9.54	0.191	1240	0.036		< 0.050		0.0614				0.369		< 0.0050	< 0.00050
4/7/2022	E321812	F2_BPO											8.97														
4/8/2022	E321811	F2_ECIN	6.06						1970				9.52	0.111													
4/8/2022	E321791	F2_NWPI	15.6						1900				5.47	0.358													
4/8/2022	E321812	F2_BPO	8.38					< 10	1960				9.26	0.231													
4/8/2022	E321812	F2_BPO											9.3														
4/9/2022	E321811	F2_ECIN	6.27						1970				9.21	0.107													
4/9/2022	E321791	F2_NWPI	16.2						1910				5.62	0.373													
4/9/2022	E321812	F2_BPO	8.75					< 10	1950				9.1	0.233													
4/9/2022	E321812	F2_BPO											9.2														
4/10/2022	E300091	EV_MC2	3.90						526				11.33	0.132	272												
4/10/2022	0200097	EV_EC1	5.92						1820				11.45	0.127	1240												
4/10/2022	E321791	F2_NWPI	16.2						1890				5.87	0.372													
4/10/2022	E321812	F2_BPO	8.71					< 10	1960				9.46	0.230													
4/10/2022	E321812	F2_BPO											9.84														
4/11/2022	E321791	F2_NWPI	16.7	< 0.10	0.10	10.4	11.6	< 10	1900	0.46	0.89	0.047	5.79	0.398	1280	0.031	0.078	< 0.050	0.122	0.206	0.180	139		0.0706	0.0760	< 0.0050	0.00056
4/11/2022	E321812	F2_BPO	9.28	< 0.10	< 0.10	12.4	13.0	< 10	1940	< 0.20	< 0.50	< 0.010	9.83	0.247	1430	0.032	0.302	< 0.050	0.125	0.0751	0.0631	152		0.358	0.381	< 0.0050	< 0.00050
4/11/2022	E321812	F2_BPO											9.83														
4/11/2022	E300091	EV_MC2	3.64	0.13	< 0.30	< 0.10	< 0.10	< 10	513	0.37	< 0.50	< 0.010	11.17	0.127	287	< 0.010	0.038	< 0.050	< 0.050	0.0107	0.0101	26.0		0.00139	0.00224	< 0.0050	0.00069
4/11/2022	E300091	EV_MC2	3.79						527					0.132	273												
4/11/2022	310168	EV_MC2A	2.32	< 0.10	< 0.20	< 0.10	< 0.10	< 10	459	0.27	< 0.50	< 0.010	12.38	0.123	262	< 0.010	0.036	< 0.050	< 0.050	0.0078	0.0069	21.5		0.00186	0.00268	< 0.0050	0.00070
4/11/2022	0200097	EV_EC1	5.90	0.14	< 0.30	0.26	0.28	< 10	1770	0.78	< 0.50	< 0.010	11.11	0.121	1290	< 0.010	< 0.010	< 0.050	< 0.050	0.0316	0.0274	145		0.00356	0.00358	< 0.0050	< 0.00050
4/11/2022	0200097	EV_EC1	6.15						1870					0.123	1260												
4/11/2022	0200203	EV_MC3	1.67	< 0.10	< 0.20	< 0.10	< 0.10	< 10	351	0.29	< 0.50	< 0.010	12.05	0.118	209	< 0.010	0.038	< 0.050	< 0.050	0.0058	0.0053	15.1		0.00099	0.00146	< 0.0050	0.00091

		Parameter	Chloride	Chromium	Chromium	Cobalt	Cobalt	COD	Conductivity, Lab	Copper	Copper	Dimethylseleneoxide	Dissolved Oxygen, Field	Fluoride	Hardness, Total or Dissolved CaCO3	Iron	Iron	Lead	Lead	Lithium	Lithium	Magnesium	Magnesium	Manganese	Manganese	Mercury	Mercury
		Fraction	D	D	T	D	T	N	N	D	T	D	N	N	D	D	T	D	T	D	T	T	T	D	T	D	T
		Unit	mg/l	ug/l	ug/l	ug/l	ug/l	mg/l	us/cm	ug/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	ppm	mg/l	mg/l	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
4/11/2022	200393	EV_ER1	3.92	0.16	< 0.30	< 0.10	< 0.10	< 10	522	< 0.20	< 0.50		11.59	0.174	303	< 0.010	0.032	< 0.050	< 0.050	0.0121	0.0113	25.9		0.00170	0.00276	< 0.0050	< 0.00050
4/11/2022	E321814	EV_ECOUT	6.27	0.21	0.22	< 0.10	< 0.10	< 10	1900	< 0.20	< 0.50	< 0.010	11.29	0.105	1260	< 0.010	< 0.010	< 0.050	< 0.050	0.0287	0.0281	173		0.00034	0.00071	< 0.0050	< 0.00050
4/11/2022	E321812	F2_BPO											9.97														
4/12/2022	0200097	EV_EC1	5.97						1830				11.49	0.122	1120												
4/12/2022	E102685	EV_BC1	16.2	< 0.10	< 0.10	0.12	0.12	< 10	1880	0.24	< 0.50		11.47	0.232	1250	< 0.010	0.032	< 0.050	< 0.050	0.107	0.104	169		0.00323	0.00374	< 0.0050	< 0.00050
4/12/2022	E206231	EV_GT1	8.63	< 0.10	0.13	0.13	0.15	< 10	1880	0.28	< 0.50	0.030	10.93	0.235	1220	0.026	0.104	< 0.050	< 0.050	0.0798	0.0827	165		0.00490	0.00549	< 0.0050	< 0.00050
4/12/2022	E206231	EV_GT1	8.55	< 0.10	< 0.20	0.12	< 0.20		1840	< 0.40	< 1.00		11.79	0.199	1190	0.017	0.090	< 0.050	< 0.100	0.0777	0.100	186		0.00486	0.00603	< 0.0050	< 0.00050
4/12/2022	E321812	F2_BPO	8.39	< 0.10		12.1		< 10	1950	< 0.20			10.25	0.227	1280	0.032		< 0.050		0.0649				0.341		< 0.0050	< 0.00050
4/12/2022	E321812	F2_BPO											10.25														
4/12/2022	E300091	EV_MC2	4.41						537				12.16	0.140	292												
4/12/2022	E102685	EV_BC1	16.0	< 0.10	0.11	0.13	0.12	< 10	1990	0.20	< 0.50	0.041	10.75	0.234	1260	< 0.010	0.027	< 0.050	< 0.050	0.107	0.104	168		0.00309	0.00359	< 0.0050	< 0.00050
4/12/2022	E300091	EV_MC2	4.62	0.11	0.16	< 0.10	< 0.10		555	1.10	< 0.50		11.87	0.110	278	0.010	0.026	< 0.050	< 0.050	0.0109	0.0125	29.8		0.00148	0.00225	< 0.0050	0.00099
4/12/2022	E321812	F2_BPO											9.36														
4/12/2022	E321791	F2_NWPI	15.9	< 0.10		12.6		< 10	1920	0.53			5.61	0.365	1190	0.024		< 0.050		0.185				0.0835		0.0111	0.00051
4/13/2022	E300091	EV_MC2	7.75						573				13.53	0.122	296												
4/13/2022	0200097	EV_EC1	5.52						1800				12.94	< 0.100	1260												
4/13/2022	E321791	F2_NWPI	16.5						1890				6.7	0.375													
4/13/2022	E321812	F2_BPO	8.33					< 10	1890				10.2	0.222													
4/13/2022	E321812	F2_BPO											10.24														
4/13/2022	0200097	EV_EC1	5.58	0.17	0.22	0.15	0.17		1820	< 0.20	< 0.50		12.62	< 0.100	1170	0.016	< 0.010	< 0.050	< 0.050	0.0281	0.0286	153		0.00183	0.00200	< 0.0050	< 0.00050
4/13/2022	E321812	F2_BPO											10.24														
4/13/2022	0200097	EV_EC1	5.58	0.17	0.22	0.15	0.17		1820	< 0.20	< 0.50		12.62	< 0.100	1170	0.016	< 0.010	< 0.050	< 0.050	0.0281	0.0286	153		0.00183	0.00200	< 0.0050	< 0.00050
4/13/2022	0200203	EV_MC3	1.68	0.11	0.20	< 0.10	< 0.10		372	< 0.40	< 0.50		13.08	0.105	184	< 0.010	0.054	< 0.050	< 0.050	0.0052	0.0057	16.2		0.00072	0.00187	< 0.0050	0.00093
4/13/2022	200393	EV_ER1	3.96	0.18	0.23	< 0.10	< 0.10		550	< 0.20	< 0.50		12.6	0.148	284	< 0.010	0.027	< 0.050	< 0.050	0.0118	0.0127	27.1		0.00136	0.00283	< 0.0050	< 0.00050
4/13/2022	E321812	F2_BPO											10.28														
4/14/2022	E321791	F2_NWPI	16.4	< 0.10		12.5		< 10	1930	0.47			5.35	0.364	1190	< 0.010		< 0.050		0.192				0.0837		< 0.0050	0.00065
4/14/2022	E300091	EV_MC2	4.59						565				11.4	0.122	292												
4/14/2022	0200097	EV_EC1	5.57						1860				10.94	< 0.100	1170												
4/14/2022	E321812	F2_BPO	9.12	< 0.10		9.83		< 10	1950	< 0.20			10.28	0.220	1300	0.031		< 0.050		0.0659				0.295		< 0.0050	< 0.00050
4/14/2022	E321812	F2_BPO											10.12														
4/14/2022	E321812	F2_BPO											10.12														
4/15/2022	E321791	F2_NWPI	16.3						1900				4.88	0.375													
4/15/2022	E300091	EV_MC2	3.48						562				8.34	0.131	292												
4/15/2022	0200097	EV_EC1	5.92						1870				9.76	0.104	1240												
4/15/2022	E321812	F2_BPO	8.48					< 10	1890				9.42	0.224													
4/15/2022	E321812	F2_BPO											9.42														
4/15/2022	E321812	F2_BPO											10.22														
4/16/2022	0200097	EV_EC1	6.02						1840				12.35	0.104	1280												
4/16/2022	E300091	EV_MC2	3.39						552				12.14	0.126	287												
4/16/2022	E321791	F2_NWPI	15.9						1910				5.12	0.352													
4/16/2022	E321812	F2_BPO	8.44					< 10	1890				10.68	0.213													
4/16/2022	E321812	F2_BPO											10.68														
4/16/2022	E321812	F2_BPO											10.15														
4/16/2022	E321812	F2_BPO											10.12														
4/17/2022	E300091	EV_MC2	3.11						529				11.94	0.124	276												
4/17/2022	E321791	F2_NWPI	15.9						1880				5.22	0.301													
4/17/2022	0200097	EV_EC1	6.38						1830				12.13	0.108	1230												
4/17/2022	E321812	F2_BPO											10														
4/17/2022	E321812	F2_BPO	8.24					< 10	1900				10.14	0.180													
4/17/2022	E321812	F2_BPO											9.67														

Parameter			Chloride	Chromium	Chromium	Cobalt	Cobalt	COD	Conductivity, Lab	Copper	Copper	Dimethylseleneoxide	Dissolved Oxygen, Field	Fluoride	Hardness, Total or Dissolved CaCO3	Iron	Iron	Lead	Lead	Lithium	Lithium	Magnesium	Magnesium	Manganese	Manganese	Mercury	Mercury
Fraction			D	D	T	D	T	N	N	D	T	D	N	N	D	D	T	D	T	D	T	T	T	D	T	D	T
Unit			mg/l	ug/l	ug/l	ug/l	ug/l	mg/l	us/cm	ug/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	ppm	mg/l	mg/l	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
4/18/2022	E321812	F2_BPO	8.89	< 0.10	< 0.10	8.51	9.06	< 10	1870	< 0.20	< 0.50	< 0.010	10.21	0.222	1270	0.035	0.362	< 0.050	0.154	0.0653	0.0703	169		0.248	0.266	< 0.0050	< 0.00050
4/18/2022	E321791	F2_NWPI	16.6	< 0.10	< 0.10	14.0	15.1	< 10	1940	0.37	0.58	0.074	5.05	0.368	1120	0.013	0.047	< 0.050	0.053	0.182	0.204	154		0.0942	0.103	< 0.0050	0.00111
4/18/2022	E300091	EV_MC2	3.95	0.12	0.18	< 0.10	< 0.10	< 10	564	0.29	< 0.50		12.34	0.131	302	0.010	0.028	< 0.050	< 0.050	0.0120	0.0116	30.7		0.00186	0.00216	< 0.0050	0.00152
4/18/2022	E300091	EV_MC2																									
4/18/2022	0200097	EV_EC1	6.72	0.18	0.20	< 0.10	0.11	< 10	1840	< 0.20	< 0.50		11.96	0.107	1120	< 0.010	0.011	< 0.050	< 0.050	0.0269	0.0294	159		0.00094	0.00112	< 0.0050	< 0.00050
4/18/2022	0200097	EV_EC1																									
4/18/2022	0200203	EV_MC3	1.73	0.12	0.20	< 0.10	< 0.10	< 10	377	0.27	< 0.50		12.95	0.118	190	< 0.010	0.044	< 0.050	< 0.050	0.0055	0.0056	16.8		0.00073	0.00152	< 0.0050	0.00117
4/18/2022	E321814	EV_ECOUT	6.65	0.22	0.24	< 0.10	< 0.10	< 10	1940	< 0.20	< 0.50		11.25	0.105	1290	< 0.010	0.012	< 0.050	< 0.050	0.0276	0.0283	166		0.00016	0.00043	< 0.0050	0.00125
4/18/2022	310168	EV_MC2A	2.58	0.12	0.21	< 0.10	< 0.10	< 10	507	0.23	< 0.50		12.79	0.126	259	< 0.010	0.036	< 0.050	< 0.050	0.0076	0.0080	26.6		0.00178	0.00258	< 0.0050	0.00079
4/18/2022	200393	EV_ER1	4.18	0.22	0.28	< 0.10	< 0.10	< 10	559	< 0.20	< 0.50		12.57	0.180	302	0.020	0.023	< 0.050	< 0.050	0.0127	0.0127	28.7		0.00149	0.00221	< 0.0050	< 0.00050
4/18/2022	E321812	F2_BPO											9.95														
4/19/2022	E300091	EV_MC2	5.72						571				11.07	0.100	306												
4/19/2022	0200097	EV_EC1	5.90						1850				11.16	< 0.100	1210												
4/19/2022	E206231	EV_GT1	9.16	< 0.10	< 0.20	0.14	< 0.20	< 10	1860	0.28	< 1.00		11.99	0.221	1260	0.019	0.126	< 0.050	< 0.100	0.0826	0.0910	180		0.00531	0.00645	< 0.0050	0.00057
4/19/2022	E102685	EV_BC1	14.6	< 0.20	< 0.10	< 0.20	0.11	< 10	1890	< 0.40	< 0.50		11.81	0.206	1190	< 0.020	0.034	< 0.100	< 0.050	0.0957	0.103	185		0.00211	0.00266	< 0.0050	< 0.00050
4/19/2022	E321812	F2_BPO	8.12	< 0.10		8.59		< 10	1910	< 0.20			10.07	0.173	1240	0.034		< 0.050		0.0636				0.251		< 0.0050	< 0.00050
4/19/2022	E321812	F2_BPO											10.07														
4/19/2022	E321791	F2_NWPI	15.8	< 0.10		15.8		< 10	1950	0.67			4.81	0.282	1200	0.010		< 0.050		0.194				0.110		< 0.0050	0.00062
4/19/2022	E321814	EV_ECOUT	6.16	0.19	0.26	< 0.10	< 0.10		1950	< 0.20	0.57		10.82	0.105	1300	< 0.010	< 0.010	< 0.050	< 0.050	0.0269	0.0286	162		< 0.00010	0.00041	< 0.0050	< 0.00050
4/19/2022	0200203	EV_MC3	1.68	< 0.10	0.20	< 0.10	< 0.10		371	0.23	< 0.50		12.03	0.114	187	< 0.010	0.053	< 0.050	< 0.050	0.0051	0.0057	16.9		0.00053	0.00191	< 0.0050	0.00163
4/19/2022	E206231	EV_GT1																									
4/19/2022	E102685	EV_BC1																									
4/19/2022	E300091	EV_MC2	4.58	< 0.10	0.22	< 0.10	< 0.10		559	0.22	< 0.50		11.28	0.127	288	< 0.010	0.039	< 0.050	< 0.050	0.0110	0.0119	31.8		0.00127	0.00240	< 0.0050	0.00059
4/19/2022	200393	EV_ER1	4.16	0.20	0.28	< 0.10	< 0.10		552	< 0.20	< 0.50		11.75	0.175	288	< 0.010	0.025	< 0.050	< 0.050	0.0114	0.0135	29.2		0.00134	0.00248	< 0.0050	< 0.00050
4/19/2022	E321812	F2_BPO											9.96														
4/20/2022	E300091	EV_MC2	4.56						576				12.25	0.107	327												
4/20/2022	0200097	EV_EC1	5.72						1840				11.74	< 0.100	1240												
4/20/2022	E321791	F2_NWPI	17.6						1910				5.21	0.368													
4/20/2022	E321812	F2_BPO	9.35					< 10	1900				10.57	0.216													
4/20/2022	E321812	F2_BPO											10.57														
4/20/2022	0200097	EV_EC1																									
4/21/2022	E300091	EV_MC2	3.09						545				12.03	0.121	291												
4/21/2022	0200097	EV_EC1	5.33						1850				11.57	< 0.100	1240												
4/21/2022	E321812	F2_BPO											10.45														
4/21/2022	E321791	F2_NWPI	15.1	< 0.10		14.0		< 10	1900	0.32			5.17	0.299	1210	< 0.010		< 0.050		0.209				0.0965		< 0.0050	0.00059
4/21/2022	E321812	F2_BPO	7.87	< 0.10		8.43		< 10	1850	< 0.20			10.45	0.179	1300	0.042		< 0.050		0.0670				0.270		< 0.0050	0.00148
4/21/2022	E321812	F2_BPO											10.14														
4/22/2022	E300091	EV_MC2	4.56						547				11.87	0.116	289												
4/22/2022	0200097	EV_EC1	5.73						1830				11.98	< 0.100	1260												
4/22/2022	E321791	F2_NWPI	15.9						1910				7.89	0.320													
4/22/2022	E321812	F2_BPO											10.04														
4/22/2022	E321812	F2_BPO	9.30					< 10	1910				10.06	0.212													
4/22/2022	E321812	F2_BPO											9.84														
4/23/2022	0200097	EV_EC1	6.10						1840				12.17	< 0.100	1300												
4/23/2022	E300091	EV_MC2	4.69						566				12.73	0.132	311												
4/23/2022	E321791	F2_NWPI	16.0						1930				5.02	0.376													
4/23/2022	E321812	F2_BPO	8.80					< 10	1910				10.51	0.219													
4/23/2022	E321812	F2_BPO											10.33														

Parameter			Chloride	Chromium	Chromium	Cobalt	Cobalt	COD	Conductivity, Lab	Copper	Copper	Dimethylseleneoxide	Dissolved Oxygen, Field	Fluoride	Hardness, Total or Dissolved CaCO3	Iron	Iron	Lead	Lead	Lithium	Lithium	Magnesium	Magnesium	Manganese	Manganese	Mercury	Mercury
Fraction			D	D	T	D	T	N	N	D	T	D	N	N	D	D	T	D	T	D	T	T	T	D	T	D	T
Unit			mg/l	ug/l	ug/l	ug/l	ug/l	mg/l	us/cm	ug/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	ppm	mg/l	mg/l	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
4/24/2022	E300091	EV_MC2	10.6						649				12.43	0.111	350												
4/24/2022	0200097	EV_EC1	5.95						1820				12.23	< 0.100	1240												
4/24/2022	E321791	F2_NWPI	16.6						1930				5.27	0.364													
4/24/2022	E321812	F2_BPO											10.08														
4/24/2022	E321812	F2_BPO	9.26					< 10	1940				10.82	0.207													
4/24/2022	E321812	F2_BPO											9.86														
4/25/2022	E300091	EV_MC2																									
4/25/2022	E300091	EV_MC2	3.35	< 0.10	0.17	< 0.10	< 0.10	< 10	494	0.41	< 0.50	< 0.010	12.89	0.100	272	< 0.010	0.058	< 0.050	< 0.050	0.0098	0.0114	27.2		0.00129	0.00229	< 0.0050	0.00089
4/25/2022	200393	EV_ER1	3.77	0.18	3.33	< 0.10	< 0.10	< 10	537	< 0.20	< 0.50		12.5	0.142	289	< 0.010	0.048	< 0.050	0.055	0.0116	0.0123	27.5		0.00115	0.00262	< 0.0050	0.00106
4/25/2022	310168	EV_MC2A	2.00	0.16	0.22	< 0.10	< 0.10	< 10	433	0.39	< 0.50	< 0.010	13.52	0.099	237	0.051	0.057	0.058	< 0.050	0.0070	0.0074	22.8		0.00322	0.00291	< 0.0050	0.00088
4/25/2022	E321812	F2_BPO	12.2	< 0.20	< 0.10	8.85	8.61	< 10	1850	< 0.40	< 0.50	< 0.010	9.93	0.218	1280	0.059	0.393	< 0.100	0.082	0.0697	0.0684	159		0.298	0.292	< 0.0050	< 0.00050
4/25/2022	0200203	EV_MC3	1.32	< 0.10	0.17	< 0.10	< 0.10	< 10	354	0.27	< 0.50	< 0.010	13.82	0.092	187	< 0.010	0.083	< 0.050	0.054	0.0057	0.0054	14.6		0.00071	0.00212	< 0.0050	0.00113
4/25/2022	E321812	F2_BPO											9.73														
4/25/2022	0200097	EV_EC1	5.89	0.17	0.33	< 0.10	0.16	< 10	1750	0.20	< 0.50	< 0.010	12.98	< 0.100	1180	< 0.010	< 0.010	< 0.050	< 0.050	0.0266	0.0269	152		0.00055	0.00247	< 0.0050	< 0.00050
4/25/2022	0200097	EV_EC1																									
4/25/2022	E321791	F2_NWPI	19.7	< 0.20	< 0.10	14.3	14.1	< 10	1850	< 0.40	0.51	0.061	5.61	0.385	1160	< 0.020	0.044	< 0.100	< 0.050	0.185	0.178	142		0.0965	0.0989	< 0.0050	0.00062
4/25/2022	E321814	EV_ECOUT	7.02	0.16	0.23	< 0.10	< 0.10	< 10	1930	< 0.20	< 0.50	< 0.010	11.52	< 0.100	1290	< 0.010	< 0.010	< 0.050	< 0.050	0.0271	0.0264	150		0.00010	0.00080	< 0.0050	< 0.00050
4/25/2022	E321812	F2_BPO											9.4														
4/26/2022	E321791	F2_NWPI	15.3	< 0.10		15.0		< 10	1890	0.33			5.35	0.279	1180	0.013		< 0.050		0.186				0.108		< 0.0050	0.00145
4/26/2022	E300091	EV_MC2	4.50						500				12.24	0.126	260												
4/26/2022	E300091	EV_MC2																									
4/26/2022	E300091	EV_MC2																									
4/26/2022	0200097	EV_EC1	5.36						1800				12.53	< 0.100	1170												
4/26/2022	E206231	EV_GT1	9.98	< 0.10	< 0.10	0.13	0.13	< 10	1920	0.28	< 0.50	0.021	12.1	0.201	1280	0.017	0.108	< 0.050	< 0.050	0.0849	0.0805	161		0.00626	0.00624	< 0.0050	< 0.00050
4/26/2022	E321812	F2_BPO	9.95	< 0.10		10.8		< 10	1860	< 0.20			9.4	0.174	1350	0.060		< 0.050		0.0755				0.381		< 0.0050	< 0.00050
4/26/2022	E321812	F2_BPO											9.31														
4/26/2022	0200203	EV_MC3	1.14	< 0.10	0.39	< 0.10	0.12		328	0.42	0.66		11.46	0.092	179	< 0.010	0.224	< 0.050	0.165	0.0053	0.0054	14.3		0.00094	0.00571	< 0.0050	0.00218
4/26/2022	E206231	EV_GT1																									
4/26/2022	E102685	EV_BC1	13.6	0.12	< 0.10	< 0.10	< 0.10	< 10	1910	0.23	< 0.50	0.064	10.75	0.188	1260	< 0.010	0.024	< 0.050	< 0.050	0.0886	0.0905	173		0.00126	0.00177	< 0.0050	0.00063
4/26/2022	E102685	EV_BC1																									
4/26/2022	E300091	EV_MC2	3.18	< 0.10	0.20	< 0.10	< 0.10		460	0.36	< 0.50		11.18	0.103	259	< 0.010	0.061	< 0.050	< 0.050	0.0095	0.0095	23.2		0.00131	0.00132	< 0.0050	0.00187
4/26/2022	200393	EV_ER1	3.49	0.18	0.50	< 0.10	0.15		526	0.25	0.57		11.15	0.146	276	< 0.010	0.259	< 0.050	0.698	0.0114	0.0121	26.2		0.00111	0.0128	< 0.0050	0.00068
4/26/2022	E321812	F2_BPO											9														
4/27/2022	E321791	F2_NWPI	17.1					< 10	1950				5.18	0.307													
4/27/2022	0200097	EV_EC1	5.88						1810				12.44	< 0.100	1180												
4/27/2022	E300091	EV_MC2	1.98						426				13.03	0.072	220												
4/27/2022	E300091	EV_MC2																									
4/27/2022	E300091	EV_MC2																									
4/27/2022	E321812	F2_BPO	9.48					< 10	1950				9.68	0.172													
4/27/2022	E321812	F2_BPO											9.68														
4/27/2022	0200097	EV_EC1																									
4/27/2022	E321812	F2_BPO											9.76														
4/28/2022	E300091	EV_MC2	2.13						423				12.64	0.122	228												
4/28/2022	0200097	EV_EC1	6.39						1780				12.19	< 0.100	1190												
4/28/2022	E321791	F2_NWPI	16.7	< 0.10		15.5		< 10	1940	0.40			5.29	0.332	1160	< 0.010		< 0.050		0.184				0.106		< 0.0050	0.00080
4/28/2022	E321812	F2_BPO	10.4	< 0.10		17.0		< 10	1990	< 0.20			10.35	0.191	1300	0.531		< 0.050		0.0782				0.519		< 0.0050	< 0.00050
4/28/2022	E321812	F2_BPO											10.35														
4/28/2022	E321812	F2_BPO											9.87														

		Parameter	Chloride	Chromium	Chromium	Cobalt	Cobalt	COD	Conductivity, Lab	Copper	Copper	Dimethylseleneoxide	Dissolved Oxygen, Field	Fluoride	Hardness, Total or Dissolved CaCO3	Iron	Iron	Lead	Lead	Lithium	Lithium	Magnesium	Magnesium	Manganese	Manganese	Mercury	Mercury
		Fraction	D	D	T	D	T	N	N	D	T	D	N	N	D	D	T	D	T	D	T	T	T	D	T	D	T
		Unit	mg/l	ug/l	ug/l	ug/l	ug/l	mg/l	us/cm	ug/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	ppm	mg/l	mg/l	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
4/29/2022	E321791	F2_NWPI	14.4						1930				4.82	0.292													
4/29/2022	E300091	EV_MC2	5.40						502				12.39	0.098	257												
4/29/2022	0200097	EV_EC1	6.22						1810				11.97	< 0.100	1170												
4/29/2022	E321812	F2_BPO	9.09					< 10	1970				9.87	0.175													
4/29/2022	E321812	F2_BPO											9.87														
4/29/2022	E321812	F2_BPO											9.94														
4/30/2022	E300091	EV_MC2	5.86						487				11.65	0.121	261												
4/30/2022	0200097	EV_EC1	6.23						1780				11.94	0.102	1210												
4/30/2022	E321791	F2_NWPI	17.3						1940				5.08	0.371													
4/30/2022	E321812	F2_BPO	10.8					< 10	2000				9.81	0.208													
4/30/2022	E321812	F2_BPO											9.81														
4/30/2022	E321812	F2_BPO											9.74														
5/1/2022	E300091	EV_MC2	6.83						501				12.32	0.121	268												
5/1/2022	E300091	EV_MC2																									
5/1/2022	E300091	EV_MC2																									
5/1/2022	0200097	EV_EC1	6.15						1790				12	< 0.100	1240												
5/1/2022	E321791	F2_NWPI	16.7						1950				5.29	0.376													
5/1/2022	E321812	F2_BPO	10.8					< 10	2010				9.79	0.213													
5/1/2022	E321812	F2_BPO											9.79														
5/1/2022	E321812	F2_BPO											9.81														
5/1/2022	E321812	F2_BPO											9.79														
5/1/2022	E321812	F2_BPO											9.81														
5/2/2022	0200097	EV_EC1	5.63	0.24	0.16	< 0.10	< 0.10	< 10	1810	< 0.20	< 0.50		11.96	< 0.100	1140	< 0.010	< 0.010	< 0.050	< 0.050	0.0259	0.0279	160		0.00042	0.00050	< 0.0050	< 0.00050
5/2/2022	0200097	EV_EC1																									
5/2/2022	310168	EV_MC2A	1.40	0.12	0.34	< 0.10	< 0.10	10	375	0.36	< 0.50		12.54	0.108	188	0.011	0.147	< 0.050	0.103	0.0056	0.0057	18.2		0.00115	0.00446	< 0.0050	0.00182
5/2/2022	0200203	EV_MC3	0.94	0.10	0.58	< 0.10	0.14	14	317	0.41	0.65		12.54	0.100	157	0.011	0.205	< 0.050	0.145	0.0047	0.0050	14.0		0.00090	0.00535	< 0.0050	0.00239
5/2/2022	200393	EV_ER1	2.83	0.20	0.33	< 0.10	< 0.10	< 10	486	0.29	< 0.50		12.04	0.148	247	< 0.010	0.095	< 0.050	0.078	0.0099	0.0104	24.6		0.00107	0.00482	< 0.0050	0.00095
5/2/2022	E321812	F2_BPO	10.0	< 0.10	< 0.10	16.1	16.4	< 10	2010	< 0.20	< 0.50	< 0.010	9.88	0.194	1390	0.050	0.441	< 0.050	0.092	0.0819	0.0900	180		0.516	0.537	< 0.0050	< 0.00050
5/2/2022	E300091	EV_MC2	2.12	0.14	0.31	< 0.10	< 0.10	< 10	408	0.35	0.51		12.8	0.109	205	< 0.010	0.134	< 0.050	0.098	0.0072	0.0075	20.5		0.00103	0.00423	< 0.0050	0.00196
5/2/2022	E300091	EV_MC2																									
5/2/2022	E321814	EV_ECOUT	6.10	0.23	0.26	< 0.10	< 0.10	< 10	1960	< 0.20	< 0.50		11.82	0.102	1240	< 0.010	0.014	< 0.050	< 0.050	0.0274	0.0288	164		< 0.00010	0.00078	< 0.0050	< 0.00050
5/2/2022	E321812	F2_BPO											9.53														
5/2/2022	E321791	F2_NWPI	16.2	< 0.10	< 0.10	16.2	16.7	< 10	1940	0.55	0.55	0.061	4.97	0.331	1220	0.012	0.040	< 0.050	0.053	0.187	0.200	156		0.108	0.117	< 0.0050	0.00052
5/2/2022	E321812	F2_BPO											9.36														
5/3/2022	E300091	EV_MC2	4.17						432				12.34	0.110	214												
5/3/2022	0200097	EV_EC1	6.88						1810				11.96	< 0.100	1160												
5/3/2022	E206231	EV_GT1	10.0	< 0.10	0.14	0.13	0.13	< 10	1910	0.26	< 0.50		12.33	0.205	1230	0.012	0.077	< 0.050	< 0.050	0.0878	0.0894	169		0.00472	0.00533	< 0.0050	< 0.00050
5/3/2022	E321812	F2_BPO	10.4	< 0.10		15.2		< 10	2000	< 0.20			9.87	0.218	1320	0.036		< 0.050		0.0801				0.471		< 0.0050	< 0.00050
5/3/2022	E321812	F2_BPO											9.87														
5/3/2022	0200203	EV_MC3	0.79	< 0.10	0.66	< 0.10	0.25		299	0.36	1.05		12.09	0.092	149	0.011	0.386	< 0.050	0.333	0.0046	0.0053	12.7		0.00130	0.0120	< 0.0050	< 0.0050
5/3/2022	E102685	EV_BC1	14.5	< 0.10	0.14	< 0.10	< 0.10	< 10	1880	0.24	< 0.50		10.38	0.189	1200	< 0.010	0.017	0.055	< 0.050	0.0915	0.0993	171		0.00110	0.00140	0.0200	< 0.00050
5/3/2022	E102685	EV_BC1	12.3	< 0.10	< 0.10	< 0.10	< 0.10		1890	< 0.20	< 0.50		10.23	0.166	1200	< 0.010	0.014	< 0.050	< 0.050	0.0886	0.0979	166		0.00106	0.00131	< 0.0050	< 0.0050
5/3/2022	E321791	F2_NWPI	16.6	< 0.10		14.8		< 10	1920	0.55			5.42	0.375	1170	0.022		0.053		0.184				0.100		< 0.0050	0.00117
5/3/2022	E206231	EV_GT1	9.66	< 0.10	< 0.10	0.12	0.13		1880	0.25	0.52		11.75	0.198	1240	0.012	0.075	< 0.050	< 0.050	0.0861	0.0872	161		0.00472	0.00491	< 0.0050	< 0.0050
5/3/2022	E300091	EV_MC2	1.98	< 0.10	0.52	< 0.10	0.20		383	0.32	0.72		11.56	0.105	198	< 0.010	0.264	< 0.050	0.228	0.0069	0.0075	18.4		0.00131	0.0101	< 0.0050	< 0.0050
5/3/2022	E321814	EV_ECOUT	5.94	0.17	0.18	< 0.10	< 0.10		1930	< 0.20	< 0.50		11.03	< 0.100	1260	< 0.010	< 0.010	< 0.050	< 0.050	0.0270	0.0288	153		< 0.00010	0.00062	< 0.0050	< 0.0050
5/3/2022	200393	EV_ER1	2.53	0.21	0.37	< 0.10	0.12		471	0.20	< 0.50		11.19	0.146	247	< 0.010	0.145	< 0.050	0.144	0.0098	0.0103	23.0		0.00118	0.00887	< 0.0050	< 0.0050
5/3/2022	E321812	F2_BPO											9.84														
5/4/2022	0200097	EV_EC1			2600		898				2800						168		465		0.306		1508		4.6		< 25
5/4/2022	E300091	EV_MC2	1.50						333				103.5	0.108	171												

		Parameter	Chloride	Chromium	Chromium	Cobalt	Cobalt	COD	Conductivity, Lab	Copper	Copper	Dimethylseleneoxide	Dissolved Oxygen, Field	Fluoride	Hardness, Total or Dissolved CaCO3	Iron	Iron	Lead	Lead	Lithium	Lithium	Magnesium	Magnesium	Manganese	Manganese	Mercury	Mercury
		Fraction	D	D	T	D	T	N	N	D	T	D	N	N	D	D	T	D	T	D	T	T	T	D	T	D	T
		Unit	mg/l	ug/l	ug/l	ug/l	ug/l	mg/l	us/cm	ug/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	ppm	mg/l	mg/l	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
5/4/2022	0200097	EV_EC1	5.51						1810				11.53	< 0.100	1180												
5/4/2022	E321812	F2_BPO	10.1					< 10	1980				8.81	0.213													
5/4/2022	E321812	F2_BPO											9.81														
5/4/2022	E321791	F2_NWPI	15.9						1900				5.56	0.366													
5/4/2022	0200097	EV_EC1	5.53	0.18	0.19	< 0.10	< 0.10	< 10	1800	< 0.20	< 0.50		10.93	< 0.100	1120	< 0.010	< 0.010	< 0.050	< 0.050	0.0263	0.0301	156		0.00041	0.00049	< 0.0050	< 0.0050
5/4/2022	E321812	F2_BPO											9.85														
5/4/2022	0200203	EV_MC3	0.59	0.13	1.58	< 0.10	0.38	15	254	0.54	1.43		10.77	0.089	122	0.031	0.692	< 0.050	0.445	0.0040	0.0048	11.4		0.00215	0.0143	< 0.0050	0.00502
5/4/2022	E321814	EV_ECOUT	6.16	0.18	0.21	< 0.10	< 0.10	< 10	1960	< 0.20	< 0.50		10.57	0.105	1240	< 0.010	< 0.010	< 0.050	< 0.050	0.0264	0.0284	153		< 0.00010	0.00027	< 0.0050	< 0.00050
5/5/2022	0200097	EV_EC1			1700		342				2400						40		3		0.095		1199		0.598		30
5/5/2022	E300091	EV_MC2	3.69						354				12.25	0.108	184												
5/5/2022	0200097	EV_EC1	6.62						1760				11.68	< 0.100	1190												
5/5/2022	E321812	F2_BPO											9.3														
5/5/2022	E321812	F2_BPO	10.4	< 0.10	< 0.10	16.5	18.0	< 10	1980	< 0.20	< 0.50		9.3	0.216	1280	0.037	0.288	< 0.050	0.081	0.0795	0.0909	179		0.505	0.559	0.0793	< 0.00050
5/5/2022	0200097	EV_EC1	5.76	0.19	0.17	< 0.10	< 0.10	< 10	1800	< 0.20	< 0.50		10.83	0.100	1160	< 0.010	< 0.010	< 0.050	< 0.050	0.0270	0.0281	143		0.00039	0.00044	< 0.0050	< 0.00050
5/5/2022	0200203	EV_MC3	0.56	< 0.10	1.59	< 0.10	0.58	19	237	0.47	1.76		10.6	0.096	121	0.016	0.983	< 0.050	0.671	0.0038	0.0049	9.90		0.00195	0.0246	< 0.0050	0.00472
5/5/2022	E321814	EV_ECOUT	6.08	0.19	0.20	< 0.10	< 0.10	< 10	1950	< 0.20	< 0.50		10.74	0.104	1270	< 0.010	0.016	< 0.050	< 0.050	0.0282	0.0294	148		< 0.00010	0.00019	< 0.0050	< 0.00050
5/5/2022	E321812	F2_BPO											9.25														
5/6/2022	0200097	EV_EC1	10.9						1770				11.59	0.108	1120												
5/6/2022	0200097	EV_EC1	5.33	0.17	0.22	< 0.10	< 0.10	< 10	1780	< 0.20	< 0.50		10.93	< 0.100	1130	< 0.010	< 0.010	< 0.050	< 0.050	0.0225	0.0278	145		0.00043	0.00049	< 0.0050	< 0.00050
5/6/2022	E321812	F2_BPO	10.1					< 10	2000				9.4	0.175													
5/6/2022	0200203	EV_MC3	0.39	0.12	0.74	< 0.10	1.07	< 10	194	0.61	2.35		11.59	0.091	98.1	0.027	0.508	< 0.050	1.20	0.0024	0.0032	8.63		0.00290	0.0759	< 0.0050	0.0200
5/6/2022	E300091	EV_MC2	0.86						229				11.91	0.105	113												
5/6/2022	E321814	EV_ECOUT	5.94	0.19	0.23	< 0.10	< 0.10	34	1960	< 0.20	< 0.50		10.97	0.106	1240	< 0.010	< 0.010	< 0.050	< 0.050	0.0236	0.0301	154		< 0.00010	0.00012	< 0.0050	< 0.00050
5/6/2022	E321812	F2_BPO											9.43														
5/6/2022	E321791	F2_NWPI	16.1	< 0.10		14.9		< 10	1930	0.45			5.71	0.304	1230	0.011		0.624		0.196				0.0968		0.0867	0.00082
5/7/2022	E321791	F2_NWPI	16.1						1920				5.45	0.304													
5/7/2022	0200097	EV_EC1	5.68						1780				11.36	< 0.100	1190												
5/7/2022	0200097	EV_EC1	5.96	0.16	0.16	< 0.10	< 0.10	< 10	1750	< 0.20	< 0.50		11.02	0.107	1160	< 0.010	< 0.010	< 0.050	< 0.050	0.0266	0.0263	149		0.00045	0.00044	< 0.0050	< 0.00050
5/7/2022	0200203	EV_MC3	0.49	< 0.10	1.36	< 0.10	0.62	20	207	0.49	1.95		11.68	0.090	104	0.021	1.16	< 0.050	0.718	0.0030	0.0040	9.25		0.00152	0.0286	< 0.0050	0.00770
5/7/2022	E300091	EV_MC2	2.81						300				11.67	0.084	149												
5/7/2022	E321812	F2_BPO	10.2					< 10	1980				9.64	0.184													
5/7/2022	E321812	F2_BPO											9.45														
5/7/2022	E321814	EV_ECOUT	6.24	0.17	0.24	< 0.10	< 0.10	< 10	1930	< 0.20	< 0.50		10.62	0.106	1270	< 0.010	< 0.010	< 0.050	< 0.050	0.0272	0.0280	154		< 0.00010	0.00011	< 0.0050	< 0.00050
5/7/2022	E321812	F2_BPO											9.36														
5/8/2022	E321791	F2_NWPI	16.0						1940				5.6	0.302													
5/8/2022	0200097	EV_EC1	5.50						1780				11.6	< 0.100	1170												
5/8/2022	0200097	EV_EC1	5.84	0.14	0.15	< 0.10	< 0.10	14	1770	< 0.20	< 0.50		11.07	< 0.100	1150	< 0.010	< 0.010	< 0.050	< 0.050	0.0253	0.0251	145		0.00038	0.00040	< 0.0050	< 0.00050
5/8/2022	0200203	EV_MC3	0.53	0.12	0.91	< 0.10	0.38	< 10	224	0.50	1.33		11.65	0.092	112	0.035	0.675	< 0.050	0.416	0.0035	0.0041	9.35		0.00148	0.0147	< 0.0050	0.00524
5/8/2022	E300091	EV_MC2	3.10						329				11.79	0.087	166												
5/8/2022	E321812	F2_BPO	10.3					< 10	1990				9.39	0.177													
5/8/2022	E321812	F2_BPO											9.453														
5/8/2022	E321814	EV_ECOUT	6.08	0.16	0.18	< 0.10	< 0.10	< 10	1950	< 0.20	< 0.50		11.03	0.104	1250	< 0.010	< 0.010	< 0.050	< 0.050	0.0264	0.0277	157		< 0.00010	0.00010	< 0.0050	< 0.00050
5/8/2022	E321812	F2_BPO											9.23														
5/9/2022	E300091	EV_MC2	2.69	0.14	0.57	< 0.10	0.20	12	334	0.38	0.75	< 0.010	11.47	0.102	162	0.015	0.290	< 0.050	0.208	0.0068	0.0076	15.1		0.00137	0.00780	< 0.0050	0.00288
5/9/2022	E321791	F2_NWPI	16.2	< 0.10	0.12	15.9	17.3	< 10	1920	0.38	0.65	0.055	7.19	0.360	1120	0.022	0.059	< 0.050	0.710	0.184	0.174	142		0.108	0.116	< 0.0050	0.00068
5/9/2022	E321812	F2_BPO	10.4	< 0.10	< 0.10	17.0	18.3	< 10	2000	< 0.20	< 0.50	< 0.010	9.54	0.217	1270	0.036	0.450	< 0.050	0.123	0.0794	0.0778	159		0.468	0.490	0.0440	< 0.00050
5/9/2022	310168	EV_MC2A	0.88	0.14	0.62	< 0.10	0.22	13	272	0.40	0.78			0.099	133	0.014	0.358	0.232	0.224	0.0043	0.0047	12.1		0.00123	0.00879	< 0.0050	0.00316
5/9/2022	E321812	F2_BPO											9.51														

Parameter			Chloride	Chromium	Chromium	Cobalt	Cobalt	COD	Conductivity, Lab	Copper	Copper	Dimethylseleneoxide	Dissolved Oxygen, Field	Fluoride	Hardness, Total or Dissolved CaCO3	Iron	Iron	Lead	Lead	Lithium	Lithium	Magnesium	Magnesium	Manganese	Manganese	Mercury	Mercury
Fraction			D	D	T	D	T	N	N	D	T	D	N	N	D	D	T	D	T	D	T	T	T	D	T	D	T
Unit			mg/l	ug/l	ug/l	ug/l	ug/l	mg/l	us/cm	ug/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	ppm	mg/l	mg/l	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
5/9/2022	0200097	EV_EC1	5.71	0.15	0.13	< 0.10	< 0.10		1760	< 0.20	< 0.50		11.74	< 0.100	1110	< 0.010	< 0.010	< 0.050	< 0.050	0.0241	0.0250	142		0.00032	0.00035	< 0.0050	< 0.00050
5/9/2022	0200203	EV_MC3	0.57	0.10	0.89	< 0.10	0.24		240	0.44	0.94		11.69	0.093	116	0.029	0.411	< 0.050	0.255	0.0036	0.0042	10.2		0.00121	0.00823	< 0.0050	< 0.0050
5/9/2022	0200097	EV_EC1	5.48	0.18	0.21	< 0.10	< 0.10	228	1770	< 0.20	< 0.50	< 0.010	11.74	< 0.100	1180	< 0.010	< 0.010	< 0.050	< 0.050	0.0270	0.0281	141		0.00048	0.00048	< 0.0050	< 0.00050
5/9/2022	200393	EV_ER1	1.76	0.18	0.59	< 0.10	0.13	< 10	385	0.30	0.56		12.02	0.134	194	< 0.010	0.237	< 0.050	0.173	0.0075	0.0080	17.5		0.00144	0.00868	< 0.0050	0.00162
5/9/2022	E321814	EV_ECOUT	6.10	0.17	0.19	< 0.10	< 0.10		1940	0.86	< 0.50		11.24	0.102	1260	0.011	< 0.010	< 0.050	< 0.050	0.0260	0.0270	151		0.00032	< 0.00010	< 0.0050	< 0.0050
5/9/2022	E321814	EV_ECOUT	6.08	0.24	0.19	< 0.10	< 0.10	152	1940	< 0.20	< 0.50	< 0.010	10.97	< 0.100	1310	< 0.010	< 0.010	< 0.050	< 0.050	0.0283	0.0304	148		0.00017	0.00023	< 0.0050	< 0.00050
5/9/2022	E321812	F2_BPO											9.57														
5/10/2022	E300091	EV_MC2	4.78						392				12.2	0.110	194												
5/10/2022	0200097	EV_EC1	6.32						1800				11.4	0.100	1150												
5/10/2022	0200097	EV_EC1											11.4														
5/10/2022	E321812	F2_BPO											9.54														
5/10/2022	E321791	F2_NWPI	16.9	< 0.10		16.2		< 10	1910	0.42			5.05	0.371	1210	< 0.010		< 0.050		0.214				0.111		0.0158	0.00056
5/10/2022	E321812	F2_BPO	10.8	< 0.10		17.3		< 10	2010	< 0.20			9.45	0.222	1360	0.037		< 0.050		0.0946				0.495		0.0187	< 0.00050
5/10/2022	E206231	EV_GT1	10.6	< 0.10	< 0.10	0.14	0.14	< 10	1770	0.29	< 0.50	0.018	11.29	0.207	1190	0.018	0.098	< 0.050	< 0.050	0.0836	0.0866	162		0.00436	0.00495	0.0214	< 0.00050
5/10/2022	E206231	EV_GT1											11.29														
5/10/2022	E321812	F2_BPO											9.48														
5/10/2022	0200097	EV_EC1	6.07	0.16	0.18	< 0.10	< 0.10		1780	< 0.20	< 0.50		11.34	< 0.100	1050	< 0.010	< 0.010	< 0.050	< 0.050	0.0259	0.0255	138		0.00031	0.00034	< 0.0050	< 0.0050
5/10/2022	0200203	EV_MC3	0.63	< 0.10	0.80	< 0.10	0.24		263	0.40	0.92		10.97	0.080	119	0.011	0.413	< 0.050	0.262	0.0042	0.0046	10.2		0.00105	0.00871	< 0.0050	0.00356
5/10/2022	E102685	EV_BC1	18.3	< 0.10	< 0.10	< 0.10	< 0.10	< 10	1820	0.24	< 0.50	0.099	9.59	0.194	1180	< 0.010	0.010	< 0.050	< 0.050	0.0923	0.0951	175		0.00108	0.00150	0.0449	< 0.00050
5/10/2022	E102685	EV_BC1											9.59														
5/10/2022	E321814	EV_ECOUT	6.65	0.17	0.20	< 0.10	< 0.10		1960	< 0.20	< 0.50		10.99	< 0.100	1150	< 0.010	< 0.010	< 0.050	< 0.050	0.0267	0.0275	145		< 0.00010	0.00028	< 0.0050	< 0.0050
5/10/2022	E321814	EV_ECOUT											10.97														
5/10/2022	E321812	F2_BPO											9.25														
5/11/2022	E300091	EV_MC2											12.38														
5/11/2022	0200097	EV_EC1											11.75														
5/11/2022	E321812	F2_BPO											9.64														
5/11/2022	E321791	F2_NWPI	18.4						1940				5.96	0.343													
5/11/2022	E321812	F2_BPO	11.2					< 10	2010				9.64	0.191													
5/11/2022	310168	EV_MC2A										< 0.010	12.18														
5/11/2022	0200203	EV_MC3	0.59	0.35	0.57	0.16	0.22	117	238	0.65	0.84	< 0.010	12.42	0.092	124	0.130	0.344	0.172	0.223	0.0041	0.0044	10.1		0.00696	0.00825	< 0.0050	0.00354
5/11/2022	E300091	EV_MC2	1.68	0.10	0.41	< 0.10	0.15		340	0.33	0.57		11.53	0.087	179	< 0.010	0.188	< 0.050	0.125	0.0067	0.0065	15.1		0.00123	0.00535	< 0.0050	0.00238
5/11/2022	E102685	EV_BC1																									
5/11/2022	E206231	EV_GT1																									
5/11/2022	E321812	F2_BPO											9.48														
5/12/2022	E300091	EV_MC2											12.12														
5/12/2022	0200097	EV_EC1											11.91														
5/12/2022	E321791	F2_NWPI	16.5	< 0.10		14.7		< 10	1950	0.39			7.17	0.373	1210	0.014		< 0.050		0.192				0.0977		0.0756	0.00054
5/12/2022	E321812	F2_BPO											9.73														
5/12/2022	E321812	F2_BPO	10.8	< 0.10		16.0		< 10	2000	< 0.20			9.52	0.217	1350	0.031		< 0.050		0.0849				0.417		0.0696	< 0.00050
5/12/2022	200393	EV_ER1	2.02	0.20	0.49	< 0.10	< 0.10		419	0.22	0.52		10.97	0.122	230	< 0.010	0.082	< 0.050	0.094	0.0098	0.0097	18.8		0.00133	0.00614	< 0.0050	0.00092
5/12/2022	E321812	F2_BPO											9.37														
5/13/2022	E321791	F2_NWPI	21.9						1920				5.58	0.366													
5/13/2022	0200097	EV_EC1											11.9														
5/13/2022	E321812	F2_BPO	10.8					< 10	1990				9.46	0.218													
5/13/2022	E300091	EV_MC2											11.97														
5/13/2022	E321812	F2_BPO											9.52														
5/13/2022	E321812	F2_BPO											9.55														
5/14/2022	E321791	F2_NWPI	16.0						1920				5.7	0.340													

		Parameter	Chloride	Chromium	Chromium	Cobalt	Cobalt	COD	Conductivity, Lab	Copper	Copper	Dimethylseleneoxide	Dissolved Oxygen, Field	Fluoride	Hardness, Total or Dissolved CaCO3	Iron	Iron	Lead	Lead	Lithium	Lithium	Magnesium	Magnesium	Manganese	Manganese	Mercury	Mercury
		Fraction	D	D	T	D	T	N	N	D	T	D	N	N	D	D	T	D	T	D	T	T	T	D	T	D	T
		Unit	mg/l	ug/l	ug/l	ug/l	ug/l	mg/l	us/cm	ug/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	ppm	mg/l	mg/l	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
5/14/2022	0200097	EV_EC1											12.24														
5/14/2022	E321812	F2_BPO	10.6					< 10	1970				9.7	0.207													
5/14/2022	E321812	F2_BPO											9.7														
5/14/2022	E300091	EV_MC2											12.38														
5/14/2022	E321812	F2_BPO											9.56														
5/15/2022	E300091	EV_MC2											12.27														
5/15/2022	0200097	EV_EC1											12.05														
5/15/2022	E321812	F2_BPO	10.6					< 10	1980				9.62	0.208													
5/15/2022	E321791	F2_NWPI	16.0						1910				6.09	0.338													
5/15/2022	E321812	F2_BPO											9.62														
5/15/2022	E321812	F2_BPO											9.52														
5/16/2022	E321791	F2_NWPI	16.6	< 0.10	< 0.10	16.0	16.4	< 10	1930	0.40	0.61	0.059	6.18	0.355	1230	0.017	0.059	< 0.050	0.075	0.207	0.193	153		0.108	0.110	0.0774	0.00051
5/16/2022	E300091	EV_MC2	1.79	0.14	0.28	< 0.10	0.12	< 10	335	0.33	< 0.50		12.15	0.110	171	0.013	0.101	< 0.050	0.088	0.0062	0.0064	16.8		0.00112	0.00418	0.0169	0.00210
5/16/2022	E300091	EV_MC2																									
5/16/2022	E321812	F2_BPO	10.9	< 0.10	< 0.10	17.6	17.5	< 10	2010	< 0.20	< 0.50	< 0.010	9.39	0.209	1350	0.031	0.418	< 0.050	0.110	0.0974	0.0932	171		0.470	0.473	0.0830	< 0.00050
5/16/2022	E321812	F2_BPO											9.39														
5/16/2022	0200097	EV_EC1	6.10	0.21	0.21	< 0.10	< 0.10	< 10	1780	< 0.20	< 0.50		12.25	< 0.100	1200	< 0.010	< 0.010	< 0.050	< 0.050	0.0278	0.0282	156		0.00044	0.00043	0.0176	0.00162
5/16/2022	0200097	EV_EC1																									
5/16/2022	0200203	EV_MC3	0.59	0.13	0.42	< 0.10	0.19	< 10	264	0.40	0.63		12.59	0.096	137	0.011	0.187	< 0.050	0.134	0.0049	0.0045	11.9		0.00105	0.00547	0.0203	0.00316
5/16/2022	310168	EV_MC2A	0.99	0.14	0.32	< 0.10	0.14	< 10	309	0.36	< 0.50		12.87	0.108	161	0.011	0.117	< 0.050	0.084	0.0049	0.0050	15.0		0.00112	0.00413	0.0209	0.00224
5/16/2022	E321814	EV_ECOUT	6.19	0.20	0.22	< 0.10	< 0.10	< 10	1920	< 0.20	< 0.50		10.87	< 0.100	1240	< 0.010	< 0.010	< 0.050	< 0.050	0.0260	0.0283	160		0.00010	0.00018	0.0835	< 0.00050
5/16/2022	200393	EV_ER1	2.04	0.21	0.38	< 0.10	< 0.10	< 10	405	0.24	< 0.50		12.3	0.152	212	< 0.010	0.061	< 0.050	0.063	0.0078	0.0079	19.7		0.00109	0.00384	0.0653	0.00103
5/17/2022	E300091	EV_MC2	1.68	0.15	0.41	< 0.10	0.35		284	1.60	0.92		11.37	0.090	151	0.030	0.226	< 0.050	0.335	0.0057	0.0065	15.3		0.00158	0.0166	< 0.0050	0.00501
5/17/2022	E321791	F2_NWPI	15.6	< 0.10		16.8		< 10	1930	0.41			5.85	0.371	1180	< 0.010		< 0.050		0.204				0.114		0.0242	0.00066
5/17/2022	0200097	EV_EC1											12.74														
5/17/2022	E206231	EV_GT1	8.45	< 0.10	0.14	0.12	0.14	< 10	1730	0.38	< 0.50		13.41	0.214	1120	< 0.010	0.095	< 0.050	< 0.050	0.0834	0.0801	149		0.00654	0.00849	0.0835	0.00075
5/17/2022	E321812	F2_BPO	10.3	< 0.10		17.5		< 10	1990	< 0.20			9.29	0.231	1370	0.052		0.066		0.0982				0.473		0.0181	< 0.00050
5/17/2022	E300091	EV_MC2											12.82														
5/17/2022	E102685	EV_BC1	20.7	< 0.20	0.11	< 0.20	< 0.10	< 10	1890	< 0.40	< 0.50		9.52	0.191	1230	< 0.020	< 0.010	< 0.100	< 0.050	0.111	0.107	169		0.00131	0.00142	0.0901	< 0.00050
5/17/2022	200393	EV_ER1	1.53	0.18	0.54	< 0.10	0.18		362	0.41	0.64		11.21	0.130	193	0.014	0.214	< 0.050	0.218	0.0070	0.0077	17.8		0.00163	0.0102	< 0.0050	0.00198
5/17/2022	0200203	EV_MC3	0.40	0.12	0.69	0.11	0.35		220	0.48	0.98		11.12	0.091	114	0.014	0.341	< 0.050	0.347	0.0035	0.0042	9.60		0.00136	0.0144	< 0.0050	0.00495
5/17/2022	E206231	EV_GT1																									
5/17/2022	E102685	EV_BC1																									
5/18/2022	E321791	F2_NWPI	16.1						1930				5.77	0.300													
5/18/2022	0200097	EV_EC1											12.5														
5/18/2022	E321812	F2_BPO	10.8					< 10	2000				9.4	0.179													
5/18/2022	E321812	F2_BPO											9.4														
5/18/2022	E300091	EV_MC2											12.67														
5/18/2022	0200097	EV_EC1																									
5/19/2022	E321791	F2_NWPI	16.3	< 0.10		15.1		< 10	1910	0.33			6.49	0.292	1120	< 0.010		< 0.050		0.191				0.102		0.0125	0.00073
5/19/2022	E300091	EV_MC2											13.05														
5/19/2022	E321812	F2_BPO											11.36														
5/19/2022	0200097	EV_EC1											12.92														
5/19/2022	E321812	F2_BPO	10.8	< 0.10		16.6		< 10	1990	< 0.20			11.36	0.139	1250	0.035		< 0.050		0.0835				0.447		0.0216	0.00070
5/20/2022	E321791	F2_NWPI	15.8						1940				6.06	0.340													
5/20/2022	E321791	F2_NWPI							1940																		
5/20/2022	E300091	EV_MC2											12.96														
5/20/2022	0200097	EV_EC1											12.69														

Parameter			Chloride	Chromium	Chromium	Cobalt	Cobalt	COD	Conductivity, Lab	Copper	Copper	Dimethylseleneoxide	Dissolved Oxygen, Field	Fluoride	Hardness, Total or Dissolved CaCO3	Iron	Iron	Lead	Lead	Lithium	Lithium	Magnesium	Magnesium	Manganese	Manganese	Mercury	Mercury
Fraction			D	D	T	D	T	N	N	D	T	D	N	N	D	D	T	D	T	D	T	T	T	D	T	D	T
Unit			mg/l	ug/l	ug/l	ug/l	ug/l	mg/l	us/cm	ug/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	ppm	mg/l	mg/l	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
5/20/2022	E321812	F2_BPO											9.58														
5/20/2022	E321812	F2_BPO	10.8										9.78	0.196													
5/20/2022	E321812	F2_BPO						< 10	2000																		
5/20/2022	E321812	F2_BPO											9.6														
5/21/2022	E321791	F2_NWPI	16.2						1940				6.11	0.347													
5/21/2022	E300091	EV_MC2											13.3														
5/21/2022	0200097	EV_EC1											13.17														
5/21/2022	E321812	F2_BPO											9.86														
5/21/2022	E321812	F2_BPO	11.1					< 10	2000				9.79	0.204													
5/21/2022	E321812	F2_BPO											9.58														
5/22/2022	E321791	F2_NWPI	15.4						1920				65	0.333													
5/22/2022	E300091	EV_MC2											13.4														
5/22/2022	0200097	EV_EC1											13.2														
5/22/2022	E321812	F2_BPO											9.69														
5/22/2022	E321812	F2_BPO	11.1					13	2000				9.68	0.210													
5/23/2022	E321791	F2_NWPI	15.5	< 0.10	< 0.10	16.1	16.9	< 10	1940	0.38	0.57	0.052	6.14	0.321	1270	0.023	0.059	< 0.050	0.070	0.183	0.193	151		0.110	0.112	0.0149	0.00068
5/23/2022	E321812	F2_BPO	11.1	< 0.10	< 0.10	17.1	17.4	12	1970	< 0.20	< 0.50	< 0.010	9.47	0.198	1400	0.023	0.404	< 0.050	0.097	0.0917	0.0920	166		0.482	0.458	0.0129	< 0.00050
5/23/2022	E321812	F2_BPO											9.47														
5/23/2022	E300091	EV_MC2	1.60	0.12	0.26	< 0.10	0.11	15	351	0.27	< 0.50	< 0.010	13.68	0.102	184	< 0.010	0.087	< 0.050	0.052	0.0065	0.0068	19.4		0.00101	0.00259	0.0137	0.00153
5/23/2022	310168	EV_MC2A	0.92	0.12	0.32	< 0.10	0.12	14	312	0.27	< 0.50	< 0.010	13.75	0.101	164	< 0.010	0.108	< 0.050	0.074	0.0047	0.0048	15.2		0.00099	0.00304	0.0133	0.00154
5/23/2022	0200203	EV_MC3	0.54	< 0.10	0.19	< 0.10	0.12	17	263	0.29	< 0.50	< 0.010	13.74	0.090	132	< 0.010	0.079	< 0.050	< 0.050	0.0042	0.0045	12.3		0.00087	0.00244	0.0156	0.00197
5/23/2022	E321812	F2_BPO											9.65														
5/23/2022	0200097	EV_EC1	5.89	0.19	0.20	< 0.10	< 0.10	10	1800	< 0.20	< 0.50	< 0.010	12.87	< 0.100	1180	< 0.010	< 0.010	< 0.050	< 0.050	0.0253	0.0263	158		0.00040	0.00037	0.0160	< 0.00050
5/23/2022	0200097	EV_EC1											12.87														
5/23/2022	200393	EV_ER1	1.87	0.18	0.27	< 0.10	< 0.10	12	406	0.22	< 0.50		13.31	0.142	216	< 0.010	0.066	< 0.050	< 0.050	0.0078	0.0081	21.1		0.00102	0.00339	0.0137	0.00074
5/23/2022	E321814	EV_ECOUT	6.10	0.21	0.20	< 0.10	< 0.10	< 10	1930	0.23	< 0.50	< 0.010	10.99	0.102	1250	< 0.010	< 0.010	< 0.050	< 0.050	0.0248	0.0255	167		0.00022	0.00037	0.0151	< 0.00050
5/23/2022	E321814	EV_ECOUT											10.99														
5/23/2022	E321812	F2_BPO											9.26														
5/24/2022	0200097	EV_EC1											12.77														
5/24/2022	E321791	F2_NWPI	15.8	< 0.10		18.1		< 10	1950	0.35			5.95	0.322	1190	0.017		< 0.050		0.224				0.124		0.0139	0.00062
5/24/2022	E300091	EV_MC2	1.91	0.11	0.31	< 0.10	0.12		346	0.87	< 0.50		11.22	0.085	180	0.010	0.102	< 0.050	0.067	0.0068	0.0072	16.6		0.00094	0.00336	< 0.0050	0.00202
5/24/2022	E102685	EV_BC1	23.9	< 0.10	< 0.20	< 0.10	< 0.20	< 10	2000	< 0.20	< 1.00	0.143	10.29	0.164	1220	< 0.010	< 0.020	< 0.050	< 0.100	0.123	0.122	194		0.00144	0.00168	< 0.100	< 0.00050
5/24/2022	E102685	EV_BC1											10.29														
5/24/2022	E300091	EV_MC2											12.92														
5/24/2022	E321812	F2_BPO	11.7	< 0.10		16.4		< 10	2010	< 0.20			9.41	0.204	1260	0.049		< 0.050		0.103				0.442		0.0149	< 0.00050
5/24/2022	E321812	F2_BPO											9.41														
5/24/2022	E206231	EV_GT1	10.9	< 0.10	< 0.10	0.13	0.17	< 10	1970	0.21	< 0.50	0.015	11.76	0.194	1200	0.022	0.097	0.094	< 0.050	0.101	0.0988	176		0.00458	0.00531	< 0.100	< 0.00050
5/24/2022	E206231	EV_GT1											11.76														
5/24/2022	0200203	EV_MC3	0.43	< 0.10	0.31	< 0.10	0.16		249	0.42	0.50		11.5	0.075	129	< 0.010	0.126	< 0.050	0.096	0.0040	0.0044	10.9		0.00085	0.00488	< 0.0050	0.00242
5/24/2022	E206231	EV_GT1																									
5/24/2022	E102685	EV_BC1																									
5/24/2022	200393	EV_ER1	1.75	0.17	0.27	< 0.10	< 0.10		398	0.23	< 0.50		11.25	0.120	221	< 0.010	0.056	< 0.050	< 0.050	0.0079	0.0084	19.0		0.00104	0.00361	< 0.0050	0.00101
5/24/2022	E321812	F2_BPO											9.07														
5/25/2022	E321791	F2_NWPI	15.4						1920				6.47	0.338													
5/25/2022	E300091	EV_MC2											12.79														
5/25/2022	0200097	EV_EC1											12.63														
5/25/2022	E321812	F2_BPO											9.36														
5/25/2022	E321812	F2_BPO	11.5					< 10	2010				9.36	0.207													

		Parameter	Chloride	Chromium	Chromium	Cobalt	Cobalt	COD	Conductivity, Lab	Copper	Copper	Dimethylseleneoxide	Dissolved Oxygen, Field	Fluoride	Hardness, Total or Dissolved CaCO3	Iron	Iron	Lead	Lead	Lithium	Lithium	Magnesium	Magnesium	Manganese	Manganese	Mercury	Mercury
		Fraction	D	D	T	D	T	N	N	D	T	D	N	N	D	D	T	D	T	D	T	T	T	D	T	D	T
		Unit	mg/l	ug/l	ug/l	ug/l	ug/l	mg/l	us/cm	ug/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	ppm	mg/l	mg/l	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
5/25/2022	0200097	EV_EC1																									
5/25/2022	E321812	F2_BPO											9.44														
5/26/2022	E321791	F2_NWPI	15.9	< 0.10		14.8		< 10	1920	0.46			6.42	0.356	1180	< 0.010		< 0.050		0.194				0.0981		0.0154	0.00063
5/26/2022	E300091	EV_MC2											12.63														
5/26/2022	0200097	EV_EC1											12.22														
5/26/2022	E321812	F2_BPO	11.5	< 0.10		17.1		< 10	2010	< 0.20			9.17	0.216	1310	0.037		< 0.050		0.0985				0.464		0.0139	< 0.00050
5/26/2022	E321812	F2_BPO											9.17														
5/26/2022	E321812	F2_BPO											9.17														
5/27/2022	E321791	F2_NWPI	15.7						1920				6.2	0.346													
5/27/2022	E300091	EV_MC2											12.47														
5/27/2022	0200097	EV_EC1											12.35														
5/27/2022	E321812	F2_BPO	11.0					< 10	2010				8.8	0.214													
5/27/2022	E321812	F2_BPO											8.8														
5/27/2022	E321812	F2_BPO											9.02														
5/28/2022	E321791	F2_NWPI	15.4						1920				6.33	0.291													
5/28/2022	0200097	EV_EC1											12.22														
5/28/2022	E300091	EV_MC2											13.08														
5/28/2022	E321812	F2_BPO	11.1					< 10	1980				9.08	0.185													
5/28/2022	E321812	F2_BPO											9.08														
5/28/2022	E321812	F2_BPO											9.34														
5/28/2022	E321812	F2_BPO											9.08														
5/28/2022	E321812	F2_BPO											9.34														
5/29/2022	E321791	F2_NWPI	15.4						1930				6.42	0.287													
5/29/2022	0200097	EV_EC1											12.76														
5/29/2022	E300091	EV_MC2											7.37														
5/29/2022	E321812	F2_BPO	11.3					< 10	2010				8.85	0.187													
5/29/2022	E321812	F2_BPO											8.85														
5/29/2022	E321812	F2_BPO											8.98														
5/30/2022	E321791	F2_NWPI	16.0	< 0.10	< 0.10	15.2	16.5	< 10	1940	0.37	0.62	0.056	6.25	0.347	1240	0.016	0.050	< 0.050	0.133	0.178	0.191	147		0.0990	0.109	0.0154	0.00079
5/30/2022	E321814	EV_ECOUT	5.72	0.26	0.25	< 0.20	< 0.10	< 10	1960	< 0.40	< 0.50	< 0.010	11.27	< 0.100	1250	< 0.020	< 0.010	< 0.100	< 0.050	0.0254	0.0272	183		< 0.00020	0.00020	0.0154	< 0.00050
5/30/2022	E321812	F2_BPO	11.6	< 0.10	< 0.20	16.7	17.7	< 10	2010	< 0.20	< 1.00	< 0.010	8.91	0.214	1360	0.029	0.434	< 0.050	< 0.100	0.0887	0.0972	164		0.443	0.473	0.0168	< 0.00050
5/30/2022	E321812	F2_BPO											8.91														
5/30/2022	E300091	EV_MC2	1.63	0.16	0.37	< 0.10	0.23	< 10	285	0.32	0.78		12.27	0.088	137	0.011	0.278	< 0.050	0.242	0.0044	0.0049	14.7		0.00110	0.0100	0.0161	0.00295
5/30/2022	E300091	EV_MC2																									
5/30/2022	200393	EV_ER1	1.02	0.21	0.95	< 0.10	0.20	< 10	333	0.26	0.65		11.93	0.119	165	0.011	0.270	< 0.050	0.274	0.0054	0.0060	17.2		0.00163	0.0171	0.0152	0.00262
5/30/2022	0200097	EV_EC1	5.50	0.16	0.28	< 0.10	< 0.10	< 10	1830	< 0.20	< 0.50		12.25	< 0.100	1200	< 0.010	< 0.010	< 0.050	< 0.050	0.0256	0.0264	173		0.00028	0.00027	0.0151	< 0.00050
5/30/2022	0200097	EV_EC1																									
5/30/2022	0200203	EV_MC3	0.27	0.16	0.86	0.11	0.24	< 10	218	1.09	0.72		12.46	0.077	103	0.144	0.208	< 0.050	0.205	0.0030	0.0032	11.2		0.00240	0.00946	0.0170	0.00328
5/30/2022	310168	EV_MC2A	0.52	0.14	0.38	< 0.10	0.20	< 10	217	0.30	0.61		12.17	0.087	125	0.012	0.189	< 0.050	0.172	0.0033	0.0035	13.1		0.00197	0.00784	0.0165	0.00273
5/30/2022	E321812	F2_BPO											9.04														
5/31/2022	E321791	F2_NWPI	17.4	< 0.10		17.4		< 10	1950	0.36			6.28	0.350	1250	< 0.010		< 0.050		0.203				0.115		0.0666	0.00066
5/31/2022	E300091	EV_MC2	1.66	0.13	0.52	< 0.10	0.24		280	0.36	0.76		11.48	0.088	153	0.010	0.354	< 0.050	0.255	0.0056	0.0059	14.5		0.00104	0.00941	< 0.0050	0.00237
5/31/2022	E102685	EV_BC1	19.7	< 0.10	< 0.20	< 0.10	< 0.20	< 10	2000	0.27	< 1.00		9.13	0.167	1220	< 0.010	< 0.020	< 0.050	< 0.100	0.118	0.0996	178		0.00116	0.00119	0.0128	< 0.00050
5/31/2022	E300091	EV_MC2											12.38														
5/31/2022	E321812	F2_BPO	12.4	< 0.10		16.7		< 10	2020	< 0.20			9.41	0.211	1340	0.031		< 0.050		0.0990				0.449		0.116	< 0.00050
5/31/2022	E321812	F2_BPO											9.41														
5/31/2022	E206231	EV_GT1	10.6	< 0.10	< 0.10	0.16	0.19	< 10	1940	0.29	< 0.50		11.45	0.176	1150	0.018	0.150	< 0.050	< 0.050	0.0967	0.0879	163		0.00594	0.00629	0.0158	< 0.00050
5/31/2022	0200097	EV_EC1											12.8														
5/31/2022	0200097	EV_EC1																									
5/31/2022	0200203	EV_MC3	0.29	0.13	0.62	< 0.10	0.28		211	0.36	0.86		10.81	0.080	111	< 0.010	0.420	< 0.050	0.234	0.0032	0.0033	10.1		0.00122	0.00962	< 0.0050	0.00266

Parameter			Chloride	Chromium	Chromium	Cobalt	Cobalt	COD	Conductivity, Lab	Copper	Copper	Dimethylseleneoxide	Dissolved Oxygen, Field	Fluoride	Hardness, Total or Dissolved CaCO3	Iron	Iron	Lead	Lead	Lithium	Lithium	Magnesium	Magnesium	Manganese	Manganese	Mercury	Mercury
Fraction			D	D	T	D	T	N	N	D	T	D	N	N	D	D	T	D	T	D	T	T	T	D	T	D	T
Unit			mg/l	ug/l	ug/l	ug/l	ug/l	mg/l	us/cm	ug/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	ppm	mg/l	mg/l	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
5/31/2022	E206231	EV_GT1																									
5/31/2022	E102685	EV_BC1																									
5/31/2022	200393	EV_ER1	1.15	0.20	0.72	< 0.10	0.20		309	1.12	0.76		10.89	0.122	222	0.031	0.418	< 0.050	0.277	0.0056	0.0060	16.6		0.00308	0.0177	< 0.0050	0.00214
5/31/2022	E321812	F2_BPO											9.11														
6/1/2022	E321791	F2_NWPI	15.8						1820				6.9	0.367													
6/1/2022	E300091	EV_MC2											13.09														
6/1/2022	E321812	F2_BPO	11.8					< 10	1860				9.23	0.229													
6/1/2022	0200097	EV_EC1											12.78														
6/1/2022	E321812	F2_BPO											9.23														
6/1/2022	E321812	F2_BPO											9														
6/2/2022	0200097	EV_EC1	5.91	0.14	0.22	< 0.10	< 0.10	< 10	1820	< 0.20	< 0.50	< 0.010	11.23	< 0.100	949	< 0.010	< 0.010	< 0.050	< 0.050	0.0234	0.0270	155		0.00026	0.00033	0.154	< 0.00050
6/2/2022	E300091	EV_MC2											11.77														
6/2/2022	E321791	F2_NWPI	16.1	< 0.10		13.7		< 10	1910	0.51			5.8	0.358	1090	0.013		< 0.050		0.191				0.0881		0.0195	0.00059
6/2/2022	E321812	F2_BPO											8.98														
6/2/2022	E321814	EV_ECOUT	6.22	0.20	0.21	< 0.10	< 0.10	< 10	1920	< 0.20	< 0.50	< 0.010	10.46	0.110	1160	< 0.010	< 0.010	< 0.050	< 0.050	0.0254	0.0265	158		< 0.00010	0.00017	0.0174	< 0.00050
6/2/2022	E321812	F2_BPO	11.9	< 0.10		16.0		18	1980	0.21			8.88	0.220	1240	0.043		< 0.050		0.0979				0.422		0.0136	< 0.00050
6/2/2022	E321812	F2_BPO											8.56														
6/3/2022	E321791	F2_NWPI	17.3						1950				5.95	0.374													
6/3/2022	E300091	EV_MC2											10.93														
6/3/2022	0200097	EV_EC1											10.79														
6/3/2022	E321812	F2_BPO											8.89														
6/3/2022	E321812	F2_BPO	13.1					< 10	2040				9.15	0.232													
6/3/2022	E321812	F2_BPO											9.07														
6/4/2022	E321791	F2_NWPI	16.5						1970				5.8	0.338													
6/4/2022	E300091	EV_MC2											11.45														
6/4/2022	0200097	EV_EC1											11.52														
6/4/2022	E321812	F2_BPO											8.76														
6/4/2022	E321812	F2_BPO	12.3					< 10	2040				9.4	0.216													
6/4/2022	E321812	F2_BPO											8.54														
6/5/2022	E321791	F2_NWPI	15.4						1960				6.57	0.300													
6/5/2022	E300091	EV_MC2											11.58														
6/5/2022	0200097	EV_EC1											11.33														
6/5/2022	E321812	F2_BPO	11.6					< 10	2060				9.1	0.185													
6/5/2022	E321812	F2_BPO											9.1														
6/5/2022	E321812	F2_BPO											8.74														
6/6/2022	E321791	F2_NWPI	18.6	< 0.10	< 0.10	15.0	16.0	< 10	1910	0.38	< 0.50	0.047	5.95	0.424	1200	0.023	0.011	< 0.050	< 0.050	0.199	0.209	149		0.102	0.103	0.0605	0.00078
6/6/2022	E300091	EV_MC2	0.74	0.19	1.40	< 0.10	0.76	17	240	0.54	2.32	< 0.010	12.33	0.104	112	0.015	1.32	< 0.050	0.884	0.0036	0.0043	9.82		0.00152	0.0361	0.0499	0.00287
6/6/2022	E321812	F2_BPO	14.1	< 0.20	< 0.10	16.0	17.7	< 10	2010	< 0.40	< 0.50	< 0.010	8.89	0.258	1310	0.048	0.402	< 0.100	0.088	0.102	0.107	161		0.430	0.462	0.0626	< 0.00050
6/6/2022	E321812	F2_BPO											8.89														
6/6/2022	E321812	F2_BPO											8.89														
6/6/2022	200393	EV_ER1	0.79	0.22	1.79	< 0.10	0.75	19	290	0.26	1.88		11.74	0.136	134	< 0.010	1.45	< 0.050	0.958	0.0044	0.0052	12.0		0.00156	0.0573	0.0160	0.00283
6/6/2022	0200203	EV_MC3	0.18	0.12	1.36	< 0.10	0.91		190	0.38	1.89		11.27	0.076	94.2	0.014	1.05	< 0.050	0.932	0.0020	0.0032	8.46		0.00138	0.0484	< 0.0050	0.0077
6/6/2022	310168	EV_MC2A	0.36	0.19	1.18	< 0.10	0.69	17	228	0.40	1.61	< 0.010	12.11	0.102	106	0.016	1.06	< 0.050	0.786	0.0030	0.0036	8.98		0.00142	0.0329	0.0182	0.00242
6/6/2022	0200203	EV_MC3	0.21	0.13	1.13	< 0.10	0.65	23	199	0.32	1.50	< 0.010	12.43	0.093	86.9	0.012	0.996	< 0.050	0.676	0.0028	0.0034	7.26		0.00130	0.0286	0.0160	0.00366
6/6/2022	0200097	EV_EC1	5.78	0.18	0.18	< 0.10	< 0.10		1850	< 0.20	< 0.50		11.09	< 0.100	1170	< 0.010	< 0.010	< 0.050	< 0.050	0.0245	0.0262	155		0.00025	0.00028	< 0.0050	< 0.0050
6/6/2022	0200097	EV_EC1	5.78	0.27	0.22	0.10	< 0.10	< 10	1900	0.56	< 0.50	< 0.010	11.52	< 0.100	1200	0.021	< 0.010	0.320	< 0.050	0.0260	0.0262	160		0.00158	0.00031	0.0506	< 0.00050
6/6/2022	0200097	EV_EC1											11.52														
6/6/2022	E206231	EV_GT1	10.9	< 0.10	< 0.10	0.17	0.19		1890	0.28	< 0.50		11.94	0.204	1290	0.018	0.101	< 0.050	< 0.050	0.0878	0.104	168		0.00654	0.00654	< 0.0050	< 0.0050

		Parameter	Chloride	Chromium	Chromium	Cobalt	Cobalt	COD	Conductivity, Lab	Copper	Copper	Dimethylseleneoxide	Dissolved Oxygen, Field	Fluoride	Hardness, Total or Dissolved CaCO3	Iron	Iron	Lead	Lead	Lithium	Lithium	Magnesium	Magnesium	Manganese	Manganese	Mercury	Mercury
		Fraction	D	D	T	D	T	N	N	D	T	D	N	N	D	D	T	D	T	D	T	T	T	D	T	D	T
		Unit	mg/l	ug/l	ug/l	ug/l	ug/l	mg/l	us/cm	ug/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	ppm	mg/l	mg/l	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
6/6/2022	E102685	EV_BC1	15.8	< 0.10	< 0.10	0.17	0.16		1900	< 0.20	< 0.50		9.82	0.222	1300	< 0.010	0.091	< 0.050	< 0.050	0.0956	0.114	175		0.00495	0.00516	< 0.0050	< 0.0050
6/6/2022	E300091	EV_MC2	1.02	0.13	1.28	< 0.10	0.61		252	0.31	1.28	< 0.010	11.36	0.089	122	< 0.010	0.676	< 0.050	0.671	0.0032	0.0045	11.1		0.00134	0.0332	< 0.0050	0.0055
6/6/2022	E321814	EV_ECOUT	5.86	0.17	0.22	< 0.10	< 0.10	< 10	2020	< 0.20	< 0.50	< 0.010	11.1	< 0.100	1180	< 0.010	< 0.010	< 0.050	< 0.050	0.0246	0.0256	142		< 0.00010	0.00044	0.0452	< 0.00050
6/6/2022	E321814	EV_ECOUT											11.1														
6/6/2022	200393	EV_ER1	0.70	0.14	2.46	< 0.10	0.87		282	0.28	2.11	< 0.010	11.18	0.112	146	< 0.010	1.38	< 0.050	1.20	0.0036	0.0056	13.9		0.00166	0.0817	< 0.0050	0.0098
6/6/2022	E321812	F2_BPO											8.79														
6/7/2022	E321791	F2_NWPI	15.6	< 0.10		14.9		< 10	1910	0.40			3.25	0.340	1150	< 0.010		< 0.050		0.194				0.100		0.0084	0.00071
6/7/2022	E300091	EV_MC2	0.94	0.20	2.64	< 0.10	0.89		236	0.28	2.19		11.56	0.093	128	0.015	1.38	< 0.050	1.10	0.0041	0.0050	12.1		0.00141	0.0453	< 0.0050	0.0059
6/7/2022	E321812	F2_BPO	12.1	< 0.10		16.7		< 10	1980	< 0.20			9.12	0.214	1280	0.047		< 0.050		0.102				0.462		< 0.0050	< 0.00050
6/7/2022	E321812	F2_BPO											9.12														
6/7/2022	E102685	EV_BC1	14.9	< 0.10	< 0.10	0.16	0.18	12	1900	0.21	< 0.50	0.016	9.57	0.191	1260	< 0.010	0.096	< 0.050	< 0.050	0.115	0.117	162		0.00527	0.00563	0.0499	< 0.00050
6/7/2022	E102685	EV_BC1											9.57														
6/7/2022	E300091	EV_MC2											11.77														
6/7/2022	0200097	EV_EC1											12.22														
6/7/2022	E206231	EV_GT1	10.8	< 0.10	< 0.10	0.18	0.20	20	1860	0.26	0.51	0.019	10.72	0.182	1270	0.015	0.114	< 0.050	< 0.050	0.0999	0.107	160		0.00689	0.00763	0.0248	0.00051
6/7/2022	E206231	EV_GT1											10.72														
6/7/2022	E321812	F2_BPO											8.77														
6/8/2022	E321791	F2_NWPI	16.2						1980				6.5	0.348													
6/8/2022	E300091	EV_MC2											12.43														
6/8/2022	E321812	F2_BPO	11.8					< 10	2030				8.93	0.204													
6/8/2022	E300091	EV_MC2											12.43														
6/8/2022	E321812	F2_BPO	11.8					< 10	2030				8.93	0.204													
6/8/2022	0200097	EV_EC1											11.92														
6/8/2022	E321812	F2_BPO											8.93														
6/8/2022	E321814	EV_ECOUT	5.72	0.17	0.20	< 0.10	< 0.10		1970	< 0.20	< 0.50		11.11	< 0.100	1250	< 0.010	< 0.010	< 0.050	< 0.050	0.0258	0.0264	136		< 0.00010	< 0.00010	< 0.0050	< 0.0050
6/8/2022	E321812	F2_BPO											9.01														
6/9/2022	E321791	F2_NWPI	15.3	< 0.10		14.6		< 10	2000	0.67			5.87	0.297	1120	0.023		0.075		0.192				0.0972		< 0.0050	0.00066
6/9/2022	0200097	EV_EC1											11.76														
6/9/2022	E300091	EV_MC2											12.23														
6/9/2022	E321812	F2_BPO	12.3	< 0.10		15.4		< 10	2070	< 0.20			8.96	0.194	1240	0.036		< 0.050		0.110				0.419		0.0305	< 0.00050
6/9/2022	E321812	F2_BPO											8.96														
6/9/2022	E321812	F2_BPO											8.66														
6/9/2022	0200203	EV_MC3	0.25	0.11	1.04	< 0.10	0.41		187	0.27	0.99		11.02	0.088	92.0	< 0.010	0.528	< 0.050	0.450	0.0026	0.0028	7.24		0.00152	0.0184	< 0.0050	< 0.0050
6/9/2022	0200097	EV_EC1	5.60	0.17	0.17	< 0.10	< 0.10		1850	< 0.20	< 0.50		10.78	0.081	1180	< 0.010	< 0.010	< 0.050	< 0.050	0.0298	0.0286	134		0.00028	0.00028	< 0.0050	< 0.0050
6/9/2022	E321814	EV_ECOUT	5.69	0.18	0.17	< 0.10	< 0.10		1960	< 0.20	0.71		9.73	0.106	1240	< 0.010	< 0.010	< 0.050	< 0.050	0.0286	0.0280	145		< 0.00010	0.00014	< 0.0050	< 0.0050
6/10/2022	E321791	F2_NWPI	15.5						1960				5.99	0.281													
6/10/2022	E300091	EV_MC2											12														
6/10/2022	0200097	EV_EC1											11.8														
6/10/2022	E321812	F2_BPO											9.15														
6/10/2022	0200097	EV_EC1	5.65	0.21	0.21	< 0.10	< 0.10		1790	< 0.20	< 0.50		11.76	< 0.100	1160	< 0.010	< 0.010	< 0.050	< 0.050	0.0259	0.0267	145		0.00026	0.00036	< 0.0050	< 0.0050
6/10/2022	E321812	F2_BPO	12.5					< 10	1990				9.69	0.222													
6/10/2022	E321812	F2_BPO											9.1														
6/11/2022	0200097	EV_EC1	6.64	0.18	0.21	< 0.10	< 0.10		1800	< 0.20	< 0.50		11.54	0.155	1180	< 0.010	< 0.010	< 0.050	< 0.050	0.0260	0.0271	139		0.00027	0.00028	< 0.0050	< 0.0050
6/11/2022	0200097	EV_EC1																									
6/11/2022	E300091	EV_MC2											12.6														
6/11/2022	E321791	F2_NWPI	16.7						1850				5.75	0.318													
6/11/2022	E321812	F2_BPO	13.4					31	1970				9.4	0.229													
6/11/2022	E321812	F2_BPO											8.69														
6/11/2022	E321812	F2_BPO											8.8														
6/12/2022	E321791	F2_NWPI	15.2						1950				5.76	0.317													

Parameter			Chloride	Chromium	Chromium	Cobalt	Cobalt	COD	Conductivity, Lab	Copper	Copper	Dimethylseleneoxide	Dissolved Oxygen, Field	Fluoride	Hardness, Total or Dissolved CaCO3	Iron	Iron	Lead	Lead	Lithium	Lithium	Magnesium	Magnesium	Manganese	Manganese	Mercury	Mercury
Fraction			D	D	T	D	T	N	N	D	T	D	N	N	D	D	T	D	T	D	T	T	T	D	T	D	T
Unit			mg/l	ug/l	ug/l	ug/l	ug/l	mg/l	us/cm	ug/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	ppm	mg/l	mg/l	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
6/12/2022	0200097	EV_EC1	6.13	0.24	0.24	< 0.10	< 0.10		1880	< 0.20	< 0.50		12.09	< 0.100	1250	< 0.010	< 0.010	< 0.050	< 0.050	0.0266	0.0268	168		0.00036	0.00032	< 0.0050	< 0.0050
6/12/2022	0200097	EV_EC1																									
6/12/2022	E300091	EV_MC2											12.24														
6/12/2022	E321812	F2_BPO											8.68														
6/12/2022	E321812	F2_BPO	9.91					< 10	2010				9.16	0.164													
6/12/2022	E321812	F2_BPO											8.56														
6/13/2022	E321791	F2_NWPI	15.9	< 0.20	< 0.10	15.4	16.3	< 10	2000	< 0.40	0.59	0.036	5.83	0.334	1160	< 0.020	0.038	< 0.100	0.056	0.183	0.195	146		0.0996	0.105	0.0564	0.00065
6/13/2022	E321814	EV_ECOUT	6.10	0.22	0.27	< 0.10	< 0.10	< 10	1950	< 0.20	< 0.50		11.43	< 0.100	1240	< 0.010	< 0.010	< 0.050	< 0.050	0.0262	0.0266	150		< 0.00010	0.00028	0.0140	< 0.00050
6/13/2022	E300091	EV_MC2	1.01	0.21	0.86	< 0.10	0.74	20	233	0.32	1.61		12.21	0.082	112	0.015	0.718	< 0.050	0.983	0.0035	0.0041	10.4		0.00174	0.0539	0.0153	0.00578
6/13/2022	E321812	F2_BPO	11.8	< 0.20	< 0.20	16.5	16.5	< 10	2040	< 0.40	< 1.00	< 0.010	8.7	0.208	1270	0.044	0.391	< 0.100	< 0.100	0.102	0.113	161		0.437	0.439	0.0540	0.00088
6/13/2022	E321812	F2_BPO											8.7														
6/13/2022	0200097	EV_EC1	6.73	0.24	0.30	< 0.10	< 0.10	< 10	1820	< 0.20	< 0.50		10.77	< 0.100	1140	< 0.010	< 0.010	< 0.050	< 0.050	0.0252	0.0272	146		0.00036	0.00052	0.0073	< 0.00050
6/13/2022	0200203	EV_MC3	0.18	0.20	0.33	< 0.10	0.37	24	179	0.36	1.19		11.11	0.071	83.1	0.011	0.251	< 0.050	0.481	0.0021	0.0024	6.89		0.00226	0.0244	0.0189	0.00571
6/13/2022	310168	EV_MC2A	0.36	0.18	0.47	< 0.10	0.37	19	188	0.31	1.08		11.2	0.079	98.2	0.011	0.308	< 0.050	0.509	0.0022	0.0026	8.26		0.00164	0.0254	0.0169	0.00554
6/13/2022	0200203	EV_MC3	0.29	1.27	2.15	0.31	1.07		170	1.06	2.98		11.3	0.076	85.6	0.375	1.88	0.364	1.40	0.0024	0.0034	7.69		0.0148	0.0528	< 0.0050	0.00888
6/13/2022	200393	EV_ER1	0.65	0.40	0.86	< 0.10	0.44	18	262	0.30	1.21		10.9	0.108	132	0.018	0.596	< 0.050	0.623	0.0038	0.0042	11.1		0.00179	0.0497	0.0157	0.00407
6/13/2022	E206231	EV_GT1																									
6/13/2022	E102685	EV_BC1																									
6/13/2022	E300091	EV_MC2	1.06	0.16	2.11	< 0.10	0.98		225	0.41	2.74		11.26	0.086	112	0.027	1.79	< 0.050	1.31	0.0037	0.0051	10.3		0.00102	0.0497	< 0.0050	0.00832
6/13/2022	200393	EV_ER1	0.66	0.17	2.98	< 0.10	1.18		254	0.34	3.44		11.13	0.107	126	0.019	2.55	< 0.050	1.77	0.0039	0.0059	12.7		0.00065	0.102	< 0.0050	0.00720
6/13/2022	E321812	F2_BPO											8.91														
6/14/2022	E206231	EV_GT1																									
6/14/2022	0200097	EV_EC1	4.82	0.16	0.21	< 0.10	< 0.10		1660	0.24	< 0.50		11.02	0.102	1020	< 0.010	< 0.010	< 0.050	< 0.050	0.0228	0.0234	134		0.00047	0.00042	0.0066	0.0089
6/14/2022	E102685	EV_BC1	19.4	< 0.10	0.15	0.31	0.52	< 10	1790	0.25	0.59		9.14	0.201	1170	< 0.010	0.122	< 0.050	0.178	0.114	0.117	146		0.00608	0.00874	0.0192	0.00167
6/14/2022	E206231	EV_GT1	8.54	< 0.10	0.63	0.18	0.80	34	1680	0.34	2.12		10.05	0.175	1060	< 0.010	0.451	< 0.050	0.695	0.0854	0.0840	132		0.00615	0.0206	0.0185	0.00504
6/14/2022	E206231	EV_GT1																									
6/14/2022	E300091	EV_MC2											11.44														
6/14/2022	E321791	F2_NWPI	16.3	< 0.10		17.4		< 10	1980	0.26			7.59	0.321	1180	< 0.010		< 0.050		0.191				0.123		0.0430	0.00124
6/14/2022	E321812	F2_BPO	13.3	< 0.20		15.9		< 10	1980	< 0.40			9.36	0.103	1250	0.040		< 0.100		0.102				0.443		0.0157	< 0.00050
6/14/2022	E321812	F2_BPO											9.36														
6/14/2022	E300091	EV_MC2	1.42	0.16	1.29	< 0.10	0.65		238	0.35	1.65		11.12	0.083	120	0.012	1.12	< 0.050	0.757	0.0036	0.0045	10.0		0.00190	0.0353	< 0.0050	< 0.0050
6/14/2022	E206231	EV_GT1																									
6/15/2022	0200097	EV_EC1	5.97	0.16	0.29	< 0.10	< 0.10		1790	< 0.20	< 0.50		11.51	0.116	1110	< 0.010	< 0.010	< 0.050	< 0.050	0.0225	0.0229	139		0.00032	0.00039	< 0.0050	< 0.0050
6/15/2022	0200097	EV_EC1																									
6/15/2022	E300091	EV_MC2											11.76														
6/15/2022	E321791	F2_NWPI	15.5						1990				6.55	0.308													
6/15/2022	E321812	F2_BPO	12.0					< 10	1670				9.29	< 0.100													
6/15/2022	E321812	F2_BPO											9.29														
6/15/2022	E321812	F2_BPO											9.04														
6/16/2022	0200097	EV_EC1	5.10	0.16	0.20	< 0.10	< 0.10		1710	< 0.20	< 0.50		10.98	< 0.100	1090	< 0.010	< 0.010	< 0.050	< 0.050	0.0230	0.0276	146		0.00034	0.00038	< 0.0050	< 0.0050
6/16/2022	0200203	EV_MC3	0.33	0.12	0.87	< 0.10	0.28		194	0.37	0.85		11.35	0.078	92.2	0.010	0.442	< 0.050	0.267	0.0025	0.0029	8.88		0.00155	0.0104	0.0186	0.0207
6/16/2022	E300091	EV_MC2											11.14														
6/16/2022	E321812	F2_BPO											8.87														
6/16/2022	E321791	F2_NWPI	15.4	< 0.10		12.7			1840	0.21			6.92	0.317	1160	< 0.010		< 0.050		0.173				0.0851		0.0638	0.00088
6/16/2022	E321814	EV_ECOUT	5.29	0.21	0.21	< 0.10	< 0.10		1890	< 0.20	< 0.50		10.56	< 0.100	1180	< 0.010	< 0.010	< 0.050	< 0.050	0.0254	0.0253	156		< 0.00010	< 0.00010	0.0395	0.0552
6/16/2022	E321812	F2_BPO	12.3	< 0.10		16.2		< 10	1950	< 0.20			8.63	0.200	1300	0.033		< 0.050		0.0993				0.463		0.0491	< 0.00050
6/16/2022	E321812	F2_BPO											9.13														
6/17/2022	E321791	F2_NWPI	15.8						1970				6.21	0.300													

Parameter			Chloride	Chromium	Chromium	Cobalt	Cobalt	COD	Conductivity, Lab	Copper	Copper	Dimethylseleneoxide	Dissolved Oxygen, Field	Fluoride	Hardness, Total or Dissolved CaCO3	Iron	Iron	Lead	Lead	Lithium	Lithium	Magnesium	Magnesium	Manganese	Manganese	Mercury	Mercury
Fraction			D	D	T	D	T	N	N	D	T	D	N	N	D	D	T	D	T	D	T	T	T	D	T	D	T
Unit			mg/l	ug/l	ug/l	ug/l	ug/l	mg/l	us/cm	ug/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	ppm	mg/l	mg/l	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
6/17/2022	E300091	EV_MC2											11.35														
6/17/2022	0200097	EV_EC1											11.47														
6/17/2022	E321812	F2_BPO											8.85														
6/17/2022	E321812	F2_BPO	12.0					< 10	2030				9	0.195													
6/17/2022	E321812	F2_BPO											8.9														
6/18/2022	E321791	F2_NWPI	15.1						1950				6.23	0.312													
6/18/2022	E300091	EV_MC2											11.33														
6/18/2022	0200097	EV_EC1											11.41														
6/18/2022	E321812	F2_BPO											8.41														
6/18/2022	E321812	F2_BPO	12.1					< 10	2000				8.64	0.199													
6/18/2022	E321812	F2_BPO											8.18														
6/19/2022	E321791	F2_NWPI	15.5						1980				5.97	0.318													
6/19/2022	E300091	EV_MC2											11.42														
6/19/2022	0200097	EV_EC1											11.45														
6/19/2022	E321812	F2_BPO											8.53														
6/19/2022	E321812	F2_BPO	12.0					< 10	2010				9.02	0.200													
6/19/2022	E321812	F2_BPO											8.5														
6/20/2022	E321791	F2_NWPI	15.9	< 0.10	< 0.10	14.4	15.7	< 10	1970	0.24	< 0.50	0.051	5.54	0.328	1220	0.020	0.065	< 0.050	0.079	0.198	0.196	152		0.0957	0.106	0.0228	0.0228
6/20/2022	E321812	F2_BPO	12.4	< 0.10	< 0.10	16.0	16.7	< 10	2020	< 0.20	< 0.50	< 0.010	8.86	0.206	1320	0.046	0.390	< 0.050	0.181	0.114	0.112	167		0.432	0.457	0.0229	0.0232
6/20/2022	E321812	F2_BPO											8.86														
6/20/2022	200393	EV_ER1	0.25	0.13	0.87	< 0.10	0.36	< 10	184	0.35	0.94		11.14	0.070	92.3	< 0.010	0.562	< 0.050	0.342	0.0024	0.0026	7.49		0.00135	0.0151	0.0249	0.0269
6/20/2022	E321812	F2_BPO											8.86														
6/20/2022	E300091	EV_MC2	1.61	0.14	0.98	< 0.10	0.41	< 10	256	0.29	1.09	< 0.010	10.78	0.085	131	< 0.010	0.790	< 0.050	0.504	0.0044	0.0047	11.2		0.00150	0.0217	0.0247	0.0232
6/20/2022	310168	EV_MC2A	0.55	0.21	0.91	< 0.10	0.37	< 10	220	0.35	1.23	< 0.010	11.28	0.080	114	< 0.010	0.691	< 0.050	0.512	0.0025	0.0030	10.1		0.00123	0.0201	0.0241	0.0306
6/20/2022	0200203	EV_MC3	5.59	0.20	0.22	< 0.10	< 0.10	< 10	1850	< 0.20	< 0.50	< 0.010	11.28	< 0.100	1260	< 0.010	< 0.010	< 0.050	< 0.050	0.0255	0.0245	148		< 0.00010	0.00027	0.0237	0.0164
6/20/2022	0200097	EV_EC1	5.43	0.18	0.23	< 0.10	< 0.10	< 10	1760	< 0.20	< 0.50	< 0.010	10.98 10.98	< 0.100	1140	< 0.010	< 0.010	0.417	< 0.050	0.0232	0.0252	141		0.00045	0.00029	0.0207	0.134
6/20/2022	E321814	EV_ECOUT	0.84	0.16	4.28	< 0.10	1.32	27	267	0.47	3.80	< 0.010	11.29	0.103	139	0.014	3.15	< 0.050	2.00	0.0039	0.0066	14.1		0.00180	0.151	0.0242	0.0450
6/20/2022	E321814	EV_ECOUT											11.29														
6/20/2022	E321812	F2_BPO											8.6														
6/21/2022	E321791	F2_NWPI	15.5	< 0.20		14.0		< 10	1970	< 0.40			5.48	0.356	1180	< 0.020		< 0.100		0.192				0.0948		0.0206	0.0214
6/21/2022	E321812	F2_BPO	12.2	< 0.20		16.2		< 10	2060	< 0.40			8.85	0.226	1280	0.038		< 0.100		0.116				0.433		0.0245	0.0212
6/21/2022	E321812	F2_BPO											8.85														
6/21/2022	E206231	EV_GT1	11.3	< 0.10	< 0.10	0.16	0.19	< 10	1720	0.31	< 0.50	0.030	10.2	0.220	1150	0.019	0.106	< 0.050	< 0.050	0.104	0.100	152		0.00609	0.00697	0.0236	0.0251
6/21/2022	0200203	EV_MC3	0.27	0.10	1.12	< 0.10	0.40		195	0.32	1.13		10.76	0.080	94.2	< 0.010	0.530	< 0.050	0.379	0.0024	0.0035	8.05		0.00134	0.0171	< 0.0050	0.00296
6/21/2022	E300091	EV_MC2											11.36														
6/21/2022	E206231	EV_GT1																									
6/21/2022	E102685	EV_BC1	16.0	< 0.20	< 0.10	< 0.20	0.16	< 10	1810	< 0.40	< 0.50	0.058	8.55	0.216	1200	< 0.020	0.033	< 0.100	< 0.050	0.128	0.122	165		0.00293	0.00361	0.0228	0.0213
6/21/2022	E102685	EV_BC1																									
6/21/2022	E300091	EV_MC2	1.22	0.13	0.74	< 0.10	0.30		260	0.31	0.96		10.6	0.087	133	< 0.010	0.490	< 0.050	0.364	0.0044	0.0052	11.6		0.00163	0.0151	< 0.0050	< 0.00050
6/21/2022	200393	EV_ER1	0.75	0.14	2.51	< 0.10	0.89		283	0.30	2.68		10.43	0.105	143	< 0.010	1.99	< 0.050	1.32	0.0042	0.0062	13.8		0.00211	0.106	< 0.0050	0.00262
6/21/2022	E321812	F2_BPO											8.8														
6/22/2022	0200097	EV_EC1											11.2														
6/22/2022	E321791	F2_NWPI	15.6						1950				5.54	0.374													
6/22/2022	E300091	EV_MC2											11.23														
6/22/2022	E321812	F2_BPO	12.3					< 10	2010				8.83	0.225													
6/22/2022	E321812	F2_BPO											8.83														
6/22/2022	0200097	EV_EC1											11.54														

		Parameter	Chloride	Chromium	Chromium	Cobalt	Cobalt	COD	Conductivity, Lab	Copper	Copper	Dimethylseleneoxide	Dissolved Oxygen, Field	Fluoride	Hardness, Total or Dissolved CaCO3	Iron	Iron	Lead	Lead	Lithium	Lithium	Magnesium	Magnesium	Manganese	Manganese	Mercury	Mercury
		Fraction	D	D	T	D	T	N	N	D	T	D	N	N	D	D	T	D	T	D	T	T	T	D	T	D	T
		Unit	mg/l	ug/l	ug/l	ug/l	ug/l	mg/l	us/cm	ug/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	ppm	mg/l	mg/l	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
6/22/2022	E321812	F2_BPO											8.74														
6/23/2022	E321791	F2_NWPI	15.5	< 0.20		13.3		< 10	1940	< 0.40			5.32	0.372		< 0.020		< 0.100		0.198				0.0858		< 0.0050	< 0.0050
6/23/2022	0200097	EV_EC1											11.18														
6/23/2022	E300091	EV_MC2											11.35														
6/23/2022	E321812	F2_BPO	12.3	< 0.10		16.1		< 10	2010	< 0.20			8.79	0.221		0.044		< 0.050		0.108				0.421		< 0.0050	< 0.0050
6/23/2022	E321812	F2_BPO											8.79														
6/23/2022	0200097	EV_EC1																									
6/23/2022	E321812	F2_BPO											8.9														
6/24/2022	E321791	F2_NWPI	15.2						1890				5.13	0.306													
6/24/2022	0200097	EV_EC1											11.58														
6/24/2022	E300091	EV_MC2											12.64														
6/24/2022	E321812	F2_BPO											8.84														
6/24/2022	E321812	F2_BPO	12.2					< 10	1940				8.68	0.197													
6/24/2022	E321812	F2_BPO											8.99														
6/25/2022	E321791	F2_NWPI	14.9						1860				5.45	0.275													
6/25/2022	0200097	EV_EC1											11.44														
6/25/2022	E300091	EV_MC2											11.23														
6/25/2022	E321812	F2_BPO	12.9					< 10	1930				8.75	0.201													
6/25/2022	E321812	F2_BPO											8.75														
6/25/2022	E321812	F2_BPO											7.81														
6/25/2022	E321812	F2_BPO											8.75														
6/25/2022	E321812	F2_BPO											7.81														
6/26/2022	E321791	F2_NWPI	14.9						1870				5.4	0.299													
6/26/2022	0200097	EV_EC1											11.76														
6/26/2022	E300091	EV_MC2											11.07														
6/26/2022	E321812	F2_BPO	12.5					< 10	1920				8.41	0.198													
6/26/2022	E321812	F2_BPO											8.41														
6/26/2022	E321812	F2_BPO											8.61														
6/27/2022	E321791	F2_NWPI	15.2	< 0.10	< 0.10	15.2	15.1	< 10	1900	0.22	< 0.50	0.064	6.32	0.304	1320	0.013	0.048	< 0.050	0.070	0.220	0.187	151		0.105	0.102	< 0.0050	< 0.0050
6/27/2022	E321814	EV_ECOUT	5.57	0.20	0.24	< 0.10	< 0.10	< 10	1790	< 0.20	< 0.50	< 0.010	11.12	0.074	1240	< 0.010	0.043	< 0.050	0.054	0.0249	0.0236	142		0.00019	0.00214	< 0.0050	< 0.0050
6/27/2022	E321812	F2_BPO	13.0	< 0.10	< 0.10	15.8	16.9	< 10	1950	< 0.20	< 0.50	< 0.010	8.45	0.211	1270	0.041	0.413	< 0.050	0.118	0.116	0.115	170		0.431	0.461	< 0.0050	< 0.0050
6/27/2022	E321812	F2_BPO											8.45														
6/27/2022	200393	EV_ER1	0.96	0.30	0.78	< 0.10	0.22	< 10	314	< 0.20	0.69		11.61	0.121	171	< 0.010	0.433	< 0.050	0.286	0.0055	0.0054	13.7		0.00185	0.0238	< 0.0050	< 0.0050
6/27/2022	310168	EV_MC2A	0.59	0.14	0.27	< 0.10	0.13	< 10	268	0.22	< 0.50		11.96	0.098	144	< 0.010	0.117	< 0.050	0.095	0.0035	0.0034	11.4		0.00136	0.00485	< 0.0050	< 0.0050
6/27/2022	0200203	EV_MC3	0.33	0.15	0.27	< 0.10	0.16	< 10	227	0.26	< 0.50		11.45	0.093	118	< 0.010	0.096	< 0.050	0.080	0.0032	0.0035	9.84		0.00122	0.00474	< 0.0050	< 0.0050
6/27/2022	0200097	EV_EC1	5.47	0.18	0.20	< 0.10	< 0.10	< 10	1710	< 0.20	< 0.50		12.18	< 0.100	1180	< 0.010	< 0.010	< 0.050	< 0.050	0.0248	0.0234	140		0.00023	0.00021	< 0.0050	< 0.0050
6/27/2022	E300091	EV_MC2	4.09	0.14	0.30	< 0.10	0.13	< 10	353	0.30	< 0.50		11.19	0.101	186	< 0.010	0.125	< 0.050	0.108	0.0078	0.0073	15.8		0.00155	0.00586	< 0.0050	< 0.0050
6/27/2022	E321812	F2_BPO											8.32														
6/28/2022	E321791	F2_NWPI	15.3	< 0.10		13.2		< 10	1860	< 0.20			5.34	0.316	1180	< 0.010		< 0.050		0.206				0.0882		< 0.0050	< 0.0050
6/28/2022	E300091	EV_MC2											11.35														
6/28/2022	0200097	EV_EC1											11.7														
6/28/2022	E321812	F2_BPO	12.6	< 0.10		16.5		15	1940	< 0.20			8.31	0.212	1330	0.035		< 0.050		0.126				0.450		< 0.0050	0.0090
6/28/2022	E321812	F2_BPO											8.31														
6/28/2022	E206231	EV_GT1	11.6	< 0.10	< 0.10	0.14	0.16	< 10	1830	0.50	< 0.50		10.87	0.190	1260	0.019	0.066	< 0.050	< 0.050	0.101	0.113	161		0.00480	0.00504	< 0.0050	< 0.0050
6/28/2022	E102685	EV_BC1	15.5	< 0.20	< 0.10	< 0.20	0.12	< 10	1850	< 0.40	< 0.50		8.84	0.181	1270	< 0.020	0.028	< 0.100	< 0.050	0.126	0.121	170		0.00209	0.00278	< 0.0050	< 0.0050
6/28/2022	0200203	EV_MC3	0.27	0.14	0.38	< 0.10	0.22		225	0.50	0.52		10.09	0.091	114	< 0.010	0.221	< 0.050	0.150	0.0032	0.0036	9.47		0.00119	0.00738	< 0.0050	< 0.0050
6/28/2022	E206231	EV_GT1																									
6/28/2022	E102685	EV_BC1																									
6/28/2022	E300091	EV_MC2	2.49	0.14	0.54	< 0.10	0.34		329	0.25	0.94		9.9	0.101	163	< 0.010	0.427	< 0.050	0.574	0.0062	0.0076	16.4		0.00142	0.0205	< 0.0050	< 0.0050
6/28/2022	200393	EV_ER1	0.86	0.19	1.04	< 0.10	0.32		314	0.24	0.92		9.93	0.130	163	< 0.010	0.665	< 0.050	0.456	0.0055	0.0065	15.2		0.00168	0.0398	< 0.0050	< 0.0050

		Parameter	Chloride	Chromium	Chromium	Cobalt	Cobalt	COD	Conductivity, Lab	Copper	Copper	Dimethylseleneoxide	Dissolved Oxygen, Field	Fluoride	Hardness, Total or Dissolved CaCO3	Iron	Iron	Lead	Lead	Lithium	Lithium	Magnesium	Magnesium	Manganese	Manganese	Mercury	Mercury
		Fraction	D	D	T	D	T	N	N	D	T	D	N	N	D	D	T	D	T	D	T	T	T	D	T	D	T
		Unit	mg/l	ug/l	ug/l	ug/l	ug/l	mg/l	us/cm	ug/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	ppm	mg/l	mg/l	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
6/28/2022	E321812	F2_BPO											8.05														
6/29/2022	E321791	F2_NWPI	15.7						1940				5.37	0.318													
6/29/2022	E300091	EV_MC2											11.11														
6/29/2022	0200097	EV_EC1											11.9														
6/29/2022	E321812	F2_BPO	12.8					< 10	2010				8.96	0.214													
6/29/2022	E321812	F2_BPO											8.96														
6/29/2022	0200097	EV_EC1																									
6/29/2022	E321812	F2_BPO											9.05														
6/30/2022	E321791	F2_NWPI	15.7	< 0.10		13.3		< 10	1860	< 0.20				0.332	1140	< 0.010		< 0.050		0.188				0.0914		< 0.0050	< 0.0050
6/30/2022	E300091	EV_MC2											11.45														
6/30/2022	0200097	EV_EC1											12.13														
6/30/2022	E321812	F2_BPO	12.5	< 0.10		17.3		< 10	1970	< 0.20			8.54	0.216	1240	0.048		< 0.050		0.107				0.474		< 0.0050	< 0.0050
6/30/2022	E321812	F2_BPO											8.54														
6/30/2022	E321791	F2_NWPI											5.36														
6/30/2022	E321812	F2_BPO											8.28														
7/1/2022	E321812	F2_BPO	13.1					< 10	1970				8.79	0.207													
7/1/2022	E321791	F2_NWPI	15.5						1870				5.34	0.306													
7/1/2022	E300091	EV_MC2											11.4														
7/1/2022	0200097	EV_EC1											12.05														
7/2/2022	E300091	EV_MC2											11.15														
7/2/2022	0200097	EV_EC1											11.44														
7/2/2022	E321791	F2_NWPI	15.2						1870				5.03	0.303													
7/2/2022	E321812	F2_BPO	12.2					< 10	1960				8.85	0.197													
7/2/2022	E321812	F2_BPO											8.85														
7/2/2022	E321812	F2_BPO											8.53														
7/3/2022	0200097	EV_EC1											11.55														
7/3/2022	E300091	EV_MC2											10.7														
7/3/2022	E321791	F2_NWPI	15.7						1880				5.37	0.312													
7/3/2022	E321812	F2_BPO											8.37														
7/3/2022	E321812	F2_BPO	13.2					< 10	1930				8.37	0.209													
7/3/2022	E321812	F2_BPO											8.1														
7/4/2022	E321791	F2_NWPI	15.8	< 0.10	< 0.10	13.2	14.4	< 10	1850	0.36	0.95	0.033	5.8	0.325	1170	0.024	0.073	< 0.050	0.166	0.192	0.208	145		0.0907	0.0982	< 0.0050	< 0.0050
7/4/2022	E321812	F2_BPO	13.0	< 0.10	< 0.10	16.4	17.0	< 10	1920	< 0.20	< 0.50	< 0.010	9.04	0.212	1320	0.042	0.319	< 0.050	0.086	0.126	0.126	162		0.473	0.460	< 0.0050	< 0.0050
7/4/2022	E321812	F2_BPO											9.04														
7/4/2022	200393	EV_ER1	0.97	0.19	0.48	< 0.10	0.14	< 10	246	< 0.20	< 0.50		12.15	0.124	180	< 0.010	0.179	< 0.050	0.170	0.0055	0.0059	14.0		0.00168	0.0159	< 0.0050	0.0051
7/4/2022	E321812	F2_BPO											9.04														
7/4/2022	310168	EV_MC2A	0.61	0.18	0.22	< 0.10	0.11	< 10	226	< 0.20	< 0.50	< 0.010	12.71	0.102	157	< 0.010	0.058	< 0.050	0.067	0.0037	0.0041	12.7		0.00130	0.00381	< 0.0050	< 0.0050
7/4/2022	0200203	EV_MC3	0.57	0.15	0.25	< 0.10	0.14	< 10	200	0.24	< 0.50	< 0.010	12.68	0.097	134	< 0.010	0.078	< 0.050	0.090	0.0033	0.0037	9.92		0.00131	0.00416	< 0.0050	< 0.0050
7/4/2022	0200097	EV_EC1	5.06	0.20	0.18	< 0.10	< 0.10	< 10	1670	< 0.20	< 0.50	< 0.010	13.05	< 0.100	1200	< 0.010	< 0.010	< 0.050	< 0.050	0.0242	0.0265	140		0.00022	0.00023	< 0.0050	< 0.0050
7/4/2022	0200097	EV_EC1											13.05														
7/4/2022	E300091	EV_MC2	2.32	0.15	0.20	< 0.10	< 0.10	< 10	261	0.23	< 0.50	< 0.010	12.67	0.100	187	< 0.010	0.057	< 0.050	0.064	0.0066	0.0071	15.1		0.00136	0.00328	< 0.0050	< 0.0050
7/4/2022	E321814	EV_ECOUT	6.09	0.23	0.23	< 0.10	< 0.10	< 10	1760	< 0.20	< 0.50	< 0.010	12	< 0.100	1280	< 0.010	< 0.010	< 0.050	< 0.050	0.0258	0.0266	138		< 0.00010	0.00030	< 0.0050	< 0.0050
7/4/2022	E321814	EV_ECOUT											12														
7/4/2022	E321812	F2_BPO											8.39														
7/5/2022	E300091	EV_MC2											11.99														
7/5/2022	E321791	F2_NWPI	16.2	< 0.10		13.9		< 10	1850	< 0.20			5.5	0.312	1190	0.014		< 0.050		0.195				0.0937		0.0128	0.0132
7/5/2022	0200097	EV_EC1											12.46														
7/5/2022	E321812	F2_BPO	13.2	< 0.10		16.6		< 10	1920	< 0.20			8.8	0.204	1300	0.048		< 0.050		0.114				0.473		0.0130	0.0124

		Parameter	Chloride	Chromium	Chromium	Cobalt	Cobalt	COD	Conductivity, Lab	Copper	Copper	Dimethylseleneoxide	Dissolved Oxygen, Field	Fluoride	Hardness, Total or Dissolved CaCO3	Iron	Iron	Lead	Lead	Lithium	Lithium	Magnesium	Magnesium	Manganese	Manganese	Mercury	Mercury
		Fraction	D	D	T	D	T	N	N	D	T	D	N	N	D	D	T	D	T	D	T	T	T	D	T	D	T
		Unit	mg/l	ug/l	ug/l	ug/l	ug/l	mg/l	us/cm	ug/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	ppm	mg/l	mg/l	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
7/5/2022	E321812	F2_BPO											8.8														
7/5/2022	E206231	EV_GT1	13.2	< 0.10	< 0.10	0.18	0.20	< 10	1820	0.99	< 0.50	< 0.010	10.97	0.211	1210	0.028	0.154	0.062	0.057	0.0964	0.109	163		0.00731	0.00772	< 0.0050	< 0.0050
7/5/2022	E206231	EV_GT1											10.97														
7/5/2022	E102685	EV_BC1	19.8	< 0.10	< 0.10	0.14	0.17	< 10	1810	0.73	< 0.50	0.023	9.01	0.202	1160	< 0.010	0.046	< 0.050	< 0.050	0.122	0.126	164		0.00397	0.00503	< 0.0050	< 0.0050
7/5/2022	E102685	EV_BC1											9.01														
7/5/2022	E321814	EV_ECOUT	5.07	0.20	0.21	< 0.10	< 0.10		1810	0.30	< 0.50		10.47	< 0.100	1160	< 0.010	< 0.010	< 0.050	< 0.050	0.0265	0.0271	144		< 0.00010	0.00012	< 0.0050	< 0.0050
7/5/2022	0200203	EV_MC3	0.30	0.14	0.23	< 0.10	0.16		235	0.27	< 0.50		9.91	0.096	121	< 0.010	0.088	< 0.050	0.082	0.0034	0.0036	9.75		0.00113	0.00443	< 0.0050	< 0.0050
7/5/2022	E206231	EV_GT1	12.4	< 0.10	< 0.10	0.16	0.20		1840	0.25	< 0.50		10.22	0.197	1210	< 0.010	0.133	< 0.050	< 0.050	0.109	0.119	157		0.00567	0.00743	< 0.0050	< 0.0050
7/5/2022	E300091	EV_MC2	1.52	0.15	0.24	< 0.10	0.11		312	< 0.20	< 0.50		10.03	0.106	161	< 0.010	0.065	< 0.050	0.082	0.0058	0.0062	14.6		0.00127	0.00412	< 0.0050	< 0.0050
7/5/2022	E321812	F2_BPO											9.34														
7/5/2022	E102685	EV_BC1	18.8	< 0.10	< 0.10	0.12	0.16		1840	< 0.20	< 0.50		8.38	0.197	1180	< 0.010	0.036	< 0.050	< 0.050	0.126	0.138	159		0.00309	0.00439	< 0.0050	< 0.0050
7/6/2022	0200097	EV_EC1											11.87														
7/6/2022	E321812	F2_BPO	12.6					< 10	1960				9.34	0.205													
7/6/2022	E300091	EV_MC2											11.44														
7/6/2022	E321812	F2_BPO											9.34														
7/6/2022	E321791	F2_NWPI	12.8						1890				5.03	0.254													
7/6/2022	200393	EV_ER1	0.92	0.18	0.95	< 0.10	0.25		316	< 0.20	0.83		10.39	0.123	163	< 0.010	0.564	< 0.050	0.382	0.0052	0.0063	14.0		0.00168	0.0306	< 0.0050	< 0.0050
7/6/2022	0200097	EV_EC1	5.07	0.17	0.18	< 0.10	< 0.10		1700	< 0.20	< 0.50		10.3	< 0.100	1120	< 0.010	< 0.010	< 0.050	< 0.050	0.0258	0.0233	131		0.00019	0.00019	< 0.0050	< 0.0050
7/6/2022	E321812	F2_BPO											8.41														
7/7/2022	E300091	EV_MC2											10.24														
7/7/2022	0200097	EV_EC1											11.26														
7/7/2022	E321791	F2_NWPI	16.1	< 0.10		12.8		< 10	1860	0.35			4.85	0.327	1180	< 0.010		< 0.050		0.181				0.0867		0.0123	0.0097
7/7/2022	E321812	F2_BPO	13.3	< 0.10		16.2		< 10	1950	< 0.20			9.19	0.228	1310	0.053		< 0.050		0.115				0.463		0.0067	0.0062
7/7/2022	E321812	F2_BPO											9.19														
7/7/2022	E321812	F2_BPO											8.9														
7/8/2022	E300091	EV_MC2											10.1														
7/8/2022	0200097	EV_EC1											11.3														
7/8/2022	E321791	F2_NWPI	16.3						1850				5	0.329													
7/8/2022	E321812	F2_BPO	13.4					< 10	1950				8.45	0.227													
7/8/2022	E321812	F2_BPO											8.45														
7/8/2022	E321812	F2_BPO											8.75														
7/9/2022	0200097	EV_EC1											11.67														
7/9/2022	E300091	EV_MC2											11.2														
7/9/2022	E321812	F2_BPO	12.6					< 10	1950				9.7	0.203													
7/9/2022	E321791	F2_NWPI	15.9						1900				5.95	0.305													
7/9/2022	E321812	F2_BPO											8.56														
7/9/2022	E321812	F2_BPO											9.7														
7/10/2022	0200097	EV_EC1											13.32														
7/10/2022	E300091	EV_MC2											12														
7/10/2022	E321791	F2_NWPI	17.1						1820				7.16	0.343													
7/10/2022	E321812	F2_BPO	14.5					< 10	1920				9.2	0.235													
7/10/2022	E321812	F2_BPO											9.3														
7/10/2022	E321812	F2_BPO											8.35														
7/11/2022	200393	EV_ER1	1.14	0.15	0.50	< 0.10	0.12	< 10	331	< 0.20	< 0.50		11.75	0.172	180	< 0.010	0.244	< 0.050	0.160	0.0059	0.0060	15.1		0.00190	0.0150	0.0150	0.0153
7/11/2022	E321791	F2_NWPI	14.6	< 0.10	0.12	13.1	13.9	< 10	1890	< 0.20	< 0.50	0.064	5.58	0.287	1250	0.023	0.064	< 0.050	0.061	0.192	0.212	154		0.0883	0.0944	0.0142	0.0136
7/11/2022	E321812	F2_BPO	12.2	< 0.10	< 0.10	16.7	17.2	< 10	1990	< 0.20	< 0.50	< 0.010	8.86	0.200	1260	0.036	0.334	< 0.050	0.077	0.116	0.125	170		0.468	0.473	0.0195	0.0167
7/11/2022	E321812	F2_BPO											8.86														
7/11/2022	0200097	EV_EC1	5.25	0.18	0.18	< 0.10	< 0.10	< 10	1700	0.31	< 0.50		12.76	0.115	1130	< 0.010	< 0.010	< 0.050	< 0.050	0.0253	0.0262	143		0.00029	0.00015	0.0196	0.0117

Parameter			Chloride	Chromium	Chromium	Cobalt	Cobalt	COD	Conductivity, Lab	Copper	Copper	Dimethylseleneoxide	Dissolved Oxygen, Field	Fluoride	Hardness, Total or Dissolved CaCO3	Iron	Iron	Lead	Lead	Lithium	Lithium	Magnesium	Magnesium	Manganese	Manganese	Mercury	Mercury
Fraction			D	D	T	D	T	N	N	D	T	D	N	N	D	D	T	D	T	D	T	T	T	D	T	D	T
Unit			mg/l	ug/l	ug/l	ug/l	ug/l	mg/l	us/cm	ug/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	ppm	mg/l	mg/l	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
7/11/2022	0200203	EV_MC3	0.51	0.11	0.14	< 0.10	0.11	< 10	275	0.38	< 0.50		12.27	0.137	145	< 0.010	0.033	< 0.050	< 0.050	0.0041	0.0043	11.6		0.00117	0.00245	0.0189	0.0188
7/11/2022	E321814	EV_ECOUT	5.36	0.16	0.21	< 0.10	< 0.10	< 10	1790	< 0.20	< 0.50		12.09	0.126	1200	< 0.010	< 0.010	< 0.050	< 0.050	0.0255	0.0256	142		< 0.00010	0.00018	0.0139	0.0158
7/11/2022	310168	EV_MC2A	0.82	0.14	0.28	< 0.10	0.10	< 10	331	0.25	< 0.50		12.58	0.146	175	< 0.010	0.050	< 0.050	< 0.050	0.0047	0.0048	15.6		0.00145	0.00334	0.0137	0.0150
7/11/2022	E300091	EV_MC2	4.35	0.12	0.17	< 0.10	< 0.10	< 10	424	0.25	< 0.50		12.04	0.149	225	< 0.010	0.033	< 0.050	< 0.050	0.0100	0.0098	19.8		0.00143	0.00250	0.0174	0.0186
7/11/2022	E321812	F2_BPO											8.23														
7/12/2022	E321791	F2_NWPI	15.9	< 0.10		12.5		< 10	1850	0.68			5.31	0.359	1240	0.017		< 0.050		0.201				0.0880		0.0270	0.0268
7/12/2022	0200097	EV_EC1											12.28														
7/12/2022	E206231	EV_GT1	13.2	< 0.10	< 0.20	0.15	< 0.20	< 10	1890	0.34	< 1.00		11.94	0.203	1270	0.015	0.137	< 0.050	< 0.100	0.117	0.123	178		0.00652	0.00718	0.0207	0.0178
7/12/2022	E300091	EV_MC2											12.67														
7/12/2022	E321812	F2_BPO	12.9	< 0.10		16.8		< 10	1940	< 0.20			8.53	0.208	1330	0.042		< 0.050		0.123				0.461		0.0251	0.0249
7/12/2022	E321812	F2_BPO											8.53														
7/12/2022	E102685	EV_BC1	23.7	< 0.10	< 0.10	0.13	0.12	< 10	1770	< 0.20	< 0.50		8.82	0.200	1180	< 0.010	0.022	< 0.050	< 0.050	0.138	0.131	160		0.00413	0.00422	0.0155	0.0174
7/12/2022	200393	EV_ER1	1.00	0.19	0.65	< 0.10	0.11		343	< 0.20	< 0.50		10.21	0.121	177	< 0.010	0.254	< 0.050	0.160	0.0063	0.0082	14.7		0.00198	0.0150	< 0.0050	0.00093
7/12/2022	0200203	EV_MC3	0.39	0.13	0.23	< 0.10	< 0.10		281	0.24	< 0.50		10.04	0.099	147	< 0.010	0.032	< 0.050	< 0.050	0.0042	0.0063	12.0		0.00101	0.00239	< 0.0050	0.00099
7/12/2022	E206231	EV_GT1																									
7/12/2022	E102685	EV_BC1																									
7/12/2022	E300091	EV_MC2	1.93	0.14	0.20	< 0.10	< 0.10		382	0.28	< 0.50		10.01	0.112	202	< 0.010	0.035	< 0.050	0.056	0.0084	0.0102	17.6		0.00135	0.00249	< 0.0050	0.00083
7/12/2022	E321812	F2_BPO											8.72														
7/13/2022	E321791	F2_NWPI	15.7						1850				4.79	0.353													
7/13/2022	E300091	EV_MC2											11.34														
7/13/2022	E321812	F2_BPO	13.2					< 10	1930				8.38	0.237													
7/13/2022	0200097	EV_EC1											13.41														
7/13/2022	E321812	F2_BPO											8.38														
7/13/2022	0200097	EV_EC1																									
7/13/2022	E321812	F2_BPO											8.6														
7/14/2022	E321791	F2_NWPI		< 0.50		14.3		< 10	1870	< 1.00			4.83		1210	< 0.050		< 0.250		0.203				0.0909		< 0.0050	< 0.0050
7/14/2022	E300091	EV_MC2											9.71														
7/14/2022	0200097	EV_EC1											11.88														
7/14/2022	E321812	F2_BPO		< 0.50		17.4		< 10	1940	< 1.00			8.03		1370	0.053		< 0.250		0.123				0.449		< 0.0050	< 0.0050
7/14/2022	E321812	F2_BPO											8.03														
7/14/2022	E321812	F2_BPO											7.78														
7/15/2022	E321791	F2_NWPI	16.5						1840				5.22	0.398													
7/15/2022	E300091	EV_MC2											9.82														
7/15/2022	0200097	EV_EC1											12														
7/15/2022	E321812	F2_BPO	14.0					< 10	1930				8.37	0.272	1310												
7/15/2022	E321812	F2_BPO											8.37														
7/15/2022	E321812	F2_BPO											8.52														
7/16/2022	E321791	F2_NWPI	16.0						1870				5.56	0.388													
7/16/2022	E300091	EV_MC2											10.22														
7/16/2022	0200097	EV_EC1											12.43														
7/16/2022	E321812	F2_BPO											8.07														
7/16/2022	E321812	F2_BPO	13.5					< 10	1940				8.07	0.262													
7/16/2022	E321812	F2_BPO											8.2														
7/17/2022	E300091	EV_MC2											10.47														
7/17/2022	0200097	EV_EC1											11.66														
7/17/2022	E321791	F2_NWPI	15.8						1870				5.19	0.352													
7/17/2022	E321812	F2_BPO	12.9					< 10	1940				8.17	0.225													
7/17/2022	E321812	F2_BPO											8.17														

Parameter			Chloride	Chromium	Chromium	Cobalt	Cobalt	COD	Conductivity, Lab	Copper	Copper	Dimethylseleneoxide	Dissolved Oxygen, Field	Fluoride	Hardness, Total or Dissolved CaCO3	Iron	Iron	Lead	Lead	Lithium	Lithium	Magnesium	Magnesium	Manganese	Manganese	Mercury	Mercury
Fraction			D	D	T	D	T	N	N	D	T	D	N	N	D	D	T	D	T	D	T	T	T	D	T	D	T
Unit			mg/l	ug/l	ug/l	ug/l	ug/l	mg/l	us/cm	ug/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	ppm	mg/l	mg/l	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
7/17/2022	E321812	F2_BPO											8														
7/18/2022	200393	EV_ER1	1.24	0.21	0.30	< 0.10	< 0.10	< 10	354	< 0.20	< 0.50		10.99	0.171	184	< 0.010	0.059	< 0.050	0.063	0.0064	0.0064	16.8		0.00195	0.00659	< 0.0050	< 0.0050
7/18/2022	E321791	F2_NWPI	15.6	< 0.20	< 0.10	12.4	14.1	< 10	1850	< 0.40	< 0.50	0.053	5.94	0.377	1180	0.026	0.056	< 0.100	0.071	0.192	0.187	160		0.0842	0.0903	< 0.0050	< 0.0050
7/18/2022	310168	EV_MC2A	0.94	0.16	0.18	< 0.10	< 0.10	< 10	364	< 0.20	< 0.50	< 0.010	11.12	0.145	194	< 0.010	0.024	< 0.050	< 0.050	0.0057	0.0052	17.6		0.00178	0.00266	< 0.0050	< 0.0050
7/18/2022	0200203	EV_MC3	0.50	0.16	0.22	< 0.10	< 0.10	< 10	318	< 0.20	< 0.50	< 0.010	10.51	0.140	161	< 0.010	0.017	< 0.050	< 0.050	0.0048	0.0042	13.7		0.00107	0.00176	< 0.0050	< 0.0050
7/18/2022	E321812	F2_BPO	13.2	< 0.20	< 0.10	16.6	17.8	< 10	1950	< 0.40	< 0.50	< 0.010	8.99	0.266	1290	0.055	0.331	< 0.100	0.082	0.119	0.119	175		0.454	0.461	< 0.0050	< 0.0050
7/18/2022	E321812	F2_BPO											8.99														
7/18/2022	E321812	F2_BPO											7.97														
7/18/2022	0200097	EV_EC1	5.15	0.20	0.20	< 0.10	< 0.10	< 10	1720	< 0.20	< 0.50	< 0.010	13.42	< 0.100	1120	< 0.010	< 0.010	< 0.050	< 0.050	0.0253	0.0236	154		0.00029	0.00024	< 0.0050	< 0.0050
7/18/2022	0200097	EV_EC1											13.42														
7/18/2022	E321814	EV_ECOUT	5.18	< 0.20	0.22	< 0.20	< 0.10	< 10	1500	< 0.40	< 0.50	< 0.010	12.98	0.111	1160	< 0.020	< 0.010	< 0.100	< 0.050	0.0253	0.0227	153		< 0.00020	0.00011	< 0.0050	< 0.0050
7/18/2022	E321814	EV_ECOUT											12.48														
7/18/2022	E300091	EV_MC2	3.73	0.16	0.19	< 0.10	< 0.10	< 10	451	< 0.20	< 0.50	< 0.010	11.36	0.145	233	< 0.010	0.018	< 0.050	< 0.050	0.0107	0.0098	23.5		0.00150	0.00209	< 0.0050	< 0.0050
7/18/2022	E321812	F2_BPO											8.13														
7/19/2022	0200097	EV_EC1											11.8														
7/19/2022	E300091	EV_MC2											10.52														
7/19/2022	E321791	F2_NWPI	15.4	< 0.10		12.7		< 10	1880	0.21			5.81	0.414	1150	< 0.010		< 0.050		0.191				0.0865		< 0.0050	< 0.0050
7/19/2022	E321812	F2_BPO	13.2	< 0.10		17.3		< 10	1960	< 0.20			8.33	0.277	1340	0.044		< 0.050		0.122				0.472		< 0.0050	< 0.0050
7/19/2022	E321812	F2_BPO											8.33														
7/19/2022	E206231	EV_GT1	14.2	< 0.10	< 0.10	0.16	0.19	< 10	1880	0.23	< 0.50	< 0.010	10.34	0.293	1260	0.012	0.170	< 0.050	< 0.050	0.121	0.129	164		0.00755	0.00777	< 0.0050	< 0.0050
7/19/2022	E206231	EV_GT1											10.34														
7/19/2022	E102685	EV_BC1	20.6	< 0.10	< 0.10	0.11	0.11	< 10	1780	< 0.20	< 0.50	0.094	7.69	0.258	1150	< 0.010	0.015	< 0.050	< 0.050	0.133	0.141	155		0.00262	0.00318	< 0.0050	< 0.0050
7/19/2022	E102685	EV_BC1											7.69														
7/19/2022	E321812	F2_BPO											8.57														
7/20/2022	E300091	EV_MC2											9.62														
7/20/2022	0200097	EV_EC1											13.41														
7/20/2022	E321812	F2_BPO	14.4					< 10	1950				8.19	0.295													
7/20/2022	E321812	F2_BPO											8.14														
7/20/2022	E321791	F2_NWPI	15.3						1860				5.41	0.392													
7/20/2022	E321812	F2_BPO											7.96														
7/21/2022	0200097	EV_EC1											11.23														
7/21/2022	E300091	EV_MC2											10.61														
7/21/2022	E321791	F2_NWPI	15.1	< 0.50		14.9		< 10	1850	< 1.00			6.12	0.365	1340	< 0.050		< 0.250		0.216				0.0993		0.0082	0.0077
7/21/2022	E321812	F2_BPO											8.48														
7/21/2022	E321812	F2_BPO	13.3	< 0.50		16.9		< 10	1910	< 1.00			8	0.252	1330	< 0.050		< 0.250		0.126				0.453		0.0069	0.0076
7/21/2022	E321812	F2_BPO	12.0	< 0.10	< 0.10	17.2	17.2		1960	< 0.20	< 0.50			0.136	1330	0.043	0.327	< 0.050	0.079	0.138	0.117	165		0.458	0.461		
7/21/2022	E321812	F2_BPO	12.2	< 0.10	< 0.10	16.5	17.6		1960	< 0.20	< 0.50			0.136	1290	0.050	0.361	< 0.050	0.212	0.126	0.127	166		0.440	0.466		
7/21/2022	E321812	F2_BPO											8.45														
7/22/2022	0200097	EV_EC1											11.55														
7/22/2022	E300091	EV_MC2											10.18														
7/22/2022	E321791	F2_NWPI	14.2						1830				5.1	0.238													
7/22/2022	E321812	F2_BPO											7.89														
7/22/2022	E321812	F2_BPO	12.2					< 10	1920				8.52	0.139													
7/22/2022	E321812	F2_BPO											8.09														
7/23/2022	0200097	EV_EC1											11.64														
7/23/2022	E300091	EV_MC2											10.55														
7/23/2022	E321791	F2_NWPI	15.1						1880				7.7	0.354													
7/23/2022	E321812	F2_BPO											8.26														

Parameter			Chloride	Chromium	Chromium	Cobalt	Cobalt	COD	Conductivity, Lab	Copper	Copper	Dimethylseleneoxide	Dissolved Oxygen, Field	Fluoride	Hardness, Total or Dissolved CaCO3	Iron	Iron	Lead	Lead	Lithium	Lithium	Magnesium	Magnesium	Manganese	Manganese	Mercury	Mercury
Fraction			D	D	T	D	T	N	N	D	T	D	N	N	D	D	T	D	T	D	T	T	T	D	T	D	T
Unit			mg/l	ug/l	ug/l	ug/l	ug/l	mg/l	us/cm	ug/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	ppm	mg/l	mg/l	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
7/23/2022	E321812	F2_BPO	13.1					< 10	1950				8.28	0.246													
7/23/2022	E321812	F2_BPO											8.71														
7/24/2022	0200097	EV_EC1											11.62														
7/24/2022	E300091	EV_MC2											10.03														
7/24/2022	E321791	F2_NWPI	15.3						1870				5.46	0.351													
7/24/2022	E321812	F2_BPO	13.2					< 10	1960				8.75	0.246													
7/24/2022	E321812	F2_BPO											8.75														
7/24/2022	E321812	F2_BPO											8.1														
7/25/2022	0200097	EV_EC1											12.95														
7/25/2022	E300091	EV_MC2											10.23														
7/25/2022	E321791	F2_NWPI	15.8	< 0.50	< 0.10	13.0	13.8	< 10	1870	< 1.00	< 0.50	0.017	6.88	0.378	1170	< 0.050	0.046	< 0.250	0.066	0.198	0.194	146		0.0901	0.0945	< 0.0050	< 0.0050
7/25/2022	E321812	F2_BPO	13.3	< 0.50	< 0.10	17.6	16.8	< 10	1930	< 1.00	< 0.50	< 0.010	8.12	0.269	1340	0.081	0.332	< 0.250	0.083	0.128	0.119	159		0.478	0.450	0.0082	0.0086
7/25/2022	E321812	F2_BPO											8.12														
7/25/2022	E321812	F2_BPO											7.86														
7/26/2022	0200097	EV_EC1											12.17														
7/26/2022	E321812	F2_BPO	13.2	< 0.20		15.6		< 10	1920	< 0.40			8.95	0.264	1250	0.051		< 0.100		0.120				0.426		< 0.0050	0.0080
7/26/2022	E321812	F2_BPO											8.95														
7/26/2022	E300091	EV_MC2											10.27														
7/26/2022	E321791	F2_NWPI	15.4	< 0.20		12.0		218	1850	< 0.40			7.2	0.371	1160	< 0.020		< 0.100		0.195				0.0820		< 0.0050	< 0.0050
7/26/2022	E321812	F2_BPO											8.19														
7/27/2022	0200097	EV_EC1											12.85														
7/27/2022	E300091	EV_MC2											10.35														
7/27/2022	E321791	F2_NWPI	15.8						1880				6.66	0.328													
7/27/2022	E321812	F2_BPO	13.8					< 10	1960				7.35	0.228													
7/27/2022	E321812	F2_BPO											7.35														
7/27/2022	E321812	F2_BPO											7.48														
7/28/2022	E321791	F2_NWPI	15.4	< 0.10		13.9		< 10	1870	0.20			5.95	0.381	1350	< 0.010		< 0.050		0.273				0.0950		< 0.0050	< 0.0050
7/28/2022	0200097	EV_EC1											12.59														
7/28/2022	E300091	EV_MC2											10.47														
7/28/2022	E321812	F2_BPO											7.69														
7/28/2022	E321812	F2_BPO	13.3	< 0.10		16.9		< 10	1920	< 0.20			8.08	0.279	1310	0.036		< 0.050		0.137				0.467		< 0.0050	< 0.0050
7/28/2022	E321812	F2_BPO											7.77														
7/29/2022	0200097	EV_EC1											10.04														
7/29/2022	E300091	EV_MC2											10.35														
7/29/2022	E321791	F2_NWPI	15.3						1820				6.48	0.380													
7/29/2022	E321812	F2_BPO	13.3					< 10	1900				8.7	0.266													
7/29/2022	E321812	F2_BPO											8.7														
7/29/2022	E321812	F2_BPO											8.76														
7/30/2022	E300091	EV_MC2											9.09														
7/30/2022	0200097	EV_EC1											11.88														
7/30/2022	E321791	F2_NWPI	15.4						1860				6.19	0.373													
7/30/2022	E321812	F2_BPO	13.3					< 10	1950				7.84	0.263													
7/30/2022	E321812	F2_BPO											7.84														
7/30/2022	E321812	F2_BPO											7.71														
7/31/2022	0200097	EV_EC1											12.28														
7/31/2022	E300091	EV_MC2											9.16														
7/31/2022	E321791	F2_NWPI	15.9						1860				5.37	0.375													
7/31/2022	E321812	F2_BPO	13.3					< 10	1930				8.07	0.256													

		Parameter	Chloride	Chromium	Chromium	Cobalt	Cobalt	COD	Conductivity, Lab	Copper	Copper	Dimethylseleneoxide	Dissolved Oxygen, Field	Fluoride	Hardness, Total or Dissolved CaCO3	Iron	Iron	Lead	Lead	Lithium	Lithium	Magnesium	Magnesium	Manganese	Manganese	Mercury	Mercury
		Fraction	D	D	T	D	T	N	N	D	T	D	N	N	D	D	T	D	T	D	T	T	T	D	T	D	T
		Unit	mg/l	ug/l	ug/l	ug/l	ug/l	mg/l	us/cm	ug/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	ppm	mg/l	mg/l	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
7/31/2022	E321812	F2_BPO											8.07														
7/31/2022	E321812	F2_BPO											7.85														
8/1/2022	200393	EV_ER1	1.54	0.22	0.32	< 0.10	< 0.10	< 10	385	< 0.20	< 0.50		9.98	0.185	198	< 0.010	0.056	< 0.050	< 0.050	0.0068	0.0069	17.9		0.00138	0.00541	< 0.0050	< 0.0050
8/1/2022	310168	EV_MC2A	1.27	0.13	0.19	< 0.10	< 0.10	< 10	442	< 0.20	< 0.50	< 0.010	10.11	0.154	207	< 0.010	0.014	< 0.050	< 0.050	0.0060	0.0066	22.1		0.00185	0.00268	< 0.0050	< 0.0050
8/1/2022	E321812	F2_BPO	13.5		< 0.10	17.6	15.8	< 10	1900	< 0.40	< 0.50	< 0.010	9.64	0.260	1380	0.073	0.305	< 0.100	0.102	0.136	0.112	163		0.490	0.428	< 0.0050	< 0.0050
8/1/2022	E321812	F2_BPO											9.64														
8/1/2022	E321812	F2_BPO											9.64														
8/1/2022	0200203	EV_MC3	0.71	0.16	0.17	< 0.10	< 0.10	< 10	362	< 0.20	< 0.50	< 0.010	9.84	0.149	193	< 0.010	0.014	< 0.050	< 0.050	0.0057	0.0069	17.5		0.00115	0.00184	< 0.0050	< 0.0050
8/1/2022	E300091	EV_MC2	2.48	0.14	0.18	< 0.10	< 0.10	< 10	475	< 0.20	< 0.50	< 0.010	9.41	0.153	237	< 0.010	0.012	< 0.050	< 0.050	0.0087	0.0088	23.8		0.00155	0.00209	< 0.0050	< 0.0050
8/1/2022	E321791	F2_NWPI	15.2	< 0.20	< 0.10	10.8	11.8	< 10	1820	< 0.40	< 0.50	0.058	6.18	0.367	1120	< 0.020	0.035	< 0.100	0.057	0.198	0.162	144		0.0722	0.0770	< 0.0050	< 0.0050
8/1/2022	0200097	EV_EC1	5.18	0.23	0.20	< 0.20	< 0.10	< 10	1650	< 0.40	< 0.50	< 0.010	11.69	0.102	1080	< 0.020	< 0.010	< 0.100	< 0.050	0.0244	0.0236	144		0.00037	0.00133	< 0.0050	< 0.0050
8/1/2022	E321814	EV_ECOUT	5.11	0.22	0.20	< 0.20	< 0.10	< 10	1790	< 0.40	< 0.50	< 0.010	10.98	0.117	1090	< 0.020	< 0.010	< 0.100	< 0.050	0.0242	0.0235	144		< 0.00020	< 0.00010	< 0.0050	< 0.0050
8/1/2022	E321814	EV_ECOUT											10.98														
8/1/2022	E321812	F2_BPO											8.12														
8/2/2022	E206231	EV_GT1										0.055	15.46														
8/2/2022	E102685	EV_BC1										0.157	9.12														
8/2/2022	E321791	F2_NWPI	15.5	< 0.10		11.8		< 10	1850	< 0.20			5.32	0.360	1210	< 0.010		< 0.050		0.196				0.0795		< 0.0050	< 0.0050
8/2/2022	E321812	F2_BPO	13.5			16.6		< 10	1950	< 0.20			7.64	0.141	1310	0.046		< 0.050		0.122				0.461		< 0.0050	< 0.0050
8/2/2022	E321812	F2_BPO											7.64														
8/2/2022	0200097	EV_EC1											12.1														
8/2/2022	E321812	F2_BPO											7.64														
8/2/2022	0200097	EV_EC1											12.1														
8/2/2022	E300091	EV_MC2											9.09														
8/2/2022	E206231	EV_GT1	17.4	< 0.20	0.11	< 0.20	0.14	< 10	1770	< 0.40	< 0.50	0.059	14.23	0.257	1120	< 0.020	0.208	< 0.100	0.374	0.117	0.120	168		0.00740	0.00886	< 0.0050	< 0.0050
8/2/2022	E206231	EV_GT1											14.23														
8/2/2022	E102685	EV_BC1	19.6	< 0.20	< 0.10	< 0.20	< 0.10	< 10	1790	< 0.40	< 0.50	0.191	7.97	0.223	1130	< 0.020	0.015	< 0.100	0.138	0.142	0.143	167		0.00162	0.00202	< 0.0050	< 0.0050
8/2/2022	E102685	EV_BC1											7.97														
8/2/2022	E321812	F2_BPO											8.05														
8/3/2022	E300091	EV_MC2											9.62														
8/3/2022	0200097	EV_EC1											12.3														
8/3/2022	E321812	F2_BPO	13.4					< 10	1940				8.34	0.268													
8/3/2022	E321812	F2_BPO											8.34														
8/3/2022	E321791	F2_NWPI	15.3						1860				6.28	0.377													
8/4/2022	E300091	EV_MC2											9.27														
8/4/2022	E321791	F2_NWPI	15.4	< 0.20		12.8		< 10	1840	< 0.40			5.63	0.348	1240	< 0.020		< 0.100		0.196				0.0882		< 0.0050	< 0.0050
8/4/2022	E321812	F2_BPO	13.0	< 0.20		15.4		< 10	1920	< 0.40			9.23	0.235	1350	0.044		0.228		0.126				0.438		< 0.0050	< 0.0050
8/4/2022	E321812	F2_BPO											9.23														
8/4/2022	0200097	EV_EC1											10.77														
8/4/2022	E321812	F2_BPO											9.27														
8/5/2022	0200097	EV_EC1											10.87														
8/5/2022	E300091	EV_MC2											9.41														
8/5/2022	E321791	F2_NWPI	15.4						1870				5.02	0.368													
8/5/2022	E321812	F2_BPO	13.5					< 10	1950				8.27	0.260													
8/5/2022	E321812	F2_BPO											8.27														
8/5/2022	E321812	F2_BPO											8.49														
8/6/2022	0200097	EV_EC1											11.71														
8/6/2022	E300091	EV_MC2											9.78														
8/6/2022	E321791	F2_NWPI	16.4						1850				5.28	0.335													
8/6/2022	E321812	F2_BPO	14.2					< 10	1920				9.02	0.235													
8/6/2022	E321812	F2_BPO											9.02														

		Parameter	Chloride	Chromium	Chromium	Cobalt	Cobalt	COD	Conductivity, Lab	Copper	Copper	Dimethylseleneoxide	Dissolved Oxygen, Field	Fluoride	Hardness, Total or Dissolved CaCO3	Iron	Iron	Lead	Lead	Lithium	Lithium	Magnesium	Magnesium	Manganese	Manganese	Mercury	Mercury
		Fraction	D	D	T	D	T	N	N	D	T	D	N	N	D	D	T	D	T	D	T	T	T	D	T	D	T
		Unit	mg/l	ug/l	ug/l	ug/l	ug/l	mg/l	us/cm	ug/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	ppm	mg/l	mg/l	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
8/6/2022	E321812	F2_BPO											8.41														
8/7/2022	E300091	EV_MC2											9.26														
8/7/2022	0200097	EV_EC1											11.57														
8/7/2022	E321791	F2_NWPI	15.2						1880				5.29	0.377													
8/7/2022	E321812	F2_BPO	13.4					< 10	1940				8.73	0.262													
8/7/2022	E321812	F2_BPO											8.73														
8/7/2022	E321812	F2_BPO											8.15														
8/8/2022	E300091	EV_MC2											9.72														
8/8/2022	0200097	EV_EC1											11.64														
8/8/2022	E321791	F2_NWPI	15.6	< 0.20	< 0.10	11.5	11.9	< 10	1880	< 0.40	< 0.50	0.042	5.52	0.371	1310	< 0.020	0.038	< 0.100	< 0.050	0.217	0.200	154		0.0790	0.0786	< 0.0050	0.0054
8/8/2022	E321812	F2_BPO	13.5	< 0.20	< 0.10	15.6	17.1	< 10	1940	< 0.40	< 0.50	< 0.010	8.03	0.256	1250	0.063	0.343	< 0.100	0.094	0.127	0.133	170		0.438	0.476	0.0060	0.0063
8/8/2022	E321812	F2_BPO											8.03														
8/8/2022	E321812	F2_BPO											7.94														
8/9/2022	E321791	F2_NWPI	15.4	< 0.20		10.2		< 10	1980	< 0.40			5.06	0.373	1180	< 0.020		< 0.100		0.202				0.0695		< 0.0050	< 0.0050
8/9/2022	E300091	EV_MC2											8.49														
8/9/2022	0200097	EV_EC1											11.09														
8/9/2022	E321814	EV_ECOUT	4.99	0.23	0.27	< 0.10	< 0.10		1750	< 0.20	< 0.50		10.45	< 0.100	1160	< 0.010	< 0.010	< 0.050	< 0.050	0.0253	0.0267	150		< 0.00010	< 0.00010	< 0.0050	< 0.0050
8/9/2022	E321812	F2_BPO	13.0	< 0.20		14.7		< 10	2030	< 0.40			7.76	0.244	1240	0.029		< 0.100		0.129				0.411		< 0.0050	< 0.0050
8/9/2022	E321812	F2_BPO											7.76														
8/9/2022	0200097	EV_EC1	4.81	0.23	0.21	< 0.10	< 0.10		1640	0.24	< 0.50		10.51	< 0.100	1040	< 0.010	< 0.010	< 0.050	< 0.050	0.0234	0.0263	144		0.00012	0.00016	< 0.0050	< 0.0050
8/9/2022	E321812	F2_BPO											7.76														
8/9/2022	0200097	EV_EC1	4.81	0.23	0.21	< 0.10	< 0.10		1640	0.24	< 0.50		10.51	< 0.100	1040	< 0.010	< 0.010	< 0.050	< 0.050	0.0234	0.0263	144		0.00012	0.00016	< 0.0050	< 0.0050
8/9/2022	0200203	EV_MC3	0.79	0.15	0.21	< 0.10	< 0.10		379	0.23	< 0.50		8.93	0.150	189	< 0.010	0.014	< 0.050	< 0.050	0.0060	0.0062	16.7		0.00111	0.00198	< 0.0050	< 0.0050
8/9/2022	E321812	F2_BPO											7.85														
8/10/2022	E300091	EV_MC2											8.32														
8/10/2022	0200097	EV_EC1											11.11														
8/10/2022	E321812	F2_BPO											8.26														
8/10/2022	E321812	F2_BPO	13.2					< 10	2050				8.26	0.278													
8/10/2022	E321791	F2_NWPI	15.2						1980				5.4	0.394													
8/10/2022	E206231	EV_GT1	14.3	< 0.10	< 0.20	0.15	< 0.20		2080	0.24	< 1.00		11.02	0.193	1330	0.014	0.141	< 0.050	< 0.100	0.138	0.114	167		0.00605	0.00539	< 0.0050	< 0.0050
8/10/2022	E102685	EV_BC1	19.6	< 0.10	< 0.20	< 0.10	< 0.20		2080	0.21	< 1.00		7.35	0.179	1280	< 0.010	0.022	< 0.050	< 0.100	0.145	0.133	175		0.00094	0.00105	< 0.0050	< 0.0050
8/10/2022	200393	EV_ER1	1.89	0.24	0.33	< 0.10	< 0.10		454	< 0.20	< 0.50		9.5	0.114	239	< 0.010	0.034	< 0.050	< 0.050	0.0093	0.0080	20.0		0.00151	0.00458	< 0.0050	< 0.0050
8/10/2022	E300091	EV_MC2	9.13	0.16	0.18	< 0.10	< 0.10		709	0.22	< 0.50		9.47	0.118	361	< 0.010	0.011	< 0.050	< 0.050	0.0198	0.0169	34.1		0.00180	0.00215	< 0.0050	< 0.0050
8/10/2022	E321812	F2_BPO											8.35														
8/11/2022	E321791	F2_NWPI	15.1	< 0.20		9.66		< 10	1950	< 0.40			5.1	0.359	1060	< 0.020		< 0.100		0.157				0.0647		< 0.0050	< 0.0050
8/11/2022	E300091	EV_MC2											8.73														
8/11/2022	0200097	EV_EC1											10.89														
8/11/2022	E321812	F2_BPO											7.78														
8/11/2022	E321812	F2_BPO	14.3	< 0.20	< 0.10	14.6	16.8	< 10	1880	< 0.40	< 0.50		7.46	0.286	1170	0.048	0.358	< 0.100	0.083	0.110	0.116	166		0.410	0.465	< 0.0050	< 0.0050
8/11/2022	E206231	EV_GT1			32000		5400				14000	< 0.010	9.98				3104		1600		4.7		3386		59		79
8/11/2022	E206231	EV_GT1			13000		478				5600						532		184		0.99		649		16		34
8/11/2022	E206231	EV_GT1			83000		7200				19000						5896		2800		21		3539		71		65
8/11/2022	E206231	EV_GT1			17000		5800				11000						4103		1800		3.8		2847		62		82
8/11/2022	E102685	EV_BC1			51000		2700				20000						2312		846		2.7		1756		66		< 28
8/11/2022	E102685	EV_BC1			31000		3500				20000						1703		792		3.8		1721		81		51
8/11/2022	E102685	EV_BC1			41000		4500				31000						2411		922		6.2		3662		103		61
8/11/2022	E102685	EV_BC1										0.084	9.05														
8/11/2022	E321812	F2_BPO											7.98														
8/12/2022	E300091	EV_MC2											8.7														
8/12/2022	0200097	EV_EC1											10.72														

		Parameter	Chloride	Chromium	Chromium	Cobalt	Cobalt	COD	Conductivity, Lab	Copper	Copper	Dimethylseleneoxide	Dissolved Oxygen, Field	Fluoride	Hardness, Total or Dissolved CaCO3	Iron	Iron	Lead	Lead	Lithium	Lithium	Magnesium	Magnesium	Manganese	Manganese	Mercury	Mercury
		Fraction	D	D	T	D	T	N	N	D	T	D	N	N	D	D	T	D	T	D	T	T	T	D	T	D	T
		Unit	mg/l	ug/l	ug/l	ug/l	ug/l	mg/l	us/cm	ug/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	ppm	mg/l	mg/l	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
8/12/2022	E321791	F2_NWPI	15.2						1990				5.16	0.395													
8/12/2022	E321812	F2_BPO	13.6					< 10	2080				7.61	0.275													
8/12/2022	E321812	F2_BPO											7.61														
8/12/2022	E321812	F2_BPO											8.7														
8/13/2022	E300091	EV_MC2											9.08														
8/13/2022	0200097	EV_EC1											10.98														
8/13/2022	E321791	F2_NWPI	15.3						1970				8.05	0.397													
8/13/2022	E321812	F2_BPO	13.2					< 10	2060				8.49	0.285													
8/13/2022	E321812	F2_BPO											8.49														
8/13/2022	E321812	F2_BPO											8.72														
8/14/2022	E300091	EV_MC2											9.17														
8/14/2022	0200097	EV_EC1											10.91														
8/14/2022	E321791	F2_NWPI	15.1						1980				5.16	0.388													
8/14/2022	E321812	F2_BPO	13.2					< 10	2040				7.7	0.285													
8/14/2022	E321812	F2_BPO											7.7														
8/14/2022	E321812	F2_BPO											9.05														
8/15/2022	E300091	EV_MC2	3.79	0.19	0.19	< 0.10	< 0.10	< 10	589	0.20	< 0.50	< 0.010	9.22	0.124	311	0.010	0.013	< 0.050	< 0.050	0.0145	0.0143	31.2		0.00216	0.00208	0.0054	< 0.0050
8/15/2022	200393	EV_ER1	1.97	0.26	0.29	< 0.10	< 0.10	< 10	426	< 0.20	< 0.50		10.09	0.152	230	< 0.010	0.027	< 0.050	< 0.050	0.0088	0.0088	19.9		0.00152	0.00324	< 0.0050	0.0075
8/15/2022	E321812	F2_BPO	13.5	< 0.10	< 0.10	15.3	16.2	< 10	2060	< 0.20	< 0.50	0.014	9.03	0.257	1280	0.047	0.328	< 0.050	0.078	0.138	0.127	163		0.430	0.459	< 0.0050	< 0.0050
8/15/2022	E321812	F2_BPO											9.03														
8/15/2022	310168	EV_MC2A	1.51	0.18	0.18	< 0.10	< 0.10	< 10	501	< 0.20	< 0.50	< 0.010	10.33	0.121	265	< 0.010	0.012	< 0.050	< 0.050	0.0083	0.0082	25.0		0.00264	0.00285	0.0057	< 0.0050
8/15/2022	0200203	EV_MC3	0.86	0.15	0.17	< 0.10	< 0.10	< 10	389	< 0.20	< 0.50	< 0.010	10.18	0.119	208	< 0.010	< 0.010	< 0.050	< 0.050	0.0064	0.0062	16.6		0.00127	0.00140	< 0.0050	< 0.0050
8/15/2022	E321791	F2_NWPI	15.3	< 0.10	0.10	10.2	11.0	< 10	1980	0.23	< 0.50	0.064	6.08	0.362	1170	< 0.010	0.036	< 0.050	0.051	0.208	0.187	146		0.0679	0.0745	< 0.0050	< 0.0050
8/15/2022	0200097	EV_EC1	4.82	0.18	0.26	< 0.10	< 0.10	< 10	1690	< 0.20	< 0.50	< 0.010	11.51	< 0.100	1100	< 0.010	< 0.010	< 0.050	< 0.050	0.0267	0.0258	140		0.00015	0.00017	< 0.0050	< 0.0050
8/15/2022	0200097	EV_EC1											11.51														
8/15/2022	E321814	EV_ECOUT	4.83	< 0.20	0.23	< 0.20	< 0.10	< 10	1800	< 0.40	< 0.50	< 0.010	11.51	< 0.100	1200	< 0.020	< 0.010	< 0.100	< 0.050	0.0262	0.0258	145		< 0.00020	0.00013	< 0.0050	< 0.0050
8/15/2022	E321814	EV_ECOUT											11.51														
8/15/2022	E321812	F2_BPO											8.71														
8/16/2022	E206231	EV_GT1	14.5	< 0.10	< 0.10	0.13	0.14	< 10	1910	0.23	< 0.50	0.026	12.55	0.247	1310	0.012	0.118	< 0.050	< 0.050	0.134	0.129	170		0.00518	0.00568	0.0070	< 0.0050
8/16/2022	E206231	EV_GT1											12.55														
8/16/2022	E321812	F2_BPO	13.6	< 0.10		15.6		< 10	1940	< 0.20			8.51	0.267	1340	0.072		< 0.050		0.136				0.429		< 0.0050	< 0.0050
8/16/2022	E300091	EV_MC2											9.82														
8/16/2022	E321791	F2_NWPI	15.3	< 0.10		9.26		< 10	1870	0.26			6.21	0.370	1200	0.014		< 0.050		0.185				0.0605		< 0.0050	< 0.0050
8/16/2022	E102685	EV_BC1	20.4	< 0.10	< 0.10	< 0.10	< 0.10	< 10	1870	< 0.20	< 0.50	0.178	7.19	0.234	1240	< 0.010	0.019	< 0.050	< 0.050	0.143	0.141	172		0.00089	0.00091	0.0062	< 0.0050
8/16/2022	E102685	EV_BC1											7.19														
8/16/2022	E300091	EV_MC2	5.86	0.12	0.20	< 0.10	< 0.10		630	< 0.20	< 0.50		9.98	0.155	358	< 0.010	< 0.010	< 0.050	< 0.050	0.0178	0.0157	40.1		0.00196	0.00212	< 0.0050	< 0.0050
8/16/2022	0200097	EV_EC1											11.64														
8/16/2022	E321812	F2_BPO											8.68														
8/17/2022	E300091	EV_MC2											8.95														
8/17/2022	0200097	EV_EC1											11.3														
8/17/2022	E321791	F2_NWPI	15.2						1840				5.28	0.371													
8/17/2022	E321812	F2_BPO	13.8					< 10	1880				8.37	0.266													
8/17/2022	E321812	F2_BPO											8.42														
8/17/2022	E321812	F2_BPO											8.57														
8/18/2022	E300091	EV_MC2											8.99														
8/18/2022	0200097	EV_EC1											11.33														
8/18/2022	E321791	F2_NWPI	15.5	< 0.20		8.43			1850	< 0.40			5.45	0.402	1130	< 0.020		< 0.100		0.188				0.0553		< 0.0050	0.0051
8/18/2022	E321812	F2_BPO											8.4														

		Parameter	Chloride	Chromium	Chromium	Cobalt	Cobalt	COD	Conductivity, Lab	Copper	Copper	Dimethylseleneoxide	Dissolved Oxygen, Field	Fluoride	Hardness, Total or Dissolved CaCO3	Iron	Iron	Lead	Lead	Lithium	Lithium	Magnesium	Magnesium	Manganese	Manganese	Mercury	Mercury
		Fraction	D	D	T	D	T	N	N	D	T	D	N	N	D	D	T	D	T	D	T	T	T	D	T	D	T
		Unit	mg/l	ug/l	ug/l	ug/l	ug/l	mg/l	us/cm	ug/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	ppm	mg/l	mg/l	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
8/18/2022	E321812	F2_BPO	13.5					< 10	1910				8.85	0.265													
8/18/2022	E321812	F2_BPO											8.48														
8/19/2022	E300091	EV_MC2											9.51														
8/19/2022	0200097	EV_EC1											12.04														
8/19/2022	E321791	F2_NWPI	16.0	< 0.10		9.47		< 10	1850	0.25			5.77	0.372	1240	< 0.010		< 0.050		0.213				0.0640		< 0.0050	< 0.0050
8/19/2022	E321812	F2_BPO	14.1					< 10	1920				8.7	0.262													
8/19/2022	E321812	F2_BPO											8.32														
8/19/2022	E321812	F2_BPO											8.51														
8/20/2022	0200097	EV_EC1											10.31														
8/20/2022	E321791	F2_NWPI	15.4						1870				5.63	0.338													
8/20/2022	E300091	EV_MC2											9.61														
8/20/2022	E321812	F2_BPO	13.8					< 10	1920				8.68	0.244													
8/20/2022	E321812	F2_BPO											8.44														
8/21/2022	E300091	EV_MC2											9.6														
8/21/2022	0200097	EV_EC1											12.1														
8/21/2022	E321791	F2_NWPI	15.3						1860				5.84	0.344													
8/21/2022	E321812	F2_BPO	13.3					35	1920				8.44	0.238													
8/21/2022	E321812	F2_BPO																									
8/21/2022	E321812	F2_BPO											8.45														
8/22/2022	E300091	EV_MC2											6.61														
8/22/2022	0200097	EV_EC1											11.71														
8/22/2022	E321812	F2_BPO	13.7	< 0.10	< 0.10	15.2	15.9	< 10	1850	< 0.20	< 0.50	< 0.010	8.6	0.252	1310	0.080	0.357	< 0.050	0.072	0.130	0.133	173		0.455	0.462	0.0529	0.0481
8/22/2022	E321791	F2_NWPI	15.6	< 0.10	< 0.10	9.75	10.6	< 10	1800	0.27	< 0.50	0.047	5.58	0.360	1230	< 0.010	0.029	< 0.050	< 0.050	0.194	0.192	161		0.0641	0.0685	0.0518	0.0706
8/22/2022	E321812	F2_BPO											8.54														
8/23/2022	E300091	EV_MC2											9.28														
8/23/2022	0200097	EV_EC1											11.76														
8/23/2022	E321791	F2_NWPI	15.4	< 0.20		9.02		< 10	1860	< 0.40			5.66	0.379	1120	< 0.020		< 0.100		0.181				0.0610		0.0603	0.0383
8/23/2022	E321812	F2_BPO	13.7	< 0.20		14.9		< 10	1900	< 0.40			8.31	0.261	1290	0.088		< 0.100		0.133				0.445		0.0367	0.0331
8/23/2022	E300091	EV_MC2	7.51	0.18	0.18	< 0.10	< 0.10		637	< 0.20	< 0.50		9.44	0.154	363	< 0.010	< 0.010	< 0.050	< 0.050	0.0204	0.0176	37.6		0.00188	0.00209	< 0.0050	< 0.0050
8/23/2022	E321812	F2_BPO											8.52														
8/24/2022	E300091	EV_MC2											9.39														
8/24/2022	0200097	EV_EC1											11.92														
8/24/2022	E321812	F2_BPO	14.2					< 10	1840				8.77	0.270													
8/24/2022	E321791	F2_NWPI	15.7						1790				5.89	0.373													
8/24/2022	E321812	F2_BPO											8.7														
8/25/2022	E321791	F2_NWPI	15.4	< 0.10		10.2		< 10	1840	0.27			5.58	0.342	1280	< 0.010		< 0.050		0.180				0.0661		0.0293	0.0292
8/25/2022	0200097	EV_EC1											11.57														
8/25/2022	E300091	EV_MC2											8.91														
8/25/2022	E321812	F2_BPO	13.8	< 0.10		15.1		11	1870	< 0.20			8.44	0.231	1350	0.067		< 0.050		0.126				0.470		0.0253	0.0278
8/25/2022	E321812	F2_BPO																									
8/25/2022	E321812	F2_BPO											8.76														
8/26/2022	E300091	EV_MC2											9.44														
8/26/2022	0200097	EV_EC1											11.39														
8/26/2022	E321812	F2_BPO	13.8					< 10	1850				8.75	0.224													
8/26/2022	E321791	F2_NWPI	15.5						1840				5.41	0.309													
8/26/2022	E321812	F2_BPO											8.7														
8/27/2022	E300091	EV_MC2											8.92														
8/27/2022	0200097	EV_EC1											10.97														

Parameter			Chloride	Chromium	Chromium	Cobalt	Cobalt	COD	Conductivity, Lab	Copper	Copper	Dimethylseleneoxide	Dissolved Oxygen, Field	Fluoride	Hardness, Total or Dissolved CaCO3	Iron	Iron	Lead	Lead	Lithium	Lithium	Magnesium	Magnesium	Manganese	Manganese	Mercury	Mercury
Fraction			D	D	T	D	T	N	N	D	T	D	N	N	D	D	T	D	T	D	T	T	T	D	T	D	T
Unit			mg/l	ug/l	ug/l	ug/l	ug/l	mg/l	us/cm	ug/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	ppm	mg/l	mg/l	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
8/27/2022	E321791	F2_NWPI	15.2						1870				5.26	0.335													
8/27/2022	E321812	F2_BPO	13.7					< 10	1900				8.27	0.261													
8/27/2022	E321812	F2_BPO											8.89														
8/28/2022	E300091	EV_MC2											9.19														
8/28/2022	0200097	EV_EC1											11.45														
8/28/2022	E321791	F2_NWPI	15.5						1820				5.49	0.366													
8/28/2022	E321812	F2_BPO	13.8	< 0.20	< 0.20	13.7	14.3	< 10	1840	< 0.40	< 1.00		8	0.267	1260	0.064	0.284	< 0.100	< 0.100	0.134	0.125	166		0.394	0.419	< 0.0050	0.00068
8/28/2022	E321812	F2_BPO											8.67														
8/28/2022	E321812	F2_BPO	13.8	< 0.20	< 0.20	13.7	14.3	< 10	1850	< 0.40	< 1.00		8.68	0.238	1260	0.064	0.284	< 0.100	< 0.100	0.134	0.125	166		0.394	0.419	< 0.0050	0.00068
8/29/2022	E300091	EV_MC2	3.90	0.15	0.17	< 0.10	< 0.10	< 10	583	< 0.20	< 0.50	< 0.010	8.98	0.154	348	< 0.010	0.010	< 0.050	< 0.050	0.0148	0.0159	33.6		0.00177	0.00191	< 0.0050	< 0.0050
8/29/2022	0200203	EV_MC3	0.91	0.16	0.22	< 0.10	< 0.10	< 10	392	< 0.20	< 0.50	< 0.010	8.86	0.150	225	< 0.010	0.012	< 0.050	< 0.050	0.0058	0.0066	18.2		0.00089	0.00142	< 0.0050	< 0.0050
8/29/2022	310168	EV_MC2A	1.52	0.16	0.19	< 0.10	< 0.10	< 10	503	< 0.20	< 0.50	< 0.010	9.64	0.152	300	< 0.010	0.010	< 0.050	< 0.050	0.0072	0.0078	27.2		0.00219	0.00255	< 0.0050	< 0.0050
8/29/2022	E321812	F2_BPO	13.8	< 0.10	< 0.20	13.5	13.6	< 10	1910	< 0.20	< 1.00	0.014	8.72	0.266	1410	0.068	0.293	< 0.050	0.195	0.122	0.134	178		0.452	0.396	< 0.0050	< 0.0050
8/29/2022	200393	EV_ER1	2.00	0.25	0.35	< 0.10	< 0.10	< 10	430	< 0.20	< 0.50		9.48	0.193	259	< 0.010	0.036	< 0.050	< 0.050	0.0085	0.0090	22.0		0.00129	0.00441	< 0.0050	< 0.0050
8/29/2022	E321791	F2_NWPI	15.4	< 0.10	< 0.20	9.36	9.77	< 10	1870	0.30	< 1.00	0.056	5.72	0.368	1320	< 0.010	0.032	< 0.050	0.224	0.162	0.180	165		0.0629	0.0650	< 0.0050	< 0.0050
8/29/2022	0200097	EV_EC1	5.01	0.20	0.27	< 0.10	< 0.10	< 10	1700	< 0.20	< 0.50	< 0.010	10.53	< 0.100	1240	< 0.010	< 0.010	< 0.050	< 0.050	0.0280	0.0289	151		0.00013	0.00020	< 0.0050	< 0.0050
8/29/2022	0200097	EV_EC1											10.53														
8/29/2022	E321814	EV_ECOUT	5.03	0.20	0.22	< 0.10	< 0.10	< 10	1820	< 0.20	< 0.50	< 0.010	9.83	0.107	1310	< 0.010	< 0.010	< 0.050	< 0.050	0.0285	0.0290	152		< 0.00010	< 0.00010	< 0.0050	< 0.0050
8/29/2022	E321814	EV_ECOUT											9.83														
8/29/2022	E321812	F2_BPO											8.7														
8/30/2022	E321791	F2_NWPI	15.3	< 0.20		7.42		< 10	1810	< 0.40			4.97	0.318	1190	< 0.020		< 0.100		0.169				0.0464		< 0.0050	< 0.0050
8/30/2022	E321812	F2_BPO	13.8	< 0.20		12.9		< 10	1840	< 0.40			9.28	0.237	1330	0.045		< 0.100		0.127				0.364		0.0226	0.0205
8/30/2022	E300091	EV_MC2											8.86														
8/30/2022	0200097	EV_EC1											10.57														
8/30/2022	E300091	EV_MC2	3.82	0.12	0.17	< 0.10	< 0.10		588	< 0.20	< 0.50		9.92	0.134	331	< 0.010	0.011	< 0.050	< 0.050	0.0134	0.0140	35.8		0.00152	0.00214	< 0.0050	< 0.0050
8/30/2022	E206231	EV_GT1	14.6	< 0.20	< 0.20	< 0.20	< 0.20	< 10	1940	< 0.40	< 1.00	0.032	11.63	0.241	1350	< 0.020	0.126	< 0.100	< 0.100	0.150	0.149	185		0.00625	0.00679	0.0243	0.0251
8/30/2022	E206231	EV_GT1											11.63														
8/30/2022	E102685	EV_BC1	21.8	< 0.20	< 0.20	< 0.20	< 0.20	< 10	1810	< 0.40	< 1.00	0.215	11.63	0.202	1150	< 0.020	< 0.020	< 0.100	< 0.100	0.149	0.147	174		0.00088	0.00085	0.0220	0.0259
8/30/2022	E102685	EV_BC1											7.23														
8/30/2022	E321812	F2_BPO											8.45														
8/31/2022	E321791	F2_NWPI	15.6						1830				4.86	0.377													
8/31/2022	E300091	EV_MC2											8.23														
8/31/2022	E321812	F2_BPO											9.14														
8/31/2022	0200097	EV_EC1											10.7														
8/31/2022	E321812	F2_BPO											9.14														
8/31/2022	E321812	F2_BPO	14.0					< 10	1900				8.63	0.274													
8/31/2022	E321812	F2_BPO											8.63														
9/1/2022	E300091	EV_MC2											9.2														
9/1/2022	0200097	EV_EC1											11.61														
9/1/2022	E321791	F2_NWPI	15.4	< 0.20		9.27		< 10	1830	< 0.40			4.75	0.372	1270	< 0.020		< 0.100		0.187				0.0624		< 0.0050	< 0.0050
9/1/2022	E321812	F2_BPO	13.8	< 0.20		14.9		< 10	1870	< 0.40			8.7	0.274	1370	0.040		< 0.100		0.132				0.432		< 0.0050	< 0.0050
9/1/2022	E321812	F2_BPO																									
9/1/2022	E321812	F2_BPO											8.65														
9/2/2022	0200097	EV_EC1											11.99														
9/2/2022	E300091	EV_MC2											11.61														
9/2/2022	E321791	F2_NWPI	15.4						1830				5.53	0.367													
9/2/2022	E321812	F2_BPO	13.8					< 10	1870				8.86	0.267													
9/2/2022	E321812	F2_BPO											8.87														

Parameter			Chloride	Chromium	Chromium	Cobalt	Cobalt	COD	Conductivity, Lab	Copper	Copper	Dimethylseleneoxide	Dissolved Oxygen, Field	Fluoride	Hardness, Total or Dissolved CaCO3	Iron	Iron	Lead	Lead	Lithium	Lithium	Magnesium	Magnesium	Manganese	Manganese	Mercury	Mercury
Fraction			D	D	T	D	T	N	N	D	T	D	N	N	D	D	T	D	T	D	T	T	T	D	T	D	T
Unit			mg/l	ug/l	ug/l	ug/l	ug/l	mg/l	us/cm	ug/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	ppm	mg/l	mg/l	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
9/3/2022	E300091	EV_MC2																									
9/3/2022	0200097	EV_EC1																									
9/3/2022	E321791	F2_NWPI	15.6						1830				5.5	0.364													
9/3/2022	E321812	F2_BPO	13.8					< 10	1880				8.9	0.263													
9/3/2022	E321812	F2_BPO											8.74														
9/4/2022	E300091	EV_MC2											9.36														
9/4/2022	0200097	EV_EC1											11.65														
9/4/2022	E321791	F2_NWPI	16.4						1880				5.59	0.413													
9/4/2022	E321812	F2_BPO	13.8					< 10	1950				8.62	0.268													
9/4/2022	E321812	F2_BPO																									
9/4/2022	E321812	F2_BPO											8.42														
9/5/2022	E300091	EV_MC2											9.05														
9/5/2022	0200097	EV_EC1											11.79														
9/5/2022	E321812	F2_BPO	13.8	< 0.10	< 0.10	14.9	14.9	< 10	1940	< 0.20	< 0.50	< 0.010	8.56	0.275	1320	0.043	0.306	< 0.050	0.080	0.130	0.120	157		0.438	0.433	< 0.0050	< 0.0050
9/5/2022	E321812	F2_BPO																									
9/5/2022	E321791	F2_NWPI	15.5	< 0.10	< 0.10	7.74	8.71	< 10	1910	0.29	< 0.50	0.035	5.54	0.376	1150	< 0.010	0.036	< 0.050	< 0.050	0.170	0.158	141		0.0494	0.0602	< 0.0050	< 0.0050
9/5/2022	E321812	F2_BPO											8.51														
9/6/2022	E300091	EV_MC2											9.68														
9/6/2022	0200097	EV_EC1											11.98														
9/6/2022	E321812	F2_BPO	13.9	< 0.20		15.5		< 10	1880	< 0.40			8.71	0.280	1340	0.057		< 0.100		0.139				0.446		0.0101	0.0092
9/6/2022	E321791	F2_NWPI	15.5	< 0.20		9.07		< 10	1840	0.45			5.62	0.380	1220	0.035		< 0.100		0.185				0.0586		0.0096	0.0145
9/6/2022	E300091	EV_MC2	4.35	0.17	0.14	< 0.10	< 0.10		604	0.26	< 0.50	< 0.010	10.19	0.160	366	< 0.010	0.011	< 0.050	< 0.050	0.0157	0.0166	34.7		0.00183	0.00215	0.0073	< 0.0050
9/6/2022	200393	EV_ER1	2.25	0.26	0.37	< 0.10	< 0.10		436	< 0.20	< 0.50	< 0.010	10.07	0.196	260	< 0.010	0.022	< 0.050	< 0.050	0.0096	0.0100	20.7		0.00156	0.00308	< 0.0050	< 0.0050
9/6/2022	E206231	EV_GT1	14.6	< 0.10	0.21	0.14	0.15		1900	0.24	< 0.50		11.14	0.267	1410	0.013	0.118	< 0.050	< 0.050	0.125	0.135	175		0.00640	0.00640	< 0.0050	< 0.0050
9/6/2022	E102685	EV_BC1	22.3	< 0.10	< 0.10	< 0.10	< 0.10		1790	0.28	< 0.50		9.03	0.220	1260	< 0.010	0.010	< 0.050	< 0.050	0.134	0.138	163		0.00073	0.00066	< 0.0050	< 0.0050
9/6/2022	E321812	F2_BPO											8.63														
9/7/2022	E300091	EV_MC2											6.39														
9/7/2022	0200097	EV_EC1											11.88														
9/7/2022	E321812	F2_BPO	14.2					< 10	1900				8.84	0.276													
9/7/2022	E321791	F2_NWPI	15.8						1840				5.38	0.375													
9/7/2022	E321812	F2_BPO											8.54														
9/8/2022	E300091	EV_MC2											9.74														
9/8/2022	0200097	EV_EC1											11.67														
9/8/2022	E321812	F2_BPO	13.8	< 0.10		14.9		< 10	1870	< 0.20			8.95	< 0.100	1320	0.034		< 0.050		0.131				0.432		0.0106	0.0117
9/8/2022	E321791	F2_NWPI	15.5	< 0.10		8.55		< 10	1840	0.28			5.6	< 0.100	1170	< 0.010		< 0.050		0.178				0.0571		0.0148	< 0.0250
9/8/2022	E321814	EV_ECOUT	5.07	0.20	0.18	< 0.10	< 0.10		1810	< 0.20	< 0.50		10.65	0.110	1270	< 0.010	< 0.010	< 0.050	< 0.050	0.0278	0.0219	154		< 0.00010	0.00015	< 0.0050	< 0.0050
9/8/2022	0200097	EV_EC1	5.07	0.20	0.18	< 0.10	< 0.10		1670	0.45	< 0.50		10.9	< 0.100	1160	< 0.010	< 0.010	< 0.050	< 0.050	0.0265	0.0212	156		0.00013	0.00012	< 0.0050	< 0.0050
9/8/2022	0200203	EV_MC3	1.04	0.14	0.16	< 0.10	< 0.10		389	< 0.20	< 0.50		10.17	0.155	210	< 0.010	< 0.010	< 0.050	< 0.050	0.0067	0.0044	17.9		0.00076	0.00135	< 0.0050	< 0.0050
9/8/2022	E300091	EV_MC2	3.68	0.13	0.16	< 0.10	< 0.10		603	< 0.20	< 0.50		9.94	0.143	328	< 0.010	0.011	< 0.050	< 0.050	0.0153	0.0149	34.9		0.00178	0.00216	< 0.0050	< 0.0050
9/8/2022	E321812	F2_BPO											9.16														
9/9/2022	E300091	EV_MC2											10.1														
9/9/2022	0200097	EV_EC1											11.78														
9/9/2022	E321812	F2_BPO	13.9					< 10	1870				9.13	0.270													
9/9/2022	E321791	F2_NWPI	15.4						1780				6.27	0.370													
9/9/2022	E300091	EV_MC2	4.02	0.14	0.16	< 0.10	< 0.10		622	< 0.20	< 0.50		10.19	0.154	363	< 0.010	< 0.010	< 0.050	< 0.050	0.0135	0.0148	34.0		0.00158	0.00121	< 0.0050	< 0.0050
9/9/2022	E102685	EV_BC1	22.0	< 0.10	< 0.10	< 0.10	< 0.10		1780	< 0.20	< 0.50		8.17	0.211	1260	< 0.010	< 0.010	< 0.050	< 0.050	0.135	0.145	159		0.00030	0.00023	< 0.0050	< 0.0050
9/9/2022	E206231	EV_GT1	14.2	< 0.20	< 0.10	< 0.20	0.12		1930	< 0.40	< 0.50		10.57	0.256	1390	< 0.020	0.061	< 0.100	< 0.050	0.128	0.135	174		0.00524	0.00427	< 0.0050	< 0.0050
9/9/2022	310168	EV_MC2A	1.72	0.16	0.16	< 0.10	< 0.10		524	< 0.20	< 0.50		10.67	0.157	308	< 0.010	< 0.010	< 0.050	< 0.050	0.0076	0.0089	27.3		0.00232	0.00119	< 0.0050	< 0.0050

Parameter			Chloride	Chromium	Chromium	Cobalt	Cobalt	COD	Conductivity, Lab	Copper	Copper	Dimethylseleneoxide	Dissolved Oxygen, Field	Fluoride	Hardness, Total or Dissolved CaCO3	Iron	Iron	Lead	Lead	Lithium	Lithium	Magnesium	Magnesium	Manganese	Manganese	Mercury	Mercury
Fraction			D	D	T	D	T	N	N	D	T	D	N	N	D	D	T	D	T	D	T	T	T	D	T	D	T
Unit			mg/l	ug/l	ug/l	ug/l	ug/l	mg/l	us/cm	ug/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	ppm	mg/l	mg/l	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
9/9/2022	E321812	F2_BPO											9.75														
9/10/2022	E300091	EV_MC2																									
9/10/2022	0200097	EV_EC1																									
9/10/2022	E321791	F2_NWPI	15.6						1860				5.3	0.375													
9/10/2022	E321812	F2_BPO	14.0					< 10	1880				9.5	0.274													
9/10/2022	E321812	F2_BPO											9.08														
9/11/2022	E300091	EV_MC2											10.32														
9/11/2022	0200097	EV_EC1											11.81														
9/11/2022	E321791	F2_NWPI	15.4						1820				5.74	0.294													
9/11/2022	E321812	F2_BPO	14.0					< 10	1860				9.21	0.216													
9/11/2022	E321812	F2_BPO											8.98														
9/12/2022	E300091	EV_MC2	4.99	0.11	0.18	< 0.10	< 0.10	< 10	633	< 0.20	< 0.50	< 0.010	10.36	0.155	290	< 0.010	< 0.010	< 0.050	< 0.050	0.0170	0.0160	36.8		0.00126	0.00185	< 0.0050	< 0.0050
9/12/2022	310168	EV_MC2A	1.76	0.15	0.21	< 0.10	< 0.10	< 10	528	< 0.20	< 0.50	< 0.010	10.81	0.153	293	< 0.010	0.022	< 0.050	< 0.050	0.0093	0.0084	29.8		0.00259	0.00300	< 0.0050	< 0.0050
9/12/2022	0200203	EV_MC3	1.06	0.11	0.16	< 0.10	< 0.10	< 10	397	< 0.20	< 0.50	< 0.010	10.77	0.156	194	< 0.010	0.015	< 0.050	< 0.050	0.0068	0.0059	17.8		0.00057	0.00118	< 0.0050	< 0.0050
9/12/2022	200393	EV_ER1	2.46	0.22	0.26	< 0.10	< 0.10	< 10	457	< 0.20	< 0.50		10.69	0.197	209	< 0.010	0.016	< 0.050	< 0.050	0.0098	0.0096	23.4		0.00118	0.00244	< 0.0050	< 0.0050
9/12/2022	E321812	F2_BPO											9.09														
9/12/2022	E321812	F2_BPO	13.8	< 0.10	< 0.10	12.9	15.4	< 10	1880	< 0.20	< 0.50	< 0.010	9.07	0.269	1140	0.038	0.316	< 0.050	0.088	0.151	0.134	167		0.381	0.483	< 0.0050	< 0.0050
9/12/2022	E321812	F2_BPO											9.07														
9/12/2022	E321791	F2_NWPI	15.4	< 0.10	< 0.10	7.51	8.94	< 10	1830	0.27	< 0.50	< 0.010	5.32	0.367	1130	< 0.010	0.026	< 0.050	< 0.050	0.216	0.172	154		0.0489	0.0597	< 0.0050	< 0.0050
9/12/2022	0200097	EV_EC1	5.03	0.15	0.20	< 0.10	< 0.10	< 10	1660	< 0.20	< 0.50	< 0.010	12.35	< 0.100	995	< 0.010	< 0.010	< 0.050	< 0.050	0.0282	0.0257	154		0.00011	0.00054	< 0.0050	< 0.0050
9/12/2022	0200097	EV_EC1											12.35														
9/12/2022	E321814	EV_ECOUT	5.06	0.14	0.22	< 0.10	< 0.10	< 10	1800	< 0.20	< 0.50	< 0.010	12.69	0.110	1020	< 0.010	< 0.010	< 0.050	< 0.050	0.0276	0.0271	155		< 0.00010	0.00027	< 0.0050	< 0.0050
9/12/2022	E321814	EV_ECOUT											12.69														
9/12/2022	E321812	F2_BPO											8.93														
9/13/2022	E300091	EV_MC2											9.84														
9/13/2022	0200097	EV_EC1											11.64														
9/13/2022	E321812	F2_BPO	14.1	< 0.20	< 0.10	10.9	14.7		1880	< 0.40	< 0.50		9.77	0.266	1140	0.034	0.306	< 0.100	0.457	0.127	0.133	158		0.309	0.423	< 0.0050	< 0.0050
9/13/2022	E206231	EV_GT1	14.0	< 0.20	< 0.20	< 0.20	< 0.20	< 10	1940	< 0.40	< 1.00	< 0.010	13.55	0.239	1360	< 0.020	0.081	< 0.100	< 0.100	0.137	0.146	190		0.00518	0.00579	< 0.0050	< 0.0050
9/13/2022	E206231	EV_GT1											13.55														
9/13/2022	E102685	EV_BC1	21.4	< 0.20	< 0.20	< 0.20	< 0.20	< 10	1780	< 0.40	< 1.00	0.017	8.69	0.190	1090	< 0.020	< 0.020	< 0.100	< 0.100	0.140	0.150	175		0.00041	0.00036	< 0.0050	< 0.0050
9/13/2022	E102685	EV_BC1											8.69														
9/13/2022	E300091	EV_MC2	4.42	0.19	0.17	< 0.10	< 0.10		613	< 0.20	< 0.50		10.07	0.155	412	< 0.010	< 0.010	< 0.050	< 0.050	0.0185	0.0160	39.6		0.00174	0.00234	< 0.0050	< 0.0050
9/13/2022	E321791	F2_NWPI	15.7	< 0.20		7.00			1830	< 0.40			6.36	0.366	1200	< 0.020		< 0.100		0.176				0.0458		0.0050	0.0050
9/13/2022	E321812	F2_BPO											9.34														
9/14/2022	E300091	EV_MC2											9.77														
9/14/2022	0200097	EV_EC1											11.95														
9/14/2022	E321791	F2_NWPI	15.4						1850				5.58	0.376													
9/14/2022	E321812	F2_BPO	13.9					< 10	1900				9.17	0.265													
9/14/2022	E321812	F2_BPO																									
9/14/2022	E321812	F2_BPO											9.36														
9/15/2022	E300091	EV_MC2											9.64														
9/15/2022	0200097	EV_EC1											11.79														
9/15/2022	E321791	F2_NWPI	15.4	< 0.20		6.38		< 10	1840	< 0.40			5.43	0.369	1090	< 0.020		< 0.100		0.187				0.0425		< 0.0050	< 0.0050
9/15/2022	E321812	F2_BPO	13.9	< 0.20		14.6		14	1880	< 0.40			9.11	0.267	1230	0.051		< 0.100		0.137				0.433		0.0081	< 0.0050
9/15/2022	0200097	EV_EC1											10.78														
9/15/2022	310168	EV_MC2A											10.44														
9/15/2022	0200203	EV_MC3											10.25														
9/15/2022	E206231	EV_GT1											10.52														

		Parameter	Chloride	Chromium	Chromium	Cobalt	Cobalt	COD	Conductivity, Lab	Copper	Copper	Dimethylseleneoxide	Dissolved Oxygen, Field	Fluoride	Hardness, Total or Dissolved CaCO3	Iron	Iron	Lead	Lead	Lithium	Lithium	Magnesium	Magnesium	Manganese	Manganese	Mercury	Mercury
		Fraction	D	D	T	D	T	N	N	D	T	D	N	N	D	D	T	D	T	D	T	T	T	D	T	D	T
		Unit	mg/l	ug/l	ug/l	ug/l	ug/l	mg/l	us/cm	ug/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	ppm	mg/l	mg/l	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
9/15/2022	E102685	EV_BC1											8.41														
9/15/2022	E300091	EV_MC2											9.49														
9/15/2022	E321812	F2_BPO											9.26														
9/16/2022	E300091	EV_MC2											9.43														
9/16/2022	0200097	EV_EC1											11.73														
9/16/2022	E321791	F2_NWPI	15.7						1810				5.5	0.365													
9/16/2022	E321812	F2_BPO	14.3					< 10	1850				9.11	0.280													
9/16/2022	E321812	F2_BPO																									
9/16/2022	E321812	F2_BPO											9.46														
9/17/2022	E300091	EV_MC2											9.32														
9/17/2022	0200097	EV_EC1											11.64														
9/17/2022	E321791	F2_NWPI	15.6						1780				5.52	0.373													
9/17/2022	E321812	F2_BPO	13.9					< 10	1850				9.18	0.272													
9/17/2022	E321812	F2_BPO											9.35														
9/18/2022	E300091	EV_MC2											9.16														
9/18/2022	0200097	EV_EC1											11.75														
9/18/2022	E321791	F2_NWPI	18.2						1830				5.34	0.262													
9/18/2022	E321812	F2_BPO	13.9					< 10	1880				11.24	0.274													
9/18/2022	E321812	F2_BPO											9.56														
9/19/2022	E300091	EV_MC2											9.19														
9/19/2022	0200097	EV_EC1											11.62														
9/19/2022	E321791	F2_NWPI	15.3	< 0.20	< 0.20	7.01	7.81	< 10	1840	< 0.40	< 1.00	0.063	5.31	0.362	1160	< 0.020	0.020	< 0.100	< 0.100	0.161	0.185	152		0.0461	0.0537	< 0.0050	< 0.0050
9/19/2022	E321812	F2_BPO	13.7	< 0.20	< 0.20	14.1	14.8	< 10	1880	< 0.40	< 1.00	0.014	9.66	0.268	1240	0.034	0.276	< 0.100	< 0.100	0.121	0.134	165		0.411	0.435	< 0.0050	< 0.0050
9/19/2022	E321812	F2_BPO																									
9/19/2022	E321812	F2_BPO											9.53														
9/20/2022	E300091	EV_MC2											9.67														
9/20/2022	0200097	EV_EC1											11.84														
9/20/2022	E321812	F2_BPO	13.8	< 0.20		15.7		< 10	1860	< 0.40			10.27	0.268	1280	0.055		< 0.100		0.130				0.432		< 0.0050	< 0.0050
9/20/2022	E321791	F2_NWPI	15.4	< 0.20		6.77		< 10	1810	< 0.40			5.32	0.367	1150	< 0.020		< 0.100		0.175				0.0424		< 0.0050	< 0.0050
9/20/2022	E321812	F2_BPO											9.82														
9/21/2022	E300091	EV_MC2											10.46														
9/21/2022	0200097	EV_EC1											11.64														
9/21/2022	E321812	F2_BPO	13.8					< 10	1870				10.02	0.276													
9/21/2022	E321812	F2_BPO																									
9/21/2022	E321791	F2_NWPI	15.5						1820				5.45	0.387													
9/21/2022	E321812	F2_BPO											10.08														
9/22/2022	E300091	EV_MC2											9.45														
9/22/2022	0200097	EV_EC1											11.28														
9/22/2022	E321791	F2_NWPI	15.6	< 0.20		7.54			1820	< 0.40			5.49	0.372	1170	< 0.020		< 0.100		0.183				0.0487		< 0.0050	0.0231
9/22/2022	E321812	F2_BPO	14.1	< 0.20		15.4		< 10	1880	< 0.40			9.11	0.280	1270	0.046		< 0.100		0.131				0.426		0.0255	0.0459
9/23/2022	E300091	EV_MC2											9.83														
9/23/2022	0200097	EV_EC1											11.5														
9/23/2022	E321791	F2_NWPI	15.8						1840				5.27	0.357													
9/23/2022	E321812	F2_BPO	14.1					< 10	1900				9.54	0.258													
9/23/2022	E321812	F2_BPO											10.49														
9/24/2022	E300091	EV_MC2											9.94														
9/24/2022	0200097	EV_EC1											11.63														
9/24/2022	E321791	F2_NWPI	15.8						1780				5.64	0.357													

Parameter			Chloride	Chromium	Chromium	Cobalt	Cobalt	COD	Conductivity, Lab	Copper	Copper	Dimethylseleneoxide	Dissolved Oxygen, Field	Fluoride	Hardness, Total or Dissolved CaCO3	Iron	Iron	Lead	Lead	Lithium	Lithium	Magnesium	Magnesium	Manganese	Manganese	Mercury	Mercury
Fraction			D	D	T	D	T	N	N	D	T	D	N	N	D	D	T	D	T	D	T	T	T	D	T	D	T
Unit			mg/l	ug/l	ug/l	ug/l	ug/l	mg/l	us/cm	ug/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	ppm	mg/l	mg/l	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
9/24/2022	E321812	F2_BPO	14.2					< 10	1830				9.96	0.260													
9/24/2022	E321812	F2_BPO											10.69														
9/25/2022	E300091	EV_MC2											9.89														
9/25/2022	0200097	EV_EC1											11.78														
9/25/2022	E321791	F2_NWPI	15.8						1830				5.61	0.356													
9/25/2022	E321812	F2_BPO	14.1					< 10	1880				10.09	0.262													
9/25/2022	E321812	F2_BPO											10.77														
9/26/2022	200393	EV_ER1	2.80	0.26	0.33	< 0.10	< 0.10	< 10	477	< 0.20	< 0.50		10.96	0.201	273	< 0.010	0.017	< 0.050	< 0.050	0.0146	0.0116	28.2		0.00134	0.00250	< 0.0050	< 0.0050
9/26/2022	310168	EV_MC2A	1.88	0.13	0.15	< 0.10	< 0.10	< 10	546	< 0.20	< 0.50	< 0.010	11.19	0.150	294	< 0.010	0.013	< 0.050	< 0.050	0.0109	0.0096	35.0		0.00180	0.00245	< 0.0050	< 0.0050
9/26/2022	E321812	F2_BPO	13.8	< 0.20	< 0.10	16.3	15.6	< 10	1890	< 0.40	< 0.50	< 0.010	9.7	0.258	1270	0.020	0.352	< 0.100	0.073	0.131	0.135	151		0.449	0.436	< 0.0050	< 0.0050
9/26/2022	E300091	EV_MC2	4.57	0.17	0.16	< 0.10	< 0.10	< 10	640	0.20	< 0.50	< 0.010	10.5	0.154	364	< 0.010	0.011	< 0.050	< 0.050	0.0218	0.0163	40.9		0.00146	0.00186	< 0.0050	< 0.0050
9/26/2022	0200203	EV_MC3	1.07	0.14	0.16	< 0.10	< 0.10	< 10	385	0.22	< 0.50	< 0.010	11.21	0.152	224	< 0.010	< 0.010	< 0.050	< 0.050	0.0078	0.0061	18.6		0.00052	0.00077	< 0.0050	< 0.0050
9/26/2022	E321791	F2_NWPI	15.6	< 0.20	< 0.10	6.78	7.39	< 10	1800	0.56	0.50	< 0.010	6.15	0.350	1140	< 0.020	0.023	< 0.100	< 0.050	0.178	0.198	139		0.0465	0.0495	< 0.0050	< 0.0050
9/26/2022	0200097	EV_EC1	5.09	0.18	0.19	< 0.10	< 0.10	< 10	1670	< 0.20	< 0.50	< 0.010	11.9	< 0.100	1180	< 0.010	0.013	< 0.050	0.102	0.0313	0.0258	159		0.00011	0.00054	< 0.0050	< 0.0050
9/26/2022	E321814	EV_ECOUT	5.07	0.17	0.18	< 0.10	< 0.10	< 10	1730	< 0.20	< 0.50	< 0.010	11.86	0.101	1270	< 0.010	< 0.010	< 0.050	< 0.050	0.0322	0.0280	163		< 0.00010	0.00040	< 0.0050	< 0.0050
9/26/2022	E321812	F2_BPO											9.64														
9/27/2022	E300091	EV_MC2											9.77														
9/27/2022	0200097	EV_EC1											11.89														
9/27/2022	E321812	F2_BPO	14.0	< 0.10		15.1		< 10	1890	< 0.20			9.93	0.269	1280	0.021		< 0.050		0.132				0.437		< 0.0050	< 0.0050
9/27/2022	E206231	EV_GT1	14.2	< 0.10	< 0.10	0.14	0.17	< 10	1930	< 0.20	< 0.50	< 0.010	9.91	0.259	1350	< 0.010	0.048	< 0.050	< 0.050	0.133	0.148	179		0.00502	0.00470	< 0.0050	< 0.0050
9/27/2022	E102685	EV_BC1	58.1	< 0.10	< 0.10	< 0.10	< 0.10	< 10	1850	0.30	< 0.50	0.157	10.2	0.200	1300	< 0.010	< 0.010	< 0.050	< 0.050	0.142	0.157	174		0.00031	0.00057	< 0.0050	< 0.0050
9/27/2022	E321791	F2_NWPI	15.6	< 0.10		6.74		< 10	1780	0.34			6.07	0.362	1150	< 0.010		< 0.050		0.182				0.0459		< 0.0050	0.0165
9/27/2022	E321812	F2_BPO											8.08														
9/28/2022	E300091	EV_MC2											9.91														
9/28/2022	0200097	EV_EC1											12														
9/28/2022	E321791	F2_NWPI	15.5						1810				5.78	0.360													
9/28/2022	E321812	F2_BPO	13.9					< 10	1870				9.21	0.264													
9/28/2022	E321812	F2_BPO											9.11														
9/29/2022	E300091	EV_MC2											8.45														
9/29/2022	E321791	F2_NWPI	15.5	< 0.20		7.06		< 10	1820	0.42			5.75	0.362	1210	< 0.020		< 0.100		0.199				0.0457		< 0.0050	< 0.0050
9/29/2022	E321812	F2_BPO	13.9	< 0.20		14.5		< 10	1890	< 0.40			9.31	0.264	1250	0.022		< 0.100		0.138				0.399		< 0.0050	< 0.0050
9/29/2022	0200097	EV_EC1											12.37														
9/29/2022	E321812	F2_BPO											8.25														
9/30/2022	E300091	EV_MC2											9.5														
9/30/2022	0200097	EV_EC1											11.9														
9/30/2022	E321812	F2_BPO	14.2						1820				8.44	0.263													
9/30/2022	E321812	F2_BPO											8.99														
9/30/2022	E321791	F2_NWPI	15.9						1710				5.64	0.358													
10/1/2022	E300091	EV_MC2											10.07														
10/1/2022	0200097	EV_EC1											11.69														
10/1/2022	E321812	F2_BPO	13.9					< 10	1730				8.92	0.282													
10/1/2022	E321791	F2_NWPI	15.5						1690				5.91	0.375													
10/1/2022	E321812	F2_BPO											9.33														
10/2/2022	E300091	EV_MC2											9.7														
10/2/2022	0200097	EV_EC1											11.91														
10/2/2022	E321791	F2_NWPI	15.6						1680				5.51	0.380													
10/2/2022	E321812	F2_BPO	13.9					< 10	1740				9.24	0.280													
10/2/2022	E321812	F2_BPO											9.27														

Parameter			Chloride	Chromium	Chromium	Cobalt	Cobalt	COD	Conductivity, Lab	Copper	Copper	Dimethylseleneoxide	Dissolved Oxygen, Field	Fluoride	Hardness, Total or Dissolved CaCO3	Iron	Iron	Lead	Lead	Lithium	Lithium	Magnesium	Magnesium	Manganese	Manganese	Mercury	Mercury
Fraction			D	D	T	D	T	N	N	D	T	D	N	N	D	D	T	D	T	D	T	T	T	D	T	D	T
Unit			mg/l	ug/l	ug/l	ug/l	ug/l	mg/l	us/cm	ug/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	ppm	mg/l	mg/l	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
10/3/2022	E300091	EV_MC2	4.08	0.30	0.16	< 0.10	< 0.10	< 10	636	< 0.20	< 0.50	< 0.010	10.08	0.149	387	< 0.010	< 0.010	< 0.050	< 0.050	0.0144	0.0145	39.0		0.00145	0.00164	< 0.0050	< 0.0050
10/3/2022	200393	EV_ER1	2.92	0.26	0.28	< 0.10	< 0.10	< 10	468	< 0.20	< 0.50		10.68	0.198	295	< 0.010	< 0.010	< 0.050	< 0.050	0.0122	0.0110	25.5		0.00134	0.00188	< 0.0050	< 0.0050
10/3/2022	0200203	EV_MC3	1.09	0.18	0.18	< 0.10	< 0.10	< 10	375	< 0.20	< 0.50	< 0.010	11.28	0.149	212	< 0.010	< 0.010	< 0.050	< 0.050	0.0062	0.0065	18.2		0.00048	0.00065	< 0.0050	< 0.0050
10/3/2022	310168	EV_MC2A	1.87	0.17	0.17	< 0.10	< 0.10	< 10	553	< 0.20	< 0.50	< 0.010	11.23	0.147	361	< 0.010	0.011	< 0.050	< 0.050	0.0107	0.0095	34.9		0.00235	0.00274	< 0.0050	< 0.0050
10/3/2022	E321812	F2_BPO	14.4	< 0.20	< 0.20	14.9	15.8	< 10	1780	< 0.40	< 1.00	< 0.010	9.23	0.266	1290	0.035	0.319	< 0.100	< 0.100	0.142	0.144	170		0.426	0.456	< 0.0050	< 0.0050
10/3/2022	E321791	F2_NWPI	15.8	< 0.20	< 0.20	6.35	7.57	< 10	1710	< 0.40	< 1.00	0.027	5.52	0.361	1130	< 0.020	0.021	< 0.100	< 0.100	0.174	0.185	153		0.0397	0.0508	< 0.0050	< 0.0050
10/3/2022	0200097	EV_EC1	5.43	0.19	0.22	< 0.10	< 0.10	< 10	1590	< 0.20	< 0.50	< 0.010	12.12	< 0.100	1140	< 0.010	< 0.010	< 0.050	< 0.050	0.0248	0.0314	157		0.00017	0.00036	< 0.0050	< 0.0050
10/3/2022	E321814	EV_ECOUT	5.43	0.18	0.25	< 0.10	< 0.10	< 10	1690	< 0.20	< 0.50	< 0.010	12.66	0.104	1320	< 0.010	< 0.010	< 0.050	< 0.050	0.0276	0.0296	161		< 0.00010	< 0.00010	< 0.0050	< 0.0050
10/3/2022	E321812	F2_BPO											9.05														
10/4/2022	E300091	EV_MC2											8.06														
10/4/2022	E321791	F2_NWPI	15.6						1790				5.84	0.359													
10/4/2022	0200097	EV_EC1											12.51														
10/4/2022	E321812	F2_BPO	14.0					< 10	1760				9.27	0.273													
10/4/2022	E206231	EV_GT1	13.9	< 0.10	< 0.10	0.17	0.20	< 10	1830	0.23	< 0.50	0.031	11.11	0.268	1340	< 0.010	0.081	< 0.050	< 0.050	0.136	0.125	184		0.00482	0.00634	< 0.0050	< 0.0050
10/4/2022	E321814	EV_ECOUT	5.29	0.20	0.20	< 0.10	< 0.10		1720	< 0.20	< 0.50		10.57	0.104	1240	< 0.010	< 0.010	< 0.050	< 0.050	0.0265	0.0276	152		< 0.00010	< 0.00010	< 0.0050	< 0.0050
10/4/2022	E102685	EV_BC1	42.7	< 0.10	< 0.10	< 0.10	< 0.10	< 10	1840	< 0.20	< 0.50	0.063	9.45	0.252	1310	< 0.010	0.029	< 0.050	< 0.050	0.150	0.125	174		0.00142	0.00185	< 0.0050	< 0.0050
10/4/2022	E321811	F2_ECIN	13.9	< 0.10	< 0.10	13.2	15.2	< 10	1780	< 0.20	0.54	0.019	13.58	0.269	1300	0.044	0.671	< 0.050	0.200	0.148	0.125	158		0.416	0.449	< 0.0050	< 0.0050
10/5/2022	E321791	F2_NWPI	15.6	< 0.20		6.12		< 10	1830	< 0.40			5.38	0.367	1130	< 0.020		< 0.100		0.179				0.0416		< 0.0050	
10/5/2022	E321811	F2_ECIN	5.37	< 0.20		< 0.20		< 10	1830	< 0.40			11.44	0.111	1150	< 0.020		< 0.100		0.0251				0.00148		< 0.0050	
10/5/2022	E321812	F2_BPO	14.2	< 0.20		13.3		14	1890	< 0.40			8.54	0.273	1200	0.032		< 0.100		0.129				0.396		< 0.0050	
10/5/2022	0200097	EV_EC1	7.29	0.13	0.14	0.13	0.14		1600	< 0.20	< 0.50		10.3	0.120	1240	< 0.010	< 0.010	< 0.050	< 0.050	0.0500	0.0546	170		0.00079	0.00080	< 0.0050	< 0.0050
10/6/2022	E321791	F2_NWPI	15.7						1740				5.45	0.367													
10/6/2022	E321812	F2_BPO	14.0					< 10	1840				9.33	0.263													
10/6/2022	E102685	EV_BC1																									
10/6/2022	0200097	EV_EC1											12.69														
10/6/2022	E300091	EV_MC2											10.5														
10/6/2022	0200203	EV_MC3	1.10	0.12	0.13	< 0.10	< 0.10		371	< 0.20	< 0.50		10.79	0.146	214	< 0.010	< 0.010	< 0.050	< 0.050	0.0065	0.0063	18.7		0.00050	0.00090	< 0.0050	< 0.0050
10/6/2022	E321811	F2_ECIN	5.36						1720				10.4	0.107													
10/6/2022	200393	EV_ER1	2.98	0.23	0.24	< 0.10	< 0.10		482	< 0.20	< 0.50		11	0.194	275	< 0.010	0.012	< 0.050	0.123	0.0121	0.0117	28.0		0.00140	0.00267	< 0.0050	< 0.0050
10/6/2022	E206231	EV_GT1	14.7	< 0.10	< 0.10	0.20	0.22		1850	< 0.20	< 0.50		10.31	0.260	1350	0.010	0.120	< 0.050	< 0.050	0.139	0.129	199		0.00661	0.00794	< 0.0050	< 0.0050
10/6/2022	E102685	EV_BC1	35.2	< 0.10	< 0.10	< 0.10	< 0.10		1820	< 0.20	< 0.50		10.45	0.232	1310	< 0.010	0.021	< 0.050	< 0.050	0.151	0.140	187		0.00067	0.00096	< 0.0050	< 0.0050
10/6/2022	E300091	EV_MC2	4.23	0.15	0.14	< 0.10	< 0.10		650	< 0.20	< 0.50		10.06	0.150	377	< 0.010	0.011	< 0.050	< 0.050	0.0184	0.0155	42.6		0.00169	0.00224	< 0.0050	< 0.0050
10/6/2022	E321812	F2_BPO											8.21														
10/7/2022	E321791	F2_NWPI	16.0	< 0.10		6.95		< 10	1740	0.41			5.24	0.379	1200	< 0.010		< 0.050		0.200				0.0470		< 0.0050	
10/7/2022	E321811	F2_ECIN	5.56	0.15		< 0.10		< 10	1730	< 0.20			11.31	0.112	1250	0.016		< 0.050		0.0288				0.00093		< 0.0050	
10/7/2022	E321812	F2_BPO	14.5	< 0.10		15.4		< 10	1790	< 0.20			13.01	0.277	1300	0.044		< 0.050		0.143				0.421		< 0.0050	
10/7/2022	E321812	F2_BPO											8.99														
10/8/2022	E321791	F2_NWPI	16.0						1730				4.73	0.369													
10/8/2022	E321811	F2_ECIN	5.67						1730				10.61	0.111													
10/8/2022	E321812	F2_BPO	14.4					< 10	1800				8.58	0.270													
10/8/2022	E321812	F2_BPO											10														
10/9/2022	E321791	F2_NWPI	15.9						1740				5.44	0.375													
10/9/2022	E321811	F2_ECIN	5.55						1750				11.79	0.114													
10/9/2022	E321812	F2_BPO	14.5					< 10	1800				8.667	0.276													
10/9/2022	E321814	EV_ECOUT	5.96	0.18	0.42	0.63	0.71	< 10	1750	< 0.20	< 0.50	< 0.010	11.27	0.113	1240	< 0.010	0.013	< 0.050	< 0.050	0.0332	0.0336	150		0.0169	0.0180	< 0.0050	< 0.0050
10/9/2022	E321812	F2_BPO											9.85														
10/10/2022	E321811	F2_ECIN	5.67	0.18	< 0.20	< 0.10	< 0.20	< 10	1740	< 0.20	< 1.00	< 0.010	11.01	0.116	1240	0.013	< 0.020	< 0.050	< 0.100	0.0290	0.0313	143		0.00065	0.00090	< 0.0050	< 0.0050
10/10/2022	E321791	F2_NWPI	16.0	< 0.10	< 0.20	6.11	6.69	< 10	1740	0.30	< 1.00	0.026	4.92	0.374	1190	< 0.010	0.028	< 0.050	< 0.100	0.197	0.206	147		0.0392	0.0448	< 0.0050	< 0.0050

Parameter			Chloride	Chromium	Chromium	Cobalt	Cobalt	COD	Conductivity, Lab	Copper	Copper	Dimethylseleneoxide	Dissolved Oxygen, Field	Fluoride	Hardness, Total or Dissolved CaCO3	Iron	Iron	Lead	Lead	Lithium	Lithium	Magnesium	Magnesium	Manganese	Manganese	Mercury	Mercury
Fraction			D	D	T	D	T	N	N	D	T	D	N	N	D	D	T	D	T	D	T	T	T	D	T	D	T
Unit			mg/l	ug/l	ug/l	ug/l	ug/l	mg/l	us/cm	ug/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	ppm	mg/l	mg/l	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
10/10/2022	E321812	F2_BPO	14.4	< 0.10	< 0.20	16.5	16.4	< 10	1820	< 0.20	< 1.00	< 0.010	7.95	0.284	1310	0.033	0.291	< 0.050	< 0.100	0.146	0.161	149		0.448	0.443	< 0.0050	< 0.0050
10/10/2022	E321812	F2_BPO											10.67														
10/11/2022	E321811	F2_ECIN	5.48						1760				11.06	0.117													
10/11/2022	E321791	F2_NWPI	16.0						1750				4.93	0.376													
10/11/2022	E321812	F2_BPO	14.2					< 10	1820				9.11	0.279													
10/11/2022	E300091	EV_MC2	4.58	0.14	0.15	< 0.10	< 0.10		650	< 0.20	< 0.50		10.74	0.157	375	< 0.010	0.014	< 0.050	< 0.050	0.0201	0.0177	39.8		0.00176	0.00238	< 0.0050	< 0.0050
10/11/2022	E321812	F2_BPO											8.98														
10/12/2022	E321811	F2_ECIN	5.68	0.20		< 0.20		< 10	1740	0.58			10.94	0.116	1300	< 0.020		< 0.100		0.0292				0.00033		< 0.0050	
10/12/2022	E321791	F2_NWPI	16.2	< 0.20		5.54		< 10	1750	< 0.40			8.03	0.367	1160	< 0.020		< 0.100		0.193				0.0364		< 0.0050	
10/12/2022	E321812	F2_BPO	14.5	< 0.20		15.3		< 10	1870	< 0.40			9.69	0.277	1290	< 0.020		< 0.100		0.152				0.398		< 0.0050	
10/12/2022	E300091	EV_MC2	3.44		0.17		< 0.10				< 0.50		10.76	0.156			0.027		< 0.050		0.0137	33.9			0.00211		
10/12/2022	E321812	F2_BPO											9.91														
10/13/2022	E321811	F2_ECIN	5.42						1770				11.27	0.119													
10/13/2022	E321791	F2_NWPI	15.7						1740				4.69	0.374													
10/13/2022	E321812	F2_BPO	14.2					< 10	1810				9.75	0.282													
10/13/2022	E321812	F2_BPO											9.42														
10/14/2022	E300091	EV_MC2	4.51		0.20		< 0.10				< 0.50		10	0.161			0.033		< 0.050		0.0170	41.2			0.00401		
10/14/2022	E321811	F2_ECIN	5.39	< 0.20		< 0.20		< 10	1760	< 0.40			10.84	0.115	1360	< 0.020		< 0.100		0.0275				0.00037		< 0.0050	
10/14/2022	E321791	F2_NWPI	15.7	< 0.20		4.39		< 10	1740	< 0.40			5.59	0.362	1150	< 0.020		< 0.100		0.153				0.0288		< 0.0050	
10/14/2022	E321812	F2_BPO	14.1	< 0.20		15.1		< 10	1800	< 0.40			9.63	0.286	1300	< 0.020		< 0.100		0.127				0.416		< 0.0050	
10/14/2022	E321812	F2_BPO											9.44														
10/15/2022	E321811	F2_ECIN	5.76						1770				11.07	< 0.100													
10/15/2022	E321791	F2_NWPI	15.9						1770				5.28	0.374													
10/15/2022	E321812	F2_BPO	14.3					< 10	1810				10.25	0.276													
10/15/2022	E321812	F2_BPO											9.53														
10/16/2022	E321791	F2_NWPI	16.0						1800				5.71	0.374													
10/16/2022	E321811	F2_ECIN	5.64						1800				10.93	< 0.100													
10/16/2022	E321812	F2_BPO	14.1					< 10	1840				9.68	0.274													
10/16/2022	E321812	F2_BPO											9.43														
10/17/2022	200393	EV_ER1	3.24	0.25	0.23	< 0.20	< 0.10	< 10	480	< 0.40	< 0.50		11.81	0.206	260	< 0.020	< 0.010	< 0.100	< 0.050	0.0118	0.0119	26.7		0.00124	0.00181	< 0.0050	< 0.0050
10/17/2022	E300091	EV_MC2	5.44	< 0.20	0.15	< 0.20	< 0.10	< 10	641	< 0.40	< 0.50	< 0.010	11.15	0.154	342	< 0.020	0.010	< 0.100	< 0.050	0.0197	0.0194	38.7		0.00157	0.00210	< 0.0050	< 0.0050
10/17/2022	310168	EV_MC2A	2.22	< 0.20	0.13	< 0.20	< 0.10	< 10	565	< 0.40	< 0.50	< 0.010	11.88	0.154	312	< 0.020	0.010	< 0.100	< 0.050	0.0138	0.0132	33.4		0.00237	0.00293	< 0.0050	< 0.0050
10/17/2022	0200203	EV_MC3	1.15	< 0.20	0.14	< 0.20	< 0.10	< 10	383	< 0.40	< 0.50	< 0.010	11.25	0.150	214	< 0.020	< 0.010	< 0.100	< 0.050	0.0067	0.0062	17.8		0.00046	0.00075	< 0.0050	< 0.0050
10/17/2022	E321812	F2_BPO	14.0	< 0.20	< 0.20	17.8	17.2	< 10	1780	< 0.40	< 1.00	< 0.010	9.19	0.288	1440	< 0.020	0.344	< 0.100	< 0.100	0.148	0.150	182		0.449	0.445	< 0.0050	< 0.0050
10/17/2022	E321791	F2_NWPI	15.7	< 0.20	< 0.20	5.84	6.12	< 10	1750	0.52	< 1.00	< 0.010	5.61	0.370	1340	< 0.020	< 0.020	< 0.100	< 0.100	0.203	0.201	175		0.0352	0.0368	< 0.0050	< 0.0050
10/17/2022	E321811	F2_ECIN	5.36	< 0.20	0.23	< 0.20	< 0.20	< 10	1760	< 0.40	< 1.00	< 0.010	11.67	0.116	1450	< 0.020	0.071	< 0.100	< 0.100	0.0304	0.0292	165		0.00037	0.00058	< 0.0050	< 0.0050
10/17/2022	0200097	EV_EC1	8.20	< 0.20	0.32	0.60	0.69	< 10	1680	< 0.40	0.67	< 0.010	11.43	0.153	1190	< 0.020	0.010	< 0.100	< 0.050	0.0680	0.0707	166		0.0106	0.0120	< 0.0050	< 0.0050
10/17/2022	E321814	EV_ECOUT	7.62	< 0.20	0.20	3.74	4.15	< 10	1780	< 0.40	< 0.50	< 0.010	11.69	0.161	1210	< 0.020	0.067	< 0.100	< 0.050	0.0593	0.0576	158		0.108	0.119	< 0.0050	< 0.0050
10/17/2022	E321812	F2_BPO											8.63														
10/18/2022	E321791	F2_NWPI	15.7						1800				6.22	0.372													
10/18/2022	E321811	F2_ECIN	5.28						1820				12	0.114													
10/18/2022	E206231	EV_GT1	41.3	< 0.20	< 0.20	< 0.20	< 0.20	< 10	1960	< 0.40	< 1.00	0.069	11.07	0.393	1280	< 0.020	0.151	< 0.100	< 0.100	0.115	0.142	191		0.00834	0.00892	< 0.0050	< 0.0050
10/18/2022	E321812	F2_BPO	13.8					< 10	1860				9.66	0.288													
10/18/2022	E102685	EV_BC1	27.0	< 0.20	< 0.20	< 0.20	< 0.20	< 10	1820	< 0.40	< 1.00	0.129	10.51	0.237	1240	< 0.020	< 0.020	< 0.100	< 0.100	0.132	0.151	184		0.00026	0.00028	< 0.0050	< 0.0050
10/18/2022	E300091	EV_MC2	4.03	0.15	0.17	< 0.10	< 0.10		620	< 0.20	< 0.50		11.1	0.156	392	< 0.010	< 0.010	< 0.050	< 0.050	0.0187	0.0173	34.6		0.00187	0.00190	< 0.0050	< 0.0050
10/18/2022	E321812	F2_BPO											9.71														
10/19/2022	E300091	EV_MC2	4.75		0.11		< 0.10				0.70		10.11	0.154			0.012		0.104		0.0172	39.4			0.00185		
10/19/2022	E321811	F2_ECIN	5.42	0.18		< 0.10		< 10		< 0.20			9.87	0.106	1230	0.013		< 0.050		0.0286				0.00043		< 0.0050	

			Chloride	Chromium	Chromium	Cobalt	Cobalt	COD	Conductivity, Lab	Copper	Copper	Dimethylseleneoxide	Dissolved Oxygen, Field	Fluoride	Hardness, Total or Dissolved CaCO3	Iron	Iron	Lead	Lead	Lithium	Lithium	Magnesium	Magnesium	Manganese	Manganese	Mercury	Mercury
Parameter																											
Fraction			D	D	T	D	T	N	N	D	T	D	N	N	D	D	T	D	T	D	T	T	T	D	T	D	T
Unit			mg/l	ug/l	ug/l	ug/l	ug/l	mg/l	us/cm	ug/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	ppm	mg/l	mg/l	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
10/19/2022	E321812	F2_BPO	13.9	< 0.10		15.5		< 10		< 0.20			8.63	0.272	1310	0.019		< 0.050		0.141				0.457		< 0.0050	
10/19/2022	E321812	F2_BPO											9.75														
10/20/2022	E321811	F2_ECIN	5.27						1800				10.54	0.106													
10/20/2022	E321812	F2_BPO	13.6					< 10	1830				9.36	0.282													
10/20/2022	E321812	F2_BPO											9.36														
10/20/2022	E321812	F2_BPO											10.21														
10/20/2022	E321812	F2_BPO											10.21														
10/21/2022	E300091	EV_MC2	4.53		0.24		< 0.20				< 1.00		8.52	0.155			< 0.020		< 0.100		0.0166	37.8			0.00230		
10/21/2022	E321811	F2_ECIN	5.32	< 0.20		< 0.20		< 10	1790	0.45			10.35	0.113	1250	< 0.020		< 0.100		0.0294				0.00022		< 0.0050	
10/21/2022	E321812	F2_BPO	13.7	< 0.20		14.6		< 10	1810	< 0.40			9.31	0.281	1250	< 0.020		< 0.100		0.132				0.414		< 0.0050	
10/21/2022	E321812	F2_BPO											10.58														
10/22/2022	E321811	F2_ECIN	7.84						1790				10.48	< 0.100													
10/22/2022	E321812	F2_BPO	13.9					< 10	1810				9.83	0.290													
10/22/2022	E321812	F2_BPO											11.72														
10/23/2022	E321811	F2_ECIN	5.54						1830				10.21	0.113													
10/23/2022	E321812	F2_BPO	13.8					< 10	1810				10.73	0.287													
10/23/2022	E321812	F2_BPO											10.89														
10/24/2022	E300091	EV_MC2	4.32		0.16		< 0.10				< 0.50		10.83	0.153			0.019		< 0.050		0.0153	34.4			0.00224		
10/24/2022	0200097	EV_EC1										< 0.010	12.08														
10/24/2022	E321811	F2_ECIN	5.46	< 0.20	< 0.20	< 0.20	< 0.20	< 10	1790	< 0.40	< 1.00	< 0.010	11.41	0.114	1210	< 0.020	0.024	< 0.100	< 0.100	0.0277	0.0267	155		0.00037	0.00037	< 0.0050	< 0.0050
10/24/2022	E321812	F2_BPO	13.7	< 0.20	< 0.20	14.1	15.8	< 10	1820	< 0.40	< 1.00	< 0.010	10.73	0.295	1210	< 0.020	0.315	< 0.100	< 0.100	0.128	0.133	164		0.416	0.443	< 0.0050	< 0.0050
10/24/2022	E321814	EV_ECOUT										< 0.010	11.63														
10/24/2022	E321812	F2_BPO											11.27														
10/25/2022	E321811	F2_ECIN	5.57						1710				11.44	0.114													
10/25/2022	E321812	F2_BPO	13.8					< 10	1760				11.07	0.289													
10/25/2022	E300091	EV_MC2	3.09	0.15	0.19	< 0.10	< 0.10		585	< 0.20	< 0.50		11.14	0.156	330	< 0.010	< 0.010	< 0.050	< 0.050	0.0163	0.0141	35.9		0.00174	0.00216	< 0.0050	< 0.0050
10/25/2022	E321812	F2_BPO											10.72														
10/25/2022	E321812	F2_BPO											10.72														
10/26/2022	E300091	EV_MC2	3.92		0.15		< 0.10				< 0.50		11.44	0.147			0.017		< 0.050		0.0143	30.0			0.00203		
10/26/2022	E321812	F2_BPO	13.4	< 0.10		16.0		< 10	1760	< 0.20			11.97	0.273	1290	0.016		< 0.050		0.124				0.455		< 0.0050	
10/26/2022	E321811	F2_ECIN	5.40	0.24		< 0.10		< 10	1700	< 0.20			11.67	0.111	1270	0.011		< 0.050		0.0255				0.00024		< 0.0050	
10/26/2022	E321812	F2_BPO											12.01														
10/27/2022	E321811	F2_ECIN	5.25						1860				11.75	0.113													
10/27/2022	E321812	F2_BPO	13.2					< 10	1870				11.73	0.281													
10/27/2022	E321812	F2_BPO											11.85														
10/28/2022	E300091	EV_MC2	3.54		0.19		< 0.10				< 0.50		11.17	0.148			0.021		0.064		0.0145	36.2			0.00238		
10/28/2022	E321811	F2_ECIN	5.33	< 0.20		< 0.20		< 10	1770	< 0.40			11.29	0.110	1100	< 0.020		< 0.100		0.0249				< 0.00020		< 0.0050	
10/28/2022	E321812	F2_BPO	13.2	< 0.20		12.6		< 10	1760	< 0.40			12.41	0.276	1090	< 0.020		< 0.100		0.125				0.372		< 0.0050	
10/28/2022	E321812	F2_BPO											12.35														
10/29/2022	E321811	F2_ECIN	5.42						1770				12.56	0.106													
10/29/2022	E321812	F2_BPO	13.2					< 10	1780				11.06	0.270													
10/29/2022	E321812	F2_BPO											11.71														
10/30/2022	E321811	F2_ECIN	5.38						1760				11.31	0.106													
10/30/2022	E321812	F2_BPO	13.1					< 10	1780				11.74	0.276													
10/30/2022	E321812	F2_BPO											11.4														
10/31/2022	0200203	EV_MC3	1.12	0.16	0.17	< 0.10	< 0.10	< 10	361	0.22	< 0.50	< 0.010	12.32	0.130	193	< 0.010	0.046	< 0.050	< 0.050	0.0044	0.0060	17.9		0.00072	0.00230	< 0.0050	< 0.0050
10/31/2022	310168	EV_MC2A	2.04	0.13	0.14	< 0.10	< 0.10	< 10	500	< 0.20	< 0.50	< 0.010	11.38	0.139	290	< 0.010	0.021	< 0.050	< 0.050	0.0097	0.0115	28.8		0.00223	0.00270	< 0.0050	< 0.0050
10/31/2022	200393	EV_ER1	3.33	0.26	0.26	< 0.10	< 0.10	< 10	470	< 0.20	< 0.50		11.25	0.194	272	< 0.010	0.014	< 0.050	< 0.050	0.0103	0.0105	25.2		0.00157	0.00227	< 0.0050	< 0.0050

Parameter			Chloride	Chromium	Chromium	Cobalt	Cobalt	COD	Conductivity, Lab	Copper	Copper	Dimethylseleneoxide	Dissolved Oxygen, Field	Fluoride	Hardness, Total or Dissolved CaCO3	Iron	Iron	Lead	Lead	Lithium	Lithium	Magnesium	Magnesium	Manganese	Manganese	Mercury	Mercury
Fraction			D	D	T	D	T	N	N	D	T	D	N	N	D	D	T	D	T	D	T	T	T	D	T	D	T
Unit			mg/l	ug/l	ug/l	ug/l	ug/l	mg/l	us/cm	ug/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	ppm	mg/l	mg/l	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
10/31/2022	E321812	F2_BPO	13.2	< 0.20	< 0.20	13.5	14.6	< 10	1820	< 0.40	< 1.00	< 0.010	11.38	0.286	1250	0.023	0.337	< 0.100	< 0.100	0.119	0.156	177		0.393	0.454	< 0.0050	< 0.0050
10/31/2022	E300091	EV_MC2	3.45	0.16	0.17	< 0.10	< 0.10	< 10	543	< 0.20	< 0.50	< 0.010	10.37	0.146	316	< 0.010	0.022	< 0.050	< 0.050	0.0131	0.0130	31.1		0.00178	0.00211	< 0.0050	< 0.0050
10/31/2022	E321811	F2_ECIN	5.42	0.21	< 0.20	< 0.20	< 0.20	< 10	1760	< 0.40	< 1.00	< 0.010	11.71	0.110	1230	< 0.020	0.023	< 0.100	< 0.100	0.0273	0.0338	165		< 0.00020	0.00025	< 0.0050	< 0.0050
10/31/2022	0200097	EV_EC1	8.33	0.12	< 0.20	0.81	0.80	< 10	1720	< 0.20	< 1.00	0.012	11.58	0.163	1260	< 0.010	< 0.020	< 0.050	< 0.100	0.0626	0.0738	165		0.0146	0.0145	< 0.0050	< 0.0050
10/31/2022	E321791	F2_NWPI	16.0	< 0.20	< 0.20	5.04	5.60	< 10	1750	0.50	< 1.00	< 0.010	5.37	0.368	1160	< 0.020	0.030	< 0.100	< 0.100	0.163	0.208	165		0.0356	0.0421	< 0.0050	< 0.0050
10/31/2022	E321814	EV_ECOUT	6.90	0.17	< 0.20	2.85	2.99	< 10	1760	< 0.20	< 1.00	< 0.010	11.56	0.146	1350	< 0.010	0.043	< 0.050	< 0.100	0.0442	0.0549	174		0.0843	0.0861	< 0.0050	< 0.0050
10/31/2022	E321812	F2_BPO											9.41														
11/1/2022	E321811	F2_ECIN	5.32						1880				11.68	0.110													
11/1/2022	E321791	F2_NWPI	17.5						1860				4.68	0.376													
11/1/2022	E102685	EV_BC1	26.7	< 0.20	< 0.10	< 0.20	< 0.10	< 10	1820	< 0.40	< 0.50	0.122	12.72	0.226	1250	< 0.020	< 0.010	< 0.100	< 0.050	0.170	0.130	178		0.00030	0.00060	< 0.0050	< 0.0050
11/1/2022	E321812	F2_BPO	12.7					< 10	1880				10.66	0.276													
11/1/2022	E206231	EV_GT1	27.2	< 0.20	0.15	0.20	0.37	13	1970	0.46	0.65	0.052	10.69	0.240	1470	< 0.020	0.097	< 0.100	0.124	0.121	0.0929	172		0.0123	0.0141	< 0.0050	< 0.0050
11/1/2022	E300091	EV_MC2	2.15	0.10	0.32	< 0.10	0.12		465	0.27	0.58		10.74	0.129	242	< 0.010	0.140	< 0.050	0.122	0.0104	0.0088	26.4		0.00172	0.00550	< 0.0050	< 0.0050
11/2/2022	E321811	F2_ECIN	5.42	0.22		< 0.10		< 10	1770	< 0.20			11.67	0.110	1320	< 0.010		< 0.050		0.0279				0.00019		< 0.0050	
11/2/2022	E321791	F2_NWPI	15.8	< 0.10		5.53		< 10	1740	0.32			5.05	0.363	1220	< 0.010		< 0.050		0.183				0.0407		< 0.0050	
11/2/2022	E321812	F2_BPO	12.4	< 0.10		15.4		< 10	1770	< 0.20			10.3	0.269	1310	0.017		< 0.050		0.126				0.467		< 0.0050	
11/2/2022	E321812	F2_BPO											10.47														
11/3/2022	E321811	F2_ECIN	5.36						1760				10.9	0.111													
11/3/2022	E321791	F2_NWPI	15.9						1740				5.9	0.374													
11/3/2022	E321812	F2_BPO	12.4					< 10	1740				10.33	0.279													
11/3/2022	E321812	F2_BPO											9.78														
11/4/2022	E321811	F2_ECIN	5.92	< 0.20		< 0.20		< 10	1770	< 0.40			11.44	0.104	1260	< 0.020		< 0.100		0.0302				0.00034		< 0.0050	
11/4/2022	E321791	F2_NWPI	15.8	< 0.20		5.35		< 10	1760	< 0.40			4.97	0.362	1170	< 0.020		< 0.100		0.194				0.0366		< 0.0050	
11/4/2022	E321812	F2_BPO	12.5	< 0.20		14.9		< 10	1770	< 0.40			9.86	0.285	1260	< 0.020		< 0.100		0.135				0.423		< 0.0050	
11/4/2022	E321812	F2_BPO											9.85														
11/5/2022	E321791	F2_NWPI	16.0						1840				4.45	0.363													
11/5/2022	E321811	F2_ECIN	5.36						1860				11	0.114													
11/5/2022	E321812	F2_BPO	12.5					< 10	1840				11.85	0.277													
11/5/2022	E321812	F2_BPO											8.98														
11/6/2022	E321811	F2_ECIN	5.45						1890				11.81	0.108													
11/6/2022	E321791	F2_NWPI	15.7						1830				5.24	0.359													
11/6/2022	E321812	F2_BPO	12.4					< 10	1940				12.04	0.273													
11/6/2022	E321812	F2_BPO											9.84														
11/7/2022	E321811	F2_ECIN	5.47	0.18	0.29	< 0.10	< 0.10	57	1760	< 0.20	< 0.50	< 0.010	12.77	0.114	1280	< 0.010	0.022	< 0.050	< 0.050	0.0285	0.0281	161		0.00025	0.00024	< 0.0050	< 0.0050
11/7/2022	E321791	F2_NWPI	15.9	< 0.10	< 0.10	5.21	5.81	< 10	1740	0.35	< 0.50	0.057	5.65	0.365	1220	< 0.010	0.022	< 0.050	< 0.050	0.201	0.184	158		0.0352	0.0378	< 0.0050	< 0.0050
11/7/2022	0200097	EV_EC1										< 0.010	14.71														
11/7/2022	E321814	EV_ECOUT										< 0.010	13.19														
11/7/2022	E321812	F2_BPO	12.3	< 0.10	< 0.10	16.1	18.2	< 10	1800	1.18	< 0.50	< 0.010	10.31	0.283	1290	0.313	0.387	0.119	0.494	0.133	0.130	181		0.425	0.487	< 0.0050	< 0.0050
11/7/2022	E321812	F2_BPO											10.29														
11/8/2022	E321791	F2_NWPI	15.6						1830				5.4	0.361													
11/8/2022	E321812	F2_BPO	12.2					< 10	1900				11.83	0.278													
11/8/2022	E300091	EV_MC2	3.83	< 0.10	0.17	< 0.10	< 0.10		645	< 0.20	< 0.50		12.07	0.151	355	< 0.010	0.012	< 0.050	< 0.050	0.0160	0.0178	38.2		0.00216	0.00310	< 0.0050	< 0.0050
11/8/2022	0200203	EV_MC3	1.52	0.10	0.27	< 0.10	0.10		412	0.36	0.59		13.63	0.142	195	< 0.010	0.128	< 0.050	0.149	0.0056	0.0058	18.5		0.00080	0.00954	< 0.0050	< 0.0050
11/8/2022	E321812	F2_BPO											9.88														
11/8/2022	E321811	F2_ECIN	5.34						1880				19.97	0.111													
11/9/2022	E321811	F2_ECIN	5.41	0.22		< 0.10		< 10	1790	< 0.20			13.55	0.109	1180	< 0.010		< 0.050		0.0257				0.00021		< 0.0050	
11/9/2022	E321791	F2_NWPI	15.6	< 0.10		4.97		< 10	1770	0.32			5.94	0.364	1100	< 0.010		< 0.050		0.172				0.0350		< 0.0050	
11/9/2022	E321812	F2_BPO	12.2	< 0.10	< 0.20	15.8	15.8	< 10	1810	< 0.20	< 1.00		10.77	0.282	1200	0.020	0.389	< 0.050	< 0.100	0.115	0.122	140		0.434	0.449	< 0.0050	

			Chloride	Chromium	Chromium	Cobalt	Cobalt	COD	Conductivity, Lab	Copper	Copper	Dimethylseleneoxide	Dissolved Oxygen, Field	Fluoride	Hardness, Total or Dissolved CaCO3	Iron	Iron	Lead	Lead	Lithium	Lithium	Magnesium	Magnesium	Manganese	Manganese	Mercury	Mercury
Parameter																										
Fraction			D	D	T	D	T	N	N	D	T	D	N	N	D	D	T	D	T	D	T	T	T	D	T	D	T
Unit			mg/l	ug/l	ug/l	ug/l	ug/l	mg/l	us/cm	ug/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	ppm	mg/l	mg/l	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
11/9/2022	E321812	F2_BPO											10.75														
11/10/2022	E321791	F2_NWPI	15.6						1700				5.61	0.367													
11/10/2022	E321811	F2_ECIN	5.40						1730				11.21	0.113													
11/10/2022	E321812	F2_BPO	12.0					< 10	1760				9.95	0.282													
11/10/2022	E321812	F2_BPO											9.16														
11/11/2022	E321791	F2_NWPI	15.7	< 0.10		5.49		< 10	1850	0.30			9.06	0.370	1250	< 0.010		< 0.050		0.183				0.0346		< 0.0050	
11/11/2022	E321811	F2_ECIN	5.39	0.17		< 0.10		< 10	1920	< 0.20			11.04	0.116	1340	< 0.010		< 0.050		0.0272				0.00029		< 0.0050	
11/11/2022	E321812	F2_BPO	12.1	< 0.10		18.2		< 10	1930	< 0.20			9.6	0.288	1430	0.021		< 0.050		0.122				0.459		< 0.0050	
11/11/2022	E321812	F2_BPO											8.17														
11/12/2022	E321811	F2_ECIN	5.40						1750				11.43	0.106													
11/12/2022	E321791	F2_NWPI	15.5						1720				6.55	0.361													
11/12/2022	E321812	F2_BPO	12.0					< 10	1800				10.34	0.277													
11/12/2022	E321812	F2_BPO											8.61														
11/13/2022	E321811	F2_ECIN	5.43						1750				10.9	0.114													
11/13/2022	E321812	F2_BPO	11.8					< 10	1790				10.07	0.291													
11/13/2022	E321791	F2_NWPI	15.4						1720				6.75	0.364													
11/13/2022	E321812	F2_BPO											10.07														
11/14/2022	200393	EV_ER1	3.76	0.28	0.28	< 0.10	< 0.10	< 10	525	< 0.20	< 0.50		13.96	0.200	267	< 0.010	< 0.010	< 0.050	< 0.050	0.0104	0.0127	27.9		0.00163	0.00173	< 0.0050	< 0.0050
11/14/2022	0200203	EV_MC3	1.54	0.12	0.13	< 0.10	< 0.10	< 10	422	< 0.20	< 0.50	< 0.010	13.71	0.139	205	< 0.010	< 0.010	< 0.050	< 0.050	0.0053	0.0064	19.7		0.00039	0.00056	< 0.0050	< 0.0050
11/14/2022	310168	EV_MC2A	2.45	0.12	0.12	< 0.10	< 0.10	< 10	578	< 0.20	< 0.50	< 0.010	13.8	0.145	291	< 0.010	< 0.010	< 0.050	< 0.050	0.0108	0.0129	32.5		0.00218	0.00196	< 0.0050	< 0.0050
11/14/2022	E300091	EV_MC2	5.06	0.13	0.16	< 0.10	< 0.10	< 10	684	< 0.20	< 0.50	< 0.010	12.53	0.148	352	< 0.010	< 0.010	< 0.050	< 0.050	0.0165	0.0212	40.2		0.00186	0.00221	< 0.0050	< 0.0050
11/14/2022	E321812	F2_BPO	11.9	< 0.10	< 0.10	17.8	17.6	< 10	1800	< 0.20	< 0.50	< 0.010	8.95	0.287	1270	0.032	0.387	< 0.050	0.070	0.129	0.125	170		0.484	0.469	< 0.0050	< 0.0050
11/14/2022	E321811	F2_ECIN	5.52	0.14	0.41	< 0.10	< 0.10	< 10	1750	< 0.20	< 0.50	< 0.010	11.13	0.120	1170	< 0.010	0.034	< 0.050	< 0.050	0.0314	0.0328	144		0.00029	0.00024	< 0.0050	< 0.0050
11/14/2022	E321791	F2_NWPI	15.3	< 0.10	0.17	4.45	4.68	< 10	1720	0.26	< 0.50	0.012	7.08	0.367	1090	< 0.010	0.021	< 0.050	< 0.050	0.204	0.193	138		0.0297	0.0319	< 0.0050	< 0.0050
11/14/2022	0200097	EV_EC1	8.18	0.12	0.10	1.04	0.98	< 10	1840	< 0.20	< 0.50	< 0.010	13.37	0.169	1240	< 0.010	< 0.010	< 0.050	< 0.050	0.0649	0.0624	164		0.0175	0.0180	< 0.0050	< 0.0050
11/14/2022	E300091	EV_MC2	5.18	0.10	0.20	< 0.10	< 0.10		686	< 0.20	< 0.50		12.33	0.157	369	< 0.010	< 0.010	< 0.050	< 0.050	0.0162	0.0204	38.8		0.00192	0.00227	< 0.0050	< 0.0050
11/14/2022	E321814	EV_ECOUT	6.87	0.14	0.20	3.58	3.49	< 10	1900	< 0.20	< 0.50	< 0.010	12.5	0.154	1290	< 0.010	0.054	< 0.050	< 0.050	0.0456	0.0493	162		0.0956	0.0942	< 0.0050	< 0.0050
11/14/2022	200393	EV_ER1	3.79	0.22	0.30	< 0.10	< 0.10		514	< 0.20	< 0.50		12.53	0.202	276	< 0.010	< 0.010	< 0.050	< 0.050	0.0102	0.0122	25.8		0.00166	0.00200	< 0.0050	< 0.0050
11/14/2022	E102685	EV_BC1	33.6	< 0.10	< 0.10	0.17	0.18		2200	0.33	< 0.50		10.94	0.262	1440	< 0.010	0.011	< 0.050	< 0.050	0.127	0.152	206		0.00340	0.00381	< 0.0050	< 0.0050
11/14/2022	E206231	EV_GT1	12.7	< 0.10	< 0.10	0.11	0.13		2020	< 0.20	< 0.50		11.65	0.272	1360	0.012	0.052	< 0.050	< 0.050	0.105	0.126	182		0.00426	0.00465	< 0.0050	< 0.0050
11/14/2022	E321812	F2_BPO											8.88														
11/15/2022	E206231	EV_GT1	12.8	< 0.10	< 0.20	0.12	< 0.20	< 10	2010	< 0.20	< 1.00	< 0.010	12.55	0.278	1380	0.013	0.045	< 0.050	< 0.100	0.134	0.121	174		0.00373	0.00412	< 0.0050	< 0.0050
11/15/2022	E321812	F2_BPO	11.8					< 10	1930				8.63	0.286													
11/15/2022	E321811	F2_ECIN	5.62						1870				11.73	0.121													
11/15/2022	E321791	F2_NWPI	15.5						1850				7.7	0.369													
11/15/2022	E102685	EV_BC1	32.0	< 0.10	< 0.20	0.16	< 0.20	< 10	2190	3.07	< 1.00	0.030	11.9	0.266	1450	< 0.010	< 0.020	< 0.050	< 0.100	0.150	0.137	185		0.00293	0.00336	< 0.0050	< 0.0050
11/15/2022	0200097	EV_EC1	1.05	< 0.10	0.11	1.05	1.06		1730	< 0.20	< 0.50		11.77	0.480	1250	< 0.010	< 0.010	< 0.050	< 0.050	0.0696	0.0677	155		0.0180	0.0188	< 0.0050	< 0.0050
11/15/2022	E321814	EV_ECOUT	5.72	0.18	< 0.20	0.69	0.71		1880	< 0.20	< 1.00		11.41	0.124	1240	< 0.010	< 0.020	< 0.050	< 0.100	0.0353	0.0310	155		0.0180	0.0222	< 0.0050	< 0.0050
11/15/2022	E321812	F2_BPO											8.79														
11/16/2022	E321811	F2_ECIN	5.47	0.20		< 0.10		< 10	1870	< 0.20			11.81	0.118	1180	0.011		< 0.050		0.0280				0.00177		< 0.0050	
11/16/2022	E321791	F2_NWPI	15.5	< 0.10		3.99		< 10	1850	< 0.20			7.96	0.374	1110	< 0.010		< 0.050		0.164				0.0284		< 0.0050	
11/16/2022	E321812	F2_BPO	11.6	< 0.10		13.9		< 10	1920	< 0.20			9.43	0.295	1140	0.030		< 0.050		0.0954				0.405		< 0.0050	
11/16/2022	E321812	F2_BPO											9.23														
11/17/2022	E321811	F2_ECIN	5.60						1710				11.17	0.120													
11/17/2022	E321791	F2_NWPI	15.3						1710				7.45	0.367													
11/17/2022	E321812	F2_BPO	11.2					< 10	1750				9.66	0.289													
11/17/2022	E321812	F2_BPO											9.86														
11/18/2022	E321811	F2_ECIN	5.39	0.26		< 0.10		< 10	1850	< 0.20			11.9	0.115	1220	0.013		< 0.050		0.0281				0.00022		< 0.0050	

Parameter			Chloride	Chromium	Chromium	Cobalt	Cobalt	COD	Conductivity, Lab	Copper	Copper	Dimethylseleneoxide	Dissolved Oxygen, Field	Fluoride	Hardness, Total or Dissolved CaCO3	Iron	Iron	Lead	Lead	Lithium	Lithium	Magnesium	Magnesium	Manganese	Manganese	Mercury	Mercury
Fraction			D	D	T	D	T	N	N	D	T	D	N	N	D	D	T	D	T	D	T	T	T	D	T	D	T
Unit			mg/l	ug/l	ug/l	ug/l	ug/l	mg/l	us/cm	ug/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	ppm	mg/l	mg/l	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
11/18/2022	E321791	F2_NWPI	15.3	< 0.10		4.26		< 10	1850	0.26			7.98	0.367	1100	< 0.010		< 0.050		0.161				0.0274		< 0.0050	
11/18/2022	E321812	F2_BPO	11.3	< 0.10		14.1		< 10	1920	< 0.20			9.99	0.288	1240	0.020		< 0.050		0.106				0.372		< 0.0050	
11/18/2022	E321812	F2_BPO											8.47														
11/19/2022	E321811	F2_ECIN	5.53						1880				12.32	0.108													
11/19/2022	E321791	F2_NWPI	15.5						1850				7.88	0.357													
11/19/2022	E321812	F2_BPO	11.7					< 10	1930				10.85	0.277													
11/19/2022	E321812	F2_BPO											11.03														
11/20/2022	E321811	F2_ECIN	5.44						1870				12.21	0.116													
11/20/2022	E321791	F2_NWPI	15.5						1840				7.98	0.357													
11/20/2022	E321812	F2_BPO	11.8					< 10	1940				10.07	0.283													
11/20/2022	E321812	F2_BPO											9.96														
11/21/2022	0200097	EV_EC1	7.96									< 0.010	12.95	0.151													
11/21/2022	E321814	EV_ECOUT	6.50									< 0.010	11.66	0.128													
11/21/2022	E321811	F2_ECIN	5.23	0.23	0.22	< 0.10	< 0.10	< 10	1910	< 0.20	< 0.50	< 0.010	11.3	< 0.100	1280	0.010	0.031	< 0.050	< 0.050	0.0282	0.0281	149		0.00018	0.00056	< 0.0050	< 0.0050
11/21/2022	E321791	F2_NWPI	15.0	< 0.10	< 0.10	4.41	4.80	< 10	1860	0.25	< 0.50	0.035	7.86	0.352	1160	< 0.010	0.022	< 0.050	< 0.050	0.180	0.159	146		0.0283	0.0308	< 0.0050	< 0.0050
11/21/2022	E321812	F2_BPO											9.39														
11/21/2022	E321812	F2_BPO	11.4	< 0.10	< 0.10	16.9	17.1	< 10	1950	< 0.20	< 0.50	< 0.010	9.5	0.258	1310	0.019	0.366	< 0.050	0.074	0.115	0.106	159		0.441	0.431	< 0.0050	< 0.0050
11/21/2022	E321812	F2_BPO											9.25														
11/22/2022	E321811	F2_ECIN	5.55						1880				11.63	0.120													
11/22/2022	E321791	F2_NWPI	15.6						1810				7.9	0.377													
11/22/2022	E321812	F2_BPO	11.7					< 10	1900				9.93	0.290													
11/22/2022	E321812	F2_BPO											9.78														
11/23/2022	E321811	F2_ECIN	5.66	0.25		< 0.20		< 10	1870	< 0.40			11.06	0.139	1300	< 0.020		< 0.100		0.0286				0.00065		< 0.0050	
11/23/2022	E321791	F2_NWPI	15.6	< 0.20		4.15		< 10	1830	< 0.40			7.73	0.366	1190	< 0.020		< 0.100		0.175				0.0313		< 0.0050	
11/23/2022	E321812	F2_BPO	11.6	< 0.20		16.1		< 10	1920	< 0.40			10.17	0.287	1330	0.025		< 0.100		0.114				0.453		< 0.0050	
11/23/2022	E321812	F2_BPO											10.52														
11/24/2022	E321791	F2_NWPI	15.4						1770				7.99	0.376													
11/24/2022	E321811	F2_ECIN	5.58						1850				11.61	0.118													
11/24/2022	E321812	F2_BPO	11.7					< 10	1860				10.34	0.286													
11/24/2022	E321812	F2_BPO											9.57														
11/25/2022	E321811	F2_ECIN	5.53	0.22		< 0.20		< 10	1830	< 0.40			11.45	0.114	1350	< 0.020		< 0.100		0.0320				< 0.00020		< 0.0050	
11/25/2022	E321791	F2_NWPI	15.4	< 0.20		4.05		< 10	1770	< 0.40			7.991907	0.359	1210	< 0.020		< 0.100		0.182				0.0262		< 0.0050	
11/25/2022	E321812	F2_BPO	11.6	< 0.20		15.1		< 10	1880	< 0.40			10.66	0.274	1210	< 0.020		< 0.100		0.103				0.406		< 0.0050	
11/25/2022	E321812	F2_BPO											10.46														
11/26/2022	E321811	F2_ECIN	6.03						1860				12.02	< 0.100													
11/26/2022	E321791	F2_NWPI	16.0						1790				8.07	0.421													
11/26/2022	E321812	F2_BPO	11.4					< 10	1900				9.27	0.294													
11/26/2022	E321812	F2_BPO											9.55														
11/27/2022	E321811	F2_ECIN	5.40						1800				11.87	0.118													
11/27/2022	E321791	F2_NWPI	16.3						1790				7.93	0.480													
11/27/2022	E321812	F2_BPO	14.2					< 10	1860				9.96	0.218													
11/27/2022	E321812	F2_BPO											8.89														
11/28/2022	200393	EV_ER1	3.92	0.23	0.28	< 0.10	< 0.10	< 10	520	< 0.20	< 0.50		13.43	0.193	275	< 0.010	< 0.010	< 0.050	< 0.050	0.0123	0.0108	26.8		0.00124	0.00233	< 0.0050	< 0.0050
11/28/2022	0200203	EV_MC3	1.62	0.14	0.19	< 0.10	< 0.10	< 10	386	< 0.20	< 0.50	< 0.010	12.83	0.140	202	< 0.010	< 0.010	< 0.050	< 0.050	0.0055	0.0050	18.3		0.00028	0.00074	< 0.0050	< 0.0050
11/28/2022	E321812	F2_BPO	12.7	< 0.10	< 0.10	16.6	17.4	< 10	1900	0.26	< 0.50	< 0.010	9.71	0.329	1280	0.019	0.366	< 0.050	0.066	0.111	0.104	179		0.424	0.460	< 0.0050	< 0.0050
11/28/2022	310168	EV_MC2A	2.55	0.13	0.15	< 0.10	< 0.10	< 10	569	< 0.20	< 0.50	< 0.010	13.54	0.141	303	< 0.010	0.010	< 0.050	< 0.050	0.0126	0.0112	31.8		0.00234	0.00258	< 0.0050	< 0.0050
11/28/2022	E300091	EV_MC2	5.19	0.15	0.17	< 0.10	< 0.10	< 10	672	< 0.20	< 0.50	< 0.010	11.62	0.146	371	< 0.010	0.011	< 0.050	< 0.050	0.0203	0.0190	42.0		0.00204	0.00214	< 0.0050	< 0.0050
11/28/2022	E321811	F2_ECIN	5.59	0.19	0.21	< 0.10	< 0.10	< 10	1770	< 0.20	< 0.50	< 0.010	11.21	0.120	1260	0.012	0.016	< 0.050	< 0.050	0.0288	0.0273	174		0.00114	0.00073	< 0.0050	< 0.0050

Parameter			Chloride	Chromium	Chromium	Cobalt	Cobalt	COD	Conductivity, Lab	Copper	Copper	Dimethylseleneoxide	Dissolved Oxygen, Field	Fluoride	Hardness, Total or Dissolved CaCO3	Iron	Iron	Lead	Lead	Lithium	Lithium	Magnesium	Magnesium	Manganese	Manganese	Mercury	Mercury
Fraction			D	D	T	D	T	N	N	D	T	D	N	N	D	D	T	D	T	D	T	T	T	D	T	D	T
Unit			mg/l	ug/l	ug/l	ug/l	ug/l	mg/l	us/cm	ug/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	ppm	mg/l	mg/l	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
11/28/2022	E321791	F2_NWPI	15.5	< 0.10	< 0.10	4.18	4.89	< 10	1790	0.32	< 0.50	0.029	7.67	0.373	1160	< 0.010	0.018	< 0.050	< 0.050	0.171	0.200	173		0.0284	0.0363	< 0.0050	< 0.0050
11/28/2022	0200097	EV_EC1	8.31	0.32	0.41	1.09	1.23	< 10	1740	< 0.40	< 1.00	< 0.010	12.88	0.149	1180	< 0.020	< 0.020	< 0.100	< 0.100	0.0667	0.0647	170		0.0182	0.0194	< 0.0050	< 0.0050
11/28/2022	E321814	EV_ECOUT	7.40	0.23	0.22	3.13	3.31	< 10	1790	< 0.40	< 1.00	< 0.010	12.11	0.125	1200	< 0.020	0.053	< 0.100	< 0.100	0.0467	0.0437	162		0.0797	0.0850	< 0.0050	< 0.0050
11/28/2022	E321812	F2_BPO											9.85														
11/29/2022	E206231	EV_GT1	12.8	< 0.10	< 0.20	0.15	< 0.20	< 10	1920	< 0.20	< 1.00	< 0.010	12.74	0.284	1340	0.016	0.062	< 0.050	< 0.100	0.109	0.106	186		0.00438	0.00481	< 0.0050	< 0.0050
11/29/2022	E321791	F2_NWPI	15.6						1760				8.38	0.379													
11/29/2022	E321811	F2_ECIN	6.17						1720				11.48	0.125													
11/29/2022	E321812	F2_BPO	11.5					< 10	1850				10.06	0.296													
11/29/2022	E102685	EV_BC1	16.0	< 0.10	< 0.20	< 0.10	< 0.20	< 10	1940	< 0.20	< 1.00	0.021	11.71	0.271	1340	< 0.010	0.024	< 0.050	< 0.100	0.117	0.115	192		0.00154	0.00139	< 0.0050	< 0.0050
11/29/2022	E321812	F2_BPO											9.4														
11/30/2022	E321811	F2_ECIN	5.63	0.16		< 0.10		< 10	1840	< 0.20			11.45	0.108	1270	0.011		< 0.050		0.0308				0.00109		< 0.0050	
11/30/2022	E321791	F2_NWPI	15.5	< 0.10		3.15		< 10	1800	0.30			8.35	0.367	1170	< 0.010		< 0.050		0.171				0.0206		< 0.0050	
11/30/2022	E321812	F2_BPO	11.7	< 0.10		17.4		< 10	1900	< 0.20			9.18	0.289	1340	0.020		< 0.050		0.112				0.430		< 0.0050	
11/30/2022	E321812	F2_BPO											9.03														
12/1/2022	E321811	F2_ECIN	7.89						1810				8.53	0.125													
12/1/2022	E321791	F2_NWPI	15.3						1780				11.84	0.373													
12/1/2022	E321812	F2_BPO	12.1					< 10	1840				9.97	0.293													
12/1/2022	E321812	F2_BPO											9.72														
12/2/2022	E321811	F2_ECIN	5.60	0.24		< 0.10		< 10	1820	< 0.20			11.95	0.119	1440	< 0.010		< 0.050		0.0288				0.00024		< 0.0050	
12/2/2022	E321791	F2_NWPI	15.5	0.12		3.63		< 10	1760	0.42			8.68	0.367	1340	< 0.010		< 0.050		0.208				0.0246		< 0.0050	
12/2/2022	E321812	F2_BPO	11.8	< 0.10		17.0		< 10	1870	< 0.20			9.29	0.289	1420	0.023		< 0.050		0.124				0.442		< 0.0050	
12/2/2022	E321812	F2_BPO											9.28														
12/3/2022	E321791	F2_NWPI	16.2						1810				8.47	0.392													
12/3/2022	E321811	F2_ECIN	5.69						1860				11.28	0.122													
12/3/2022	E321812	F2_BPO	12.3					< 10	1890				10.12	0.302													
12/3/2022	E321812	F2_BPO											9.71														
12/4/2022	E321811	F2_ECIN	5.64						1810				12.07	0.122													
12/4/2022	E321791	F2_NWPI	16.0						1760				8.71	0.386													
12/4/2022	E321812	F2_BPO	11.8					< 10	1800				9.87	0.300													
12/4/2022	E321812	F2_BPO											9.33														
12/5/2022	0200097	EV_EC1	9.20									< 0.010	13.31	0.180													
12/5/2022	E321812	F2_BPO	11.6	0.12	< 0.10	16.3	16.7	< 10	1890	< 0.20	< 0.50	< 0.010	8	0.285	1370	0.023	0.418	< 0.050	0.062	0.115	0.103	165		0.426	0.460	< 0.0050	< 0.0050
12/5/2022	E321811	F2_ECIN	5.57	0.20	0.24	< 0.10	< 0.10	< 10	1870	< 0.20	< 0.50	< 0.010	11.87	0.118	1340	< 0.010	0.033	< 0.050	< 0.050	0.0314	0.0293	162		< 0.00010	0.00128	< 0.0050	< 0.0050
12/5/2022	E321791	F2_NWPI	15.5	< 0.10	< 0.10	3.44	4.04	< 10	1820	0.30	< 0.50	0.041	8.72	0.365	1210	< 0.010	0.022	< 0.050	< 0.050	0.172	0.158	151		0.0238	0.0278	< 0.0050	< 0.0050
12/5/2022	E321814	EV_ECOUT	5.81									< 0.010	11.93	0.107													
12/5/2022	E321812	F2_BPO											9.8														
12/5/2022	E321812	F2_BPO											9.06														
12/6/2022	E321811	F2_ECIN	5.80						2000				9.44	< 0.200													
12/6/2022	E321791	F2_NWPI	15.3						1930				7.35	0.323													
12/6/2022	E321812	F2_BPO	12.0					< 10	2000				8.48	0.342													
12/6/2022	E321814	EV_ECOUT	7.76	0.12	0.27	6.35	6.19		1830	< 0.20	< 0.50		10.99	0.184	1340	0.011	0.112	< 0.050	< 0.050	0.0597	0.0637	162		0.167	0.155	< 0.0050	< 0.0050
12/6/2022	0200203	EV_MC3	1.50	0.13	0.15	< 0.10	< 0.10		408	< 0.20	< 0.50		12.13	0.141	225	< 0.010	< 0.010	< 0.050	< 0.050	0.0053	0.0063	16.8		0.00036	0.00051	< 0.0050	< 0.0050
12/6/2022	E206231	EV_GT1	12.4	< 0.10	< 0.10	0.17	0.17		1880	< 0.20	< 0.50		11.43	0.281	1420	0.014	0.058	< 0.050	< 0.050	0.114	0.120	178		0.00452	0.00413	< 0.0050	< 0.0050
12/6/2022	E300091	EV_MC2	4.69	0.13	0.14	< 0.10	< 0.10		670	< 0.20	< 0.50	< 0.010	12.18	0.152	398	< 0.010	0.010	< 0.050	< 0.050	0.0184	0.0208	37.9		0.00188	0.00183	< 0.0050	< 0.0050
12/6/2022	E321812	F2_BPO											10														
12/6/2022	E102685	EV_BC1	14.8	< 0.10	< 0.10	0.10	0.11		1900	0.20	< 0.50		11.2	0.286	1420	< 0.010	0.025	0.071	0.099	0.122	0.121	180		0.00144	0.00149	< 0.0050	< 0.0050
12/7/2022	E321811	F2_ECIN	5.45	0.29		< 0.10		< 10	1880	< 0.20			9.4	0.110	1270	0.011		< 0.050		0.0306				0.00104		< 0.0050	
12/7/2022	E321791	F2_NWPI	15.4	< 0.10		3.35		< 10	1820	0.37			6.98	0.362	1200	< 0.010		< 0.050		0.170				0.0230		< 0.0050	

Parameter			Chloride	Chromium	Chromium	Cobalt	Cobalt	COD	Conductivity, Lab	Copper	Copper	Dimethylseleneoxide	Dissolved Oxygen, Field	Fluoride	Hardness, Total or Dissolved CaCO3	Iron	Iron	Lead	Lead	Lithium	Lithium	Magnesium	Magnesium	Manganese	Manganese	Mercury	Mercury
Fraction			D	D	T	D	T	N	N	D	T	D	N	N	D	D	T	D	T	D	T	T	T	D	T	D	T
Unit			mg/l	ug/l	ug/l	ug/l	ug/l	mg/l	us/cm	ug/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	ppm	mg/l	mg/l	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
12/7/2022	E321812	F2_BPO	9.69	< 0.10		15.5		< 10	1890	< 0.20			11.18	0.245	1320	0.020		< 0.050		0.105				0.412		< 0.0050	
12/7/2022	200393	EV_ER1	4.20	0.26	0.52	< 0.10	< 0.10		521	< 0.20	< 0.50	< 0.010	12.62	0.204	306	< 0.010	0.014	< 0.050	< 0.050	0.0117	0.0112	29.4		0.00164	0.00235	< 0.0050	< 0.0050
12/7/2022	E321812	F2_BPO											10.73														
12/8/2022	E321811	F2_ECIN	5.42						1870				9.48	0.116													
12/8/2022	E321791	F2_NWPI	15.5						1820				6.88	0.372													
12/8/2022	E321812	F2_BPO	11.3					< 10	1890				8.21	0.282													
12/8/2022	0200097	EV_EC1	8.39	0.10	< 0.10	1.22	1.26		1790	< 0.20	< 0.50		11.46	0.197	1250	< 0.010	< 0.010	< 0.050	< 0.050	0.0686	0.0654	156		0.0188	0.0207	< 0.0050	< 0.0050
12/8/2022	E321812	F2_BPO											8.02														
12/9/2022	E321811	F2_ECIN	5.63	< 0.20		< 0.20		< 10	1880	< 0.40			12.02	0.124	1320	< 0.020		< 0.100		0.0278				0.00027		< 0.0050	
12/9/2022	E321791	F2_NWPI	15.6	< 0.20		3.81		< 10	1820	0.44			8.87	0.387	1220	< 0.020		< 0.100		0.195				0.0281		< 0.0050	
12/9/2022	E321812	F2_BPO	11.6	< 0.20		16.2		< 10	1900	< 0.40			9.33	0.304	1260	0.021		< 0.100		0.102				0.420		< 0.0050	
12/9/2022	E321812	F2_BPO											7.62														
12/10/2022	E321811	F2_ECIN	5.67						1890				13.09	0.115													
12/10/2022	E321791	F2_NWPI	15.4						1830				9.02	0.379													
12/10/2022	E321812	F2_BPO	11.3					< 10	1880				10.04	0.293													
12/10/2022	E321812	F2_BPO											7.73														
12/11/2022	E321811	F2_ECIN	5.48						1890				11.44	0.125													
12/11/2022	E321791	F2_NWPI	15.2						1820				8.39	0.369													
12/11/2022	E321812	F2_BPO	11.3					< 10	1900				9.04	0.292													
12/11/2022	E321812	F2_BPO											8.31														
12/12/2022	E321811	F2_ECIN	5.48	0.19	0.22	< 0.10	< 0.20	< 10	1800	< 0.20	< 1.00	< 0.010	11.32	0.113	1380	< 0.010	< 0.020	< 0.050	< 0.100	0.0293	0.0268	145		0.00093	0.00032	< 0.0050	< 0.0050
12/12/2022	E321791	F2_NWPI	15.5	< 0.10	< 0.20	3.54	3.91	< 10	1840	0.34	< 1.00	< 0.010	8.34	0.363	1240	< 0.010	< 0.020	< 0.050	< 0.100	0.197	0.170	138		0.0253	0.0264	< 0.0050	< 0.0050
12/12/2022	200393	EV_ER1	4.13	0.32	0.33	< 0.10	< 0.10	< 10	533	< 0.20	< 0.50		13.05	0.195	274	< 0.010	0.012	< 0.050	< 0.050	0.0129	0.0109	29.3		0.00144	0.00230	< 0.0050	< 0.0050
12/12/2022	E321812	F2_BPO	10.4	< 0.10	< 0.20	16.6	17.9	< 10	1900	< 0.20	< 1.00	< 0.010	8.96	0.251	1410	0.024	0.373	< 0.050	< 0.100	0.116	0.0964	158		0.415	0.453	< 0.0050	< 0.0050
12/12/2022	E300091	EV_MC2	4.84	0.14	0.17	< 0.10	< 0.10	< 10	685	< 0.20	< 0.50	< 0.010	11.83	0.149	363	< 0.010	< 0.010	< 0.050	< 0.050	0.0198	0.0189	41.6		0.00171	0.00221	< 0.0050	< 0.0050
12/12/2022	0200203	EV_MC3	1.54	0.14	0.16	< 0.10	< 0.10	< 10	411	< 0.20	< 0.50	< 0.010	12.28	0.137	210	< 0.010	< 0.010	< 0.050	< 0.050	0.0060	0.0051	18.7		0.00035	0.00050	< 0.0050	< 0.0050
12/12/2022	0200097	EV_EC1	9.55	< 0.10	0.18	1.20	1.33	< 10	1760	0.34	< 0.50	< 0.010	11.51	0.190	1240	< 0.010	< 0.010	< 0.050	< 0.050	0.0810	0.0668	177		0.0199	0.0202	< 0.0050	< 0.0050
12/12/2022	E321814	EV_ECOUT	7.28	0.18	0.21	3.24	3.34	< 10	1810	< 0.20	< 1.00	< 0.010	11.15	0.148	1310	< 0.010	0.056	< 0.050	< 0.100	0.0501	0.0422	170		0.0889	0.0858	< 0.0050	< 0.0050
12/12/2022	E321812	F2_BPO											8.84														
12/13/2022	E321811	F2_ECIN	5.60						1890				11.5	0.117													
12/13/2022	E321791	F2_NWPI	16.1						1820				8.46	0.389													
12/13/2022	E206231	EV_GT1	12.2	< 0.10	< 0.20	0.16	< 0.20	< 10	1880	< 0.20	< 1.00	0.017	11.42	0.239	1400	0.017	0.054	< 0.050	< 0.100	0.129	0.103	171		0.00433	0.00460	< 0.0050	< 0.0050
12/13/2022	E102685	EV_BC1	13.3	< 0.10	< 0.20	0.14	< 0.20	< 10	1880	< 0.20	< 1.00	< 0.010	11.12	0.227	1380	< 0.010	0.021	< 0.050	< 0.100	0.132	0.116	171		0.00141	0.00138	< 0.0050	< 0.0050
12/13/2022	E321812	F2_BPO	11.8					< 10	1880				9.29	0.304													
12/13/2022	E321812	F2_BPO											8.89														
12/14/2022	E321791	F2_NWPI	15.2	< 0.20		3.33		< 10	1820	0.41			8.61	0.366	1100	< 0.020		< 0.100		0.186				0.0243		< 0.0050	
12/14/2022	E321811	F2_ECIN	5.79	< 0.20		< 0.20		< 10	1790	< 0.40			11.71	0.124	1180	< 0.020		< 0.100		0.0283				0.00113		< 0.0050	
12/14/2022	E321812	F2_BPO	11.4	< 0.20		14.2		< 10	1880	< 0.40			9.35	0.296	1140	0.036		< 0.100		0.111				0.371		< 0.0050	
12/14/2022	E321812	F2_BPO											9.33														
12/14/2022	E321812	F2_BPO											9.51														
12/15/2022	E321811	F2_ECIN	5.86						1860				11.71	0.125													
12/15/2022	E321791	F2_NWPI	16.2						1810				8.68	0.390													
12/15/2022	E321812	F2_BPO	11.8					40	1860				9.49	0.306													
12/15/2022	E321812	F2_BPO											8.75														
12/16/2022	E321791	F2_NWPI	15.4	< 0.20		3.73		< 10	1800	< 0.40			8.95	0.365	1140	< 0.020		< 0.100		0.187				0.0278		< 0.0050	
12/16/2022	E321811	F2_ECIN	5.63	< 0.20		< 0.20		< 10	1870	< 0.40			11.63	0.111	1240	< 0.020		< 0.100		0.0291				0.00024		< 0.0050	
12/16/2022	E321812	F2_BPO	11.3	< 0.20		15.5		< 10	1880	< 0.40			9.94	0.278	1230	0.027		< 0.100		0.113				0.413		< 0.0050	
12/16/2022	E321812	F2_BPO											9.46														

Parameter			Chloride	Chromium	Chromium	Cobalt	Cobalt	COD	Conductivity, Lab	Copper	Copper	Dimethylseleneoxide	Dissolved Oxygen, Field	Fluoride	Hardness, Total or Dissolved CaCO3	Iron	Iron	Lead	Lead	Lithium	Lithium	Magnesium	Magnesium	Manganese	Manganese	Mercury	Mercury
Fraction			D	D	T	D	T	N	N	D	T	D	N	N	D	D	T	D	T	D	T	T	T	D	T	D	T
Unit			mg/l	ug/l	ug/l	ug/l	ug/l	mg/l	us/cm	ug/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	ppm	mg/l	mg/l	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
12/17/2022	E321811	F2_ECIN	5.57						1860				12.14	0.112													
12/17/2022	E321791	F2_NWPI	15.6						1820				8.45	0.368													
12/17/2022	E321812	F2_BPO	11.8					< 10	1840				9.97	0.282													
12/17/2022	E321812	F2_BPO											10.33														
12/18/2022	E321811	F2_ECIN	5.64						1850				11.8	0.111													
12/18/2022	E321791	F2_NWPI	15.4						1800				8.28	0.363													
12/18/2022	E321812	F2_BPO	11.3					< 10	1840				10.44	0.285													
12/18/2022	E321812	F2_BPO											9.51														
12/19/2022	0200097	EV_EC1	8.38									< 0.010	13.08	0.188													
12/19/2022	E321814	EV_ECOUT	7.29									< 0.010	10.17	0.170													
12/19/2022	E321811	F2_ECIN	5.46	0.17	0.28	< 0.10	< 0.10	< 10	1850	< 0.20	< 0.50	< 0.010	10.98	0.119	1330	0.014	0.025	< 0.050	< 0.050	0.0288	0.0236	164		0.00126	0.00116	< 0.0050	< 0.0050
12/19/2022	E321812	F2_BPO	11.5	< 0.10	< 0.10	14.6	15.8	29	1860	< 0.20	< 0.50	< 0.010	9.64	0.297	1340	0.023	0.426	< 0.050	0.123	0.112	0.0949	167		0.398	0.431	< 0.0050	< 0.0050
12/19/2022	E321791	F2_NWPI	15.7	< 0.10	< 0.10	3.56	4.15	< 10	1780	0.27	< 0.50	0.056	7.89	0.380	1250	0.014	0.022	< 0.050	< 0.050	0.202	0.154	161		0.0272	0.0322	< 0.0050	< 0.0050
12/19/2022	E321812	F2_BPO											9.44														
12/20/2022	E321811	F2_ECIN	5.70						1870				10.72	0.121													
12/20/2022	E321791	F2_NWPI	15.7						1810				8.51	0.375													
12/20/2022	E321812	F2_BPO	11.4					< 10	1850				9.85	0.286													
12/20/2022	E321812	F2_BPO											9.85														
12/21/2022	E321811	F2_ECIN	5.60	< 0.20		< 0.20		< 10	1920	< 0.40			10.93	0.121	1250	< 0.020		< 0.100		0.0304				0.00039		< 0.0050	
12/21/2022	E321812	F2_BPO	11.1	< 0.20		15.3		< 10	1900	< 0.40			10.25	0.292	1230	< 0.020		< 0.100		0.108				0.401		< 0.0050	
12/21/2022	E321812	F2_BPO											9.35														
12/21/2022	E321791	F2_NWPI	15.7	< 0.20		3.66		< 10	1840	< 0.40			7.77	0.378	1120	< 0.020		< 0.100		0.179				0.0283		< 0.0050	
12/22/2022	E321791	F2_NWPI	15.8						1810				7.61	0.349													
12/22/2022	E321812	F2_BPO	11.6					< 10	1880				9.46	< 0.100													
12/22/2022	E321811	F2_ECIN	5.66						1870				11.64	0.107													
12/22/2022	E321812	F2_BPO											8.75														
12/23/2022	E321791	F2_NWPI	15.4	< 0.10		4.02		< 10	1810	0.33			7.92	0.370	1240	< 0.010		< 0.050		0.207				0.0307		< 0.0050	
12/23/2022	E321811	F2_ECIN	5.41	0.18		< 0.10		< 10	1880	< 0.20			11.32	0.115	1430	0.011		< 0.050		0.0303				0.00023		< 0.0050	
12/23/2022	E321812	F2_BPO	10.6	< 0.10		16.1		< 10	1860	< 0.20			8.75	0.276	1330	0.017		< 0.050		0.116				0.421		< 0.0050	
12/23/2022	E321812	F2_BPO											9.48														
12/24/2022	E321811	F2_ECIN	5.46						1860				10.61	0.121													
12/24/2022	E321791	F2_NWPI	15.1						1820				7.93	0.367													
12/24/2022	E321812	F2_BPO	10.5					< 10	1860				9.47	0.276													
12/24/2022	E321812	F2_BPO											9.08														
12/25/2022	E321811	F2_ECIN	5.96						1880				10.81	0.131													
12/25/2022	E321791	F2_NWPI	16.0						1830				7.83	0.394													
12/25/2022	E321812	F2_BPO	11.9					< 10	1860				10.21	0.315													
12/25/2022	E321812	F2_BPO											9.52														
12/26/2022	E321811	F2_ECIN	5.86	0.24		< 0.10		< 10	1880	< 0.20			11.4	0.133	1320	< 0.010		< 0.050		0.0288				0.00051		< 0.0050	
12/26/2022	E321791	F2_NWPI	16.0	< 0.10		3.86		< 10	1820	0.34			8.37	0.393	1210	< 0.010		< 0.050		0.206				0.0307		< 0.0050	
12/26/2022	E321812	F2_BPO	11.7	< 0.10		15.5		< 10	1900	< 0.20			9.37	0.316	1310	0.031		< 0.050		0.111				0.408		< 0.0050	
12/26/2022	E321812	F2_BPO											8.94														
12/27/2022	200393	EV_ER1	4.46	0.27	0.29	< 0.10	< 0.10	< 10	496	0.31	< 0.50		13.01	0.186	296	< 0.010	0.017	< 0.050	< 0.050	0.0113	0.0108	26.5		0.00179	0.00281	< 0.0050	< 0.0050
12/27/2022	0200203	EV_MC3	1.59	0.18	0.15	< 0.10	< 0.10	< 10	382	< 0.20	< 0.50	< 0.010	13.31	0.126	218	< 0.010	0.010	< 0.050	< 0.050	0.0056	0.0051	17.1		0.00039	0.00100	< 0.0050	< 0.0050
12/27/2022	E321812	F2_BPO	11.5	< 0.10	< 0.10	15.3	16.6	< 10	1870	< 0.20	< 0.50	< 0.010	8.89	0.310	1340	0.025	0.430	< 0.050	0.095	0.110	0.105	169		0.400	0.438	< 0.0050	< 0.0050
12/27/2022	E300091	EV_MC2	6.35	0.13	0.19	< 0.10	< 0.10	< 10	607	0.22	< 0.50	< 0.010	13.11	0.142	365	< 0.010	0.011	< 0.050	< 0.050	0.0171	0.0164	35.1		0.00140	0.00211	< 0.0050	< 0.0050
12/27/2022	E321811	F2_ECIN	5.85	0.16	0.20	< 0.10	< 0.10	< 10	1860	< 0.20	0.56	< 0.010	10.4	0.129	1330	0.012	0.021	< 0.050	< 0.050	0.0280	0.0276	164		0.00021	0.00027	< 0.0050	< 0.0050
12/27/2022	E321791	F2_NWPI	16.1	< 0.10	< 0.10	4.02	4.00	< 10	1800	0.30	< 0.50	0.040	7.67	0.395	1250	< 0.010	0.010	< 0.050	< 0.050	0.205	0.199	156		0.0315	0.0322	< 0.0050	< 0.0050

Parameter			Chloride	Chromium	Chromium	Cobalt	Cobalt	COD	Conductivity, Lab	Copper	Copper	Dimethylseleneoxide	Dissolved Oxygen, Field	Fluoride	Hardness, Total or Dissolved CaCO3	Iron	Iron	Lead	Lead	Lithium	Lithium	Magnesium	Magnesium	Manganese	Manganese	Mercury	Mercury
Fraction			D	D	T	D	T	N	N	D	T	D	N	N	D	D	T	D	T	D	T	T	T	D	T	D	T
Unit			mg/l	ug/l	ug/l	ug/l	ug/l	mg/l	us/cm	ug/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	ppm	mg/l	mg/l	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
12/27/2022	0200097	EV_EC1	8.60	< 0.20	< 0.20	1.15	1.28	< 10	1720	< 0.40	< 1.00	< 0.010	10.84	0.184	1280	< 0.020	< 0.020	< 0.100	0.103	0.0688	0.0689	162		0.0195	0.0216	< 0.0050	< 0.0050
12/27/2022	E321814	EV_ECOUT	8.01	< 0.20	0.21	4.36	4.39	< 10	1840	< 0.40	< 1.00	< 0.010	10.94	0.171	1400	< 0.020	0.079	< 0.100	< 0.100	0.0545	0.0506	161		0.116	0.111	< 0.0050	< 0.0050
12/27/2022	E321812	F2_BPO											8.87														
12/28/2022	E206231	EV_GT1	12.6	< 0.10	< 0.10	0.15	0.20	< 10	1850	0.24	< 0.50		11.3	0.279	1340	0.015	0.038	< 0.050	< 0.050	0.107	0.101	167		0.00424	0.00440	< 0.0050	< 0.0050
12/28/2022	E321811	F2_ECIN	5.92						1880				10.26	0.112													
12/28/2022	E321791	F2_NWPI	15.9						1820				7.51	0.364													
12/28/2022	E102685	EV_BC1	13.6	< 0.10	0.12	0.14	0.32	< 10	1830	0.31	< 0.50		11.47	0.284	1300	< 0.010	0.067	< 0.050	0.091	0.112	0.0980	164		0.00233	0.00428	< 0.0050	< 0.0050
12/28/2022	E321812	F2_BPO	11.5					< 10	1840				8.93	0.275													
12/28/2022	E321812	F2_BPO											9.49														
12/29/2022	E321811	F2_ECIN	5.69						1920				10.52	< 0.100													
12/29/2022	E321791	F2_NWPI	15.7						1850				7.68	0.323													
12/29/2022	E321812	F2_BPO	11.2					< 10	1900				9.3	0.244													
12/29/2022	E321812	F2_BPO											9.91														
12/30/2022	E321791	F2_NWPI	15.4	< 0.10		4.06		< 10	1840	0.38			7.88	0.381	1230	< 0.010		< 0.050		0.218				0.0326		< 0.0050	
12/30/2022	E321811	F2_ECIN	5.72	0.21		< 0.10		< 10	1900	0.20			10.93	0.125	1360	0.012		< 0.050		0.0294				0.00018		< 0.0050	
12/30/2022	E321812	F2_BPO	11.2	< 0.10		15.2		< 10	1870	< 0.20			9.46	0.292	1300	0.026		< 0.050		0.113				0.406		< 0.0050	
12/30/2022	E321812	F2_BPO											9.98														
12/31/2022	E321811	F2_ECIN	5.82						1890				10.96	0.127													
12/31/2022	E321791	F2_NWPI	15.7						1830				7.95	0.387													
12/31/2022	E321812	F2_BPO	11.4					< 10	1880				9.7	0.309													
12/31/2022	E321812	F2_BPO											10.04														

		Parameter	MeSe(IV) – methylselenic acid CH3SeO2H	Methaneselenonic Acid	Molybdenum	Molybdenum	Nickel	Nickel	Nitrate Nitrogen (NO3), As N	Nitrite Nitrogen (NO2), As N	Nitrogen, Ammonia (As N)	Ortho-Phosphate	OXIDATION-REDUCTION POTENTIAL, FIELD	pH, Field	pH, LAB	Phosphorus	Phosphorus	Potassium	Potassium	Se(IV) – selenite SeO3(-2)	Se(VI) – selenate SeO4(-2)	SeCN – selenocyanate SeCN(-1)	Selenium	Selenium
		Fraction	D	D	D	T	D	T	N	N	T	D	N	N	N	T	T	T	T	D	D	D	D	T
		Unit	ug/l	ug/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mv	ph units	ph units	mg/l	ppm	mg/l	ppm	ug/l	ug/l	ug/l	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
1/1/2022	E321811	F2_ECIN							17.0	< 0.0050	0.0249	0.0233	59	7.45	7.80	0.0214								
1/1/2022	E321791	F2_NWPI							24.5	0.0812	0.229	< 0.0010	35.1	7.62	7.83	0.0022								
1/1/2022	E321812	F2_BPO							1.06	0.0369	0.154	< 0.0010	48.8	7.54	7.68	< 0.0020								8.64
1/1/2022	E321812	F2_BPO											114.3	7.31										
1/2/2022	E321812	F2_BPO											67.8	7.34										
1/2/2022	E321811	F2_ECIN							17.1	< 0.0050	0.458	0.0230	65.7	7.69	8.01	0.0199								
1/2/2022	E321791	F2_NWPI							24.4	0.0781	0.240	< 0.0010	40.3	7.78	8.03	0.0027								
1/2/2022	E321812	F2_BPO							0.867	0.0316	0.152	< 0.0010	38.9	7.45	7.94	0.0035								7.82
1/2/2022	E321812	F2_BPO												7.38										
1/3/2022	E321811	F2_ECIN			0.00111		< 1.00		17.6	< 0.0050	< 0.0050	0.0223	18.9	7.52	8.04	0.0198							160	
1/3/2022	E321791	F2_NWPI			0.0107		102		24.7	0.0750	0.230	< 0.0010	2.1	7.66	8.03	0.0030							174	
1/3/2022	E206231	EV_GT1	0.035	< 0.010	0.00657	0.00738	6.18	6.94	11.8	0.0120	0.0203	0.0219	36.2	8.2	8.22	0.0213		3.36		1.10	201	< 0.010	201	196
1/3/2022	E321812	F2_BPO			0.0172		56.9		0.883	0.0293	0.154	0.0012	242	7.21	7.93	0.0031							10.7	9.09
1/3/2022	E321812	F2_BPO											111.2	7.09										
1/3/2022	E102685	EV_BC1	0.014	< 0.010	0.00620	0.00662	22.6	24.3	29.6	0.180	0.940	< 0.0010	56.6	8.03	8.09	0.0027		6.47		0.432	298	< 0.010	300	292
1/3/2022	E321812	F2_BPO											73.2	7.21										
1/4/2022	E321812	F2_BPO											106.6	7.16										
1/4/2022	E321812	F2_BPO											188.8	7.31										
1/4/2022	E321812	F2_BPO	< 0.010	< 0.010	0.0178	0.0178	61.5	56.3	0.867	0.0353	0.148	< 0.0010	242	7.21	8.02	0.0035		4.58		1.07	7.80	0.022	9.58	8.71
1/4/2022	E321811	F2_ECIN	< 0.010	< 0.010	0.00110	0.00112	1.01	0.86	17.0	< 0.0050	< 0.0050	0.0223	62.9	7.59	8.07	0.0202		2.86		0.021	166	< 0.010	211	174
1/4/2022	E321791	F2_NWPI	< 0.010	< 0.010	0.0107	0.0116	111	106	24.8	0.0831	0.205	< 0.0010	46.5	7.63	7.93	0.0030		7.24		3.21	165	< 0.010	197	165
1/4/2022	E321812	F2_BPO												7.38										
1/5/2022	E321812	F2_BPO							0.851	0.0284	0.153	< 0.0010	46.8	7.37	7.74	0.0033								9.28
1/5/2022	E321812	F2_BPO											55.1	7.28										
1/5/2022	E321811	F2_ECIN							14.3	< 0.0050	< 0.0050	0.0191	69.4	7.99	7.66	0.0203								
1/5/2022	E321791	F2_NWPI							23.0	0.0744	0.207	< 0.0010	40.2	7.88	7.64	0.0024								
1/5/2022	0200097	EV_EC1	0.015	< 0.010	0.0150	0.0153	33.6	32.7	5.20	0.0226	0.0279	< 0.0010	7.1	8.56	8.20	0.0042		4.36		0.805	50.6	< 0.010	72.0	63.9
1/5/2022	E321812	F2_BPO												7.3										
1/5/2022	0200203	EV_MC3	< 0.010	< 0.010	0.000831	0.000835	0.62	0.74	0.535	0.0041	0.0062	0.0062	99.7	9.42	7.51	0.0095		0.647		0.029	1.98	< 0.010	2.24	2.10
1/6/2022	E321811	F2_ECIN	< 0.010	< 0.010	0.00112		0.87		17.2	< 0.0050	< 0.0050	0.0244	54.6	8.01	7.91	0.0202				0.033	156	< 0.010	194	
1/6/2022	E321791	F2_NWPI			0.0112		100		24.9	0.0821	0.211	< 0.0010	38.2	7.95	7.92	0.0024							182	
1/6/2022	E321812	F2_BPO	< 0.010	< 0.010	0.0178		56.8		0.933	0.0362	0.146	< 0.0010	34.9	7.37	7.94	0.0030				1.23	6.95	0.020	8.64	8.16
1/6/2022	E321814	EV_ECOUT	< 0.010	< 0.010	0.0135	0.0144	41.2	41.1	5.76	0.0199	0.0791	0.0054	71.5	8.03	8.18	0.0074		4.15		0.958	50.2	< 0.010	59.9	57.3
1/6/2022	310168	EV_MC2A	< 0.010	< 0.010	0.00144	0.00148	1.87	1.89	0.565	0.0010	0.0077	0.0059	17.6	9.06	8.16	0.0069		0.831		0.077	4.74	< 0.010	5.06	4.83
1/6/2022	E300091	EV_MC2	< 0.010	< 0.010	0.00145	0.00146	1.90	1.92	0.945	0.0011	0.0165	0.0057	531	8.77	8.17	0.0065		0.909		0.064	8.09	< 0.010	8.15	8.32
1/6/2022	E321812	F2_BPO											93.6	7.13										
1/6/2022	200393	EV_ER1			0.00130	0.00135	0.71	0.71	2.20	0.0014	0.0409	0.0026	68.9	8.87	8.19	0.0051		0.717					10.8	11.9
1/7/2022	E321811	F2_ECIN							17.2	< 0.0050	0.0066	0.0216	38.1	7.67	7.87	0.0288								
1/7/2022	E321791	F2_NWPI							24.6	0.0783	0.216	< 0.0010	-54.5	9.62	8.00	0.0028								
1/7/2022	E321812	F2_BPO							1.03	0.0282	0.162	< 0.0010	-2.3	7.3	7.76	0.0028								7.90
1/7/2022	E321812	F2_BPO											230	7.2										
1/7/2022	E321812	F2_BPO											76.6	7.25										
1/8/2022	E321811	F2_ECIN							17.2	< 0.0050	< 0.0050	0.0214	71.4	7.53	7.84	0.0227								
1/8/2022	E321791	F2_NWPI							24.8	0.0881	0.205	< 0.0010	16.7	7.68	7.92	0.0027								
1/8/2022	E321812	F2_BPO							1.00	0.0297	0.139	< 0.0010	214.9	7.29	7.76	0.0028								8.90
1/8/2022	E321812	F2_BPO											78	7.2										
1/8/2022	E321812	F2_BPO											67	7.35										
1/9/2022	E321811	F2_ECIN							17.3	< 0.0050	< 0.0050	0.0215	89	7.69	8.03	0.0206								

		Parameter	MeSe(IV) – methylselenic acid CH3SeO2H	Methaneselenonic Acid	Molybdenum	Molybdenum	Nickel	Nickel	Nitrate Nitrogen (NO3), As N	Nitrite Nitrogen (NO2), As N	Nitrogen, Ammonia (As N)	Ortho-Phosphate	OXIDATION-REDUCTION POTENTIAL, FIELD	pH, Field	pH, LAB	Phosphorus	Phosphorus	Potassium	Potassium	Se(IV) – selenite SeO3(-2)	Se(VI) – selenate SeO4(-2)	SeCN – selenocyanate SeCN(-1)	Selenium	Selenium
		Fraction	D	D	D	T	D	T	N	N	T	D	N	N	N	T	T	T	T	D	D	D	D	T
		Unit	ug/l	ug/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mv	ph units	ph units	mg/l	ppm	mg/l	ppm	ug/l	ug/l	ug/l	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
1/9/2022	E321791	F2_NWPI							24.7	0.0879	0.222	< 0.0010	40.9	7.22	7.99	0.0028								
1/9/2022	E321812	F2_BPO							0.854	0.0309	0.161	< 0.0010	56.6	7.65	7.96	0.0023								9.38
1/9/2022	E321812	F2_BPO											88.7	7.36										
1/9/2022	E321812	F2_BPO											3.3	7.37										
1/10/2022	E321811	F2_ECIN	< 0.010	< 0.010	0.00108	0.00109	< 1.00	0.88	17.5	< 0.0050	< 0.0050	0.0210	184.6	7.44	8.17	0.0191		2.78		0.030	158	< 0.010	164	167
1/10/2022	E321791	F2_NWPI	< 0.010	< 0.010	0.0111	0.0109	100	105	24.7	0.0803	0.197	< 0.0010	105.4	7.59	8.19	0.0025		7.48		3.39	159	< 0.010	192	170
1/10/2022	E321814	EV_ECOUT	< 0.010	< 0.010																0.639	87.9	< 0.010		
1/10/2022	E321812	F2_BPO											75	7.25										
1/10/2022	E321812	F2_BPO	< 0.010	< 0.010	0.0225	0.0212	56.8	56.3	1.07	0.0204	0.145	< 0.0010	103.4	7.81	8.20	0.0030		4.81		1.24	6.75	0.018	9.00	9.25
1/10/2022	E321812	F2_BPO											54	7.3										
1/11/2022	E321811	F2_ECIN			0.00106		0.71		17.6	0.0090	0.0052	0.0195	52.5	7.61	8.10	0.0204							213	
1/11/2022	E321791	F2_NWPI			0.0106		101		24.9	0.0796	0.211	< 0.0010	45.4	7.66	8.13	0.0022							180	
1/11/2022	0200097	EV_EC1	0.018	< 0.010																0.880	47.5	< 0.010		
1/11/2022	E321812	F2_BPO											75	7.25										
1/11/2022	E321812	F2_BPO			0.0207		53.7		0.945	0.0252	0.151	0.0018	75.5	7.38	8.07	0.0027							9.07	8.23
1/11/2022	E321812	F2_BPO											64.1	7.36										
1/12/2022	E321811	F2_ECIN							17.4	< 0.0050	< 0.0050	0.0216	22.5	7.58	7.82	0.0213								
1/12/2022	E321791	F2_NWPI							25.0	0.0793	0.217	< 0.0010	30.2	7.62	7.89	< 0.0020								
1/12/2022	E321812	F2_BPO											98.1	7.27										
1/12/2022	E321812	F2_BPO							0.914	0.0251	0.143	< 0.0010	49.8	7.46	7.80	0.0034								9.23
1/12/2022	E321812	F2_BPO											34.1	7.28										
1/13/2022	E321811	F2_ECIN	< 0.010	< 0.010	0.00110		0.84		17.6	< 0.0050	0.0078	0.0244	75.9	7.58	7.84	0.0211				0.036	150	< 0.010	196	
1/13/2022	E321791	F2_NWPI			0.0107		101		25.2	0.0875	0.186	< 0.0010	41.2	7.68	7.84	0.0033							172	
1/13/2022	E321814	EV_ECOUT	< 0.010	< 0.010									67.3	7.9						0.645	71.0	< 0.010		
1/13/2022	E321812	F2_BPO	< 0.010	< 0.010	0.0201		54.7		0.948	0.0269	0.210	< 0.0010	73.8	7.42	7.77	0.0040				1.26	6.62	0.021	10.8	8.58
1/13/2022	E321814	EV_ECOUT			0.00911	0.00831	23.4	21.5	10.8	0.0082	0.0540	0.0136	173	7.56	8.34	0.0138		3.46					98.4	120
1/13/2022	E321812	F2_BPO											67	7.24										
1/13/2022	0200097	EV_EC1	0.013	< 0.010									36.3	8.59						0.841	42.3	< 0.010		
1/14/2022	E321811	F2_ECIN							17.1	< 0.0050	0.0102	0.0230	105.3	7.64	7.95	0.0207								
1/14/2022	E321791	F2_NWPI							24.8	0.0830	0.174	< 0.0010	71.8	7.79	7.97	0.0034								
1/14/2022	E321812	F2_BPO											69.8	7.24										
1/14/2022	E321812	F2_BPO							1.13	0.0236	0.131	< 0.0010	69.8	7.24	7.87	0.0033								8.41
1/14/2022	E321812	F2_BPO											30.1	7.24										
1/15/2022	E321811	F2_ECIN							17.2	< 0.0050	0.0161	0.0211	62.8	7.46	7.95	0.0238								
1/15/2022	E321791	F2_NWPI							24.7	0.0753	0.192	< 0.0010	21	7.56	8.00	0.0032								
1/15/2022	E321812	F2_BPO							0.935	0.0221	0.132	< 0.0010	207.6	7.29	7.80	0.0028								9.07
1/15/2022	E321812	F2_BPO												7.39										
1/16/2022	E321811	F2_ECIN							17.5	< 0.0050	0.0186	0.0215	41.6	7.53	7.78	0.0209								
1/16/2022	E321791	F2_NWPI							25.1	0.0787	0.198	< 0.0010	29.4	7.57	7.85	< 0.0020								
1/16/2022	E321812	F2_BPO							0.907	0.0203	0.140	0.0010	188.9	7.46	7.76	0.0057								9.42
1/16/2022	E321812	F2_BPO												7.45										
1/17/2022	E321812	F2_BPO	< 0.010	< 0.010	0.0164	0.0164	55.9	56.4	0.925	0.0205	0.136	< 0.0010	98.5	7.32	7.99	0.0026		4.65		1.31	6.39	< 0.010	8.42	9.19
1/17/2022	E321811	F2_ECIN	< 0.010	< 0.010	0.00109	0.00111	0.92	0.86	17.4	0.0173	0.0180	0.0208	170.2	7.4	8.00	0.0232		2.69		0.035	153	< 0.010	192	173
1/17/2022	E321791	F2_NWPI	< 0.010	< 0.010	0.0108	0.0106	106	105	25.0	0.0859	0.216	< 0.0010	39.5	7.52	8.02	0.0044		7.06		2.85	146	< 0.010	163	174
1/17/2022	0200097	EV_EC1			0.0143	0.0148	29.9	30.6	5.02	< 0.0050	< 0.0050	< 0.0010	144.2	8.09	8.27	0.0031		4.19					54.6	47.4
1/17/2022	E321812	F2_BPO											102	7.2										
1/17/2022	0200097	EV_EC1	0.014	< 0.010	0.0146	0.0146	29.8	29.9	5.36	< 0.0050	< 0.0050	0.0011	56.1	8.37	8.32	0.0039		4.02		0.829	40.6	< 0.010	51.6	50.4
1/17/2022	0200203	EV_MC3	< 0.010	< 0.010	0.000753	0.000723	0.68	0.63	0.327	< 0.0010	0.0068	0.0045	108.8	8.14	8.28	0.0074		0.607		0.020	1.75	< 0.010	2.21	2.07

		Parameter	MeSe(IV) – methylselenic acid CH3SeO2H	Methaneselenonic Acid	Molybdenum	Molybdenum	Nickel	Nickel	Nitrate Nitrogen (NO3), As N	Nitrite Nitrogen (NO2), As N	Nitrogen, Ammonia (As N)	Ortho-Phosphate	OXIDATION-REDUCTION POTENTIAL, FIELD	pH, Field	pH, LAB	Phosphorus	Phosphorus	Potassium	Potassium	Se(IV) – selenite SeO3(-2)	Se(VI) – selenate SeO4(-2)	SeCN – selenocyanate SeCN(-1)	Selenium	Selenium
		Fraction	D	D	D	T	D	T	N	N	T	D	N	N	N	T	T	T	T	D	D	D	D	T
		Unit	ug/l	ug/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mv	ph units	ph units	mg/l	ppm	mg/l	ppm	ug/l	ug/l	ug/l	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
1/17/2022	310168	EV_MC2A	< 0.010	< 0.010	0.00150	0.00140	1.93	1.80	0.493	< 0.0010	0.0084	0.0024	62.3	8.5	8.34	0.0057		0.807		0.058	4.15	< 0.010	5.13	5.00
1/17/2022	0200203	EV_MC3			0.000818	0.000714	0.74	0.74	0.324	< 0.0010	< 0.0050	0.0045	167.7	8.07	8.22	0.0085		0.620					2.10	1.97
1/17/2022	E321814	EV_ECOUT	< 0.010	< 0.010	0.00760	0.00960	20.3	26.3	12.6	0.0075	0.0487	0.0133	188.8	7.59	8.08	0.0117		3.54		0.425	96.2	< 0.010	128	97.3
1/17/2022	200393	EV_ER1			0.00132	0.00129	0.61	0.59	2.44	< 0.0010	0.0053	< 0.0010	103.1	8.21	8.34	0.0037		0.682					12.5	11.7
1/17/2022	E300091	EV_MC2	< 0.010	< 0.010	0.00148	0.00139	1.77	1.88	0.781	0.0010	0.0089	0.0026	97.9	8.11	8.31	0.0088		0.848		0.058	6.51	< 0.010	8.09	7.47
1/17/2022	E206231	EV_GT1			0.00675	0.00711	7.41	7.92	11.5	0.0447	0.108	0.0225	204.9	8.13	8.21	0.0272		3.55					203	195
1/17/2022	E321812	F2_BPO												7.36										
1/18/2022	E321812	F2_BPO			0.0193		55.2				0.136	0.0027	264.3	7.44	8.15	0.0081							8.36	8.22
1/18/2022	E321811	F2_ECIN			0.00108		< 1.00				< 0.0050	0.0223	59.4	7.44	8.12	0.0217							162	
1/18/2022	E321791	F2_NWPI			0.0104		100				0.200	< 0.0010	39.1	7.5	8.17	0.0040							160	
1/18/2022	E206231	EV_GT1	0.068	< 0.010	0.00702	0.00737	7.39	7.53	11.8	0.0319	0.0685	0.0233	89.2	8.1	8.29	0.0243		3.42		2.03	179	< 0.010	216	211
1/18/2022	E102685	EV_BC1	0.018	< 0.010	0.00624	0.00662	26.4	24.8	33.9	0.194	0.470	< 0.0010	75	8.01	8.17	0.0044		6.25		0.539	291	< 0.010	326	339
1/18/2022	200393	EV_ER1			0.00129	0.00138	0.68	0.63	2.45	0.0013	0.0096	0.0013	197.2	8.24	8.23	0.0044		0.717					13.5	12.1
1/18/2022	E102685	EV_BC1			0.00653	0.00689	25.0	24.8	33.7	0.173	0.441	< 0.0010	179.4	7.98	8.08	0.0034		6.36					359	334
1/18/2022	E300091	EV_MC2			0.00147	0.00155	1.93	1.96	0.964	0.0010	0.0064	0.0037	146.2	8.18	8.18	0.0072		0.953					9.66	9.58
1/18/2022	E321812	F2_BPO												7.51										
1/19/2022	E321811	F2_ECIN							17.3	0.0070	0.0118	0.0205	97.9	7.49	8.11	0.0222								
1/19/2022	E321791	F2_NWPI							25.1	0.0779	0.188	< 0.0010	53	7.55	8.11	0.0029								
1/19/2022	E321812	F2_BPO											61.8	7.41										
1/19/2022	E321812	F2_BPO							0.887	0.0225	0.137	< 0.0010	256.2	7.4	8.11	0.0036								8.63
1/19/2022	E321812	F2_BPO												7.51										
1/20/2022	E321811	F2_ECIN	< 0.010	< 0.010	0.00108		0.87		17.4	< 0.0050	0.0055	0.0210	84.8	7.46	7.91	0.0227				0.029	157	< 0.010	212	
1/20/2022	E321791	F2_NWPI			0.0104		105		25.2	0.0807	0.207	< 0.0010	63.8	7.54	7.94	0.0025							194	
1/20/2022	E321814	EV_ECOUT	< 0.010	< 0.010									58.2	8.38						0.647	75.9	< 0.010		
1/20/2022	E321812	F2_BPO	0.011	< 0.010	0.0180		55.5		0.856	0.0185	0.150	< 0.0010	225.5	7.41	7.86	0.0042				1.20	6.11	0.028	10.8	9.24
1/20/2022	E321812	F2_BPO											140.8	7.26										
1/20/2022	0200097	EV_EC1	0.015	< 0.010									34.3	8.41						0.720	44.6	< 0.010		
1/20/2022	E321812	F2_BPO											101.9	7.35										
1/21/2022	E321811	F2_ECIN							17.6	< 0.0050	< 0.0050	0.0189	76.5	7.65	8.15	0.0236								
1/21/2022	E321811	F2_ECIN							17.6	< 0.0050														
1/21/2022	E321791	F2_NWPI							25.0	0.0858	0.190	< 0.0010	63.4	7.63	8.14	0.0026								
1/21/2022	E321812	F2_BPO							0.831	0.0221	0.138	< 0.0010	232.7	7.37	7.83	0.0108								8.41
1/21/2022	E321812	F2_BPO							0.831	0.0221														
1/21/2022	E321812	F2_BPO											150.8	7.23										
1/21/2022	E321812	F2_BPO											71	7.39										
1/22/2022	E321811	F2_ECIN							17.6	< 0.0050	0.0066	0.0196	94.4	7.42	7.97	0.0208								
1/22/2022	E321791	F2_NWPI							25.4	0.0739	0.222	< 0.0010	51.1	7.44	7.96	0.0030								
1/22/2022	E321812	F2_BPO							0.797	0.0199	0.137	< 0.0010	96.1	7.42	7.94	0.0058								8.19
1/22/2022	E321812	F2_BPO											239.4	7.22										
1/22/2022	E321812	F2_BPO											99.9	7.29										
1/23/2022	E321811	F2_ECIN							17.5	< 0.0050	< 0.0050	0.0234	74.7	7.43	8.03	0.0224								
1/23/2022	E321791	F2_NWPI							25.1	0.0799	0.188	< 0.0010	46.9	7.42	8.04	0.0029								
1/23/2022	E321812	F2_BPO											103.1	7.28										
1/23/2022	E321812	F2_BPO							0.798	0.0233	0.153	< 0.0010	187.4	7.37	8.01	0.0032								8.13
1/23/2022	E321812	F2_BPO											95.6	7.39										
1/24/2022	E321811	F2_ECIN	< 0.010	< 0.010	0.00113	0.00113	0.92	0.97	18.0	0.0121	< 0.0050	0.0227	57.8	7.45	7.94	0.0209		2.74		0.038	156	< 0.010	204	176
1/24/2022	E321791	F2_NWPI	< 0.010	< 0.010	0.0106	0.0107	108	107	25.7	0.0768	0.180	< 0.0010	37.7	7.44	7.93	0.0037		7.07		2.91	153	< 0.010	188	172
1/24/2022	E321814	EV_ECOUT	< 0.010	< 0.010																0.617	82.3	< 0.010		

		Parameter	MeSe(IV) – methylselenic acid CH3SeO2H	Methaneselenonic Acid	Molybdenum	Molybdenum	Nickel	Nickel	Nitrate Nitrogen (NO3), As N	Nitrite Nitrogen (NO2), As N	Nitrogen, Ammonia (As N)	Ortho-Phosphate	OXIDATION-REDUCTION POTENTIAL, FIELD	pH, Field	pH, LAB	Phosphorus	Phosphorus	Potassium	Potassium	Se(IV) – selenite SeO3(-2)	Se(VI) – selenate SeO4(-2)	SeCN – selenocyanate SeCN(-1)	Selenium	Selenium
		Fraction	D	D	D	T	D	T	N	N	T	D	N	N	N	T	T	T	T	D	D	D	D	T
		Unit	ug/l	ug/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mv	ph units	ph units	mg/l	ppm	mg/l	ppm	ug/l	ug/l	ug/l	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
1/24/2022	E321812	F2_BPO	< 0.010	< 0.010	0.0197	0.0196	55.3	60.2	0.797	0.0224	0.144	< 0.0010	204.9	7.3	7.87	0.0031		4.78		1.25	5.68	0.026	9.60	8.48
1/24/2022	0200097	EV_EC1	0.013	< 0.010																0.880	43.1	< 0.010		
1/24/2022	E321812	F2_BPO											128.6	7.22										
1/25/2022	E321811	F2_ECIN			0.00116		0.91		17.3	< 0.0050	< 0.0050	0.0224	70.7	7.89	7.97	0.0232							176	
1/25/2022	E321791	F2_NWPI			0.0112		102		24.2	0.0604	0.166	< 0.0010	8.9	7.71	7.97	0.0032							166	
1/25/2022	E321812	F2_BPO			0.0195		54.1		0.728	0.0131	0.138	< 0.0010	69.7	7.73	7.90	0.0041							7.95	7.51
1/25/2022	E321812	F2_BPO											56.2	7.39										
1/26/2022	E321811	F2_ECIN							16.6	< 0.0050	0.0133	0.0229	79.8	7.46	7.81	0.0206								
1/26/2022	E321791	F2_NWPI							23.0	0.0659	0.190	< 0.0010	60.8	7.46	7.80	0.0022								
1/26/2022	E321812	F2_BPO							0.681	0.0157	0.156	< 0.0010	225.6	7.36	7.79	0.0026								7.86
1/26/2022	E321812	F2_BPO											111.7	7.21										
1/26/2022	E321812	F2_BPO											69.1	7.36										
1/27/2022	E321811	F2_ECIN	< 0.010	< 0.010	0.00112		0.92		17.4	< 0.0050	< 0.0050	0.0223	86.3	7.4	8.03	0.0224				0.035	151	< 0.010	195	
1/27/2022	E321791	F2_NWPI			0.0111		101		24.0	0.0575	0.161	< 0.0010	67.2	7.38	8.03	0.0027							180	
1/27/2022	E321814	EV_ECOUT	< 0.010	< 0.010									147.2	7.45						0.752	67.5	< 0.010		
1/27/2022	E321812	F2_BPO	< 0.010	< 0.010	0.0222		52.1		0.727	0.0156	0.165	< 0.0010	253.3	7.38	8.05	0.0031				1.35	5.21	0.023	8.05	7.66
1/27/2022	E321812	F2_BPO																						
1/27/2022	0200097	EV_EC1	0.015	< 0.010									80.7	8.08						0.922	40.2	< 0.010		
1/27/2022	E321812	F2_BPO											119	7.32										
1/28/2022	E321811	F2_ECIN							16.7	< 0.0050	< 0.0050	0.0210	68.3	7.48	8.16	0.0198								
1/28/2022	E321791	F2_NWPI							22.9	0.0598	0.164	< 0.0010	53.7	7.47	8.16	0.0027								
1/28/2022	E321812	F2_BPO											97.5	7.38										
1/28/2022	E321812	F2_BPO							0.689	0.0184	0.138	< 0.0010	148.8	7.48	8.26	0.0050								7.49
1/28/2022	E321812	F2_BPO												7.5										
1/29/2022	E321811	F2_ECIN							16.7	< 0.0050	0.0130	0.0226	66.7	7.83	7.85	0.0218								
1/29/2022	E321791	F2_NWPI							22.7	0.0637	0.165	0.0010	36.4	7.71	7.88	0.0032								
1/29/2022	E321812	F2_BPO							0.680	0.0197	0.151	0.0011	218.4	7.52	7.95	0.0048								7.41
1/29/2022	E321812	F2_BPO											218.4	7.52										
1/29/2022	E321812	F2_BPO												7.53										
1/30/2022	E321811	F2_ECIN							17.5	0.0129	< 0.0050	0.0226	103.5	7.45	8.01	0.0240								
1/30/2022	E321791	F2_NWPI							23.4	0.0649	0.163	< 0.0010	67.8	7.74	8.08	0.0039								
1/30/2022	E321812	F2_BPO							0.761	0.0250	0.139	0.0014	120.2	7.48	8.06	0.0042								8.13
1/30/2022	E321812	F2_BPO											120.2	7.48										
1/30/2022	E321812	F2_BPO												7.6										
1/31/2022	E300091	EV_MC2	< 0.010	< 0.010	0.00135	0.00157	1.65	1.94	0.906	< 0.0010	< 0.0050	0.0027	140.2	8.11	8.18	0.0070		0.930		0.069	7.97	< 0.010	7.86	8.54
1/31/2022	E321812	F2_BPO	< 0.010	< 0.010	0.0136	0.0209	54.0	57.0	1.01	0.0222	0.143	0.0010	126.8	7.57	8.14	0.0036		4.88		1.30	5.46	0.019	7.62	7.82
1/31/2022	E321812	F2_BPO											155.8	7.25										
1/31/2022	0200097	EV_EC1	0.015	< 0.010	0.0137	0.0156	30.5	32.7	4.10	< 0.0050	< 0.0050	0.0023	106.9	8.64	8.33	0.0041		4.44		0.941	35.6	< 0.010	46.5	42.4
1/31/2022	0200203	EV_MC3	< 0.010	< 0.010	0.000715	0.000761	< 0.50	0.50	0.308	< 0.0010	< 0.0050	0.0052	40.3	8.03	8.10	0.0059		0.641		0.033	1.78	< 0.010	2.01	2.02
1/31/2022	310168	EV_MC2A	< 0.010	< 0.010	0.00144	0.00159	1.70	2.04	0.456	< 0.0010	0.0070	0.0028	98.6	8.16	8.20	0.0060		0.872		0.073	4.03	< 0.010	4.54	4.70
1/31/2022	E321811	F2_ECIN	< 0.010	< 0.010	0.00103	0.00116	0.75	0.91	17.5	< 0.0050	0.0102	0.0210	98.6	7.69	8.09	0.0208		2.91		0.038	147	< 0.010	166	172
1/31/2022	E321791	F2_NWPI	0.013	< 0.010	0.0113	0.0119	97.5	107	23.5	0.0596	0.170	< 0.0010	63.1	7.68	8.14	0.0038		8.01		2.96	130	< 0.010	163	165
1/31/2022	E321814	EV_ECOUT	< 0.010	< 0.010	0.00910	0.00948	23.0	25.9	10.5	0.0081	0.0480	0.0134	135.8	7.87	8.20	0.0139		3.90		0.556	87.5	< 0.010	103	101
1/31/2022	200393	EV_ER1			0.00122	0.00150	0.51	0.66	2.35	0.0012	0.0060	0.0020	113.2	8.21	8.22	0.0044		0.762					11.2	11.8
1/31/2022	E321812	F2_BPO												7.4										
2/1/2022	E321812	F2_BPO											72.4	7.67										
2/1/2022	E206231	EV_GT1	0.029	< 0.010	0.00736	0.00752	6.73	7.06	12.7	0.0064	0.0120	0.0195	86.7	8.99	8.31	0.0211		3.48		1.10	194	< 0.010	204	210
2/1/2022	E321812	F2_BPO			0.0184		53.0		0.724	0.0194	0.146	< 0.0010	112.7	7.49	8.03	0.0063							8.63	8.24

		Parameter	MeSe(IV) – methylselenic acid CH3SeO2H	Methaneselenonic Acid	Molybdenum	Molybdenum	Nickel	Nickel	Nitrate Nitrogen (NO3), As N	Nitrite Nitrogen (NO2), As N	Nitrogen, Ammonia (As N)	Ortho-Phosphate	OXIDATION-REDUCTION POTENTIAL, FIELD	pH, Field	pH, LAB	Phosphorus	Phosphorus	Potassium	Potassium	Se(IV) – selenite SeO3(-2)	Se(VI) – selenate SeO4(-2)	SeCN – selenocyanate SeCN(-1)	Selenium	Selenium
		Fraction	D	D	D	T	D	T	N	N	T	D	N	N	N	T	T	T	T	D	D	D	D	T
		Unit	ug/l	ug/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mv	ph units	ph units	mg/l	ppm	mg/l	ppm	ug/l	ug/l	ug/l	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2/1/2022	E102685	EV_BC1	0.020	< 0.010	0.00654	0.00679	24.5	26.0	37.3	0.134	0.412	0.0010	101.5	8.59	8.13	0.0048		6.69		0.578	331	< 0.010	359	358
2/1/2022	E300091	EV_MC2			0.00126	0.00114	2.09	2.07	1.65	0.0010	0.0060	0.0024	81	8.39	8.12	0.0075		1.00					15.5	15.4
2/1/2022	E321811	F2_ECIN			0.00113		0.78		17.2	< 0.0050	0.0168	0.0224	84.6	8.1	7.94	0.0240							196	
2/1/2022	E321791	F2_NWPI			0.0116		96.9		23.2	0.0600	0.192	< 0.0010	47.3	8.03	7.97	0.0044							167	
2/1/2022	E321812	F2_BPO												7.53										
2/2/2022	E321791	F2_NWPI							23.4	0.0640	0.171	< 0.0010	13.6	8.08	8.02	0.0031								
2/2/2022	E321812	F2_BPO											185	7.24										
2/2/2022	E321812	F2_BPO							0.757	0.0227	0.142	0.0019	237.4	7.33	8.00	0.0051								7.54
2/2/2022	E321812	F2_BPO												7.39										
2/2/2022	E321811	F2_ECIN							17.4	0.0122	< 0.0050	0.0231	44.8	8.06	7.96	0.0336								
2/3/2022	E321811	F2_ECIN	< 0.010	< 0.010	0.00108		0.87		17.9	< 0.0050	0.0097	0.0228	60.8	7.43	8.07	0.0392				0.034	158	< 0.010	203	
2/3/2022	E321791	F2_NWPI			0.0110		99.6		24.1	0.0704	0.174	< 0.0010	10.9	7.42	8.06	0.0032							178	
2/3/2022	E321812	F2_BPO	< 0.010	< 0.010	0.0153		54.5		0.835	0.0245	0.159	0.0024	220.9	7.17	7.97	0.0056				1.47	6.18	0.020	9.10	9.00
2/3/2022	E321812	F2_BPO											227.7	7.15										
2/3/2022	E321814	EV_ECOUT	< 0.010	< 0.010									1854	7.54						0.067	153	< 0.010		
2/3/2022	0200097	EV_EC1											27.8	8.9										
2/3/2022	0200097	EV_EC1	0.015	< 0.010																0.793	74.4	< 0.010		
2/3/2022	E321812	F2_BPO											142.9	7.18										
2/4/2022	E321811	F2_ECIN							17.7	< 0.0050	< 0.0050	0.0215	86.9	7.37	7.88	0.0229								
2/4/2022	E321791	F2_NWPI							24.0	0.0829	0.184	< 0.0010	59.2	7.4	7.88	0.0027								
2/4/2022	E321812	F2_BPO							1.01	0.0330	0.138	< 0.0010	100.2	7.26	7.77	0.0044								7.97
2/4/2022	E321812	F2_BPO											100.2	7.26										
2/4/2022	E321812	F2_BPO											42.6	7.28										
2/5/2022	E321811	F2_ECIN							17.7	< 0.0050	< 0.0050	0.0198	75.4	7.51	7.82	0.0215								
2/5/2022	E321791	F2_NWPI							23.9	0.0426	0.175	< 0.0010	29.6	7.53	7.86	0.0034								
2/5/2022	E321812	F2_BPO							0.804	0.0102	0.147	< 0.0010	86.8	7.35	7.76	0.0041								9.17
2/5/2022	E321812	F2_BPO											71	7.26										
2/5/2022	E321812	F2_BPO											75.9	7.38										
2/6/2022	E321811	F2_ECIN							17.7	< 0.0050	< 0.0050	0.0210	97.3	7.4	7.97	0.0206								
2/6/2022	E321791	F2_NWPI							24.0	0.0455	0.173	< 0.0010	68.2	7.42	7.98	0.0031								
2/6/2022	E321812	F2_BPO							0.810	0.0099	0.153	< 0.0010	243.6	7.51	8.00	0.0049								9.35
2/6/2022	E321812	F2_BPO											246	7.52										
2/6/2022	E321812	F2_BPO											86.3	7.43										
2/7/2022	E321811	F2_ECIN	< 0.010	< 0.010	0.00110	0.00106	0.84	1.28	17.9	0.0265	0.0124	0.0216	93.5	7.48	7.92	0.0224		2.54		0.042	154	< 0.010	198	175
2/7/2022	E321791	F2_NWPI	0.011	< 0.010	0.0110	0.0115	103	108	24.2	0.0608	0.174	< 0.0010	72.9	7.44	7.94	0.0026		6.28		3.01	139	< 0.010	171	174
2/7/2022	E321812	F2_BPO	< 0.010	< 0.010	0.0234	0.0234	62.6	62.9	0.771	0.0080	0.158	< 0.0010	255.3	7.47	7.85	0.0039		4.63		1.29	5.89	0.016	9.72	9.04
2/7/2022	E321812	F2_BPO											116.2	7.35										
2/7/2022	E321812	F2_BPO											97.2	7.43										
2/8/2022	E321811	F2_ECIN			0.00108		0.89		17.8	< 0.0050	< 0.0050	0.0218	56.1	7.5	7.88	0.0202							188	
2/8/2022	E321791	F2_NWPI			0.0109		102		24.2	0.0731	0.176	< 0.0010	28.8	7.53	7.89	0.0025							167	
2/8/2022	E321814	EV_ECOUT			0.0146	0.0163	49.3	54.4	4.32	0.0084	0.0869	0.0038	193.8	7.72	8.28	0.0055		4.61					41.5	32.4
2/8/2022	E321812	F2_BPO											111.5	7.5										
2/8/2022	E321812	F2_BPO			0.0178		61.5		0.744	0.0147	0.157	0.0011	69.5	7.4	7.93	0.0039							8.91	8.73
2/8/2022	0200203	EV_MC3			0.000678	0.000775	< 0.50	< 0.50	0.240	< 0.0010	< 0.0050	0.0015	149.7	8.43	8.40	0.0056		0.652					1.88	2.14
2/8/2022	200393	EV_ER1	< 0.010	< 0.010	0.00143	0.00146	0.65	0.68	2.48	< 0.0010	0.0098	< 0.0010	159.8	8.37	8.44	0.0024		0.754		0.059	11.6	< 0.010	11.8	12.6
2/8/2022	E206231	EV_GT1			0.00748	0.00809	12.3	13.3	12.1	0.0157	0.0710	0.0103	190.2	8.13	8.36	0.0119		4.02					148	163
2/8/2022	E102685	EV_BC1			0.0102	0.0113	25.5	27.6	20.9	0.0613	0.160	< 0.0010	121.4	8.14	8.28	0.0040		6.12					173	193
2/8/2022	E300091	EV_MC2	< 0.010	< 0.010	0.00160	0.00166	2.08	2.14	0.842	< 0.0010	< 0.0050	< 0.0010	135.1	8.46	8.44	0.0051		1.01		0.056	8.47	< 0.010	9.14	9.30

		Parameter	MeSe(IV) – methylselenic acid CH3SeO2H	Methaneselenonic Acid	Molybdenum	Molybdenum	Nickel	Nickel	Nitrate Nitrogen (NO3), As N	Nitrite Nitrogen (NO2), As N	Nitrogen, Ammonia (As N)	Ortho-Phosphate	OXIDATION-REDUCTION POTENTIAL, FIELD	pH, Field	pH, LAB	Phosphorus	Phosphorus	Potassium	Potassium	Se(IV) – selenite SeO3(-2)	Se(VI) – selenate SeO4(-2)	SeCN – selenocyanate SeCN(-1)	Selenium	Selenium
		Fraction	D	D	D	T	D	T	N	N	T	D	N	N	N	T	T	T	T	D	D	D	D	T
		Unit	ug/l	ug/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mv	ph units	ph units	mg/l	ppm	mg/l	ppm	ug/l	ug/l	ug/l	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2/8/2022	E321812	F2_BPO											146	7.56										
2/9/2022	E321811	F2_ECIN							17.9	< 0.0050	< 0.0050	0.0181	80.7	7.47	7.92	0.0210								
2/9/2022	E321791	F2_NWPI							25.0	0.0701	0.172	< 0.0010	62.2	7.46	7.90	0.0030								
2/9/2022	E321812	F2_BPO							0.758	0.0114	0.148	< 0.0010	269.9	7.49	7.87	0.0044								8.83
2/9/2022	E321812	F2_BPO											113.1	7.38										
2/9/2022	E321812	F2_BPO											6.9	7.31										
2/10/2022	E321811	F2_ECIN			0.00110		0.88		18.2	< 0.0050	< 0.0050	0.0212	193.4	7.41	7.94	0.0215							173	
2/10/2022	E321791	F2_NWPI			0.0116		111		25.4	0.0826	0.183	< 0.0010	196.7	7.37	7.92	< 0.0020							168	
2/10/2022	E321812	F2_BPO			0.0202		65.3		0.765	0.0109	0.152	< 0.0010	126.8	7.47	7.89	0.0041							7.84	7.96
2/10/2022	E321812	F2_BPO											106.9	7.3										
2/10/2022	E321812	F2_BPO											106.4	7.37										
2/11/2022	E321811	F2_ECIN							18.1	< 0.0050	< 0.0050	0.0230	56	7.54	7.84	0.0228								
2/11/2022	E321791	F2_NWPI							25.1	0.0838	0.184	< 0.0010	33.4	7.52	7.88	0.0027								
2/11/2022	E321812	F2_BPO							0.738	0.0097	0.157	< 0.0010	115.8	7.56	7.86	0.0040								7.92
2/11/2022	E321812	F2_BPO											67.6	7.33										
2/11/2022	E321812	F2_BPO												7.44										
2/12/2022	E321811	F2_ECIN							17.6	< 0.0050	< 0.0050	0.0214	84	7.57	8.06	0.0206								
2/12/2022	E321791	F2_NWPI							24.7	0.0836	0.188	< 0.0010	53.8	7.57	8.05	< 0.0020								
2/12/2022	E321812	F2_BPO							0.695	0.0121	0.158	< 0.0010	124.6	7.36	8.07	0.0037								8.62
2/12/2022	E321812	F2_BPO											240.7	7.27										
2/12/2022	E321812	F2_BPO											136.4	7.35										
2/13/2022	E321811	F2_ECIN							17.6	< 0.0050	0.0184	0.0218	87	7.48	8.13	0.0228								
2/13/2022	E321791	F2_NWPI							24.6	0.0820	0.187	< 0.0010	61.4	7.59	8.10	0.0026								
2/13/2022	E321812	F2_BPO							0.678	0.0105	0.174	< 0.0010	203.2	7.29	8.09	0.0041								7.49
2/13/2022	E321812	F2_BPO											159.9	7.2										
2/13/2022	E321812	F2_BPO												7.34										
2/14/2022	E321812	F2_BPO	< 0.010	< 0.010	0.0176	0.0201	60.3	63.7	0.674	0.0137	0.148	< 0.0010	182.9	7.35	8.19	0.0053		4.90		1.52	5.60	0.019	9.02	8.42
2/14/2022	E321811	F2_ECIN	< 0.010	< 0.010	0.00109	0.00118	0.87	1.23	13.8	< 0.0050	< 0.0050	0.0188	79.9	7.49	8.21	0.0206		2.91		0.034	165	< 0.010	194	186
2/14/2022	E321791	F2_NWPI	< 0.010	< 0.010	0.0106	0.0126	107	121	24.8	0.0847	0.180	< 0.0010	51.5	7.47	8.17	0.0033		7.55		3.02	147	< 0.010	178	180
2/14/2022	E321812	F2_BPO											135.4	7.27										
2/14/2022	0200097	EV_EC1	0.015	< 0.010	0.0125	0.0155	30.1	37.2	6.03	0.0795	< 0.0050	< 0.0010	97.1	8.27	8.41	0.0038		4.60		0.930	55.5	< 0.010	60.7	67.4
2/14/2022	0200203	EV_MC3	< 0.010	< 0.010	0.000663	0.000855	< 0.50	0.68	0.195	< 0.0010	0.0088	< 0.0010	124.6	8.19	8.35	0.0043		0.641		0.015	1.83	< 0.010	1.87	2.07
2/14/2022	310168	EV_MC2A	< 0.010	< 0.010	0.00147	0.00169	1.96	2.25	0.488	< 0.0010	0.0099	< 0.0010	53.9	8.54	8.43	0.0027		0.874		0.064	5.96	< 0.010	5.74	6.36
2/14/2022	200393	EV_ER1			0.00132	0.00145	0.70	0.88	2.43	0.0012	< 0.0050	< 0.0010	63.5	8.92	8.39	0.0027		0.732					12.0	13.1
2/14/2022	E321814	EV_ECOUT	< 0.010	< 0.010	0.00653	0.00768	19.0	22.3	12.6	0.0081	0.0329	0.0132	178.4	7.61	8.28	0.0163		3.65		0.489	110	< 0.010	124	129
2/14/2022	E300091	EV_MC2	< 0.010	< 0.010	0.00163	0.00181	2.11	2.46	1.04	0.0010	< 0.0050	< 0.0010	128.5	8.24	8.40	0.0028		1.04		0.062	10.7	< 0.010	10.8	11.3
2/14/2022	E321812	F2_BPO												7.35										
2/15/2022	E321811	F2_ECIN			0.00110		0.88		17.6	< 0.0050	< 0.0050	0.0224	55.3	7.49	8.16	0.0210							193	
2/15/2022	E321791	F2_NWPI			0.0112		106		24.7	0.0747	0.195	< 0.0010	29.8	7.49	8.18	0.0035							175	
2/15/2022	E321812	F2_BPO			0.0195		58.1		0.696	0.0126	0.154	< 0.0010	124.6	7.39	8.23	0.0038							8.72	8.67
2/15/2022	E321812	F2_BPO											124.6	7.39										
2/15/2022	E102685	EV_BC1	0.022	< 0.010	0.0134	0.0135	29.1	28.9	13.9	0.0314	0.0682	< 0.0010	70.9	7.93	8.20	0.0031		5.67		0.642	116	< 0.010	130	139
2/15/2022	E206231	EV_GT1	0.015	< 0.010	0.0127	0.0126	25.0	25.5	11.2	0.0122	0.124	0.0063	75.5	8.53	8.27	0.0106		4.84		0.821	115	< 0.010	128	135
2/15/2022	E300091	EV_MC2			0.00167	0.00176	2.42	2.54	1.48	0.0012	0.0114	< 0.0010	99	8.06	8.29	0.0032		1.11					14.9	15.7
2/15/2022	E321812	F2_BPO												7.43										
2/16/2022	E321811	F2_ECIN							17.6	< 0.0050	< 0.0050	0.0207	95.8	7.44	8.02	0.0194								
2/16/2022	E321791	F2_NWPI							24.6	0.0820	0.191	< 0.0010	95.8	7.43	8.05	0.0026								
2/16/2022	E321812	F2_BPO							0.752	0.0225	0.144	< 0.0010	-23	7.48	8.08	0.0044								7.82

		Parameter	MeSe(IV) – methylselenic acid CH3SeO2H	Methaneselenonic Acid	Molybdenum	Molybdenum	Nickel	Nickel	Nitrate Nitrogen (NO3), As N	Nitrite Nitrogen (NO2), As N	Nitrogen, Ammonia (As N)	Ortho-Phosphate	OXIDATION-REDUCTION POTENTIAL, FIELD	pH, Field	pH, LAB	Phosphorus	Phosphorus	Potassium	Potassium	Se(IV) – selenite SeO3(-2)	Se(VI) – selenate SeO4(-2)	SeCN – selenocyanate SeCN(-1)	Selenium	Selenium
		Fraction	D	D	D	T	D	T	N	N	T	D	N	N	N	T	T	T	T	D	D	D	D	T
		Unit	ug/l	ug/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mv	ph units	ph units	mg/l	ppm	mg/l	ppm	ug/l	ug/l	ug/l	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2/16/2022	E321812	F2_BPO											-23	7.48										
2/16/2022	0200097	EV_EC1			0.0117	0.0121	28.0	31.6	8.34	< 0.0050	< 0.0050	0.0022	163.3	8.22	8.32	0.0037		4.31					83.1	84.7
2/16/2022	E321812	F2_BPO												7.49										
2/17/2022	E321811	F2_ECIN			0.00100		0.90		17.7	< 0.0050	< 0.0050	0.0227	95.4	7.6	8.17	0.0215							173	
2/17/2022	E321791	F2_NWPI			0.0109		103		24.7	0.0856	0.164	< 0.0010	47	7.55	8.13	0.0032							180	
2/17/2022	E321812	F2_BPO			0.0188		61.2		0.789	0.0296	0.126	0.0014	75.2	7.59	8.16	0.0033							9.40	8.81
2/17/2022	E321812	F2_BPO											137.8	7.41										
2/17/2022	E321812	F2_BPO											98.7	7.5										
2/18/2022	E321811	F2_ECIN							18.4	< 0.0050	< 0.0050	0.0222	98.8	7.56	8.06	0.0217								
2/18/2022	E321791	F2_NWPI							26.2	0.0944	0.183	< 0.0010	49.6	7.56	8.04	0.0022								
2/18/2022	E321812	F2_BPO							0.883	0.0388	0.139	< 0.0010	147.3	7.62	8.07	0.0038								8.55
2/18/2022	E321812	F2_BPO											120	7.39										
2/18/2022	E321812	F2_BPO											128.9	7.39										
2/19/2022	E321811	F2_ECIN							17.5	< 0.0050	< 0.0050	0.0188	92.5	7.58	7.95	0.0230								
2/19/2022	E321791	F2_NWPI							25.0	0.0942	0.176	< 0.0010	67.3	7.57	7.90	< 0.0020								
2/19/2022	E321812	F2_BPO							0.851	0.0386	0.142	< 0.0010	151.3	7.58	7.89	0.0026								8.44
2/19/2022	E321812	F2_BPO											108.6	7.37										
2/19/2022	E321812	F2_BPO											95.4	7.51										
2/20/2022	E321811	F2_ECIN							18.0	< 0.0050	< 0.0050	0.0212	103.8	7.54	7.96	0.0210								
2/20/2022	E321791	F2_NWPI							25.8	0.0765	0.184	< 0.0010	49.2	7.54	7.94	0.0028								
2/20/2022	E321812	F2_BPO							0.870	0.0270	0.153	< 0.0010	161.5	7.58	8.00	0.0038								9.13
2/20/2022	E321812	F2_BPO											128.1	7.39										
2/20/2022	E321812	F2_BPO											87	7.49										
2/21/2022	E321811	F2_ECIN	< 0.010	< 0.010	0.00104	0.00108	0.87	0.89	18.1	< 0.0050	< 0.0050	0.0206	88.4	7.56	8.01	0.0212		2.79		0.050	172	< 0.010	196	166
2/21/2022	E321791	F2_NWPI	0.011	< 0.010	0.0102	0.0106	105	108	25.9	0.0818	0.184	< 0.0010	64.7	7.5	7.98	0.0034		7.32		3.21	157	< 0.010	169	165
2/21/2022	E321812	F2_BPO	< 0.010	< 0.010	0.0186	0.0196	60.4	65.3	0.895	0.0340	0.155	< 0.0010	6.8	7.53	8.07	< 0.0020		4.91		1.53	5.86	0.021	8.60	7.57
2/21/2022	E321812	F2_BPO											147.4	7.46										
2/21/2022	E321812	F2_BPO											111	7.59										
2/22/2022	E321811	F2_ECIN			0.00106		0.91		17.5	< 0.0050	< 0.0050	0.0190	46	7.82	8.22	0.0197							200	
2/22/2022	E321791	F2_NWPI			0.0108		114		25.2	0.0877	0.178	< 0.0010	24	7.67	8.16	< 0.0020							180	
2/22/2022	E321812	F2_BPO											328	7.37										
2/22/2022	E321812	F2_BPO			0.0190		64.0		0.864	0.0374	0.147	< 0.0010	-30.7	7.49	8.23	0.0027							8.86	8.48
2/22/2022	E300091	EV_MC2			0.00238	0.00252	3.42	3.50	1.78	0.0014	0.0052	< 0.0010	214.9	8.01	8.20	0.0035		1.50					16.6	18.6
2/22/2022	E321812	F2_BPO											88.6	7.45										
2/22/2022	E321812	F2_BPO											78.9	7.46										
2/23/2022	E321811	F2_ECIN							17.9	< 0.0050	< 0.0050	0.0219	25.9	7.62	8.17	0.0208								
2/23/2022	E321791	F2_NWPI							25.9	0.0856	0.186	< 0.0010	14.9	7.51	8.12	0.0023								
2/23/2022	E321812	F2_BPO							0.903	0.0442	0.149	< 0.0010	219.9	7.36	8.14	0.0048								7.82
2/23/2022	E321812	F2_BPO											139.9	7.29										
2/23/2022	E321812	F2_BPO											97.2	7.44										
2/24/2022	E321811	F2_ECIN			0.00107		0.86		18.6	< 0.0050	< 0.0050	0.0221	61.5	7.63	8.04	0.0228							195	
2/24/2022	E321791	F2_NWPI			0.0100		99.7		27.0	0.0960	0.190	< 0.0010	43.9	7.53	7.98	0.0023							172	
2/24/2022	E321812	F2_BPO											57.9	7.59										
2/24/2022	E321812	F2_BPO			0.0197		53.9		0.985	0.0642	0.139	< 0.0010	57.9	7.59	7.99	0.0042							9.82	9.12
2/24/2022	E321812	F2_BPO												7.33										
2/25/2022	E321811	F2_ECIN							18.2	< 0.0050	< 0.0050	0.0228	74.8	7.6	8.13	0.0211								
2/25/2022	E321791	F2_NWPI							26.3	0.0934	0.178	< 0.0010	49.8	7.52	8.09	0.0022								
2/25/2022	E321812	F2_BPO							0.933	0.0633	0.131	< 0.0010	97.7	7.36	8.13	0.0039								7.38

		Parameter	MeSe(IV) – methylselenic acid CH3SeO2H	Methaneselenonic Acid	Molybdenum	Molybdenum	Nickel	Nickel	Nitrate Nitrogen (NO3), As N	Nitrite Nitrogen (NO2), As N	Nitrogen, Ammonia (As N)	Ortho-Phosphate	OXIDATION-REDUCTION POTENTIAL, FIELD	pH, Field	pH, LAB	Phosphorus	Phosphorus	Potassium	Potassium	Se(IV) – selenite SeO3(-2)	Se(VI) – selenate SeO4(-2)	SeCN – selenocyanate SeCN(-1)	Selenium	Selenium
		Fraction	D	D	D	T	D	T	N	N	T	D	N	N	N	T	T	T	T	D	D	D	D	T
		Unit	ug/l	ug/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mv	ph units	ph units	mg/l	ppm	mg/l	ppm	ug/l	ug/l	ug/l	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2/25/2022	E321812	F2_BPO											97.7	7.36										
2/25/2022	E321812	F2_BPO												7.4										
2/26/2022	E321811	F2_ECIN							17.9	< 0.0050	< 0.0050	0.0216	4.7	7.64	7.97	0.0199								
2/26/2022	E321791	F2_NWPI							25.8	0.0832	0.166	< 0.0010	-6.2	7.57	7.95	0.0029								
2/26/2022	E321812	F2_BPO							0.854	0.0449	0.140	< 0.0010	119.2	7.35	7.95	0.0033								7.95
2/26/2022	E321812	F2_BPO											91.7	7.43										
2/27/2022	E321811	F2_ECIN							18.0	0.0052	< 0.0050	0.0197	37.2	7.77	8.05	0.0197								
2/27/2022	E321791	F2_NWPI							26.1	0.102	0.173	< 0.0010	5.3	7.6	8.00	0.0020								
2/27/2022	E321812	F2_BPO											104.5	7.33										
2/27/2022	E321812	F2_BPO							0.786	0.0457	0.141	< 0.0010	49.9	7.54	8.07	0.0034								7.32
2/27/2022	E321812	F2_BPO												7.44										
2/28/2022	E321812	F2_BPO	< 0.010	< 0.010	0.0225	0.0182	58.6	59.2	1.08	0.0337	0.146	< 0.0010	124.9	7.28	7.95	0.0047		4.76		1.52	4.08	0.020	6.76	6.42
2/28/2022	E321811	F2_ECIN	< 0.010	< 0.010	0.00124	0.00115	0.89	0.98	18.1	< 0.0050	< 0.0050	0.0214	15.2	7.6	7.95	0.0213		2.90		0.032	155	< 0.010	180	161
2/28/2022	E321791	F2_NWPI	< 0.010	< 0.010	0.0114	0.0110	106	111	26.2	0.0854	0.176	< 0.0010	-5.4	7.51	7.89	0.0031		7.10		2.99	150	< 0.010	169	154
2/28/2022	E321812	F2_BPO											113.5	7.2										
2/28/2022	0200097	EV_EC1	0.019	< 0.010	0.0149	0.0154	32.3	33.1	4.44	< 0.0050	< 0.0050	0.0018	72.1	8.15	8.30	0.0030		4.36		1.07	38.1	< 0.010	42.4	41.8
2/28/2022	200393	EV_ER1			0.00142	0.00139	0.66	0.68	2.44	0.0018	< 0.0050	< 0.0010	5.6	8.41	8.20	0.0029		0.806					12.9	12.4
2/28/2022	E321812	F2_BPO												7.3										
2/28/2022	E321814	EV_ECOUT	0.012	< 0.010	0.0136	0.0129	38.9	39.0	7.24	0.0221	0.0606	0.0080	50.3	7.67	8.07	0.0116		4.02		1.04	52.5	< 0.010	62.8	69.9
3/1/2022	0200203	EV_MC3	< 0.010	< 0.010	0.000779	0.000763	< 0.50	< 0.50	0.180	< 0.0010	< 0.0050	0.0011	105.9	8.11	8.14	0.0032		0.667		0.015	1.80	< 0.010	2.00	1.90
3/1/2022	E321812	F2_BPO			0.0194		56.3		0.715	0.0398	0.151	< 0.0010	127.6	7.31	8.06	0.0040							7.00	6.39
3/1/2022	E321811	F2_ECIN			0.00102		0.84		17.8	< 0.0050	< 0.0050	0.0224	95.1	7.5	8.07	0.0209							178	
3/1/2022	E321791	F2_NWPI			0.0102		106		26.0	0.0922	0.182	< 0.0010	45.9	7.47	8.05	0.0041							164	
3/1/2022	E300091	EV_MC2			0.00154	0.00166	2.18	2.41	0.993	0.0011	< 0.0050	< 0.0010	96.9	8.03	8.00	0.0047		1.11					11.1	10.6
3/1/2022	E321812	F2_BPO											127.6	7.31										
3/1/2022	310168	EV_MC2A	< 0.010	< 0.010	0.00172	0.00176	2.26	2.13	0.412	< 0.0010	< 0.0050	< 0.0010	109.2	8.2	8.23	0.0039		0.951		0.071	4.71	< 0.010	5.26	4.91
3/1/2022	E102685	EV_BC1	0.027	< 0.010	0.0111	0.0110	26.0	28.1	18.0	0.0410	0.127	< 0.0010	97.1	8.08	8.03	0.0134		6.19		0.576	145	< 0.010	153	169
3/1/2022	E206231	EV_GT1	0.033	< 0.010	0.00789	0.00809	12.2	14.0	13.6	0.0159	0.0738	0.0113	140.2	8.35	8.30	0.0159		4.27		0.813	166	< 0.010	186	200
3/1/2022	E300091	EV_MC2	< 0.010	< 0.010	0.00172	0.00177	2.14	2.25	0.944	0.0012	< 0.0050	< 0.0010	112.5	8.03	8.14	0.0040		1.11		0.062	8.74	< 0.010	10.1	9.14
3/1/2022	E321812	F2_BPO												7.34										
3/2/2022	E321811	F2_ECIN	< 0.010	< 0.010	0.00109	0.00113	0.84	1.05	17.6	< 0.0050	< 0.0050	0.0205	94.8	7.56	8.08	0.0201		2.71		0.040	155	< 0.010	188	169
3/2/2022	E321791	F2_NWPI	0.012	< 0.010	0.0107	0.0109	106	109	25.6	0.0898	0.211	< 0.0010	44.7	7.53	8.04	0.0067		6.58		2.92	150	< 0.010	178	171
3/2/2022	E321812	F2_BPO	< 0.010	< 0.010	0.0167	0.0185	51.6	56.0	0.717	0.0344	0.156	< 0.0010	17.9	7.35	8.06	0.0050		4.47		1.38	3.84	0.028	6.98	7.10
3/2/2022	E321812	F2_BPO											69.2	7.34										
3/2/2022	E321812	F2_BPO												7.42										
3/3/2022	E321811	F2_ECIN			0.00106		0.88		17.4	< 0.0050	< 0.0050	0.0204	53.1	7.56	7.83	0.0214							194	
3/3/2022	E321791	F2_NWPI			0.0101		116		25.1	0.0872	0.199	< 0.0010	30.8	7.5	7.74	0.0053							192	
3/3/2022	E321812	F2_BPO			0.0192		58.5		0.724	0.0418	0.148	< 0.0010	47.4	7.39	7.79	0.0054							7.71	6.41
3/3/2022	E321812	F2_BPO											96.9	7.28										
3/3/2022	E321812	F2_BPO											86	7.39										
3/4/2022	E321811	F2_ECIN							18.2	< 0.0050	< 0.0050	0.0200	14.2	8.19	7.94	0.0201								
3/4/2022	E321812	F2_BPO							0.915	0.0398	0.141	< 0.0010	187.5	7.37	7.90	0.0042								6.66
3/4/2022	E321812	F2_BPO											83.7	7.27										
3/4/2022	E321791	F2_NWPI							26.7	0.0991	0.195	< 0.0010	-21.5	7.63	7.84	0.0027								
3/4/2022	E321812	F2_BPO											67.3	7.45										
3/5/2022	E321811	F2_ECIN							18.2	< 0.0050	< 0.0050	0.0165	58.1	7.7	7.81	0.0217								
3/5/2022	E321791	F2_NWPI							26.7	0.0979	0.204	< 0.0010	32.4	7.58	7.76	0.0029								
3/5/2022	E321812	F2_BPO							0.716	0.0371	0.146	< 0.0010	195	7.34	7.78	0.0047								6.21

		Parameter	MeSe(IV) – methylselenic acid CH3SeO2H	Methaneselenonic Acid	Molybdenum	Molybdenum	Nickel	Nickel	Nitrate Nitrogen (NO3), As N	Nitrite Nitrogen (NO2), As N	Nitrogen, Ammonia (As N)	Ortho-Phosphate	OXIDATION-REDUCTION POTENTIAL, FIELD	pH, Field	pH, LAB	Phosphorus	Phosphorus	Potassium	Potassium	Se(IV) – selenite SeO3(-2)	Se(VI) – selenate SeO4(-2)	SeCN – selenocyanate SeCN(-1)	Selenium	Selenium
		Fraction	D	D	D	T	D	T	N	N	T	D	N	N	N	T	T	T	T	D	D	D	D	T
		Unit	ug/l	ug/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mv	ph units	ph units	mg/l	ppm	mg/l	ppm	ug/l	ug/l	ug/l	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
3/5/2022	E321812	F2_BPO											79	7.42										
3/6/2022	E321811	F2_ECIN							17.9	< 0.0050	< 0.0050	0.0212	67.5	8.12	7.76	0.0224								
3/6/2022	E321791	F2_NWPI							26.3	0.0862	0.197	< 0.0010	24.8	7.72	7.69	0.0032								
3/6/2022	E321812	F2_BPO							0.689	0.0278	0.138	< 0.0010	75.9	7.39	7.77	0.0047								7.39
3/6/2022	E321812	F2_BPO											77.9	7.38										
3/6/2022	E321812	F2_BPO											76.6	7.5										
3/7/2022	E321814	EV_ECOUT			0.0145	0.0139	39.3	38.0	6.23	0.0081	0.0629	0.0047	99.1	7.7	8.15	0.0158		4.28					52.9	69.5
3/7/2022	E321812	F2_BPO			0.0188	0.0240	52.8	57.2	0.684	0.0288	0.146	< 0.0010	136.6	7.37	7.85	0.0045		4.62					7.60	7.07
3/7/2022	E321811	F2_ECIN	< 0.010	< 0.010	0.00109	0.00108	0.91	0.95	18.2	< 0.0050	< 0.0050	0.0207	102.2	7.52	7.91	0.0222		2.96		0.033	148	< 0.010	200	184
3/7/2022	E321791	F2_NWPI	< 0.010	< 0.010	0.0111	0.0104	110	118	26.7	0.0993	0.198	< 0.0010	61.9	7.42	7.82	0.0026		6.94		2.79	142	< 0.010	193	182
3/7/2022	E321812	F2_BPO											31.7	7.4										
3/8/2022	E321811	F2_ECIN			0.00103		0.83		17.9	< 0.0050	< 0.0050	0.0190	83.6	7.58	7.97	0.0213							200	
3/8/2022	E321791	F2_NWPI			0.0105		120		26.4	0.0908	0.194	< 0.0010	55	7.4	7.86	0.0037							182	
3/8/2022	E300091	EV_MC2			0.00159	0.00170	2.05	2.22	0.904	0.0035	0.0333	< 0.0010	99.4	8.1	7.98	0.0053		0.965					9.41	8.49
3/8/2022	E321812	F2_BPO			0.0247		55.5		0.686	0.0219	0.145	< 0.0010	3.1	7.55	7.96	0.0047							7.23	6.14
3/8/2022	E321812	F2_BPO											3.1	7.55										
3/8/2022	E321812	F2_BPO											20.9	7.57										
3/9/2022	E321811	F2_ECIN							17.6	< 0.0050	< 0.0050	0.0194	78.7	7.59	7.90	0.0197								
3/9/2022	E321791	F2_NWPI							26.1	0.0910	0.200	< 0.0010	74.9	7.4	7.83	0.0032								
3/9/2022	E321812	F2_BPO											79.8	7.57										
3/9/2022	E321812	F2_BPO							0.826	0.0198	0.139	< 0.0010	-27.4	7.53	7.99	0.0047								6.49
3/9/2022	E321812	F2_BPO											38.4	7.63										
3/10/2022	E321791	F2_NWPI			0.0103		108		27.2	0.0826	0.186	< 0.0010	45	9.5	7.67	0.0046							167	
3/10/2022	E321812	F2_BPO	0.014	< 0.010	0.0188		52.6		0.639	0.0127	0.144	< 0.0010	225.8	7.52	7.81	0.0054				1.53	3.17	0.050	6.20	6.55
3/10/2022	E321812	F2_BPO											23.5	7.43										
3/10/2022	E321811	F2_ECIN			0.00107		0.96		18.3	< 0.0050	< 0.0050	0.0223	101.9	7.45	7.83	0.0216							180	
3/10/2022	E321812	F2_BPO												7.5										
3/11/2022	E321811	F2_ECIN							18.2	< 0.0050	< 0.0050	0.0223	88.4	7.47	7.79	0.0216								
3/11/2022	E321791	F2_NWPI							27.3	0.112	0.176	< 0.0010	78.6	7.36	7.75	0.0024								
3/11/2022	E321812	F2_BPO							0.563	0.0237	0.144	< 0.0010	22.4	7.48	7.92	0.0042								6.03
3/11/2022	E321812	F2_BPO											68.5	7.56										
3/12/2022	E321811	F2_ECIN							18.2	< 0.0050	< 0.0050	0.0156	99.5	7.48	7.76	0.0209								
3/12/2022	E321791	F2_NWPI							26.9	0.0912	0.212	< 0.0010	68.3	7.45	7.75	0.0030								
3/12/2022	E321812	F2_BPO											54.1	7.37										
3/12/2022	E321812	F2_BPO							1.96	0.0173	0.152	< 0.0010	72.8	7.35	7.78	0.0026								5.94
3/12/2022	E321812	F2_BPO												7.5										
3/13/2022	E321811	F2_ECIN							17.5	< 0.0050	< 0.0050	0.0183	63.1	7.5	7.84	0.0178								
3/13/2022	E321791	F2_NWPI							25.7	0.0833	0.216	< 0.0010	51.5	7.39	7.77	< 0.0020								
3/13/2022	E321812	F2_BPO							0.600	0.0153	0.150	< 0.0010	210.5	7.33	7.82	0.0034								6.48
3/13/2022	E321812	F2_BPO												7.27										
3/14/2022	E321812	F2_BPO	0.012	< 0.010	0.0212	0.0193	53.9	59.0	0.605	0.0142	0.142	< 0.0010	131	7.34	7.76	0.0084		5.00		1.31	2.97	0.027	6.75	6.02
3/14/2022	E321812	F2_BPO											-191.8	7.32										
3/14/2022	0200097	EV_EC1	0.016	< 0.010	0.0125	0.0125	30.9	34.5	7.83	< 0.0050	< 0.0050	< 0.0010	107.4	8.1	8.07	0.0022		4.10		1.00	54.1	< 0.010	72.3	65.1
3/14/2022	0200203	EV_MC3	< 0.010	< 0.010	0.000799	0.000707	< 0.50	< 0.50	0.116	< 0.0010	< 0.0050	< 0.0010	38.9	8.85	8.15	0.0048		0.589		0.012	1.61	< 0.010	1.87	1.77
3/14/2022	E321811	F2_ECIN	< 0.010	< 0.010	0.00106	0.00128	1.08	1.04	17.8	< 0.0050	< 0.0050	0.0179	76.5	7.4	7.78	0.0196		3.13		0.035	155	< 0.010	204	203
3/14/2022	310168	EV_MC2A	< 0.010	< 0.010	0.00150	0.00156	1.98	2.30	0.453	< 0.0010	0.0054	< 0.0010	117	8.3	8.19	0.0028		0.870		0.066	5.43	< 0.010	6.35	6.14
3/14/2022	E321791	F2_NWPI	< 0.010	< 0.010	0.0108	0.0115	112	116	26.3	0.0846	0.214	< 0.0010	9.7	7.29	7.79	0.0034		7.24		3.03	146	< 0.010	170	180

		Parameter	MeSe(IV) – methylselenic acid CH3SeO2H	Methaneselenonic Acid	Molybdenum	Molybdenum	Nickel	Nickel	Nitrate Nitrogen (NO3), As N	Nitrite Nitrogen (NO2), As N	Nitrogen, Ammonia (As N)	Ortho-Phosphate	OXIDATION-REDUCTION POTENTIAL, FIELD	pH, Field	pH, LAB	Phosphorus	Phosphorus	Potassium	Potassium	Se(IV) – selenite SeO3(-2)	Se(VI) – selenate SeO4(-2)	SeCN – selenocyanate SeCN(-1)	Selenium	Selenium
		Fraction	D	D	D	T	D	T	N	N	T	D	N	N	N	T	T	T	T	D	D	D	D	T
		Unit	ug/l	ug/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mv	ph units	ph units	mg/l	ppm	mg/l	ppm	ug/l	ug/l	ug/l	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
3/14/2022	200393	EV_ER1			0.00140	0.00135	0.68	0.80	2.74	0.0012	< 0.0050	< 0.0010	16.9	8.44	8.10	0.0022		0.793					13.7	14.4
3/14/2022	E300091	EV_MC2	< 0.010	< 0.010	0.00164	0.00163	2.07	2.36	1.30	0.0010	< 0.0050	< 0.0010	104	8.17	8.04	0.0028		1.11		0.076	12.3	< 0.010	14.2	15.0
3/14/2022	E321814	EV_ECOUT	< 0.010	< 0.010	0.0140	0.0148	38.7	41.2	10.3	0.0155	0.0655	0.0050	106	7.54	7.78	0.0065		4.18		1.10	35.7	< 0.010	44.6	44.1
3/14/2022	E321812	F2_BPO												7.38										
3/15/2022	E321812	F2_BPO			0.0199	0.0208	48.9	49.9	1.11	0.0143	0.142	< 0.0010	59.9	7.7	7.83	0.0041		4.39					5.99	5.90
3/15/2022	E321812	F2_BPO											34.6	7.39										
3/15/2022	E321811	F2_ECIN			0.00103	0.00111	0.77	0.92	18.2	< 0.0050	< 0.0050	0.0216	87	7.61	7.81	0.0215		2.89					193	192
3/15/2022	E321791	F2_NWPI			0.0101	0.0105	109	106	27.0	0.0885	0.203	< 0.0010	66.7	7.39	7.74	0.0028		6.59					188	179
3/15/2022	E300091	EV_MC2			0.00159	0.00157	2.28	2.31	1.02	0.0011	0.0148	< 0.0010	123.6	8.19	8.21	0.0035		0.963					10.9	10.2
3/15/2022	E102685	EV_BC1	0.023	< 0.010	0.0103	0.0122	23.4	27.4	19.4	0.0540	0.167	< 0.0010	104	7.91	8.01	0.0078		6.15		0.529	159	< 0.010	174	216
3/15/2022	E206231	EV_GT1	0.037	< 0.010	0.00936	0.0119	16.3	21.6	12.5	0.0204	0.120	0.0046	81.4	8.47	8.19	0.0166		5.23		0.689	124	< 0.010	145	176
3/15/2022	E321812	F2_BPO												7.49										
3/16/2022	E321811	F2_ECIN							17.1	< 0.0050	< 0.0050	0.0203	63	7.37	7.87	0.0203								
3/16/2022	E321791	F2_NWPI							25.6	0.0841	0.200	< 0.0010	70.5	7.28	7.79	0.0024								
3/16/2022	E321812	F2_BPO											123.1	7.25										
3/16/2022	0200203	EV_MC3			0.000721	0.000706	< 0.50	< 0.50	0.110	< 0.0010	< 0.0050	< 0.0010	162.1	8.33	8.18	0.0045		0.593					1.91	1.89
3/16/2022	E321812	F2_BPO							0.528	0.0155	0.140	< 0.0010	238.8	7.43	7.87	0.0028								4.86
3/16/2022	E206231	EV_GT1			0.00878	0.00934	13.6	16.4	11.6	0.0238	0.136	0.0040	172.7	8.33	8.21	0.0229		4.50					172	160
3/16/2022	E102685	EV_BC1			0.0113	0.0112	21.6	23.3	16.7	0.0410	0.173	< 0.0010	163.3	8.11	8.09	0.0126		5.33					186	175
3/16/2022	E300091	EV_MC2			0.00161	0.00178	1.86	1.92	0.930	< 0.0010	< 0.0050	< 0.0010	121.6	8.2	8.13	0.0027		1.04					10.8	10.1
3/16/2022	E321812	F2_BPO												7.4										
3/17/2022	E321811	F2_ECIN			0.00106		0.69		17.0	< 0.0050	< 0.0050	0.0207	48.4	9.06	7.95	0.0207							189	
3/17/2022	E321791	F2_NWPI			0.0106		116		25.4	0.0909	0.204	< 0.0010	25.8	8.03	7.82	0.0031							176	
3/17/2022	E321812	F2_BPO			0.0152		53.6		0.522	0.0232	0.144	< 0.0010	83.3	7.41	7.92	0.0048							5.75	5.25
3/17/2022	E321812	F2_BPO											83.3	7.41										
3/17/2022	200393	EV_ER1			0.00136	0.00141	< 0.50	0.52	2.52	0.0011	< 0.0050	< 0.0010	160.1	8.34	8.29	0.0027		0.769					13.5	13.4
3/17/2022	0200097	EV_EC1			0.0149	0.0152	29.7	31.8	4.25	< 0.0050	< 0.0050	< 0.0010	211.4	8.13	8.22	0.0020		4.49					45.3	41.2
3/17/2022	E321812	F2_BPO											63.5	7.48										
3/18/2022	E321811	F2_ECIN							17.7	0.0164	< 0.0050	0.0190	89.8	7.32	7.97	0.0194								
3/18/2022	E321791	F2_NWPI							25.9	0.0838	0.188	< 0.0010	41.7	7.29	7.91	0.0023								
3/18/2022	E321812	F2_BPO							0.603	0.0270	0.132	< 0.0010	92	7.37	8.00	< 0.0020								5.51
3/18/2022	E321812	F2_BPO											82.1	7.33										
3/18/2022	E321812	F2_BPO											74.4	7.46										
3/19/2022	E321811	F2_ECIN							18.4	< 0.0050	< 0.0050	0.0201	82.5	7.33	7.79	0.0215								
3/19/2022	E321791	F2_NWPI							27.6	0.101	0.203	< 0.0010	56.2	7.24	7.75	0.0036								
3/19/2022	E321812	F2_BPO							0.587	0.0213	0.139	< 0.0010	130.5	7.34	7.76	0.0026								5.78
3/19/2022	E321812	F2_BPO											64	7.29										
3/19/2022	E321812	F2_BPO											85.7	7.46										
3/20/2022	E321811	F2_ECIN			0.00111		0.89		18.7	< 0.0050	< 0.0050	0.0221	77.2	7.24	8.21	0.0225							181	
3/20/2022	E321791	F2_NWPI			0.0105		114		28.1	0.105	0.193	< 0.0010	39.2	7.15	8.08	0.0038							181	
3/20/2022	E321812	F2_BPO			0.0177		47.9		0.553	0.0197	0.136	0.0019	87.2	7.28	8.19	0.0057							4.84	4.79
3/20/2022	E321812	F2_BPO											108.2	7.3										
3/20/2022	E321812	F2_BPO											82.3	7.41										
3/21/2022	E321812	F2_BPO			0.0173	0.0191	47.5	54.5	0.492	0.0216	0.136	< 0.0010	158.9	7.33	7.98	0.0049		5.28					4.70	5.23
3/21/2022	E321811	F2_ECIN	< 0.010	< 0.010	0.00105	0.00116	0.91	1.01	17.8	0.0125	< 0.0050	0.0211	58	7.39	7.92	0.0231		3.07		0.024	158	< 0.010	164	200
3/21/2022	E321791	F2_NWPI	< 0.010	< 0.010	0.0103	0.0112	109	118	27.0	0.0915	0.195	< 0.0010	7	7.25	7.86	0.0036		7.19		2.56	156	< 0.010	160	190
3/21/2022	0200097	EV_EC1			0.0158	0.0150	30.0	29.4	3.25	< 0.0050	< 0.0050	< 0.0010	23.6	9.12	8.29	0.0027		4.32					38.9	34.2
3/21/2022	E321812	F2_BPO											93.9	7.37										

		Parameter	MeSe(IV) – methylselenic acid CH3SeO2H	Methaneselenonic Acid	Molybdenum	Molybdenum	Nickel	Nickel	Nitrate Nitrogen (NO3), As N	Nitrite Nitrogen (NO2), As N	Nitrogen, Ammonia (As N)	Ortho-Phosphate	OXIDATION-REDUCTION POTENTIAL, FIELD	pH, Field	pH, LAB	Phosphorus	Phosphorus	Potassium	Potassium	Se(IV) – selenite SeO3(-2)	Se(VI) – selenate SeO4(-2)	SeCN – selenocyanate SeCN(-1)	Selenium	Selenium
		Fraction	D	D	D	T	D	T	N	N	T	D	N	N	N	T	T	T	T	D	D	D	D	T
		Unit	ug/l	ug/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mv	ph units	ph units	mg/l	ppm	mg/l	ppm	ug/l	ug/l	ug/l	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
3/21/2022	0200203	EV_MC3			0.000775	0.000700	< 0.50	0.51	0.0535	0.0024	< 0.0050	< 0.0010	128.2	8.11	8.34	0.0039		0.601					2.08	1.96
3/21/2022	310168	EV_MC2A			0.00180	0.00168	2.05	2.08	0.261	0.0028	0.0080	< 0.0010	69.7	8.84	8.38	0.0038		0.874					4.84	4.78
3/21/2022	E321814	EV_ECOUT			0.0133	0.0134	36.1	36.6	6.00	0.0139	0.0596	0.0047	167.7	7.66	8.13	0.0080		4.30					70.2	61.2
3/21/2022	200393	EV_ER1			0.00141	0.00137	0.64	0.75	2.69	0.0044	< 0.0050	< 0.0010	61.6	8.55	8.34	0.0024		0.799					14.0	14.0
3/21/2022	E300091	EV_MC2			0.00168	0.00174	1.99	2.07	0.942	0.0036	< 0.0050	< 0.0010	716.1	7.89	8.31	0.0026		1.07					11.5	11.3
3/21/2022	E321812	F2_BPO											79.1	7.48										
3/22/2022	E321812	F2_BPO			0.0177		47.9		0.489	0.0178	0.136	0.0019	230.5	7.5	8.19	0.0057							4.84	4.79
3/22/2022	E321811	F2_ECIN			0.00111		0.89		17.9	0.0069	< 0.0050	0.0221	52.4	7.43	8.21	0.0225							181	
3/22/2022	E321791	F2_NWPI			0.0105		114		27.3	0.104	0.193	< 0.0010	32.2	7.18	8.08	0.0038							181	
3/22/2022	0200097	EV_EC1																						
3/22/2022	E321812	F2_BPO											170.4	7.2										
3/22/2022	E102685	EV_BC1			0.0109	0.0109	21.5	22.7	16.9	0.0496	0.132	< 0.0010	80.4	7.74	8.27	0.0034		5.66					160	151
3/22/2022	E206231	EV_GT1			0.00797	0.00791	11.6	11.9	11.1	0.0164	0.0996	0.0073	77.2	8.27	8.33	0.0159		3.82					178	157
3/22/2022	0200203	EV_MC3			0.000737	0.000720	< 0.50	< 0.50	0.0525	< 0.0010	< 0.0050	0.0011	152.6	8.43	8.30	0.0043		0.638					2.24	1.86
3/22/2022	E206231	EV_GT1																						
3/22/2022	E102685	EV_BC1																						
3/22/2022	E300091	EV_MC2			0.00171	0.00168	1.88	2.28	0.983	0.0023	0.0054	< 0.0010	130.5	8.31	8.23	0.0086		1.19					12.6	11.6
3/22/2022	200393	EV_ER1			0.00136	0.00137	0.62	0.81	2.76	0.0029	< 0.0050	0.0010	131.3	8.27	8.29	0.0047		0.879					14.8	13.7
3/22/2022	E321812	F2_BPO											-0.4	7.36										
3/23/2022	E321811	F2_ECIN							18.3	< 0.0050	< 0.0050	0.0211	113.7	7.22	7.71	0.0222								
3/23/2022	E321791	F2_NWPI							27.6	0.0986	0.197	< 0.0010	98.7	7.14	7.66	0.0028								
3/23/2022	E321812	F2_BPO							0.518	0.0143	0.136	< 0.0010	181.5	7.33	7.66	0.0044								5.13
3/23/2022	E321812	F2_BPO											149.1	7.25										
3/23/2022	E321812	F2_BPO											35.9	7.37										
3/24/2022	E321812	F2_BPO											59.9	7.39										
3/24/2022	E321812	F2_BPO			0.0146		46.4		0.510	0.0121	0.143	0.0026	108.3	7.51	7.97	0.0053							5.24	5.50
3/24/2022	E321811	F2_ECIN			0.00110		0.93		19.4	< 0.0050	< 0.0050	0.0196	102.7	7.89	7.97	0.0228							194	
3/24/2022	E321791	F2_NWPI			0.0108		115		29.2	0.100	0.214	< 0.0010	59.9	7.41	7.89	0.0047							188	
3/24/2022	E321812	F2_BPO											69.1	7.49										
3/25/2022	E321811	F2_ECIN							17.9	< 0.0050	< 0.0050	0.0221	75.2	8	7.78	0.0216								
3/25/2022	E321791	F2_NWPI							26.8	0.0941	0.218	< 0.0010	657.5	7.21	7.72	0.0036								
3/25/2022	E321812	F2_BPO	0.021	< 0.010					0.660	< 0.0050	0.150	0.0075	96.5	7.46	7.90	0.0074				1.51	2.22	0.015		4.34
3/25/2022	E321812	F2_BPO											197.1	7.35										
3/26/2022	E321811	F2_ECIN							18.6	< 0.0050	< 0.0050	0.0187	88.9	7.55	8.09	0.0233								
3/26/2022	E321791	F2_NWPI							28.6	0.105	0.209	< 0.0010	79.2	7.37	8.06	0.0039								
3/26/2022	E321812	F2_BPO							0.428	< 0.0050	0.135	< 0.0010	188.8	7.41	8.18	0.0052								4.31
3/26/2022	E321812	F2_BPO											188.8	7.41										
3/26/2022	E321812	F2_BPO												7.44										
3/28/2022	0200097	EV_EC1							16.9	< 0.0050	< 0.0050	0.0010			8.23	0.0110								171
3/28/2022	0200203	EV_MC3	< 0.010	< 0.010	0.000715	0.000727	< 0.50	0.75	0.133	< 0.0010	< 0.0050	< 0.0010	49.2	9.05	8.20	0.0087		0.695		0.013	1.70	< 0.010	1.73	1.86
3/28/2022	E321814	EV_ECOUT	< 0.010	< 0.010	0.00104	0.00110	0.87	0.92	18.1	< 0.0050	< 0.0050	0.0222	110.6	7.53	8.09	0.0221		2.98		0.056	158	< 0.010	182	174
3/28/2022	E321812	F2_BPO											151.8	7.4										
3/28/2022	200393	EV_ER1			0.00117	0.00122	0.59	0.72	2.80	0.0018	< 0.0050	< 0.0010	71.5	8.31	8.24	0.0066		0.855					14.8	14.2
3/28/2022	E321812	F2_BPO	0.030	< 0.010	0.00416	0.00432	47.8	49.1	0.412	0.0066	0.130	< 0.0010	158.7	7.59	8.05	0.0050		4.69		1.31	1.87	0.014	4.19	4.05
3/28/2022	310168	EV_MC2A	< 0.010	< 0.010	0.000879	0.000901	1.14	1.44	0.736	0.0012	0.0116	< 0.0010	87.2	8.25	8.28	0.0081		0.884		0.053	8.59	< 0.010	9.09	9.25
3/28/2022	E300091	EV_MC2	< 0.010	< 0.010	0.000883	0.000983	1.90	1.51	1.12	0.0016	< 0.0050	< 0.0010	65.6	8.21	8.23	0.0058		1.00		0.050	12.1	< 0.010	12.7	13.1
3/28/2022	E300091	EV_MC2							1.21	0.0011	< 0.0050	< 0.0010			8.25	0.0086								13.6
3/28/2022	E321791	F2_NWPI							28.2	0.0845	0.190	< 0.0010	86.8	7.38	7.79	0.0032								

		Parameter	MeSe(IV) – methylselenic acid CH3SeO2H	Methaneselenonic Acid	Molybdenum	Molybdenum	Nickel	Nickel	Nitrate Nitrogen (NO3), As N	Nitrite Nitrogen (NO2), As N	Nitrogen, Ammonia (As N)	Ortho-Phosphate	OXIDATION-REDUCTION POTENTIAL, FIELD	pH, Field	pH, LAB	Phosphorus	Phosphorus	Potassium	Potassium	Se(IV) – selenite SeO3(-2)	Se(VI) – selenate SeO4(-2)	SeCN – selenocyanate SeCN(-1)	Selenium	Selenium
		Fraction	D	D	D	T	D	T	N	N	T	D	N	N	N	T	T	T	T	D	D	D	D	T
		Unit	ug/l	ug/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mv	ph units	ph units	mg/l	ppm	mg/l	ppm	ug/l	ug/l	ug/l	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
3/28/2022	E321811	F2_ECIN							19.2	< 0.0050	< 0.0050	0.0226	118.1	7.7	8.11	0.0211								
3/28/2022	0200097	EV_EC1	0.015	< 0.010	0.00230	0.00248	16.9	17.2	16.5	< 0.0050	< 0.0050	0.0013	17.3	8.88	8.22	< 0.0020		3.08		0.506	151	< 0.010	168	163
3/29/2022	E321812	F2_BPO											215.6	7.59										
3/29/2022	E102685	EV_BC1	0.039	< 0.010	0.0110	0.0115	22.1	23.1	15.3	0.0410	0.0594	< 0.0010	42.9	7.99	8.08	0.0030		5.84		0.609	136	< 0.010	156	160
3/29/2022	E321812	F2_BPO			0.0149		48.2		0.392	0.0064	0.114	< 0.0010	15.9	7.76	8.08	0.0054							3.82	4.38
3/29/2022	E206231	EV_GT1	0.037	< 0.010	0.00654	0.00680	5.40	8.54	7.87	0.0058	0.0241	0.0144	28	8.92	8.30	0.0582		3.21		0.750	135	< 0.010	150	154
3/29/2022	E206231	EV_GT1																						
3/29/2022	0200203	EV_MC3			0.000730	0.000853	0.53	2.41	0.145	0.0010	< 0.0050	< 0.0010	200.4	8.23	8.08	0.0436		1.25					1.89	1.91
3/29/2022	E300091	EV_MC2			0.000938	0.000968	1.18	1.66	1.13	< 0.0010	0.0052	0.0025	148	8.07	7.98	0.0140		1.07					11.7	12.1
3/29/2022	E206231	EV_GT1																						
3/29/2022	E321811	F2_ECIN			0.00111	0.00112	0.97	1.01	17.7	< 0.0050	< 0.0050	0.0129	66	7.69	7.87	0.0174		3.18					178	196
3/29/2022	E321791	F2_NWPI			0.0106	0.0103	117	114	27.3	0.0883	0.207	< 0.0010	58.2	7.39	7.84	0.0044		7.07					179	170
3/29/2022	E102685	EV_BC1																						
3/29/2022	200393	EV_ER1			0.00120	0.00132	0.63	0.94	2.78	0.0014	< 0.0050	< 0.0010	90.3	8.34	8.16	0.0126		0.952					14.6	14.8
3/29/2022	E321812	F2_BPO											84.9	7.67										
3/30/2022	E321812	F2_BPO							0.359	< 0.0050	0.130	< 0.0010	93.5	7.43	7.94	0.0033								3.73
3/30/2022	E321811	F2_ECIN							17.7	< 0.0050	< 0.0050	0.0210	88.7	8.18	7.91	0.0198								
3/30/2022	E321791	F2_NWPI							27.8	0.0982	0.201	< 0.0010	77.2	7.83	7.79	0.0034								
3/30/2022	E321812	F2_BPO											205.5	7.43										
3/30/2022	0200097	EV_EC1																						
3/30/2022	E321812	F2_BPO												7.5										
3/31/2022	E321811	F2_ECIN			0.00116		0.87		17.5	< 0.0050	< 0.0050	0.0222	62.3	7.44	8.03	0.0203							202	
3/31/2022	E321791	F2_NWPI			0.0107		110		28.2	0.0827	0.179	< 0.0010	45.6	7.32	7.96	0.0027							194	
3/31/2022	E321812	F2_BPO			0.0155		48.3		0.399	0.0077	0.130	< 0.0010	228	7.58	8.11	0.0030							3.95	3.30
3/31/2022	E321812	F2_BPO											228	7.58										
3/31/2022	E321812	F2_BPO											181	7.39										
4/1/2022	E321811	F2_ECIN							17.2	< 0.0050	< 0.0050	0.0174	66	7.48	7.76	0.0185								
4/1/2022	E321791	F2_NWPI							24.9	0.0863	0.239	< 0.0010	74.8	7.38	7.68	0.0039								
4/1/2022	E321812	F2_BPO							0.379	0.0065	0.133	< 0.0010	211.5	7.54	7.96	0.0060								3.11
4/1/2022	E321812	F2_BPO											92.1	7.56										
4/2/2022	E321811	F2_ECIN							17.9	< 0.0050	< 0.0050	0.0202	55.8	7.58	7.83	0.0194								
4/2/2022	E321791	F2_NWPI							27.3	0.0958	0.196	< 0.0010	66.5	7.44	7.79	0.0027								
4/2/2022	E321812	F2_BPO							0.397	< 0.0050	0.134	< 0.0010	73.5	7.58	8.01	0.0049								3.38
4/2/2022	E321812	F2_BPO											159	7.44										
4/2/2022	E321812	F2_BPO											77	7.53										
4/3/2022	E321811	F2_ECIN							18.1	< 0.0050	< 0.0050	0.0189	31.6	7.49	7.76	0.0208								
4/3/2022	E321791	F2_NWPI							27.3	0.0980	0.192	< 0.0010	19	7.35	7.73	0.0024								
4/3/2022	E321812	F2_BPO							0.411	0.0063	0.136	< 0.0010	124.5	7.48	7.89	0.0032								3.91
4/3/2022	E321812	F2_BPO											127.5	7.38										
4/3/2022	E321812	F2_BPO											99.1	7.52										
4/4/2022	E321812	F2_BPO	< 0.010	< 0.010	0.0254	0.0153	52.2	54.1	0.436	0.0062	0.140	< 0.0010	177.2	7.45	7.85	0.0055		4.69		1.13	2.04	< 0.010	4.05	3.90
4/4/2022	0200097	EV_EC1			0.0101	0.0120	19.3	25.0	7.38	< 0.0050	< 0.0050	0.0020	-17.5	8.87	8.14	0.0039		4.78					83.6	107
4/4/2022	E321812	F2_BPO											125.6	7.36										
4/4/2022	0200203	EV_MC3			0.000704	0.000834	0.54	0.95	0.134	< 0.0010	< 0.0050	0.0018	53.8	8.4	7.56	0.0106		0.816					1.88	2.30
4/4/2022	310168	EV_MC2A			0.00114	0.00115	1.15	1.57	0.452	< 0.0010	0.0053	< 0.0010	41.9	8.28	7.60	0.0076		0.911					6.36	7.18
4/4/2022	E321811	F2_ECIN	< 0.010	< 0.010	0.00100	0.00104	0.80	0.84	17.9	< 0.0050	< 0.0050	0.0219	145.7	7.43	7.81	0.0199		2.49		0.023	158	< 0.010	157	161
4/4/2022	E321791	F2_NWPI	< 0.010	< 0.010	0.0109	0.0120	111	127	27.0	0.0847	0.178	< 0.0010	43.2	7.33	7.70	0.0057		8.23		2.91	148	< 0.010	178	200
4/4/2022	200393	EV_ER1			0.00131	0.00131	0.66	0.78	3.07	0.0020	< 0.0050	0.0011	24.3	8.5	7.64	0.0061		0.856					15.1	17.9

		Parameter	MeSe(IV) – methylselenic acid CH3SeO2H	Methaneselenonic Acid	Molybdenum	Molybdenum	Nickel	Nickel	Nitrate Nitrogen (NO3), As N	Nitrite Nitrogen (NO2), As N	Nitrogen, Ammonia (As N)	Ortho-Phosphate	OXIDATION-REDUCTION POTENTIAL, FIELD	pH, Field	pH, LAB	Phosphorus	Phosphorus	Potassium	Potassium	Se(IV) – selenite SeO3(-2)	Se(VI) – selenate SeO4(-2)	SeCN – selenocyanate SeCN(-1)	Selenium	Selenium
		Fraction	D	D	D	T	D	T	N	N	T	D	N	N	N	T	T	T	T	D	D	D	D	T
		Unit	ug/l	ug/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mv	ph units	ph units	mg/l	ppm	mg/l	ppm	ug/l	ug/l	ug/l	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
4/4/2022	E321814	EV_ECOUT			0.00401	0.00442	9.11	11.1	14.8	< 0.0050	0.0090	0.0169	161.2	7.59	7.88	0.0187		3.52					143	182
4/4/2022	E300091	EV_MC2			0.00124	0.00128	1.24	1.66	0.810	0.0012	< 0.0050	< 0.0010	55.9	8.23	7.62	0.0071		0.932					10.5	10.6
4/4/2022	E321812	F2_BPO											82.1	7.53										
4/5/2022	E321791	F2_NWPI			0.0105		116		30.9	0.116	0.250	0.0014	2.5	7.62	7.95	0.0036							162	
4/5/2022	E321811	F2_ECIN			0.000999		0.88		20.8	< 0.0050	< 0.0050	0.0226	30.2	7.61	8.04	0.0239							188	
4/5/2022	E206231	EV_GT1			0.00883	0.00929	14.3	14.4	11.5	0.0137	0.104	0.0097	56.6	8.49	8.36	0.0142		3.83					190	163
4/5/2022	E102685	EV_BC1			0.0108	0.0112	22.8	22.6	19.4	0.0569	0.0680	< 0.0010	72.5	8.06	8.09	0.0036		5.34					181	178
4/5/2022	E321812	F2_BPO			0.0172		58.2		0.496	0.0213	0.133	< 0.0010	74.9	7.5	8.04	0.0044							4.38	4.26
4/5/2022	0200203	EV_MC3			0.000686	0.000715	< 0.50	0.91	0.145	< 0.0010	< 0.0050	< 0.0010	178.7	8.18	8.26	0.0121		0.689					1.77	1.96
4/5/2022	E321812	F2_BPO											162	7.39										
4/5/2022	E206231	EV_GT1																						
4/5/2022	E102685	EV_BC1																						
4/5/2022	E300091	EV_MC2			0.00119	0.00116	1.36	1.59	1.50	0.0011	< 0.0050	< 0.0010	123.8	8.05	8.15	0.0062		1.07					11.4	15.2
4/5/2022	200393	EV_ER1			0.00124	0.00134	0.64	0.84	3.20	0.0013	< 0.0050	< 0.0010	168.1	8.29	8.32	0.0049		0.866					15.3	16.9
4/5/2022	E321812	F2_BPO											42.4	7.59										
4/6/2022	E321811	F2_ECIN							18.3	< 0.0050	< 0.0050	0.0184	26.2	8.08	7.74	0.0165								
4/6/2022	E321791	F2_NWPI							27.5	0.0914	0.187	< 0.0010	9.8	7.61	7.68	0.0023								
4/6/2022	E321812	F2_BPO							0.508	< 0.0050	0.138	< 0.0010	165.9	7.59	7.92	0.0028								4.58
4/6/2022	E321812	F2_BPO											124.1	7.52										
4/6/2022	0200097	EV_EC1																						
4/6/2022	E321812	F2_BPO											84.8	7.55										
4/7/2022	E321811	F2_ECIN			0.00104		1.02		17.8	< 0.0050	< 0.0050	0.0197	74.2	7.41	7.84	0.0216							193	
4/7/2022	E321791	F2_NWPI			0.0105		118		27.0	0.0835	0.230	< 0.0010	71.7	7.35	7.75	< 0.0020							189	
4/7/2022	E321812	F2_BPO											110.3	7.51										
4/7/2022	E321812	F2_BPO			0.0146		52.5		0.424	< 0.0050	0.146	< 0.0010	179.7	7.58	7.98	0.0024							4.89	3.90
4/7/2022	E321812	F2_BPO											97.6	7.47										
4/8/2022	E321811	F2_ECIN							17.8	< 0.0050	< 0.0050	0.0164	83.6	7.54	7.98	0.0236								
4/8/2022	E321791	F2_NWPI							26.8	0.103	0.209	< 0.0010	53	7.38	7.79	0.0024								
4/8/2022	E321812	F2_BPO							0.571	< 0.0050	0.137	< 0.0010	202.6	7.43	8.06	0.0046								3.86
4/8/2022	E321812	F2_BPO											31.4	7.64										
4/9/2022	E321811	F2_ECIN							18.2	< 0.0050	< 0.0050	0.0218	20.2	7.61	8.04	0.0220								
4/9/2022	E321791	F2_NWPI							27.8	0.107	0.226	0.0013	15.1	7.58	7.91	0.0029								
4/9/2022	E321812	F2_BPO							0.456	< 0.0050	0.138	< 0.0010	78.6	7.54	8.08	0.0037								4.28
4/9/2022	E321812	F2_BPO											25.8	7.63										
4/10/2022	E300091	EV_MC2							1.24	< 0.0010	0.0053	0.0010	79.8	8.24	8.20	0.0035								13.2
4/10/2022	0200097	EV_EC1							16.5	< 0.0050	< 0.0050	< 0.0010	62.1	8.89	8.25	0.0024								142
4/10/2022	E321791	F2_NWPI							27.3	0.107	0.224	< 0.0010	25.6	7.79	7.85	0.0024								
4/10/2022	E321812	F2_BPO							0.431	< 0.0050	0.133	0.0013	45	8.11	8.11	0.0029								4.60
4/10/2022	E321812	F2_BPO											43.2	7.61										
4/11/2022	E321791	F2_NWPI	< 0.010	< 0.010	0.0105	0.0108	119	128	28.5	0.0983	0.199	< 0.0010	12.6	7.57	7.95	0.0056		6.94		3.30	157	< 0.010	176	174
4/11/2022	E321812	F2_BPO	0.026	< 0.010	0.0245	0.0246	49.1	52.2	0.391	< 0.0050	0.125	< 0.0010	203.4	7.72	8.22	0.0043		4.46		1.11	2.21	< 0.010	3.91	4.23
4/11/2022	E321812	F2_BPO											203.4	7.72										
4/11/2022	E300091	EV_MC2	< 0.010	< 0.010	0.00100	0.00100	1.42	1.58	1.20	< 0.0010	< 0.0050	< 0.0010	-25.5	8.32	8.17	0.0052		0.952		0.044	12.4	< 0.010	12.3	14.3
4/11/2022	E300091	EV_MC2							1.23	0.0020	0.0077	< 0.0010			7.82	0.0049								13.7
4/11/2022	310168	EV_MC2A	< 0.010	< 0.010	0.000852	0.000784	1.06	1.13	0.779	< 0.0010	0.0067	< 0.0010	25.9	8.54	8.18	0.0033		0.796		0.032	8.66	< 0.010	8.64	10.2
4/11/2022	0200097	EV_EC1	< 0.010	< 0.010	0.00227	0.00224	12.7	13.0	16.2	< 0.0050	< 0.0050	< 0.0010	28	8.28	8.19	0.0020		2.92		0.350	145	< 0.010	170	177
4/11/2022	0200097	EV_EC1							16.5	< 0.0050	< 0.0050	< 0.0010			8.29	< 0.0020								172
4/11/2022	0200203	EV_MC3	< 0.010	< 0.010	0.000690	0.000641	0.54	0.54	0.118	< 0.0010	< 0.0050	< 0.0010	51.7	9.01	8.12	0.0065		0.672		0.015	1.56	< 0.010	1.56	1.81

		Parameter	MeSe(IV) – methylselenic acid CH3SeO2H	Methaneselenonic Acid	Molybdenum	Molybdenum	Nickel	Nickel	Nitrate Nitrogen (NO3), As N	Nitrite Nitrogen (NO2), As N	Nitrogen, Ammonia (As N)	Ortho-Phosphate	OXIDATION-REDUCTION POTENTIAL, FIELD	pH, Field	pH, LAB	Phosphorus	Phosphorus	Potassium	Potassium	Se(IV) – selenite SeO3(-2)	Se(VI) – selenate SeO4(-2)	SeCN – selenocyanate SeCN(-1)	Selenium	Selenium
		Fraction	D	D	D	T	D	T	N	N	T	D	N	N	N	T	T	T	T	D	D	D	D	T
		Unit	ug/l	ug/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mv	ph units	ph units	mg/l	ppm	mg/l	ppm	ug/l	ug/l	ug/l	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
4/11/2022	200393	EV_ER1			0.00121	0.00126	0.71	0.71	3.29	0.0019	< 0.0050	0.0016	50	8.53	8.22	0.0030		0.856					15.7	18.3
4/11/2022	E321814	EV_ECOUT	< 0.010	< 0.010	0.00111	0.00116	0.88	1.12	18.1	< 0.0050	< 0.0050	0.0152	170	7.52	7.94	0.0161		2.99		0.036	154	< 0.010	183	199
4/11/2022	E321812	F2_BPO												7.82										
4/12/2022	0200097	EV_EC1							17.5	< 0.0050	< 0.0050	0.0017	61.1	9.2	8.05	0.0020								146
4/12/2022	E102685	EV_BC1			0.0113	0.0112	22.1	22.8	16.6	0.0401	0.0402	< 0.0010	162.2	8.08	8.06	0.0024		5.39					165	156
4/12/2022	E206231	EV_GT1	0.034	< 0.010	0.0120	0.0122	19.7	21.0	10.2	0.0142	0.103	0.0060	4.3	9.27	8.31	0.0066		4.63		0.723	119	< 0.010	136	128
4/12/2022	E206231	EV_GT1			0.0116	0.0145	19.4	23.1	10.3	0.0074	0.0953	0.0026	148.2	8.33	8.27	0.0059		5.42					135	157
4/12/2022	E321812	F2_BPO			0.0193		47.4		0.347	< 0.0050	0.130	< 0.0010	220.7	7.82	8.23	0.0033							3.83	4.44
4/12/2022	E321812	F2_BPO											200.7	7.82										
4/12/2022	E300091	EV_MC2							1.34	< 0.0010	< 0.0050	0.0011	21	8.76	8.06	0.0047								14.7
4/12/2022	E102685	EV_BC1	0.055	< 0.010	0.0115	0.0114	21.1	21.8	16.6	0.0528	0.0392	< 0.0010	81.4	8.2	8.11	0.0029		5.47		0.629	143	0.021	145	162
4/12/2022	E300091	EV_MC2			0.000997	0.00113	1.32	1.46	1.37	0.0013	< 0.0050	< 0.0010	180.8	8.16	8.30	0.0056		1.04					15.6	17.3
4/12/2022	E321812	F2_BPO												7.92										
4/12/2022	E321791	F2_NWPI			0.0112		126		27.5	0.123	0.280	< 0.0010	17.9	7.95	7.86	0.0024							160	
4/13/2022	E300091	EV_MC2							1.76	< 0.0010	< 0.0050	< 0.0010	137.3	7.35	7.63	0.0037								15.5
4/13/2022	0200097	EV_EC1							16.5	< 0.0050	< 0.0050	< 0.0010	108.4	8.14	8.10	0.0021								186
4/13/2022	E321791	F2_NWPI							28.2	0.103	0.225	0.0011	36.5	8.41	7.69	0.0021								
4/13/2022	E321812	F2_BPO							0.292	< 0.0050	0.123	0.0014	22.7	7.81	7.56	0.0071								4.22
4/13/2022	E321812	F2_BPO											213.9	7.55										
4/13/2022	0200097	EV_EC1			0.00172	0.00191	10.4	11.4	16.3	< 0.0050	< 0.0050	0.0013	196.5	8.14	8.21	0.0031		3.04					172	172
4/13/2022	0200203	EV_MC3			0.000727	0.000767	0.54	0.75	0.100	< 0.0010	< 0.0050	< 0.0010	177.5	8.33	8.26	0.0022		0.712					1.82	1.85
4/13/2022	200393	EV_ER1			0.00128	0.00136	0.70	0.76	3.48	0.0025	0.0094	< 0.0010	192.4	8.31	8.31	0.0035		0.863					16.9	19.1
4/13/2022	E321812	F2_BPO											144.4	7.78										
4/14/2022	E321791	F2_NWPI			0.0116		122		27.4	0.124	0.290	< 0.0010	21.7	7.56	7.94	< 0.0020							177	
4/14/2022	E300091	EV_MC2							1.35	< 0.0010	< 0.0050	< 0.0010	55.5	8.28	8.18	0.0028								14.4
4/14/2022	0200097	EV_EC1							15.7	< 0.0050	< 0.0050	0.0013	71.8	8.14	8.20	0.0030								143
4/14/2022	E321812	F2_BPO			0.0148		40.0		0.277	0.0080	0.134	< 0.0010	22.4	7.77	8.20	0.0050							4.43	4.30
4/14/2022	E321812	F2_BPO											86	7.69										
4/14/2022	E321812	F2_BPO												7.78										
4/15/2022	E321791	F2_NWPI							28.1	0.125	0.288	< 0.0010	43.6	7.76	7.70	0.0025								
4/15/2022	E300091	EV_MC2							1.36	< 0.0010	< 0.0050	< 0.0010	7.4	9.12	8.23	0.0044								13.4
4/15/2022	0200097	EV_EC1							16.1	< 0.0050	< 0.0050	< 0.0010	100	8.25	8.20	0.0032								140
4/15/2022	E321812	F2_BPO							0.274	0.0071	0.134	< 0.0010	-20	7.78	8.02	0.0041								3.79
4/15/2022	E321812	F2_BPO											-20	7.78										
4/15/2022	E321812	F2_BPO											-27	7.87										
4/16/2022	0200097	EV_EC1							17.1	< 0.0050	< 0.0050	0.0021	33.7	8.24	8.13	0.0023								161
4/16/2022	E300091	EV_MC2							1.33	0.0010	0.0050	< 0.0010	12.7	9.01	8.16	0.0034								14.8
4/16/2022	E321791	F2_NWPI							27.0	0.137	0.326	< 0.0010	49.3	7.67	7.91	< 0.0020								
4/16/2022	E321812	F2_BPO							0.312	0.0116	0.134	< 0.0010	59.1	8.33	8.20	0.0045								4.87
4/16/2022	E321812	F2_BPO											59.1	8.33										
4/16/2022	E321812	F2_BPO											76.2	7.78										
4/16/2022	E321812	F2_BPO											113.2	7.88										
4/17/2022	E300091	EV_MC2							1.20	0.0011	0.0058	< 0.0010	167.7	8.04	8.19	0.0027								13.0
4/17/2022	E321791	F2_NWPI							27.6	0.139	0.327	< 0.0010	55.9	7.49	7.80	< 0.0020								
4/17/2022	0200097	EV_EC1							16.7	< 0.0050	< 0.0050	0.0017	81.2	8.31	8.21	0.0023								158
4/17/2022	E321812	F2_BPO											38.5	7.81										
4/17/2022	E321812	F2_BPO							0.275	0.0082	0.133	< 0.0010	154.4	7.9	8.12	0.0048								5.00
4/17/2022	E321812	F2_BPO											72.6	7.79										

		Parameter	MeSe(IV) – methylselenic acid CH3SeO2H	Methaneselenonic Acid	Molybdenum	Molybdenum	Nickel	Nickel	Nitrate Nitrogen (NO3), As N	Nitrite Nitrogen (NO2), As N	Nitrogen, Ammonia (As N)	Ortho-Phosphate	OXIDATION-REDUCTION POTENTIAL, FIELD	pH, Field	pH, LAB	Phosphorus	Phosphorus	Potassium	Potassium	Se(IV) – selenite SeO3(-2)	Se(VI) – selenate SeO4(-2)	SeCN – selenocyanate SeCN(-1)	Selenium	Selenium
		Fraction	D	D	D	T	D	T	N	N	T	D	N	N	N	T	T	T	T	D	D	D	D	T
		Unit	ug/l	ug/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mv	ph units	ph units	mg/l	ppm	mg/l	ppm	ug/l	ug/l	ug/l	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
4/18/2022	E321812	F2_BPO	0.028	< 0.010	0.0151	0.0165	35.5	37.2	0.320	0.0212	0.118	< 0.0010	238	7.68	8.09	0.0053		5.01		1.28	3.50	0.014	5.67	6.49
4/18/2022	E321791	F2_NWPI	< 0.010	< 0.010	0.0109	0.0117	128	129	27.7	0.141	0.313	< 0.0010	54.8	7.28	7.75	0.0036		7.34		3.90	143	< 0.010	156	182
4/18/2022	E300091	EV_MC2			0.00104	0.00113	1.62	1.46	1.50	0.0011	0.0052	< 0.0010	157.6	7.98	8.17	0.0044		0.956					14.6	16.6
4/18/2022	E300091	EV_MC2																						15.2
4/18/2022	0200097	EV_EC1			0.00157	0.00158	8.10	8.17	17.2	0.0053	< 0.0050	< 0.0010	234	7.79	8.13	0.0047		2.85					176	192
4/18/2022	0200097	EV_EC1																						158
4/18/2022	0200203	EV_MC3			0.000680	0.000740	0.54	0.61	0.105	0.0012	< 0.0050	< 0.0010	191.9	8.31	8.18	0.0066		0.650					1.69	1.87
4/18/2022	E321814	EV_ECOUT			0.00102	0.00113	0.91	0.94	17.9	0.0050	< 0.0050	0.0203	171.4	7.57	7.98	0.0195		2.91					163	188
4/18/2022	310168	EV_MC2A			0.000765	0.000864	0.91	1.02	1.05	< 0.0010	0.0066	< 0.0010	201.5	8.19	8.22	0.0049		0.831					11.0	12.4
4/18/2022	200393	EV_ER1			0.00122	0.00134	0.59	0.70	3.62	0.0032	< 0.0050	< 0.0010	218.6	8.19	8.23	0.0032		0.838					16.7	18.4
4/18/2022	E321812	F2_BPO											82.2	7.92										
4/19/2022	E300091	EV_MC2							1.54	< 0.0010	< 0.0050	< 0.0010	206.5	7.95	7.71	0.0036								18.2
4/19/2022	0200097	EV_EC1							16.7	< 0.0050	< 0.0050	< 0.0010	225.9	7.88	8.05	0.0025								154
4/19/2022	E206231	EV_GT1			0.0115	0.0136	20.7	22.3	9.79	0.0116	0.107	0.0038	234.2	8.28	8.23	0.0101		4.96					124	126
4/19/2022	E102685	EV_BC1			0.0119	0.0140	23.2	23.8	12.0	0.0375	0.0201	< 0.0010	242.8	7.94	8.09	0.0030		5.64					101	130
4/19/2022	E321812	F2_BPO			0.0160		35.4		0.280	0.0166	0.118	< 0.0010	66.6	7.82	8.07	0.0048							5.21	1.14
4/19/2022	E321812	F2_BPO											66.6	7.82										
4/19/2022	E321791	F2_NWPI			0.0110		127		27.2	0.142	0.390	< 0.0010	125.9	7.26	7.62	0.0020							158	
4/19/2022	E321814	EV_ECOUT			0.00102	0.00114	1.05	0.90	17.5	< 0.0050	< 0.0050	0.0199	156.2	7.87	8.01	0.0229		2.94					176	187
4/19/2022	0200203	EV_MC3			0.000682	0.000765	< 0.50	0.60	0.0427	< 0.0010	0.0069	< 0.0010	136.5	8.26	8.19	0.0072		0.712					1.70	1.88
4/19/2022	E206231	EV_GT1																						
4/19/2022	E102685	EV_BC1																						
4/19/2022	E300091	EV_MC2			0.000947	0.00110	1.19	1.37	1.40	< 0.0010	< 0.0050	< 0.0010	50.7	8.37	8.16	0.0043		1.06					16.2	17.8
4/19/2022	200393	EV_ER1			0.00116	0.00138	0.79	0.72	3.56	0.0027	< 0.0050	< 0.0010	105.3	8.44	8.23	0.0027		0.911					18.3	18.9
4/19/2022	E321812	F2_BPO											60	7.9										
4/20/2022	E300091	EV_MC2							1.53	< 0.0010	0.0052	< 0.0010	148.8	8.04	8.25	0.0029								17.2
4/20/2022	0200097	EV_EC1							17.3	< 0.0050	< 0.0050	0.0019	172.8	7.96	8.22	0.0020								163
4/20/2022	E321791	F2_NWPI							27.9	0.138	0.319	< 0.0010	67.7	7.38	7.78	0.0025								
4/20/2022	E321812	F2_BPO							0.281	0.0165	0.125	< 0.0010	107.9	7.86	8.07	0.0049								5.07
4/20/2022	E321812	F2_BPO											107.9	7.86										
4/20/2022	0200097	EV_EC1																						
4/21/2022	E300091	EV_MC2							1.27	< 0.0010	0.0070	< 0.0010	170.1	8.01	8.23	0.0022								14.1
4/21/2022	0200097	EV_EC1							17.7	< 0.0050	< 0.0050	0.0018	205.3	7.95	8.21	0.0024								149
4/21/2022	E321812	F2_BPO											58	7.82										
4/21/2022	E321791	F2_NWPI			0.0118		124		28.4	0.133	0.360	< 0.0010	65.9	7.4	7.74	0.0027							152	
4/21/2022	E321812	F2_BPO			0.00413		37.1		0.214	< 0.0050	0.123	< 0.0010	58	7.82	8.00	0.0059							4.27	4.18
4/21/2022	E321812	F2_BPO												7.83										
4/22/2022	E300091	EV_MC2							1.49	< 0.0010	< 0.0050	< 0.0010	64.7	8.66	8.28	< 0.0020								13.6
4/22/2022	0200097	EV_EC1							17.3	< 0.0050	< 0.0050	< 0.0010	109.7	8.04	8.27	< 0.0020								154
4/22/2022	E321791	F2_NWPI							28.0	0.140	0.357	< 0.0010	73.2	7.52	7.94	0.0036								
4/22/2022	E321812	F2_BPO											88.2	7.61										
4/22/2022	E321812	F2_BPO							0.200	0.0137	0.115	< 0.0010	51	7.76	8.18	0.0059								4.52
4/22/2022	E321812	F2_BPO											84.1	7.74										
4/23/2022	0200097	EV_EC1							16.4	< 0.0050	0.0619	0.0025	22.9	7.95	8.30	0.0029								205
4/23/2022	E300091	EV_MC2							1.48	0.0018	< 0.0050	0.0020	176.2	8.24	8.33	0.0039								16.8
4/23/2022	E321791	F2_NWPI							26.6	0.145	0.389	0.0019	55.4	7.36	8.04	0.0034								
4/23/2022	E321812	F2_BPO							0.180	< 0.0050	0.113	0.0015	75.8	7.82	8.22	0.0053								3.93
4/23/2022	E321812	F2_BPO											185.9	7.84										

		Parameter	MeSe(IV) – methylselenic acid CH3SeO2H	Methaneselenonic Acid	Molybdenum	Molybdenum	Nickel	Nickel	Nitrate Nitrogen (NO3), As N	Nitrite Nitrogen (NO2), As N	Nitrogen, Ammonia (As N)	Ortho-Phosphate	OXIDATION-REDUCTION POTENTIAL, FIELD	pH, Field	pH, LAB	Phosphorus	Phosphorus	Potassium	Potassium	Se(IV) – selenite SeO3(-2)	Se(VI) – selenate SeO4(-2)	SeCN – selenocyanate SeCN(-1)	Selenium	Selenium
		Fraction	D	D	D	T	D	T	N	N	T	D	N	N	N	T	T	T	T	D	D	D	D	T
		Unit	ug/l	ug/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mv	ph units	ph units	mg/l	ppm	mg/l	ppm	ug/l	ug/l	ug/l	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
4/24/2022	E300091	EV_MC2							1.98	< 0.0010	< 0.0050	0.0018	129.8	7.77	8.18	0.0047								22.2
4/24/2022	0200097	EV_EC1							16.9	< 0.0050	< 0.0050	0.0026	61.7	7.85	8.34	0.0027								165
4/24/2022	E321791	F2_NWPI							27.2	0.155	0.349	0.0019	23.8	7.84	8.11	0.0031								
4/24/2022	E321812	F2_BPO											58.7	7.69										
4/24/2022	E321812	F2_BPO							0.230	0.0104	0.107	0.0016	27.2	7.69	8.30	0.0052								3.98
4/24/2022	E321812	F2_BPO											64.1	7.71										
4/25/2022	E300091	EV_MC2																						12.4
4/25/2022	E300091	EV_MC2	< 0.010	< 0.010	0.000950	0.000922	1.22	1.13	1.14	< 0.0010	< 0.0050	0.0022	62.7	8	8.26	0.0067		0.891		0.043	12.1	< 0.010	12.6	12.1
4/25/2022	200393	EV_ER1			0.00121	0.00125	0.67	2.52	3.33	0.0014	< 0.0050	0.0019	170.2	7.96	8.31	0.0042		0.788					16.6	15.8
4/25/2022	310168	EV_MC2A	< 0.010	< 0.010	0.000783	0.000776	0.98	0.91	0.789	< 0.0010	< 0.0050	0.0018	96.9	7.98	8.27	0.0074		0.771		0.025	8.84	< 0.010	9.83	8.58
4/25/2022	E321812	F2_BPO	0.026	< 0.010	0.0207	0.0202	40.3	36.9	0.288	0.0157	0.112	0.0018	253.6	7.58	8.29	0.0049		4.42		0.986	1.89	0.014	3.52	3.03
4/25/2022	0200203	EV_MC3	< 0.010	< 0.010	0.000675	0.000697	0.54	0.69	0.0982	< 0.0010	< 0.0050	0.0022	54.6	8.12	8.26	0.0107		0.672		0.014	1.50	< 0.010	1.62	1.76
4/25/2022	E321812	F2_BPO											138.2	7.61										
4/25/2022	0200097	EV_EC1	< 0.010	< 0.010	0.00146	0.00148	6.55	6.16	16.2	< 0.0050	< 0.0050	0.0026	62.9	9.83	8.28	0.0054		2.59		0.220	152	< 0.010	186	151
4/25/2022	0200097	EV_EC1																						149
4/25/2022	E321791	F2_NWPI	< 0.010	< 0.010	0.0110	0.0110	130	121	26.6	0.165	0.355	0.0013	46.9	7.22	8.17	0.0042		6.96		4.16	147	< 0.010	154	143
4/25/2022	E321814	EV_ECOUT	< 0.010	< 0.010	0.00108	0.00104	0.95	0.84	17.4	< 0.0050	< 0.0050	0.0220	224.2	7.43	8.16	0.0213		2.46		0.035	159	< 0.010	207	154
4/25/2022	E321812	F2_BPO											45.9	7.77										
4/26/2022	E321791	F2_NWPI			0.0110		124		24.0	0.145	0.411	< 0.0010	37.8	7.17	8.12	0.0020							160	
4/26/2022	E300091	EV_MC2							1.22	0.0024	< 0.0050	0.0010	64.2	7.88	8.04	0.0074								11.5
4/26/2022	E300091	EV_MC2																						14.2
4/26/2022	E300091	EV_MC2																						14.9
4/26/2022	0200097	EV_EC1							15.1	< 0.0050	< 0.0050	0.0021	140.8	7.89	8.09	0.0025								143
4/26/2022	E206231	EV_GT1	0.044	< 0.010	0.0118	0.0119	19.7	20.2	10.8	0.0139	0.130	0.0026	95.1	8.11	8.35	0.0039		4.52		0.720	119	< 0.010	138	127
4/26/2022	E321812	F2_BPO			0.0302		45.7		0.134	< 0.0050	0.109	< 0.0010	76.9	7.46	8.21	0.0041							3.77	3.45
4/26/2022	E321812	F2_BPO											103.5	7.45										
4/26/2022	0200203	EV_MC3			0.000706	0.000690	0.68	1.08	0.118	< 0.0010	< 0.0050	0.0012	122.3	8.36	8.13	0.0194		0.729					1.56	1.56
4/26/2022	E206231	EV_GT1																						
4/26/2022	E102685	EV_BC1	0.077	< 0.010	0.0129	0.0137	21.7	23.0	11.6	0.0232	0.0070	< 0.0010	108	7.76	8.25	0.0043		5.05		0.782	98.3	< 0.010	121	111
4/26/2022	E102685	EV_BC1																						
4/26/2022	E300091	EV_MC2			0.000899	0.000983	1.13	1.14	1.00	< 0.0010	< 0.0050	0.0010	82.6	8.28	8.16	0.0103		0.898					12.0	11.5
4/26/2022	200393	EV_ER1			0.00117	0.00112	0.61	1.14	3.35	0.0019	< 0.0050	0.0010	107	8.39	8.25	0.0094		0.872					17.3	17.7
4/26/2022	E321812	F2_BPO												7.6										
4/27/2022	E321791	F2_NWPI							27.7	0.157	0.399	0.0013	24.4	7.08	8.26	0.0033								
4/27/2022	0200097	EV_EC1							16.8	< 0.0050	< 0.0050	0.0027	87.9	7.68	8.30	0.0024								147
4/27/2022	E300091	EV_MC2							0.810	< 0.0010	< 0.0050	< 0.0010	79.2	8.07	8.35	0.0075								8.08
4/27/2022	E300091	EV_MC2																						8.98
4/27/2022	E300091	EV_MC2																						8.68
4/27/2022	E321812	F2_BPO							0.132	0.0052	0.111	0.0012	86.5	7.6	8.40	0.0044								3.19
4/27/2022	E321812	F2_BPO											86.5	7.6										
4/27/2022	0200097	EV_EC1																						
4/27/2022	E321812	F2_BPO												7.74										
4/28/2022	E300091	EV_MC2							0.793	< 0.0010	< 0.0050	< 0.0010	173	7.82	8.10	0.0075								8.69
4/28/2022	0200097	EV_EC1							15.9	< 0.0050	< 0.0050	< 0.0010	88.4	7.8	8.04	0.0027								155
4/28/2022	E321791	F2_NWPI			0.0113		130		26.8	0.157	0.352	< 0.0010	35.6	7.24	7.92	0.0028							154	
4/28/2022	E321812	F2_BPO			0.00315		63.8		0.178	0.0073	0.147	< 0.0010	50.2	7.61	8.16	0.0029							2.24	2.01
4/28/2022	E321812	F2_BPO											50.2	7.61										
4/28/2022	E321812	F2_BPO											35.2	7.72										

		Parameter	MeSe(IV) – methylselenic acid CH3SeO2H	Methaneselenonic Acid	Molybdenum	Molybdenum	Nickel	Nickel	Nitrate Nitrogen (NO3), As N	Nitrite Nitrogen (NO2), As N	Nitrogen, Ammonia (As N)	Ortho-Phosphate	OXIDATION-REDUCTION POTENTIAL, FIELD	pH, Field	pH, LAB	Phosphorus	Phosphorus	Potassium	Potassium	Se(IV) – selenite SeO3(-2)	Se(VI) – selenate SeO4(-2)	SeCN – selenocyanate SeCN(-1)	Selenium	Selenium
		Fraction	D	D	D	T	D	T	N	N	T	D	N	N	N	T	T	T	T	D	D	D	D	T
		Unit	ug/l	ug/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mv	ph units	ph units	mg/l	ppm	mg/l	ppm	ug/l	ug/l	ug/l	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
4/29/2022	E321791	F2_NWPI							24.8	0.134	0.366	< 0.0010	73.3	7.11	7.73	0.0030								
4/29/2022	E300091	EV_MC2							1.22	< 0.0010	< 0.0050	< 0.0010	82.4	7.83	8.23	0.0073								12.5
4/29/2022	0200097	EV_EC1							15.1	< 0.0050	< 0.0050	< 0.0010	135.5	7.71	8.27	0.0030								155
4/29/2022	E321812	F2_BPO							0.0988	< 0.0050	0.216	< 0.0010	-9.3	7.6	8.05	0.0036								2.61
4/29/2022	E321812	F2_BPO											-9.3	7.6										
4/29/2022	E321812	F2_BPO											23.9	7.66										
4/30/2022	E300091	EV_MC2							1.23	< 0.0010	< 0.0050	< 0.0010	174.5	7.65	7.99	0.0050								11.4
4/30/2022	0200097	EV_EC1							16.4	< 0.0050	< 0.0050	< 0.0010	150.2	7.73	8.08	0.0025								144
4/30/2022	E321791	F2_NWPI							27.1	0.164	0.374	< 0.0010	54.8	7.28	7.90	0.0034								
4/30/2022	E321812	F2_BPO							0.130	0.0064	0.112	< 0.0010	65.7	7.57	8.10	0.0050								2.64
4/30/2022	E321812	F2_BPO											65.7	7.57										
4/30/2022	E321812	F2_BPO											25.6	7.49										
5/1/2022	E300091	EV_MC2							1.33	0.0011	< 0.0050	< 0.0010	161.5	8.02	7.98	0.0054								9.12
5/1/2022	E300091	EV_MC2																						9.71
5/1/2022	E300091	EV_MC2																						11.0
5/1/2022	0200097	EV_EC1							16.5	< 0.0050	< 0.0050	< 0.0010	84	7.98	8.11	0.0025								149
5/1/2022	E321791	F2_NWPI							27.7	0.157	0.372	< 0.0010	31.7	7.71	7.90	0.0030								
5/1/2022	E321812	F2_BPO							0.127	< 0.0050	0.116	< 0.0010	193.9	7.46	8.08	0.0040								2.52
5/1/2022	E321812	F2_BPO											193.9	7.46										
5/1/2022	E321812	F2_BPO											38.9	7.48										
5/2/2022	0200097	EV_EC1			0.00131	0.00141	5.44	5.61	16.5	< 0.0050	0.0083	0.0018	184.1	7.88	8.23	< 0.0020		2.79					170	163
5/2/2022	0200097	EV_EC1																						149
5/2/2022	310168	EV_MC2A			0.000685	0.000730	0.87	1.18	0.537	< 0.0010	< 0.0050	< 0.0010	132.3	8.11	8.25	0.0120		0.724					5.87	5.67
5/2/2022	0200203	EV_MC3			0.000635	0.000641	0.84	1.28	0.165	0.0012	< 0.0050	0.0010	140.9	8.14	8.23	0.0168		0.702					1.38	1.38
5/2/2022	200393	EV_ER1			0.00109	0.00107	0.72	0.94	2.96	0.0020	< 0.0050	< 0.0010	144	8.23	8.32	0.0078		0.780					14.7	14.0
5/2/2022	E321812	F2_BPO	0.014	< 0.010	0.0144	0.0132	60.0	62.5	0.105	< 0.0050	0.113	< 0.0010	225	7.54	8.02	0.0042		5.02		0.509	1.23	< 0.010	2.53	2.47
5/2/2022	E300091	EV_MC2			0.000793	0.000824	1.08	1.28	0.734	0.0012	< 0.0050	< 0.0010	53.6	8.58	8.27	0.0130		0.793					7.76	7.37
5/2/2022	E300091	EV_MC2																						7.79
5/2/2022	E321814	EV_ECOUT			0.00109	0.00105	0.86	0.86	17.6	< 0.0050	< 0.0050	0.0202	110.1	7.71	8.02	0.0214		2.73					188	165
5/2/2022	E321812	F2_BPO											219.4	7.39										
5/2/2022	E321791	F2_NWPI	< 0.010	< 0.010	0.0114	0.0118	129	132	26.8	0.149	0.370	< 0.0010	58.9	7.4	7.88	< 0.0020		7.57		3.85	118	< 0.010	160	150
5/2/2022	E321812	F2_BPO											39	7.41										
5/3/2022	E300091	EV_MC2							0.965	< 0.0010	< 0.0050	< 0.0010	187.9	8.12	8.11	0.0079								8.79
5/3/2022	0200097	EV_EC1							16.5	< 0.0050	< 0.0050	< 0.0010	97.3	8.23	8.23	0.0022								153
5/3/2022	E206231	EV_GT1			0.0118	0.0125	22.0	22.8	9.79	0.0096	0.101	< 0.0010	95.5	8.61	8.33	0.0050		4.74					124	114
5/3/2022	E321812	F2_BPO			0.0121		56.4		0.123	< 0.0050	0.124	< 0.0010	62.3	7.5	8.19	0.0044							2.64	2.49
5/3/2022	E321812	F2_BPO											62.3	7.5										
5/3/2022	0200203	EV_MC3			0.000605	0.000593	0.89	1.79	0.150	< 0.0010	0.0055	< 0.0010	149.6	8.27	8.35	0.0454		0.757					1.35	1.40
5/3/2022	E102685	EV_BC1			0.0128	0.0135	20.5	21.2	10.8	0.0206	0.0079	< 0.0010	126.1	7.98	8.27	0.0028		5.21					112	102
5/3/2022	E102685	EV_BC1			0.0128	0.0129	20.5	21.1	9.77	0.0172	0.0096	< 0.0010	126.1	7.87	8.34	0.0029		5.16					107	110
5/3/2022	E321791	F2_NWPI			0.0112		119		27.2	0.175	0.405	< 0.0010	58.6	7.91	8.04	0.0050							162	
5/3/2022	E206231	EV_GT1			0.0117	0.0118	22.1	22.9	9.70	0.0078	0.109	< 0.0010	112.7	8.26	8.34	0.0053		4.62					121	120
5/3/2022	E300091	EV_MC2			0.000732	0.000750	0.95	1.65	0.640	< 0.0010	0.0081	< 0.0010	116.8	8.04	8.44	0.0287		0.826					6.68	6.76
5/3/2022	E321814	EV_ECOUT			0.00106	0.00106	0.82	0.91	17.7	< 0.0050	< 0.0050	0.0189	200.6	7.62	8.20	0.0196		2.75					178	178
5/3/2022	200393	EV_ER1			0.00100	0.000983	0.68	1.17	2.76	0.0015	0.0153	< 0.0010	123.9	8.28	8.49	0.0177		0.810					14.0	15.0
5/3/2022	E321812	F2_BPO											7.9	7.5										
5/4/2022	0200097	EV_EC1				0.145		2700									14308		28485					8300
5/4/2022	E300091	EV_MC2							0.526	0.0010	0.0115	< 0.0010	134	7.95	8.19	0.0141								4.76

		Parameter	MeSe(IV) – methylselenic acid CH3SeO2H	Methaneselenonic Acid	Molybdenum	Molybdenum	Nickel	Nickel	Nitrate Nitrogen (NO3), As N	Nitrite Nitrogen (NO2), As N	Nitrogen, Ammonia (As N)	Ortho-Phosphate	OXIDATION-REDUCTION POTENTIAL, FIELD	pH, Field	pH, LAB	Phosphorus	Phosphorus	Potassium	Potassium	Se(IV) – selenite SeO3(-2)	Se(VI) – selenate SeO4(-2)	SeCN – selenocyanate SeCN(-1)	Selenium	Selenium
		Fraction	D	D	D	T	D	T	N	N	T	D	N	N	N	T	T	T	T	D	D	D	D	T
		Unit	ug/l	ug/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mv	ph units	ph units	mg/l	ppm	mg/l	ppm	ug/l	ug/l	ug/l	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
5/4/2022	0200097	EV_EC1							16.6	< 0.0050	< 0.0050	< 0.0010	125.7	7.93	8.25	0.0030								159
5/4/2022	E321812	F2_BPO							0.0959	< 0.0050	0.121	< 0.0010	251.8	7.43	7.96	0.0032								2.36
5/4/2022	E321812	F2_BPO											251.8	7.43										
5/4/2022	E321791	F2_NWPI							26.6	0.150	0.393	< 0.0010	66.1	7.7	7.78	0.0051								
5/4/2022	0200097	EV_EC1			0.00142	0.00156	5.29	5.63	15.8	< 0.0050	0.0053	< 0.0010	157	7.91	8.04	0.0026		3.04					191	173
5/4/2022	E321812	F2_BPO											35.1	7.67										
5/4/2022	0200203	EV_MC3			0.000572	0.000717	0.99	2.52	0.116	< 0.0010	< 0.0050	0.0011	118.8	8.18	8.12	0.0410		0.981					1.14	1.27
5/4/2022	E321814	EV_ECOUT			0.00102	0.00102	0.82	0.95	17.7	< 0.0050	< 0.0050	0.0198	201.1	7.4	7.85	0.0233		2.84					177	176
5/5/2022	0200097	EV_EC1				0.024		558									12438		20756					4700
5/5/2022	E300091	EV_MC2							0.811	< 0.0010	< 0.0050	< 0.0010	71	8.38	7.98	0.0198								9.03
5/5/2022	0200097	EV_EC1							16.0	< 0.0050	< 0.0050	< 0.0010	70.7	8.27	8.12	< 0.0020								171
5/5/2022	E321812	F2_BPO											171.9	7.44										
5/5/2022	E321812	F2_BPO			0.0150	0.0163	61.0	66.9	0.0916	< 0.0050	0.115	0.0018	171.7	7.44	7.99	0.0048		4.90					2.79	2.51
5/5/2022	0200097	EV_EC1			0.00138	0.00134	5.03	5.18	17.6	< 0.0050	< 0.0050	< 0.0010	137.9	7.93	8.11	0.0030		2.70					185	170
5/5/2022	0200203	EV_MC3			0.000534	0.000555	1.03	3.06	0.182	< 0.0010	0.0155	0.0035	143.9	8.27	8.06	0.0691		0.907					1.45	1.23
5/5/2022	E321814	EV_ECOUT			0.00121	0.00103	0.87	0.90	17.6	< 0.0050	0.0063	0.0175	192.3	7.51	7.84	0.0186		2.72					189	173
5/5/2022	E321812	F2_BPO											49.5	7.48										
5/6/2022	0200097	EV_EC1							16.0	0.0050	< 0.0050	< 0.0010	165.2	8.11	8.17	0.0033								141
5/6/2022	0200097	EV_EC1			0.00128	0.00142	4.72	5.04	15.5	< 0.0050	< 0.0050	< 0.0010	147.3	8.11	8.26	0.0030		2.91					187	169
5/6/2022	E321812	F2_BPO							0.320	< 0.0050	0.124	0.0028	-13.1	7.71	8.20	0.0034								2.73
5/6/2022	0200203	EV_MC3			0.000452	0.000394	1.09	3.34	0.176	< 0.0010	0.0220	0.0149	165.2	8.11	8.08	0.270		0.716					1.06	0.950
5/6/2022	E300091	EV_MC2							0.314	0.0018	0.0055	0.0086	61.5	7.84	8.00	0.389								2.21
5/6/2022	E321814	EV_ECOUT			0.00103	0.00111	0.91	0.90	17.1	< 0.0050	0.0086	0.0206	222.1	7.73	8.11	0.0233		2.96					204	178
5/6/2022	E321812	F2_BPO											170.4	7.48										
5/6/2022	E321791	F2_NWPI			0.0111		128		25.5	0.135	0.350	0.0024	44.6	7.5	8.05	0.0041							165	
5/7/2022	E321791	F2_NWPI							26.8	0.174	0.511	< 0.0010	70.3	7.35	7.71	0.0025								
5/7/2022	0200097	EV_EC1							16.3	< 0.0050	< 0.0050	0.0014	115.6	8.02	8.19	0.0025								143
5/7/2022	0200097	EV_EC1			0.00135	0.00135	4.91	4.93	16.5	< 0.0050	0.0057	0.0026	167.9	8.23	8.16	0.0032		2.62					189	162
5/7/2022	0200203	EV_MC3			0.000456	0.000561	1.04	3.31	0.180	< 0.0010	0.0190	0.0201	160.2	8.48	8.02	0.0837		0.847					1.03	1.06
5/7/2022	E300091	EV_MC2							0.624	< 0.0010	< 0.0050	0.0097	88.6	8.35	8.05	0.0361								4.54
5/7/2022	E321812	F2_BPO							0.0878	< 0.0050	0.148	< 0.0010	220.9	7.55	8.05	0.0040								2.62
5/7/2022	E321812	F2_BPO											136.2	7.64										
5/7/2022	E321814	EV_ECOUT			0.00105	0.00108	0.83	0.85	17.9	< 0.0050	0.0557	0.0223	195.9	7.84	7.87	0.0198		2.67					186	171
5/7/2022	E321812	F2_BPO											72.6	7.67										
5/8/2022	E321791	F2_NWPI							26.8	0.166	0.477	< 0.0010	82.2	7.34	7.76	< 0.0020								
5/8/2022	0200097	EV_EC1							16.2	< 0.0050	< 0.0050	0.0017	133.3	8.05	8.22	0.0028								144
5/8/2022	0200097	EV_EC1			0.00134	0.00136	4.66	4.71	16.2	< 0.0050	< 0.0050	0.0018	159.3	8.37	8.24	0.0022		2.58					185	163
5/8/2022	0200203	EV_MC3			0.000504	0.000543	1.03	2.29	0.185	0.0010	< 0.0050	0.0128	154.4	8.61	8.13	0.0645		0.711					1.06	1.17
5/8/2022	E300091	EV_MC2							0.693	< 0.0010	< 0.0050	0.0110	140	8.03	8.10	0.0350								3.80
5/8/2022	E321812	F2_BPO							0.148	< 0.0050	0.152	< 0.0010	267.7	7.48	8.03	0.0047								2.93
5/8/2022	E321812	F2_BPO											173.5	7.2										
5/8/2022	E321814	EV_ECOUT			0.00106	0.00111	0.82	0.88	17.6	< 0.0050	< 0.0050	0.0211	200.4	7.74	8.08	0.0211		2.77					190	171
5/8/2022	E321812	F2_BPO												7.5										
5/9/2022	E300091	EV_MC2	< 0.010	< 0.010	0.000667	0.000670	1.09	1.72	0.632	< 0.0010	0.0074	0.0089	181.8	7.78	8.07	0.0214		0.781		0.038	5.07	< 0.010	5.48	5.69
5/9/2022	E321791	F2_NWPI	< 0.010	< 0.010	0.0113	0.0120	126	134	26.8	0.176	0.461	< 0.0010	20.3	7.88	7.73	0.0038		7.72		4.91	145	< 0.010	174	161
5/9/2022	E321812	F2_BPO	0.012	< 0.010	0.0164	0.0202	63.0	68.2	0.508	< 0.0050	0.148	< 0.0010	227.7	7.48	7.93	0.0035		4.92		0.737	1.64	0.012	3.22	2.90
5/9/2022	310168	EV_MC2A			0.000576	0.000608	0.86	1.65	0.337	0.0018	< 0.0050	0.0088			8.16	0.0253		0.679					2.91	3.03
5/9/2022	E321812	F2_BPO											149.2	7.34										

		Parameter	MeSe(IV) – methylselenic acid CH3SeO2H	Methaneselenonic Acid	Molybdenum	Molybdenum	Nickel	Nickel	Nitrate Nitrogen (NO3), As N	Nitrite Nitrogen (NO2), As N	Nitrogen, Ammonia (As N)	Ortho-Phosphate	OXIDATION-REDUCTION POTENTIAL, FIELD	pH, Field	pH, LAB	Phosphorus	Phosphorus	Potassium	Potassium	Se(IV) – selenite SeO3(-2)	Se(VI) – selenate SeO4(-2)	SeCN – selenocyanate SeCN(-1)	Selenium	Selenium
		Fraction	D	D	D	T	D	T	N	N	T	D	N	N	N	T	T	T	T	D	D	D	D	T
		Unit	ug/l	ug/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mv	ph units	ph units	mg/l	ppm	mg/l	ppm	ug/l	ug/l	ug/l	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
5/9/2022	0200097	EV_EC1			0.00130	0.00134	4.35	4.47	16.4	< 0.0050	< 0.0050	0.0015	146.1	8.03	8.27	0.0023		2.58					178	161
5/9/2022	0200203	EV_MC3			0.000543	0.000585	1.02	1.94	0.191	< 0.0010	< 0.0050	0.0130	117.8	8.55	8.17	0.0300		0.724					1.14	1.16
5/9/2022	0200097	EV_EC1	< 0.010	< 0.010	0.00137	0.00134	4.80	4.76	15.2	< 0.0050	< 0.0050	< 0.0010	146.1	8.03	8.14	< 0.0020		2.72		0.214	146	< 0.010	174	161
5/9/2022	200393	EV_ER1			0.000937	0.000927	0.75	1.26	1.81	< 0.0010	< 0.0050	0.0044	83.7	8.47	8.25	0.0182		0.729					9.47	8.82
5/9/2022	E321814	EV_ECOUT			0.00108	0.00107	0.89	0.84	17.7	< 0.0050	< 0.0050	0.0216	195.2	7.64	8.10	0.0215		2.67					191	170
5/9/2022	E321814	EV_ECOUT	< 0.010	< 0.010	0.00108	0.00107	1.19	0.91	17.2	< 0.0050	0.0239	0.0204	243.6	7.49	7.94	0.0206		2.84		0.034	153	< 0.010	190	170
5/9/2022	E321812	F2_BPO											84.7	7.48										
5/10/2022	E300091	EV_MC2							0.960	0.0015	< 0.0050	0.0070	193.9	8.02	8.01	0.0142								6.90
5/10/2022	0200097	EV_EC1							16.9	< 0.0050	< 0.0050	< 0.0010	173.7	7.87	8.21	< 0.0020								156
5/10/2022	0200097	EV_EC1											173.7	7.87										
5/10/2022	E321812	F2_BPO											227.7	7.48										
5/10/2022	E321791	F2_NWPI			0.0114		131		27.4	0.180	0.447	< 0.0010	60.4	9.01	7.91	0.0026							161	
5/10/2022	E321812	F2_BPO			0.0194		66.4		0.272	0.0065	0.144	< 0.0010	234.8	7.45	7.99	0.0059							3.38	2.81
5/10/2022	E206231	EV_GT1	0.035	< 0.010	0.0119	0.0135	26.7	26.9	8.25	0.0100	0.0796	< 0.0010	148.4	8.32	8.16	0.0058		4.68		0.631	78.6	< 0.010	80.8	84.0
5/10/2022	E206231	EV_GT1											148.4	8.32										
5/10/2022	E321812	F2_BPO											145.7	7.39										
5/10/2022	0200097	EV_EC1			0.00126	0.00131	4.33	4.51	15.8	< 0.0050	< 0.0050	< 0.0010	159.5	8.17	8.25	0.0030		2.58					173	162
5/10/2022	0200203	EV_MC3			0.000547	0.000612	1.16	1.94	0.204	< 0.0010	< 0.0050	0.0100	189.8	8.1	8.08	0.0289		0.714					1.29	1.19
5/10/2022	E102685	EV_BC1	0.096	< 0.010	0.0123	0.0135	21.2	21.2	9.86	0.0237	0.0067	< 0.0010	123.6	8.06	8.08	0.0036		5.34		1.10	89.3	< 0.010	93.2	93.7
5/10/2022	E102685	EV_BC1											123.6	8.06										
5/10/2022	E321814	EV_ECOUT			0.00101	0.00103	0.78	0.87	17.4	< 0.0050	< 0.0050	0.0201	206.3	7.33	8.08	0.0198		2.72					189	168
5/10/2022	E321814	EV_ECOUT											243.6	7.49										
5/10/2022	E321812	F2_BPO												7.5										
5/11/2022	E300091	EV_MC2							1.49				198	8.01										9.97
5/11/2022	0200097	EV_EC1							16.6				88.5	8.1										155
5/11/2022	E321812	F2_BPO											250.5	7.5										
5/11/2022	E321791	F2_NWPI							26.7	0.170	0.459	< 0.0010	22.1	7.77	7.92	0.0035								
5/11/2022	E321812	F2_BPO							0.266	< 0.0050	0.132	< 0.0010	250.5	7.5	8.11	0.0077								2.68
5/11/2022	310168	EV_MC2A	< 0.010	< 0.010									119	7.93						0.031	2.77	< 0.010		
5/11/2022	0200203	EV_MC3	< 0.010	< 0.010	0.000520	0.000576	1.65	1.82	0.188	< 0.0010	0.0059	0.0120	109.8	8.01	8.11	0.0261		0.671		0.030	0.996	< 0.010	1.20	1.11
5/11/2022	E300091	EV_MC2			0.000662	0.000665	1.16	1.56	0.549	< 0.0010	< 0.0050	0.0066	140.6	7.94	8.16	0.0149		0.736					4.88	5.44
5/11/2022	E102685	EV_BC1																						
5/11/2022	E206231	EV_GT1																						
5/11/2022	E321812	F2_BPO											41.7	7.58										
5/12/2022	E300091	EV_MC2							0.626				123.3	8.01										5.22
5/12/2022	0200097	EV_EC1							16.5				63.3	8.13										151
5/12/2022	E321791	F2_NWPI			0.0110		119		27.2	0.173	0.397	< 0.0010	55.5	7.62	8.08	0.0044							162	
5/12/2022	E321812	F2_BPO											43	7.7										
5/12/2022	E321812	F2_BPO			0.00349		60.5		0.262	< 0.0050	0.126	< 0.0010	233.1	7.5	8.13	0.0051							2.96	2.88
5/12/2022	200393	EV_ER1			0.00104	0.00100	0.82	1.07	2.21	0.0023	< 0.0050	0.0029	129.2	8.29	8.42	0.0133		0.714					11.3	10.2
5/12/2022	E321812	F2_BPO												7.56										
5/13/2022	E321791	F2_NWPI							27.2	0.178	0.445	< 0.0010	94.2	7.37	7.94	0.0027								
5/13/2022	0200097	EV_EC1							16.5				117.8	8.34										170
5/13/2022	E321812	F2_BPO							0.253	< 0.0050	0.140	< 0.0010	243.6	7.52	8.11	0.0024								2.46
5/13/2022	E300091	EV_MC2							0.589				103.1	8.23										5.43
5/13/2022	E321812	F2_BPO											130.7	7.43										
5/13/2022	E321812	F2_BPO											97.9	7.52										
5/14/2022	E321791	F2_NWPI							26.4	0.159	0.388	< 0.0010	56.1	7.89	7.92	0.0068								

		Parameter	MeSe(IV) – methylselenic acid CH3SeO2H	Methaneselenonic Acid	Molybdenum	Molybdenum	Nickel	Nickel	Nitrate Nitrogen (NO3), As N	Nitrite Nitrogen (NO2), As N	Nitrogen, Ammonia (As N)	Ortho-Phosphate	OXIDATION-REDUCTION POTENTIAL, FIELD	pH, Field	pH, LAB	Phosphorus	Phosphorus	Potassium	Potassium	Se(IV) – selenite SeO3(-2)	Se(VI) – selenate SeO4(-2)	SeCN – selenocyanate SeCN(-1)	Selenium	Selenium
		Fraction	D	D	D	T	D	T	N	N	T	D	N	N	N	T	T	T	T	D	D	D	D	T
		Unit	ug/l	ug/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mv	ph units	ph units	mg/l	ppm	mg/l	ppm	ug/l	ug/l	ug/l	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
5/14/2022	0200097	EV_EC1							14.8				101.1	8.26										149
5/14/2022	E321812	F2_BPO							0.241	0.0053	0.124	< 0.0010	241.5	7.43	8.11	0.0039								2.92
5/14/2022	E321812	F2_BPO											241.5	7.43										
5/14/2022	E300091	EV_MC2							0.598				87	8.43										5.50
5/14/2022	E321812	F2_BPO											68.9	7.5										
5/15/2022	E300091	EV_MC2							0.626				175.8	7.99										5.68
5/15/2022	0200097	EV_EC1							17.0				154	7.85										152
5/15/2022	E321812	F2_BPO							0.240	0.0063	0.124	< 0.0010	42.6	7.51	7.93	0.0022								2.83
5/15/2022	E321791	F2_NWPI							26.4	0.166	0.451	< 0.0010	64.1	7.96	7.67	0.0033								
5/15/2022	E321812	F2_BPO											42.6	7.51										
5/15/2022	E321812	F2_BPO											65	7.51										
5/16/2022	E321791	F2_NWPI	< 0.010	< 0.010	0.0119	0.0110	129	129	27.3	0.167	0.441	< 0.0010	45.2	7.34	7.91	0.0032		7.73		4.29	125	< 0.010	170	178
5/16/2022	E300091	EV_MC2			0.000644	0.000612	1.00	1.56		< 0.0010	< 0.0050	0.0053	120.2	7.97	8.13	0.0135		0.704					5.56	5.87
5/16/2022	E300091	EV_MC2							0.602															5.44
5/16/2022	E321812	F2_BPO	< 0.010	< 0.010	0.00360	0.00343	65.4	65.4	0.236	0.0073	0.148	< 0.0010	111.6	7.39	8.03	0.0036		4.94		0.609	1.26	0.012	2.81	2.89
5/16/2022	E321812	F2_BPO											111.6	7.39										
5/16/2022	0200097	EV_EC1			0.00131	0.00122	4.41	4.33		< 0.0050	< 0.0050	0.0025	90.7	8.15	7.98	0.0027		2.80					191	195
5/16/2022	0200097	EV_EC1							17.2															152
5/16/2022	0200203	EV_MC3			0.000603	0.000562	1.55	2.08	0.176	< 0.0010	< 0.0050	0.0082	133.4	8.24	8.14	0.0236		0.660					1.43	1.42
5/16/2022	310168	EV_MC2A			0.000672	0.000607	1.00	1.56	0.424	< 0.0010	< 0.0050	0.0058	58.6	8.53	8.20	0.0126		0.657					4.16	4.19
5/16/2022	E321814	EV_ECOUT			0.00106	0.00104	0.55	0.88	18.0	< 0.0050	< 0.0050	0.0208	213.9	7.46	7.76	0.0216		2.82					178	195
5/16/2022	200393	EV_ER1			0.000968	0.000919	0.54	1.02	2.09	0.0014	< 0.0050	0.0020	79.3	8.34	8.30	0.0077		0.680					10.2	11.1
5/17/2022	E300091	EV_MC2			0.000588	0.000497	1.38	2.06	0.579	0.0074	0.0118	0.0077	113.1	7.95	8.26	0.0626		0.644					4.48	4.26
5/17/2022	E321791	F2_NWPI			0.0118		131		25.1	0.194	0.480	0.0016	87.1	7.32	7.98	0.0036							159	
5/17/2022	0200097	EV_EC1							16.3				96.6	8.48										164
5/17/2022	E206231	EV_GT1			0.00590	0.00604	12.4	12.6	15.4	0.0346	0.126	< 0.0010	107.6	8.47	8.37	0.0082		3.81					208	208
5/17/2022	E321812	F2_BPO			0.00372		65.9		0.222	< 0.0050	0.154	< 0.0010	115.7	7.42	8.05	0.0031							2.76	2.47
5/17/2022	E300091	EV_MC2							0.387				129.4	8.01										3.54
5/17/2022	E102685	EV_BC1			0.0125	0.0126	22.2	21.8	11.7	0.0407	0.0111	< 0.0010	726.6	7.96	8.14	0.0022		5.59					110	116
5/17/2022	200393	EV_ER1			0.000846	0.000885	0.94	1.29	1.62	0.0031	< 0.0050	0.0032	168	8.29	8.37	0.0307		0.688					8.61	8.60
5/17/2022	0200203	EV_MC3			0.000484	0.000552	1.42	2.19	0.131	0.0013	< 0.0050	0.0100	152.5	8.16	8.18	0.0476		0.632					1.03	0.968
5/17/2022	E206231	EV_GT1																						
5/17/2022	E102685	EV_BC1																						
5/18/2022	E321791	F2_NWPI							26.1	0.171	0.462	< 0.0010	71.8	7.36	8.02	0.0026								
5/18/2022	0200097	EV_EC1							17.1				95.3	8.31										161
5/18/2022	E321812	F2_BPO							0.223	< 0.0050	0.148	< 0.0010	55.9	7.49	8.11	0.0044								2.66
5/18/2022	E321812	F2_BPO											55.9	7.49										
5/18/2022	E300091	EV_MC2							0.456				103.2	8.2										3.58
5/18/2022	0200097	EV_EC1																						
5/19/2022	E321791	F2_NWPI			0.0115		120		26.6	0.157	0.416	< 0.0010	15	7.72	7.64	0.0054							160	
5/19/2022	E300091	EV_MC2							3.39				88.7	8.1										4.78
5/19/2022	E321812	F2_BPO											70.6	7.7										
5/19/2022	0200097	EV_EC1							19.2				69.5	9.01										174
5/19/2022	E321812	F2_BPO			0.00347		62.4		0.228	< 0.0050	0.136	< 0.0010	70.6	7.76	7.86	0.0031							2.95	2.45
5/20/2022	E321791	F2_NWPI							25.6	0.163	0.435	< 0.0010	71.2	7.37	7.75	0.0027								
5/20/2022	E321791	F2_NWPI									0.435	< 0.0010			7.75	0.0027								
5/20/2022	E300091	EV_MC2							0.500				112.3	7.96										4.92
5/20/2022	0200097	EV_EC1							17.4				121.1	7.96										169

Parameter			MeSe(IV) – methylselenic acid CH3SeO2H	Methaneselenonic Acid	Molybdenum	Molybdenum	Nickel	Nickel	Nitrate Nitrogen (NO3), As N	Nitrite Nitrogen (NO2), As N	Nitrogen, Ammonia (As N)	Ortho-Phosphate	OXIDATION-REDUCTION POTENTIAL, FIELD	pH, Field	pH, LAB	Phosphorus	Phosphorus	Potassium	Potassium	Se(IV) – selenite SeO3(-2)	Se(VI) – selenate SeO4(-2)	SeCN – selenocyanate SeCN(-1)	Selenium	Selenium
Fraction			D	D	D	T	D	T	N	N	T	D	N	N	N	T	T	T	T	D	D	D	D	T
Unit			ug/l	ug/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mv	ph units	ph units	mg/l	ppm	mg/l	ppm	ug/l	ug/l	ug/l	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
5/20/2022	E321812	F2_BPO											80.2	7.52										
5/20/2022	E321812	F2_BPO							0.224	0.0072	0.151	< 0.0010	156	7.61		0.0047								
5/20/2022	E321812	F2_BPO									0.147	< 0.0010			7.98	0.0043								2.53
5/20/2022	E321812	F2_BPO											17.9	7.52										
5/21/2022	E321791	F2_NWPI							26.0	0.189	0.476	< 0.0010	65.2	7.34	8.09	0.0029								
5/21/2022	E300091	EV_MC2							0.609				112.7	7.98										5.62
5/21/2022	0200097	EV_EC1							16.1				96.7	8.43										146
5/21/2022	E321812	F2_BPO											184	7.4										
5/21/2022	E321812	F2_BPO							0.263	< 0.0050	0.151	< 0.0010	115.9	7.49	8.20	0.0049								2.33
5/21/2022	E321812	F2_BPO												7.7										
5/22/2022	E321791	F2_NWPI							24.0	0.152	0.397	< 0.0010	47	7.7	7.76	0.0036								
5/22/2022	E300091	EV_MC2							0.614				78.9	8.5										5.98
5/22/2022	0200097	EV_EC1							16.8				112	8.5										156
5/22/2022	E321812	F2_BPO											252.4	7.43										
5/22/2022	E321812	F2_BPO							0.233	0.0065	0.148	< 0.0010	156.8	7.54	7.94	0.0055								3.13
5/23/2022	E321791	F2_NWPI	< 0.010	< 0.010	0.0115	0.0117	127	132	25.1	0.164	0.434	< 0.0010	74.3	7.22	7.85	0.0049		7.28		4.36	113	< 0.010	138	142
5/23/2022	E321812	F2_BPO	< 0.010	< 0.010	0.0171	0.0167	65.5	67.6	0.221	< 0.0050	0.147	< 0.0010	214.9	7.41	8.01	0.0048		4.64		0.609	1.06	0.013	2.18	2.18
5/23/2022	E321812	F2_BPO											214.9	7.41										
5/23/2022	E300091	EV_MC2	< 0.010	< 0.010	0.000742	0.000793	1.38	1.83	0.591	0.0017	< 0.0050	0.0036	90.6	8.69	8.15	0.0117		0.762		0.027	5.25	< 0.010	6.02	5.59
5/23/2022	310168	EV_MC2A	< 0.010	< 0.010	0.000629	0.000630	1.13	1.46	0.415	0.0017	< 0.0050	0.0035	131.9	7.98	8.16	0.0107		0.652		0.025	3.89	< 0.010	4.28	4.58
5/23/2022	0200203	EV_MC3	< 0.010	< 0.010	0.000584	0.000636	1.43	1.70	0.144	0.0013	< 0.0050	0.0011	143.9	8.01	8.15	0.0129		0.606		0.025	1.20	< 0.010	1.45	1.41
5/23/2022	E321812	F2_BPO											45.4	7.2										
5/23/2022	0200097	EV_EC1	0.011	< 0.010	0.00128	0.00143	3.65	3.93	15.9	< 0.0050	< 0.0050	0.0016	130.9	7.96	8.08	0.0036		2.84		0.168	143	< 0.010	180	158
5/23/2022	0200097	EV_EC1											130.9	7.96										
5/23/2022	200393	EV_ER1			0.000983	0.00108	0.79	1.07	1.92	0.0021	< 0.0050	0.0015	105.8	8.29	8.30	0.0065		0.720					9.97	10.1
5/23/2022	E321814	EV_ECOUT	< 0.010	< 0.010	0.00108	0.00115	0.81	1.05	17.6	0.0063	< 0.0050	0.0211	294.3	7.41	7.87	0.0222		2.93		0.030	142	< 0.010	191	176
5/23/2022	E321814	EV_ECOUT											294.3	7.41										
5/23/2022	E321812	F2_BPO												7.5										
5/24/2022	0200097	EV_EC1							18.8				103.6	8.11										158
5/24/2022	E321791	F2_NWPI			0.0120		132		25.9	0.180	0.486	< 0.0010	73.2	7.18	7.92	0.0047							149	
5/24/2022	E300091	EV_MC2			0.000735	0.000727	1.54	1.68	0.713	< 0.0010	< 0.0050	0.0015	159.8	8.4	8.18	0.0115		0.680					6.02	5.70
5/24/2022	E102685	EV_BC1	0.080	< 0.010	0.0114	0.0111	20.8	23.0	18.0	0.0876	0.0139	< 0.0010	94	8.18	8.19	0.0040		5.42		1.31	141	< 0.010	185	165
5/24/2022	E102685	EV_BC1											94	8.18										
5/24/2022	E300091	EV_MC2							0.602				117.5	7.97										5.37
5/24/2022	E321812	F2_BPO			0.0159		61.7		0.253	0.0055	0.145	< 0.0010	230.9	7.35	8.00	0.0077							2.36	2.54
5/24/2022	E321812	F2_BPO											230.9	7.35										
5/24/2022	E206231	EV_GT1	0.027	< 0.010	0.0138	0.0135	25.9	29.0	9.23	0.0126	0.0654	0.0010	110	8.23	8.30	0.0076		4.55		0.599	76.2	< 0.010	91.0	90.5
5/24/2022	E206231	EV_GT1											110	8.23										
5/24/2022	0200203	EV_MC3			0.000563	0.000554	1.37	1.64	0.0793	< 0.0010	0.0529	0.0044	167.4	8.61	8.27	0.0192		0.578					1.38	1.34
5/24/2022	E206231	EV_GT1																						
5/24/2022	E102685	EV_BC1																						
5/24/2022	200393	EV_ER1			0.000942	0.000968	0.80	0.87	1.97	0.0022	< 0.0050	< 0.0010	172.1	8.57	8.39	0.0100		0.649					9.48	9.50
5/24/2022	E321812	F2_BPO											50.2	7.46										
5/25/2022	E321791	F2_NWPI							24.2	0.161	0.410	< 0.0010	0.2	7.21	7.67	0.0035								
5/25/2022	E300091	EV_MC2							0.473				90.7	8.81										4.42
5/25/2022	0200097	EV_EC1							16.7				76.3	8.27										159
5/25/2022	E321812	F2_BPO											224.1	7.33										
5/25/2022	E321812	F2_BPO							0.242	< 0.0050	0.138	< 0.0010	224.1	7.33	7.73	0.0036								2.88

		Parameter	MeSe(IV) – methylselenic acid CH3SeO2H	Methaneselenonic Acid	Molybdenum	Molybdenum	Nickel	Nickel	Nitrate Nitrogen (NO3), As N	Nitrite Nitrogen (NO2), As N	Nitrogen, Ammonia (As N)	Ortho-Phosphate	OXIDATION-REDUCTION POTENTIAL, FIELD	pH, Field	pH, LAB	Phosphorus	Phosphorus	Potassium	Potassium	Se(IV) – selenite SeO3(-2)	Se(VI) – selenate SeO4(-2)	SeCN – selenocyanate SeCN(-1)	Selenium	Selenium
		Fraction	D	D	D	T	D	T	N	N	T	D	N	N	N	T	T	T	T	D	D	D	D	T
		Unit	ug/l	ug/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mv	ph units	ph units	mg/l	ppm	mg/l	ppm	ug/l	ug/l	ug/l	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
5/25/2022	0200097	EV_EC1																						
5/25/2022	E321812	F2_BPO											90.4	7.52										
5/26/2022	E321791	F2_NWPI			0.0115		122		25.1	0.169	0.407	< 0.0010	69.2	7.22	7.71	0.0042							159	
5/26/2022	E300091	EV_MC2							0.432				104.7	7.89										4.47
5/26/2022	0200097	EV_EC1							15.8				140.7	7.82										158
5/26/2022	E321812	F2_BPO			0.0140		63.2		0.248	< 0.0050	0.145	< 0.0010	66.5	7.44	7.86	< 0.0020							2.78	2.37
5/26/2022	E321812	F2_BPO											66.5	7.44										
5/26/2022	E321812	F2_BPO											27.7	7.5										
5/27/2022	E321791	F2_NWPI							25.0	0.180	0.472	< 0.0010	92.4	7.2	8.10	0.0072								
5/27/2022	E300091	EV_MC2							0.366				107.2	7.85										3.72
5/27/2022	0200097	EV_EC1							16.4				102.8	8.03										172
5/27/2022	E321812	F2_BPO							0.249	< 0.0050	0.151	< 0.0010	100.1	7.25	8.17	0.0034								2.66
5/27/2022	E321812	F2_BPO											100	7.25										
5/27/2022	E321812	F2_BPO											48.1	7.5										
5/28/2022	E321791	F2_NWPI							24.9	0.177	0.490	< 0.0010	97.8	7.38	7.93	0.0023								
5/28/2022	0200097	EV_EC1							16.4				139.6	7.77										169
5/28/2022	E300091	EV_MC2							0.299				114.8	8.46										2.72
5/28/2022	E321812	F2_BPO							0.227	< 0.0050	0.151	< 0.0010	44.9	7.39	8.07	0.0024								2.51
5/28/2022	E321812	F2_BPO											44.9	7.39										
5/28/2022	E321812	F2_BPO											98.1	7.37										
5/29/2022	E321791	F2_NWPI							24.7	0.157	0.429	< 0.0010	149.3	7.2	8.12	0.0024								
5/29/2022	0200097	EV_EC1							16.4				150.8	7.82										170
5/29/2022	E300091	EV_MC2							0.356				171.7	8										3.09
5/29/2022	E321812	F2_BPO							0.230	< 0.0050	0.149	< 0.0010	2584	7.14	8.09	0.0027								2.80
5/29/2022	E321812	F2_BPO											258.4	7.14										
5/29/2022	E321812	F2_BPO											78.8	7.3										
5/30/2022	E321791	F2_NWPI	< 0.010	< 0.010	0.0119	0.0117	123	129	25.3	0.175	0.414	< 0.0010	44.8	7.55	8.09	0.0028		7.53		4.55	126	< 0.010	158	155
5/30/2022	E321814	EV_ECOUT	< 0.010	< 0.010	0.00109	0.00102	< 1.00	0.90	17.0	< 0.0050	< 0.0050	0.0221	156.2	7.49	8.00	0.0281		2.63		0.060	152	< 0.010	166	169
5/30/2022	E321812	F2_BPO	< 0.010	< 0.010	0.0222	0.0219	63.5	67.0	0.246	< 0.0050	0.149	< 0.0010	228.2	7.57	8.06	0.0035		4.70		0.639	1.22	< 0.010	2.64	2.68
5/30/2022	E321812	F2_BPO											228.2	7.57										
5/30/2022	E300091	EV_MC2			0.000567	0.000551	1.24	1.97	0.486	< 0.0010	< 0.0050	0.0100	136.2	7.99	8.13	0.0279		0.650					3.45	3.40
5/30/2022	E300091	EV_MC2																						3.52
5/30/2022	200393	EV_ER1			0.000797	0.000758	0.86	1.53	1.16	< 0.0010	< 0.0050	0.0051	153.2	8.05	8.22	0.0324		0.636					6.00	6.02
5/30/2022	0200097	EV_EC1			0.00131	0.00124	3.34	3.60	16.3	< 0.0050	< 0.0050	0.0025	104.3	8.43	8.12	0.0028		2.63					187	171
5/30/2022	0200097	EV_EC1																						166
5/30/2022	0200203	EV_MC3			0.000582	0.000465	1.64	1.94	0.136	< 0.0010	< 0.0050	0.0140	101.8	8.54	8.09	0.0345		0.612					1.13	1.13
5/30/2022	310168	EV_MC2A			0.000499	0.000491	1.08	1.51	0.263	< 0.0010	< 0.0050	0.0102	145.9	8.13	7.99	0.0273		0.590					2.48	2.34
5/30/2022	E321812	F2_BPO											90.2	7.37										
5/31/2022	E321791	F2_NWPI			0.0119		130		28.1	0.202	0.436	< 0.0010	180.2	7.29	8.05	0.0025							150	
5/31/2022	E300091	EV_MC2			0.000543	0.000585	1.24	2.11	0.494	< 0.0010	< 0.0050	0.0086	148.3	7.91	7.94	0.0338		0.709					4.54	4.31
5/31/2022	E102685	EV_BC1			0.0118	0.0116	25.0	23.1	14.2	0.0425	0.0099	< 0.0010	137.9	7.95	8.13	0.0033		5.42					175	154
5/31/2022	E300091	EV_MC2							0.393				118.1	8.38										3.38
5/31/2022	E321812	F2_BPO			0.0188		63.2		0.255	0.0059	0.128	< 0.0010	154.5	7.35	8.03	0.0023							2.25	2.32
5/31/2022	E321812	F2_BPO											154.5	7.35										
5/31/2022	E206231	EV_GT1			0.0144	0.0142	31.1	31.5	6.71	0.0085	0.0772	0.0013	168.3	8.36	8.20	0.0056		4.89					86.3	82.6
5/31/2022	0200097	EV_EC1							18.0				123.2	8.4										160
5/31/2022	0200097	EV_EC1																						
5/31/2022	0200203	EV_MC3			0.000490	0.000523	1.29	2.26	0.111	< 0.0010	< 0.0050	0.0098	182.2	8.34	8.02	0.0449		0.666					1.34	1.39

Parameter			MeSe(IV) – methylselenic acid CH3SeO2H	Methaneselenonic Acid	Molybdenum	Molybdenum	Nickel	Nickel	Nitrate Nitrogen (NO3), As N	Nitrite Nitrogen (NO2), As N	Nitrogen, Ammonia (As N)	Ortho-Phosphate	OXIDATION-REDUCTION POTENTIAL, FIELD	pH, Field	pH, LAB	Phosphorus	Phosphorus	Potassium	Potassium	Se(IV) – selenite SeO3(-2)	Se(VI) – selenate SeO4(-2)	SeCN – selenocyanate SeCN(-1)	Selenium	Selenium
Fraction			D	D	D	T	D	T	N	N	T	D	N	N	N	T	T	T	T	D	D	D	D	T
Unit			ug/l	ug/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mv	ph units	ph units	mg/l	ppm	mg/l	ppm	ug/l	ug/l	ug/l	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
5/31/2022	E206231	EV_GT1																						
5/31/2022	E102685	EV_BC1																						
5/31/2022	200393	EV_ER1			0.000835	0.000916	1.50	1.65	1.16	0.0014	< 0.0050	0.0014	136.1	8.28	8.06	0.0397		0.723					6.29	6.08
5/31/2022	E321812	F2_BPO											88.8	7.28										
6/1/2022	E321791	F2_NWPI							25.7	0.169	0.423	< 0.0010	50.6	7.52	8.05	0.0053								
6/1/2022	E300091	EV_MC2							0.405				104.2	8.48										3.75
6/1/2022	E321812	F2_BPO							0.236	< 0.0050	0.152	< 0.0010	237.2	7.3	8.16	0.0038								2.26
6/1/2022	0200097	EV_EC1							16.8				130.4	8.41										176
6/1/2022	E321812	F2_BPO											237.2	7.3										
6/1/2022	E321812	F2_BPO											-1.4	7.35										
6/2/2022	0200097	EV_EC1	< 0.010	< 0.010	0.00117	0.00124	2.52	3.23	17.2	< 0.0050	< 0.0050	0.0011	105.2	8.08	8.24	0.0042		2.54		0.161	150	< 0.010	144	170
6/2/2022	E300091	EV_MC2							0.377				44.4	8.73										7.99
6/2/2022	E321791	F2_NWPI			0.0112		117		25.8	0.168	0.410	< 0.0010	48.9	7.88	8.04	0.0050							145	
6/2/2022	E321812	F2_BPO											-210.6	7.16										
6/2/2022	E321814	EV_ECOUT	< 0.010	< 0.010	0.00112	0.00109	0.63	0.89	18.3	< 0.0050	< 0.0050	0.0198	166.6	7.53	8.13	0.0223		2.55		0.025	154	< 0.010	171	171
6/2/2022	E321812	F2_BPO			0.0132		60.9		0.301	< 0.0050	0.157	< 0.0010	95.8	7.48	8.14	0.0034							2.10	2.21
6/2/2022	E321812	F2_BPO												7.26										
6/3/2022	E321791	F2_NWPI							26.6	0.195	0.424	< 0.0010	28.4	7.49	7.88	0.0030								
6/3/2022	E300091	EV_MC2							0.410				84.8	8.24										3.40
6/3/2022	0200097	EV_EC1							17.4				148.5	7.96										167
6/3/2022	E321812	F2_BPO											185.1	7.27										
6/3/2022	E321812	F2_BPO							0.257	0.0052	0.150	< 0.0010	90.9	7.47	7.91	0.0042								2.46
6/3/2022	E321812	F2_BPO											59.2	7.48										
6/4/2022	E321791	F2_NWPI							27.3	0.172	0.407	0.0018	72.7	7.37	7.95	0.0035								
6/4/2022	E300091	EV_MC2							0.352				131.3	7.88										2.95
6/4/2022	0200097	EV_EC1							18.2				116.6	8.21										177
6/4/2022	E321812	F2_BPO											208.2	7.13										
6/4/2022	E321812	F2_BPO							0.225	< 0.0050	0.149	0.0017	86.5	7.89	8.04	0.0038								2.15
6/4/2022	E321812	F2_BPO											138.6	7.32										
6/5/2022	E321791	F2_NWPI							25.0	0.158	0.399	0.0021	37.5	8.14	8.05	0.0036								
6/5/2022	E300091	EV_MC2							0.293				112.9	7.89										2.97
6/5/2022	0200097	EV_EC1							16.8				93.1	8.23										178
6/5/2022	E321812	F2_BPO							0.204	< 0.0050	0.148	0.0023	79	7.34	8.20	0.0036								2.51
6/5/2022	E321812	F2_BPO											79	7.34										
6/5/2022	E321812	F2_BPO											151.1	7.26										
6/6/2022	E321791	F2_NWPI	0.011	< 0.010	0.0111	0.0118	129	129	28.8	0.203	0.394	0.0010	97.8	7.24	7.79	0.0037		7.67		4.22	116	< 0.010	140	148
6/6/2022	E300091	EV_MC2	< 0.010	< 0.010	0.000550	0.000595	1.09	3.38	0.334	< 0.0010	0.0099	0.0071	144	7.85	7.93	0.116		0.796		0.023	2.17	< 0.010	2.44	2.30
6/6/2022	E321812	F2_BPO	< 0.010	< 0.010	0.0212	0.0146	61.8	64.4	0.297	< 0.0050	0.151	< 0.0010	212.4	7.22	7.69	0.0039		4.89		0.581	1.08	< 0.010	2.04	2.36
6/6/2022	E321812	F2_BPO											212.4	7.22										
6/6/2022	E321812	F2_BPO											212.4	7.22										
6/6/2022	200393	EV_ER1			0.000692	0.000796	0.73	3.41	0.877	0.0010	0.0060	0.0020	154	7.83	8.09	0.128		0.819					3.93	4.09
6/6/2022	0200203	EV_MC3			0.000417	0.000441	1.45	3.88	0.122	< 0.0010	< 0.0050	0.0160	69.3	8.39	8.02	0.201		0.758					1.10	1.10
6/6/2022	310168	EV_MC2A	< 0.010	< 0.010	0.000456	0.000510	1.00	3.04	0.247	< 0.0010	0.0052	0.0084	156.7	7.77	8.02	0.102		0.713		0.020	1.64	< 0.010	1.90	1.88
6/6/2022	0200203	EV_MC3	< 0.010	< 0.010	0.000464	0.000498	1.20	3.22	0.137	< 0.0010	< 0.0050	0.0111	126.8	8.14	7.98	0.0950		0.654		0.024	0.872	< 0.010	1.01	1.00
6/6/2022	0200097	EV_EC1			0.00118	0.00119	3.06	3.24	17.1	< 0.0050	< 0.0050	0.0040	77.5	8.11	8.31	0.0038		2.50					167	198
6/6/2022	0200097	EV_EC1	< 0.010	< 0.010	0.00121	0.00126	3.33	3.22	17.3	< 0.0050	0.0062	< 0.0010	170.6	8.25	8.09	0.0133		2.61		0.201	147	< 0.010	169	168
6/6/2022	0200097	EV_EC1											170.6	8.25										
6/6/2022	E206231	EV_GT1			0.0134	0.0126	29.5	28.9	7.07	0.0078	0.0692	0.0038	87	8.46	8.24	0.0051		4.79					96.2	82.4

		Parameter	MeSe(IV) – methylselenic acid CH3SeO2H	Methaneselenonic Acid	Molybdenum	Molybdenum	Nickel	Nickel	Nitrate Nitrogen (NO3), As N	Nitrite Nitrogen (NO2), As N	Nitrogen, Ammonia (As N)	Ortho-Phosphate	OXIDATION-REDUCTION POTENTIAL, FIELD	pH, Field	pH, LAB	Phosphorus	Phosphorus	Potassium	Potassium	Se(IV) – selenite SeO3(-2)	Se(VI) – selenate SeO4(-2)	SeCN – selenocyanate SeCN(-1)	Selenium	Selenium
		Fraction	D	D	D	T	D	T	N	N	T	D	N	N	N	T	T	T	T	D	D	D	D	T
		Unit	ug/l	ug/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mv	ph units	ph units	mg/l	ppm	mg/l	ppm	ug/l	ug/l	ug/l	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
6/6/2022	E102685	EV_BC1			0.0151	0.0144	33.1	32.6	7.26	0.0171	0.142	0.0018	91.3	8.26	8.19	0.0093		5.22					76.7	66.0
6/6/2022	E300091	EV_MC2	< 0.010	< 0.010	0.000481	0.000424	1.31	2.73	0.340	< 0.0010	0.0094	0.0131	46.1	8.29	8.10	0.104		0.708		0.025	2.90	< 0.010	2.91	2.92
6/6/2022	E321814	EV_ECOUT	< 0.010	< 0.010	0.00110	0.00113	0.79	0.86	17.8	< 0.0050	< 0.0050	0.0175	57.2	7.62	7.92	0.0251		2.56		0.032	145	< 0.010	186	176
6/6/2022	E321814	EV_ECOUT											57.2	7.62										
6/6/2022	200393	EV_ER1	< 0.010	< 0.010	0.000682	0.000679	0.94	3.87	0.790	< 0.0010	0.0077	0.0078	89.8	8.39	8.17	0.221		1.01		0.037	4.20	< 0.010	4.36	4.36
6/6/2022	E321812	F2_BPO												7.3										
6/7/2022	E321791	F2_NWPI			0.0116		125		24.9	0.140	0.416	< 0.0010	128.7	7.24	8.02	< 0.0020							140	
6/7/2022	E300091	EV_MC2			0.000485	0.000606	0.63	3.80	0.325	0.0012	< 0.0050	0.0122	141.2	8.13	7.96	0.166		0.877					2.81	3.28
6/7/2022	E321812	F2_BPO			0.0149		64.1		0.228	< 0.0050	0.151	< 0.0010	223.8	7.32	8.08	0.0031							2.26	2.39
6/7/2022	E321812	F2_BPO											223.8	7.32										
6/7/2022	E102685	EV_BC1	0.033	< 0.010	0.0141	0.0149	32.7	33.4	6.62	0.0212	0.151	< 0.0010	115.5	8.05	8.17	0.0035		5.41		0.589	50.8	< 0.010	66.6	66.5
6/7/2022	E102685	EV_BC1											115.5	8.05										
6/7/2022	E300091	EV_MC2							0.446				140.9	7.71										3.77
6/7/2022	0200097	EV_EC1							17.1				94.9	8.4										181
6/7/2022	E206231	EV_GT1	0.032	< 0.010	0.0122	0.0127	29.3	30.1	6.95	0.0212	0.0730	< 0.0010	120.5	8.27	8.22	0.0055		4.88		0.591	65.7	< 0.010	87.2	85.7
6/7/2022	E206231	EV_GT1											120.5	8.27										
6/7/2022	E321812	F2_BPO											38	7.3										
6/8/2022	E321791	F2_NWPI							25.6	0.170	0.414	< 0.0010	40.5	7.52	7.93	0.0033								
6/8/2022	E300091	EV_MC2							0.335				108.5	7.88										2.72
6/8/2022	E321812	F2_BPO							0.213	< 0.0050	0.152	< 0.0010	137.6	7.27	7.94	0.0027								2.42
6/8/2022	0200097	EV_EC1							16.8				101.9	8.33										209
6/8/2022	E321812	F2_BPO											137.6	7.27										
6/8/2022	E321814	EV_ECOUT			0.00109	0.00106	0.78	0.84	16.9	0.0130	0.0224	0.0185	169.6	7.68	8.11	0.0202		2.82					203	170
6/8/2022	E321812	F2_BPO											112	7.5										
6/9/2022	E321791	F2_NWPI			0.0113		116		24.9	0.170	0.427	< 0.0010	110.4	7.2	7.90	0.0031							155	
6/9/2022	0200097	EV_EC1							16.3				134.7	7.78										170
6/9/2022	E300091	EV_MC2							0.341				107.1	7.73										3.33
6/9/2022	E321812	F2_BPO			0.0202		57.6		0.220	< 0.0050	0.142	< 0.0010	132.6	7.21	7.86	0.0026							2.46	2.43
6/9/2022	E321812	F2_BPO											132.6	7.21										
6/9/2022	E321812	F2_BPO											149	7.24										
6/9/2022	0200203	EV_MC3			0.000450	0.000443	1.24	2.32	0.126	< 0.0010	< 0.0050	0.0166	119.3	8.31	8.08	0.0612		0.628					1.13	1.02
6/9/2022	0200097	EV_EC1			0.00131	0.00117	3.03	2.93	16.1	0.0012	< 0.0050	0.0014	107.3	7.85	8.12	0.0040		2.64					180	158
6/9/2022	E321814	EV_ECOUT			0.00109	0.00459	0.87	0.86	17.2	< 0.0050	< 0.0050	0.0185	82	7.71	7.95	0.0217		2.82					178	168
6/10/2022	E321791	F2_NWPI							24.1	0.165	0.411	< 0.0010	77.9	7.98	8.26	< 0.0020								
6/10/2022	E300091	EV_MC2							0.385				195.3	7.79										3.44
6/10/2022	0200097	EV_EC1							16.6				133.8	8.25										176
6/10/2022	E321812	F2_BPO											38.3	7.43										
6/10/2022	0200097	EV_EC1			0.00116	0.00127	2.96	3.05	16.8	0.0052	< 0.0050	0.0017	196.2	7.98	8.05	0.0039		2.81					179	168
6/10/2022	E321812	F2_BPO							0.223	< 0.0050	0.131	< 0.0010	117.1	8.11	8.35	< 0.0020								2.51
6/10/2022	E321812	F2_BPO											-0.4	7.48										
6/11/2022	0200097	EV_EC1			0.00116	0.00123	2.99	3.19	19.9	< 0.0050	< 0.0050	< 0.0010	215.9	7.81	8.10	0.0148		2.83					188	168
6/11/2022	0200097	EV_EC1							18.5															179
6/11/2022	E300091	EV_MC2							0.266				106.4	8.28										2.35
6/11/2022	E321791	F2_NWPI							26.8	0.170	0.369	< 0.0010	72.8	7.3	7.93	< 0.0020								
6/11/2022	E321812	F2_BPO							0.219	< 0.0050	0.139	< 0.0010	120.3	7.69	7.96	< 0.0020								2.67
6/11/2022	E321812	F2_BPO											207.9	7.35										
6/11/2022	E321812	F2_BPO											281.6	7.51										
6/12/2022	E321791	F2_NWPI							24.3	0.138	0.330	< 0.0010	92.9	7.32	8.06	0.0024								

Parameter			MeSe(IV) – methylselenic acid CH3SeO2H	Methaneselenonic Acid	Molybdenum	Molybdenum	Nickel	Nickel	Nitrate Nitrogen (NO3), As N	Nitrite Nitrogen (NO2), As N	Nitrogen, Ammonia (As N)	Ortho-Phosphate	OXIDATION-REDUCTION POTENTIAL, FIELD	pH, Field	pH, LAB	Phosphorus	Phosphorus	Potassium	Potassium	Se(IV) – selenite SeO3(-2)	Se(VI) – selenate SeO4(-2)	SeCN – selenocyanate SeCN(-1)	Selenium	Selenium
Fraction			D	D	D	T	D	T	N	N	T	D	N	N	N	T	T	T	T	D	D	D	D	T
Unit			ug/l	ug/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mv	ph units	ph units	mg/l	ppm	mg/l	ppm	ug/l	ug/l	ug/l	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
6/12/2022	0200097	EV_EC1			0.00168	0.00131	3.29	3.26	18.5	< 0.0050	< 0.0050	0.0020	189.5	8.15	8.00	0.0042		3.08					226	189
6/12/2022	0200097	EV_EC1							16.6															185
6/12/2022	E300091	EV_MC2							0.225				206.9	7.8										2.16
6/12/2022	E321812	F2_BPO											158.3	7.11										
6/12/2022	E321812	F2_BPO							0.174	< 0.0050	0.136	0.0020	111.3	7.69	8.10	0.0024								2.77
6/12/2022	E321812	F2_BPO											58.3	7.26										
6/13/2022	E321791	F2_NWPI	0.012	< 0.010	0.0109	0.0112	123	126	23.7	0.175	0.427	0.0011	76.4	7.26	7.77	0.0025		7.49		4.76	136	< 0.010	136	147
6/13/2022	E321814	EV_ECOUT			0.00103	0.00106	0.84	0.85	18.3	< 0.0050	< 0.0050	0.0093	168.3	7.3	8.12	0.0224		2.74					187	177
6/13/2022	E300091	EV_MC2			0.000478	0.000360	0.97	2.94	0.325	< 0.0010	0.0050	0.0059	139.5	8.67	8.09	0.169		0.623					2.64	2.76
6/13/2022	E321812	F2_BPO	0.011	< 0.010	0.0134	0.0276	63.0	63.3	0.198	< 0.0050	0.140	0.0011	227.9	7.17	8.00	0.0047		4.86		0.612	1.21	0.020	2.02	2.30
6/13/2022	E321812	F2_BPO											227.9	7.17										
6/13/2022	0200097	EV_EC1			0.00114	0.00123	2.77	2.82	17.2	< 0.0050	< 0.0050	< 0.0010	198.8	7.85	8.27	0.0055		2.79					172	169
6/13/2022	0200203	EV_MC3			0.000406	0.000279	1.08	1.91	0.104	< 0.0010	0.0051	0.0091	149.5	8.36	8.09	0.0931		0.464					0.912	0.854
6/13/2022	310168	EV_MC2A			0.000414	0.000317	0.84	1.74	0.201	< 0.0010	0.0066	0.0068	144.7	7.93	7.95	0.0884		0.498					1.64	1.64
6/13/2022	0200203	EV_MC3			0.000361	0.000528	1.98	4.97	0.112	0.0014	0.0054	0.0080	241.9	7.71	7.66	0.182		0.934					0.949	0.983
6/13/2022	200393	EV_ER1			0.000662	0.000554	0.74	2.08	0.744	0.0017	< 0.0050	0.0021	186.3	7.84	8.20	0.0989		0.630					3.59	3.59
6/13/2022	E206231	EV_GT1																						
6/13/2022	E102685	EV_BC1																						
6/13/2022	E300091	EV_MC2			0.000539	0.000614	0.95	4.52	0.331	0.0012	< 0.0050	0.0090	203.9	8.11	7.77	0.170		0.968					2.73	2.91
6/13/2022	200393	EV_ER1			0.000700	0.000850	0.69	5.40	0.716	0.0019	0.0072	0.0051	202.7	8.11	7.93	0.276		1.10					3.70	3.53
6/13/2022	E321812	F2_BPO											147.7	7.37										
6/14/2022	E206231	EV_GT1																						
6/14/2022	0200097	EV_EC1			0.00131	0.00142	2.53	2.69	13.7	< 0.0050	< 0.0050	0.0052	327	7.09	8.21	0.0106		2.77					149	144
6/14/2022	E102685	EV_BC1			0.0136	0.0137	28.7	29.8	6.34	0.0232	0.144	0.0011	273.6	7.88	8.03	0.0140		5.23					58.6	56.1
6/14/2022	E206231	EV_GT1			0.0110	0.0107	20.1	24.4	6.26	< 0.0050	0.0911	0.0074	284.7	8.14	8.30	0.0572		4.20					81.9	67.8
6/14/2022	E206231	EV_GT1																						
6/14/2022	E300091	EV_MC2							0.280				238.8	8.18										2.46
6/14/2022	E321791	F2_NWPI			0.0117		120		25.6	0.217	0.597	0.0015	188.3	7.44	8.08	0.0045							146	
6/14/2022	E321812	F2_BPO			0.0249		62.3		0.354	0.0065	0.146	0.0023	263.9	7.5	8.20	0.0036							1.99	2.37
6/14/2022	E321812	F2_BPO											263.9	7.5										
6/14/2022	E300091	EV_MC2			0.000514	0.000544	0.95	3.11	0.326	0.0011	0.0052	0.0103	219.3	8.08	8.08	0.0518		0.753					2.86	2.70
6/14/2022	E206231	EV_GT1																						
6/15/2022	0200097	EV_EC1			0.00125	0.00134	2.70	2.88	16.0	< 0.0050	< 0.0050	0.0020	213.5	8.08	8.26	0.0066		2.69					165	157
6/15/2022	0200097	EV_EC1																						
6/15/2022	E300091	EV_MC2							0.326				127.6	8.16										3.12
6/15/2022	E321791	F2_NWPI							25.0	0.178	0.418	< 0.0010	138.6	7.47	8.23	0.0045								
6/15/2022	E321812	F2_BPO							0.223	< 0.0050	0.157	0.0012	145.9	7.33	8.23	0.0041								2.22
6/15/2022	E321812	F2_BPO											145.9	7.33										
6/15/2022	E321812	F2_BPO											59.3	7.41										
6/16/2022	0200097	EV_EC1			0.00120	0.00133	2.58	2.68	15.7	0.0070	0.0055	0.0056	141	8.02	8.27	0.0082		2.97					170	166
6/16/2022	0200203	EV_MC3			0.000450	0.000521	1.25	2.12	0.124	0.0018	0.0054	0.0162	124.1	8.03	8.06	0.0348		0.700					1.13	1.19
6/16/2022	E300091	EV_MC2							0.330				139	7.96										2.75
6/16/2022	E321812	F2_BPO											11.9	7.2										
6/16/2022	E321791	F2_NWPI			0.0110		111		25.0	0.162	0.381	< 0.0010	102	7.37	7.99	0.0046							143	
6/16/2022	E321814	EV_ECOUT			0.000996	0.00111	0.88	0.80	17.3	< 0.0050	< 0.0050	0.0193	125.4	7.66	8.12	0.0215		2.72					165	171
6/16/2022	E321812	F2_BPO			0.0171		62.7		0.272	< 0.0050	0.158	< 0.0010	-52.9	7.29	8.03	0.0037							2.24	2.52
6/16/2022	E321812	F2_BPO											14.1	7.38										
6/17/2022	E321791	F2_NWPI							25.6	0.161	0.362	0.0012	40	7.4	8.20	0.0033								

		Parameter	MeSe(IV) – methylselenic acid CH3SeO2H	Methaneselenonic Acid	Molybdenum	Molybdenum	Nickel	Nickel	Nitrate Nitrogen (NO3), As N	Nitrite Nitrogen (NO2), As N	Nitrogen, Ammonia (As N)	Ortho-Phosphate	OXIDATION-REDUCTION POTENTIAL, FIELD	pH, Field	pH, LAB	Phosphorus	Phosphorus	Potassium	Potassium	Se(IV) – selenite SeO3(-2)	Se(VI) – selenate SeO4(-2)	SeCN – selenocyanate SeCN(-1)	Selenium	Selenium
		Fraction	D	D	D	T	D	T	N	N	T	D	N	N	N	T	T	T	T	D	D	D	D	T
		Unit	ug/l	ug/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mv	ph units	ph units	mg/l	ppm	mg/l	ppm	ug/l	ug/l	ug/l	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
6/17/2022	E300091	EV_MC2							0.341				132	7.75										2.85
6/17/2022	0200097	EV_EC1							16.2				135.9	8.01										147
6/17/2022	E321812	F2_BPO											103.9	7.23										
6/17/2022	E321812	F2_BPO							0.204	0.0055	0.154	0.0012	68.2	7.36	8.25	0.0027								2.22
6/17/2022	E321812	F2_BPO											84.6	7.41										
6/18/2022	E321791	F2_NWPI							23.8	0.161	0.365	< 0.0010	43	7.46	8.05	< 0.0020								
6/18/2022	E300091	EV_MC2							0.217				116	7.97										2.31
6/18/2022	0200097	EV_EC1							15.7				112.3	8.1										149
6/18/2022	E321812	F2_BPO											79.9	7.07										
6/18/2022	E321812	F2_BPO							0.212	< 0.0050	0.153	< 0.0010	199.9	7.29	8.14	0.0026								2.29
6/18/2022	E321812	F2_BPO												7.2										
6/19/2022	E321791	F2_NWPI							24.7	0.151	0.332	< 0.0010	51.9	7.32	8.22	0.0032								
6/19/2022	E300091	EV_MC2							0.417				102.9	7.8										2.98
6/19/2022	0200097	EV_EC1							16.1				135.3	8										156
6/19/2022	E321812	F2_BPO											298.2	7.12										
6/19/2022	E321812	F2_BPO							0.213	< 0.0050	0.149	< 0.0010	116.7	7.35	8.27	0.0026								2.38
6/19/2022	E321812	F2_BPO											170.8	7.09										
6/20/2022	E321791	F2_NWPI	< 0.010	< 0.010	0.0112	0.0118	112	118	24.9	0.173	0.443	< 0.0010	52	7.32	7.98	0.0038		7.40		4.45	131	< 0.010	161	154
6/20/2022	E321812	F2_BPO	< 0.010	< 0.010	0.0107	0.0180	60.3	62.2	0.220	< 0.0050	0.160	< 0.0010	130.1	7.55	7.89	0.0032		4.69		0.613	1.19	< 0.010	2.72	2.44
6/20/2022	E321812	F2_BPO											130.1	7.55										
6/20/2022	200393	EV_ER1			0.000439	0.000488	1.19	2.42	0.100	0.0015	< 0.0050	0.0183	88.1	7.83	8.06	0.0324		0.630					0.953	0.953
6/20/2022	E321812	F2_BPO											130.1	7.55										
6/20/2022	E300091	EV_MC2	< 0.010	< 0.010	0.000502	0.000576	0.94	2.48	0.409	0.0014	< 0.0050	0.0134	156	7.73	8.10	0.0603		0.766		0.030	3.63	< 0.010	3.58	3.47
6/20/2022	310168	EV_MC2A	< 0.010	< 0.010	0.000490	0.000509	1.02	2.07	0.224	< 0.0010	< 0.0050	0.0142	142.4	7.92	8.09	0.0537		0.634		0.028	2.11	< 0.010	2.20	2.02
6/20/2022	0200203	EV_MC3	< 0.010	< 0.010	0.00105	0.00111	0.98	1.37	17.0	< 0.0050	< 0.0050	0.0213	71.8	7.82	8.05	0.0208		2.74		0.025	0.913	< 0.010	195	172
6/20/2022	0200097	EV_EC1	< 0.010	< 0.010	0.00116	0.00120	2.42	2.70	16.1	< 0.0050	< 0.0050	0.0072	1471 147.4	7.91 7.91	8.18	0.0077		2.74		0.175	159	< 0.010	176	169
6/20/2022	E321814	EV_ECOUT	< 0.010	< 0.010	0.000704	0.00101	0.82	6.49	0.659	0.0018	0.0058	0.0072	222.6	7.53	8.19	0.234		1.47		0.022	163	< 0.010	3.82	4.06
6/20/2022	E321814	EV_ECOUT											222.6	7.53										
6/20/2022	E321812	F2_BPO											94.8	7.24										
6/21/2022	E321791	F2_NWPI			0.0112		118		24.5	0.167	0.413	< 0.0010	65.3	7.56	8.24	0.0052							133	
6/21/2022	E321812	F2_BPO			0.0125		60.6		0.236	< 0.0050	0.160	< 0.0010	144.9	7.3	8.19	0.0042							2.29	2.69
6/21/2022	E321812	F2_BPO											144.9	7.3										
6/21/2022	E206231	EV_GT1	0.029	< 0.010	0.0124	0.0122	25.0	27.1	7.48	0.0064	0.0919	0.0037	149.4	8.88	8.24	0.0066		4.64		0.680	80.9	< 0.010	100	87.0
6/21/2022	0200203	EV_MC3			0.000443	0.000492	1.23	3.27	0.106	< 0.0010	< 0.0050	0.0106	159.8	8.05	8.06	0.0530		0.689					0.997	1.18
6/21/2022	E300091	EV_MC2							0.375				142.6	8.31										3.61
6/21/2022	E206231	EV_GT1																						
6/21/2022	E102685	EV_BC1	0.065	< 0.010	0.0148	0.0144	29.0	30.2	9.36	0.0423	0.0696	< 0.0010	194.1	8.09	7.98	0.0030		5.49		0.835	83.2	< 0.010	92.5	89.8
6/21/2022	E102685	EV_BC1																						
6/21/2022	E300091	EV_MC2			0.000508	0.000585	0.99	1.87	0.375	< 0.0010	< 0.0050	0.0061	129	8.14	8.16	0.0620		0.690					4.08	3.75
6/21/2022	200393	EV_ER1			0.000779	0.000903	0.68	4.12	0.826	0.0012	0.0102	0.0021	138.7	8.16	8.22	0.209		1.05					4.88	4.63
6/21/2022	E321812	F2_BPO												7.3										
6/22/2022	0200097	EV_EC1							16.0				154.5	8.45										88.2
6/22/2022	E321791	F2_NWPI							24.3	0.170	0.448	< 0.0010	24.4	7.29	7.80	0.0041								
6/22/2022	E300091	EV_MC2							0.356				54.1	8.18										3.68
6/22/2022	E321812	F2_BPO							0.218	< 0.0050	0.165	< 0.0010	196.4	7.61	7.96	0.0046								2.24
6/22/2022	E321812	F2_BPO											196.4	7.61										
6/22/2022	0200097	EV_EC1							16.0				35.2	8.15										174

		Parameter	MeSe(IV) – methylselenic acid CH3SeO2H	Methaneselenonic Acid	Molybdenum	Molybdenum	Nickel	Nickel	Nitrate Nitrogen (NO3), As N	Nitrite Nitrogen (NO2), As N	Nitrogen, Ammonia (As N)	Ortho-Phosphate	OXIDATION-REDUCTION POTENTIAL, FIELD	pH, Field	pH, LAB	Phosphorus	Phosphorus	Potassium	Potassium	Se(IV) – selenite SeO3(-2)	Se(VI) – selenate SeO4(-2)	SeCN – selenocyanate SeCN(-1)	Selenium	Selenium
		Fraction	D	D	D	T	D	T	N	N	T	D	N	N	N	T	T	T	T	D	D	D	D	T
		Unit	ug/l	ug/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mv	ph units	ph units	mg/l	ppm	mg/l	ppm	ug/l	ug/l	ug/l	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
6/22/2022	E321812	F2_BPO											66.7	7.32										
6/23/2022	E321791	F2_NWPI			0.0110		111		24.2	0.154	0.408	< 0.0010	55.6	7.36	8.16	0.0043							146	
6/23/2022	0200097	EV_EC1							15.7				143.7	7.93										156
6/23/2022	E300091	EV_MC2							0.351				87.2	7.93										2.96
6/23/2022	E321812	F2_BPO			0.0162		60.9		0.215	< 0.0050	0.170	< 0.0010	239.6	7.18	8.25	< 0.0020							2.85	2.25
6/23/2022	E321812	F2_BPO											239.6	7.18										
6/23/2022	0200097	EV_EC1																						
6/23/2022	E321812	F2_BPO											-25.9	7.44										
6/24/2022	E321791	F2_NWPI							23.7	0.176	0.506	< 0.0010	41	7.29	8.15	0.0033								
6/24/2022	0200097	EV_EC1							15.7				94.9	7.98										147
6/24/2022	E300091	EV_MC2							0.374				85.5	7.97										3.48
6/24/2022	E321812	F2_BPO											75.5	7.18										
6/24/2022	E321812	F2_BPO							0.198	< 0.0050	0.166	< 0.0010	36.9	7.44	8.42	0.0046								2.53
6/24/2022	E321812	F2_BPO											20.1	7.28										
6/25/2022	E321791	F2_NWPI							14.7	0.107	0.340	< 0.0010	34	7.36	8.08	0.0038								
6/25/2022	0200097	EV_EC1							16.2				107.4	7.96										177
6/25/2022	E300091	EV_MC2							0.507				74.2	7.82										4.91
6/25/2022	E321812	F2_BPO							0.195	< 0.0050	0.150	< 0.0010	94.6	7.39	8.16	0.0044								2.27
6/25/2022	E321812	F2_BPO											94.6	7.34										
6/25/2022	E321812	F2_BPO											70.1	7.57										
6/26/2022	E321791	F2_NWPI							23.6	0.152	0.398	< 0.0010	59.9	7.27	8.18	0.0024								
6/25/2022	E321812	F2_BPO											70.1	7.57										
6/26/2022	E321791	F2_NWPI							23.6	0.152	0.398	< 0.0010	59.9	7.27	8.18	0.0024								
6/26/2022	0200097	EV_EC1							13.2				82.5	7.92										175
6/26/2022	E300091	EV_MC2							0.612				123	7.88										5.39
6/26/2022	E321812	F2_BPO							0.224	< 0.0050	0.164	< 0.0010	35.4	7.3	8.16	0.0040								2.48
6/26/2022	E321812	F2_BPO											35.4	7.3										
6/26/2022	E321812	F2_BPO											80.8	7.23										
6/27/2022	E321791	F2_NWPI	< 0.010	< 0.010	0.0124	0.0118	124	117	23.9	0.158	0.362	< 0.0010	51.3	7.54	8.22	0.0034		7.44		4.84	121	< 0.010	151	145
6/27/2022	E321814	EV_ECOUT	< 0.010	< 0.010	0.00106	0.000991	0.74	0.86	16.8	< 0.0010	< 0.0050	0.0083	133.7	7.39	7.91	0.0262		2.63		0.027	136	< 0.010	164	159
6/27/2022	E321812	F2_BPO	< 0.010	< 0.010	0.0145	0.0162	60.8	63.5	0.199	< 0.0050	0.147	< 0.0010	226.4	7.03	8.29	0.0031		4.80		0.633	1.14	< 0.010	2.25	2.32
6/27/2022	E321812	F2_BPO											226.4	7.03										
6/27/2022	200393	EV_ER1			0.000871	0.000891	0.77	1.52	1.01	< 0.0010	< 0.0050	0.0012	56.5	8.25	8.29	0.0395		0.665					5.63	5.70
6/27/2022	310168	EV_MC2A			0.000542	0.000535	0.94	1.26	0.345	< 0.0010	< 0.0050	0.0029	32.8	8.38	8.23	0.0177		0.509					3.23	3.49
6/27/2022	0200203	EV_MC3			0.000539	0.000529	1.39	1.70	0.114	< 0.0010	< 0.0050	0.0041	139.9	8.11	8.14	0.0189		0.515					1.02	1.23
6/27/2022	0200097	EV_EC1			0.00121	0.00120	2.15	2.12	16.2	< 0.0050	< 0.0050	< 0.0010	17.4	8.06	8.28	0.0061		2.61					168	156
6/27/2022	E300091	EV_MC2			0.000646	0.000572	1.06	1.38	0.747	< 0.0010	< 0.0050	0.0087	31	8.39	8.24	0.0217		0.660					6.70	6.41
6/27/2022	E321812	F2_BPO											112.9	7.24										
6/28/2022	E321791	F2_NWPI			0.0120		114		24.6	0.159	0.364	< 0.0010	26.9	7.33	8.21	0.0046							152	
6/28/2022	E300091	EV_MC2							0.463				57.1	7.9										4.53
6/28/2022	0200097	EV_EC1							14.7				125.7	8.02										153
6/28/2022	E321812	F2_BPO			0.0156		64.2		0.174	< 0.0050	0.152	< 0.0010	1827	7.24	8.36	0.0041							2.52	2.16
6/28/2022	E321812	F2_BPO											182.7	7.24										
6/28/2022	E206231	EV_GT1			0.0134	0.0140	27.7	28.2	7.81	< 0.0050	0.0608	< 0.0010	104	8.28	8.21	0.0070		4.69					99.8	82.6
6/28/2022	E102685	EV_BC1			0.0147	0.0159	30.0	30.8	7.52	0.0362	0.0512	< 0.0010	110.4	7.94	8.11	0.0051		5.34					68.9	77.6
6/28/2022	0200203	EV_MC3			0.000527	0.000550	1.34	1.86	0.0899	0.0035	0.0144	0.0059	147.4	8.31	7.99	0.0255		0.547					1.08	1.20
6/28/2022	E206231	EV_GT1																						
6/28/2022	E102685	EV_BC1																						
6/28/2022	E300091	EV_MC2			0.000599	0.000614	1.07	2.11	0.633	0.0019	< 0.0050	0.0038	159.3	7.99	7.98	0.0084		0.703					5.42	6.48
6/28/2022	200393	EV_ER1			0.000874	0.000932	0.73	2.04	1.03	0.0035	< 0.0050	0.0018	157.6	8.26	8.73	0.0651		0.744					5.77	5.83

Parameter			MeSe(IV) – methylselenic acid CH3SeO2H	Methaneselenonic Acid	Molybdenum	Molybdenum	Nickel	Nickel	Nitrate Nitrogen (NO3), As N	Nitrite Nitrogen (NO2), As N	Nitrogen, Ammonia (As N)	Ortho-Phosphate	OXIDATION-REDUCTION POTENTIAL, FIELD	pH, Field	pH, LAB	Phosphorus	Phosphorus	Potassium	Potassium	Se(IV) – selenite SeO3(-2)	Se(VI) – selenate SeO4(-2)	SeCN – selenocyanate SeCN(-1)	Selenium	Selenium
Fraction			D	D	D	T	D	T	N	N	T	D	N	N	N	T	T	T	T	D	D	D	D	T
Unit			ug/l	ug/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mv	ph units	ph units	mg/l	ppm	mg/l	ppm	ug/l	ug/l	ug/l	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
6/28/2022	E321812	F2_BPO											141.4	7.28										
6/29/2022	E321791	F2_NWPI							24.6	0.172	0.424	< 0.0010	70.2	7.32	8.29	0.0051								
6/29/2022	E300091	EV_MC2							0.476				110	7.89										4.91
6/29/2022	0200097	EV_EC1							15.1				41.8	7.98										176
6/29/2022	E321812	F2_BPO							0.174	< 0.0050	0.150	< 0.0010	130.9	7.33	8.48	0.0040								2.68
6/29/2022	E321812	F2_BPO											130.9	7.33										
6/29/2022	0200097	EV_EC1																						
6/29/2022	E321812	F2_BPO											28.8	7.49										
6/30/2022	E321791	F2_NWPI			0.0110		110		24.7	0.148	0.396	< 0.0010			7.94	0.0036							161	
6/30/2022	E300091	EV_MC2							0.485				73.3	7.92										5.26
6/30/2022	0200097	EV_EC1							15.6				30.5	8.04										163
6/30/2022	E321812	F2_BPO			0.0211		65.0		0.220	< 0.0050	0.173	< 0.0010	208.9	7.05	7.99	0.0033							2.58	2.27
6/30/2022	E321812	F2_BPO											208.9	7.05										
6/30/2022	E321791	F2_NWPI											-8.2	7.32										
6/30/2022	E321812	F2_BPO											108.2	7.04										
7/1/2022	E321812	F2_BPO							0.237	< 0.0050	0.175	< 0.0010	44.2	7.33	7.96	0.0040								2.18
7/1/2022	E321791	F2_NWPI							24.9	0.149	0.374	< 0.0010	9.2	7.34	8.05	0.0044								
7/1/2022	E300091	EV_MC2							0.532				162.4	7.97										5.60
7/1/2022	0200097	EV_EC1							15.8				47.1	8.39										166
7/2/2022	E300091	EV_MC2							0.544				25.7	7.99										5.54
7/2/2022	0200097	EV_EC1							15.8				36.2	7.98										153
7/2/2022	E321791	F2_NWPI							25.1	0.173	0.421	< 0.0010	-9.6	7.53	7.94	0.0037								
7/2/2022	E321812	F2_BPO							0.247	< 0.0050	0.176	< 0.0010	34.7	7.65	7.99	0.0033								2.30
7/2/2022	E321812	F2_BPO											34.7	7.65										
7/2/2022	E321812	F2_BPO											135.3	7.33										
7/3/2022	0200097	EV_EC1							16.3				98	7.79										149
7/3/2022	E300091	EV_MC2							0.571				26.6	8.3										5.17
7/3/2022	E321791	F2_NWPI							24.9	0.153	0.394	< 0.0010	-2.7	7.58	8.22	0.0036								
7/3/2022	E321812	F2_BPO											54.1	7.46										
7/3/2022	E321812	F2_BPO							0.186	< 0.0050	0.182	< 0.0010	54.1	7.46	8.33	0.0040								2.19
7/3/2022	E321812	F2_BPO												7.12										
7/4/2022	E321791	F2_NWPI	0.012	< 0.010	0.0110	0.0116	111	112	24.7	0.179	0.387	< 0.0010	72.3	7.35	8.07	0.0040		7.62		4.01	127	< 0.010	162	163
7/4/2022	E321812	F2_BPO	< 0.010	< 0.010	0.0143	0.0243	63.2	62.7	0.179	< 0.0050	0.177	0.0044	193.5	7.37	8.16	0.0036		4.96		0.544	1.10	< 0.010	2.48	2.47
7/4/2022	E321812	F2_BPO											193.5	7.37										
7/4/2022	200393	EV_ER1			0.000893	0.000893	0.83	1.12	1.01	< 0.0010	< 0.0050	0.0013	102.4	8.16	8.34	0.0329		0.601					6.03	5.87
7/4/2022	E321812	F2_BPO											193.5	7.37										
7/4/2022	310168	EV_MC2A	< 0.010	< 0.010	0.000681	0.000578	1.16	1.22	0.382	0.0014	0.0077	0.0052	24.5	8.21	8.35	0.0142		0.539		0.028	3.61	< 0.010	4.28	4.20
7/4/2022	0200203	EV_MC3	< 0.010	< 0.010	0.000587	0.000585	1.62	1.65	0.207	0.0014	< 0.0050	0.0071	-4.5	8.26	8.22	0.0156		0.519		0.030	1.02	< 0.010	1.17	1.22
7/4/2022	0200097	EV_EC1	< 0.010	< 0.010	0.00124	0.00125	2.22	2.11	15.4	< 0.0050	< 0.0050	0.0032	56.9	7.95	8.33	0.0059		2.69		0.135	137	< 0.010	188	171
7/4/2022	0200097	EV_EC1											56.9	7.95										
7/4/2022	E300091	EV_MC2	< 0.010	< 0.010	0.000697	0.000662	1.25	1.33	0.631	0.0012	< 0.0050	0.0020	22.7	8.34	8.33	0.0136		0.644		0.043	5.66	< 0.010	6.70	6.22
7/4/2022	E321814	EV_ECOUT	< 0.010	< 0.010	0.00116	0.00117	0.81	0.75	15.8	0.0054	< 0.0050	0.0196	150.3	7.44	8.10	0.0222		2.69		0.024	139	< 0.010	192	171
7/4/2022	E321814	EV_ECOUT											150.3	7.44										
7/4/2022	E321812	F2_BPO											221.7	7.2										
7/5/2022	E300091	EV_MC2							0.508				195.8	7.8										4.73
7/5/2022	E321791	F2_NWPI			0.0110		110		25.1	0.161	0.403	< 0.0010	107.6	7.27	8.08	0.0042							178	
7/5/2022	0200097	EV_EC1							15.2				177.2	7.88										156
7/5/2022	E321812	F2_BPO			0.0172		61.2		0.173	0.0147	0.183	< 0.0010	133.1	7.33	8.10	0.0040							2.70	2.56

		Parameter	MeSe(IV) – methylselenic acid CH3SeO2H	Methaneselenonic Acid	Molybdenum	Molybdenum	Nickel	Nickel	Nitrate Nitrogen (NO3), As N	Nitrite Nitrogen (NO2), As N	Nitrogen, Ammonia (As N)	Ortho-Phosphate	OXIDATION-REDUCTION POTENTIAL, FIELD	pH, Field	pH, LAB	Phosphorus	Phosphorus	Potassium	Potassium	Se(IV) – selenite SeO3(-2)	Se(VI) – selenate SeO4(-2)	SeCN – selenocyanate SeCN(-1)	Selenium	Selenium
		Fraction	D	D	D	T	D	T	N	N	T	D	N	N	N	T	T	T	T	D	D	D	D	T
		Unit	ug/l	ug/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mv	ph units	ph units	mg/l	ppm	mg/l	ppm	ug/l	ug/l	ug/l	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
7/5/2022	E321812	F2_BPO											133.1	7.33										
7/5/2022	E206231	EV_GT1	0.031	< 0.010	0.0133	0.0139	27.0	27.7	8.21	0.0122	0.132	0.0016	122.9	8.29	8.26	0.0085		5.06		0.585	78.3	< 0.010	102	99.1
7/5/2022	E206231	EV_GT1											122.9	8.29										
7/5/2022	E102685	EV_BC1	0.043	< 0.010	0.0133	0.0136	28.1	30.1	8.00	0.0633	0.139	< 0.0010	114.4	7.93	8.07	0.0041		5.55		0.695	70.0	< 0.010	88.9	90.5
7/5/2022	E102685	EV_BC1											114.4	7.93										
7/5/2022	E321814	EV_ECOUT			0.00110	0.00112	0.77	0.77	15.7	< 0.0050	0.0100	0.0227	184.6	7.39	7.97	0.0221		2.80					180	172
7/5/2022	0200203	EV_MC3			0.000541	0.000540	1.34	1.58	0.0605	< 0.0010	< 0.0050	0.0072	170.4	8.48	8.22	0.0156		0.531					1.11	1.16
7/5/2022	E206231	EV_GT1			0.0128	0.0133	26.6	27.0	8.11	0.0097	0.134	< 0.0010	167.4	8.26	8.23	0.0078		5.30					99.9	95.0
7/5/2022	E300091	EV_MC2			0.000667	0.000649	1.17	1.37	0.490	< 0.0010	0.0088	0.0015	132.9	8.24	8.29	0.0145		0.630					5.18	5.33
7/5/2022	E321812	F2_BPO											51.4	7.44										
7/5/2022	E102685	EV_BC1			0.0129	0.0137	28.0	29.1	8.48	0.0530	0.122	< 0.0010	145.3	7.88	8.15	0.0043		5.53					88.2	83.7
7/6/2022	0200097	EV_EC1							16.1				169.3	7.98										147
7/6/2022	E321812	F2_BPO							0.191	< 0.0050	0.194	< 0.0010	53.8	7.38	7.79	0.0021								2.32
7/6/2022	E300091	EV_MC2							0.579				93.4	8.21										5.54
7/6/2022	E321812	F2_BPO											53.8	7.38										
7/6/2022	E321791	F2_NWPI							20.7	0.134	0.421	< 0.0010	33.3	7.37	7.82	0.0039								
7/6/2022	200393	EV_ER1			0.000877	0.000862	0.69	1.61	0.963	< 0.0010	< 0.0050	< 0.0010	157.6	8.23	8.34	0.0576		0.676					5.64	6.29
7/6/2022	0200097	EV_EC1			0.00116	0.00120	2.05	1.92	15.5	< 0.0050	< 0.0050	0.0014	177	8.03	8.34	0.0052		2.54					182	156
7/6/2022	E321812	F2_BPO											262.3	6.87										
7/7/2022	E300091	EV_MC2							0.617				137.8	7.86										5.83
7/7/2022	0200097	EV_EC1							16.0				120.2	7.9										151
7/7/2022	E321791	F2_NWPI			0.0117		109		25.0	0.184	0.385	< 0.0010	30.1	7.3	7.96	0.0038							149	
7/7/2022	E321812	F2_BPO			0.0197		60.8		0.225	< 0.0050	0.186	< 0.0010	166.6	7.25	7.91	0.0025							2.46	4.95
7/7/2022	E321812	F2_BPO											166.6	7.25										
7/7/2022	E321812	F2_BPO											30.4	7.44										
7/8/2022	E300091	EV_MC2							0.627				184	8.05										6.33
7/8/2022	0200097	EV_EC1							15.4				131.6	7.91										175
7/8/2022	E321791	F2_NWPI							25.4	0.178	0.384	< 0.0010	21.1	7.34	8.25	0.0054								
7/8/2022	E321812	F2_BPO							0.166	< 0.0050	0.227	< 0.0010	66.5	7.32	8.23	0.0021								2.34
7/8/2022	E321812	F2_BPO											66.5	7.32										
7/8/2022	E321812	F2_BPO											63.7	7.5										
7/9/2022	0200097	EV_EC1							15.2				134.3	7.98										153
7/9/2022	E300091	EV_MC2							0.761				24.6	8.5										7.04
7/9/2022	E321812	F2_BPO							0.240	< 0.0050	0.168	< 0.0010	112.4	7.47	8.11	0.0060								1.97
7/9/2022	E321791	F2_NWPI							24.5	0.164	0.384	< 0.0010	44.5	7.38	7.96	0.0049								
7/9/2022	E321812	F2_BPO											118.5	7.42										
7/9/2022	E321812	F2_BPO											112.4	7.47										
7/10/2022	0200097	EV_EC1							15.1				75.6	7.99										161
7/10/2022	E300091	EV_MC2							0.735				92.5	8.01										7.70
7/10/2022	E321791	F2_NWPI							27.8	0.123	0.269	< 0.0010	3.9	7.59	7.80	0.0037								
7/10/2022	E321812	F2_BPO							0.211	< 0.0050	0.180	< 0.0010	62.1	7.42	7.84	0.0028								2.16
7/10/2022	E321812	F2_BPO											62.1	7.42										
7/10/2022	E321812	F2_BPO											139.9	7.26										
7/11/2022	200393	EV_ER1			0.000934	0.00102	0.72	1.13	1.06	< 0.0010	< 0.0050	< 0.0010	158.6	8.22	8.37	0.0182		0.598					6.07	6.53
7/11/2022	E321791	F2_NWPI	< 0.010	< 0.010	0.0118	0.0130	113	114	23.7	0.152	0.395	< 0.0010	168.6	7.33	7.54	0.0045		7.80		4.07	122	< 0.010	190	163
7/11/2022	E321812	F2_BPO	0.011	< 0.010	0.0195	0.0205	62.4	63.9	0.134	< 0.0050	0.190	< 0.0010	38.5	7.61	7.75	0.0033		5.04		0.680	0.918	0.016	2.53	2.46
7/11/2022	E321812	F2_BPO											38.5	7.61										
7/11/2022	0200097	EV_EC1			0.00119	0.00133	2.09	2.00	15.2	< 0.0050	0.0093	0.0013	37.2	7.98	8.27	0.0052		2.52					168	163

		Parameter	MeSe(IV) – methylselenic acid CH3SeO2H	Methaneselenonic Acid	Molybdenum	Molybdenum	Nickel	Nickel	Nitrate Nitrogen (NO3), As N	Nitrite Nitrogen (NO2), As N	Nitrogen, Ammonia (As N)	Ortho-Phosphate	OXIDATION-REDUCTION POTENTIAL, FIELD	pH, Field	pH, LAB	Phosphorus	Phosphorus	Potassium	Potassium	Se(IV) – selenite SeO3(-2)	Se(VI) – selenate SeO4(-2)	SeCN – selenocyanate SeCN(-1)	Selenium	Selenium
		Fraction	D	D	D	T	D	T	N	N	T	D	N	N	N	T	T	T	T	D	D	D	D	T
		Unit	ug/l	ug/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mv	ph units	ph units	mg/l	ppm	mg/l	ppm	ug/l	ug/l	ug/l	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
7/11/2022	0200203	EV_MC3			0.000628	0.000654	1.67	1.78	0.0638	< 0.0010	< 0.0050	0.0013	-2.7	8.44	8.34	0.0115		0.518					1.19	1.33
7/11/2022	E321814	EV_ECOUT			0.00109	0.00124	0.75	0.77	15.7	< 0.0050	< 0.0050	0.0188	96.9	7.54	8.08	0.0210		2.52					171	165
7/11/2022	310168	EV_MC2A			0.000654	0.000699	1.16	1.34	0.462	0.0010	< 0.0050	< 0.0010	82	8.29	8.39	0.0109		0.574					5.12	5.28
7/11/2022	E300091	EV_MC2			0.000785	0.000796	1.39	1.44	0.900	0.0013	< 0.0050	< 0.0010	-19.8	8.54	8.31	0.0077		0.733					9.09	9.39
7/11/2022	E321812	F2_BPO											173.1	7.23										
7/12/2022	E321791	F2_NWPI			0.0117		111		25.0	0.150	0.341	< 0.0010	4.9	8	8.10	0.0038							151	
7/12/2022	0200097	EV_EC1							14.8				217.5	7.9										179
7/12/2022	E206231	EV_GT1			0.0130	0.0127	27.9	28.4	8.33	0.0083	0.132	< 0.0010	127.7	8.24	8.34	0.0056		5.03					102	91.8
7/12/2022	E300091	EV_MC2							0.692				40.5	8.37										8.11
7/12/2022	E321812	F2_BPO			0.0135		62.6		0.163	< 0.0050	0.166	< 0.0010	43.3	7.54	8.08	0.0056							2.08	2.05
7/12/2022	E321812	F2_BPO											43.3	7.54										
7/12/2022	E102685	EV_BC1			0.0133	0.0130	27.9	27.2	7.49	0.0657	0.144	< 0.0010	101.6	7.88	8.21	0.0042		5.47					71.6	67.1
7/12/2022	200393	EV_ER1			0.00106	0.000956	0.73	1.13	0.968	< 0.0010	< 0.0050	0.0042	183.2	8.32	7.56	0.0306		0.664					7.53	6.49
7/12/2022	0200203	EV_MC3			0.000659	0.000611	1.56	1.56	0.0242	< 0.0010	< 0.0050	0.0041	172.2	8.58	7.63	0.0101		0.585					1.49	1.32
7/12/2022	E206231	EV_GT1																						
7/12/2022	E102685	EV_BC1																						
7/12/2022	E300091	EV_MC2			0.000836	0.000724	1.46	1.44	0.586	< 0.0010	0.0059	0.0018	165.8	8.53	7.72	0.0064		0.700					9.37	7.87
7/12/2022	E321812	F2_BPO											25	7.44										
7/13/2022	E321791	F2_NWPI							24.7	0.188	0.446	0.0012	86.4	7.03	8.16	0.0032								
7/13/2022	E300091	EV_MC2							0.710				201.8	7.81										7.22
7/13/2022	E321812	F2_BPO							0.179	< 0.0050	0.182	0.0016	76.3	7.37	8.11	0.0030								1.98
7/13/2022	0200097	EV_EC1							15.6				29.5	8.12										157
7/13/2022	E321812	F2_BPO											76.3	7.37										
7/13/2022	0200097	EV_EC1																						
7/13/2022	E321812	F2_BPO											35.9	7.52										
7/14/2022	E321791	F2_NWPI			0.0128		122				0.395	< 0.0010	77.3	7.34	7.45	0.0030							133	
7/14/2022	E300091	EV_MC2							0.704				103.2	7.89										7.59
7/14/2022	0200097	EV_EC1							15.1				24.2	8.33										152
7/14/2022	E321812	F2_BPO			0.0171		69.1				0.176	< 0.0010	223.5	6.84	7.62	0.0038							2.11	2.35
7/14/2022	E321812	F2_BPO											223.5	6.84										
7/14/2022	E321812	F2_BPO												7.36										
7/15/2022	E321791	F2_NWPI							26.2	0.164	0.381	< 0.0010	122.2	7.45	7.38	0.0040								
7/15/2022	E300091	EV_MC2							0.682				192.2	7.89										10.3
7/15/2022	0200097	EV_EC1							16.0				3.4	8.19										161
7/15/2022	E321812	F2_BPO							0.178	< 0.0050	0.195	< 0.0010	64.2	7.51	7.69	< 0.0020								2.22
7/15/2022	E321812	F2_BPO											64.2	7.51										
7/15/2022	E321812	F2_BPO											30.8	7.4										
7/16/2022	E321791	F2_NWPI							25.3	0.173	0.423	< 0.0010	53.4	7.43	7.76	0.0028								
7/16/2022	E300091	EV_MC2							0.855				52.5	8.02										8.52
7/16/2022	0200097	EV_EC1							15.8				45.6	8.68										158
7/16/2022	E321812	F2_BPO											154	7.28										
7/16/2022	E321812	F2_BPO							0.172	< 0.0050	0.195	< 0.0010	154	7.28	7.91	0.0031								2.28
7/16/2022	E321812	F2_BPO												7.34										
7/17/2022	E300091	EV_MC2							1.15				153.1	8.03										10.8
7/17/2022	0200097	EV_EC1							15.7				136.7	7.89										156
7/17/2022	E321791	F2_NWPI							23.7	0.158	0.405	< 0.0010	57.5	7.36	7.65	0.0036								
7/17/2022	E321812	F2_BPO							0.150	< 0.0050	0.197	< 0.0010	79.2	7.36	7.87	< 0.0020								1.92
7/17/2022	E321812	F2_BPO											79.2	7.4										

		Parameter	MeSe(IV) – methylselenic acid CH3SeO2H	Methaneselenonic Acid	Molybdenum	Molybdenum	Nickel	Nickel	Nitrate Nitrogen (NO3), As N	Nitrite Nitrogen (NO2), As N	Nitrogen, Ammonia (As N)	Ortho-Phosphate	OXIDATION-REDUCTION POTENTIAL, FIELD	pH, Field	pH, LAB	Phosphorus	Phosphorus	Potassium	Potassium	Se(IV) – selenite SeO3(-2)	Se(VI) – selenate SeO4(-2)	SeCN – selenocyanate SeCN(-1)	Selenium	Selenium
		Fraction	D	D	D	T	D	T	N	N	T	D	N	N	N	T	T	T	T	D	D	D	D	T
		Unit	ug/l	ug/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mv	ph units	ph units	mg/l	ppm	mg/l	ppm	ug/l	ug/l	ug/l	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
7/17/2022	E321812	F2_BPO												7.4										
7/18/2022	200393	EV_ER1			0.00106	0.00107	0.67	1.04	1.17	< 0.0010	< 0.0050	< 0.0010	195.2	7.92	8.30	0.0109		0.599					8.18	7.06
7/18/2022	E321791	F2_NWPI	0.014	< 0.010	0.0113	0.0120	112	119	24.6	0.158	0.349	< 0.0010	33.7	7.38	7.89	0.0035		7.91		4.03	129	< 0.010	158	148
7/18/2022	310168	EV_MC2A	< 0.010	< 0.010	0.000723	0.000742	1.16	1.29	0.587	< 0.0010	0.0078	< 0.0010	239.3	8.08	8.29	0.0064		0.635		0.031	6.19	< 0.010	7.75	6.10
7/18/2022	0200203	EV_MC3	< 0.010	< 0.010	0.000704	0.000682	1.61	1.83	0.0806	< 0.0010	< 0.0050	0.0021	97	8.39	8.29	0.0071		0.611		0.026	1.25	< 0.010	1.68	1.41
7/18/2022	E321812	F2_BPO	0.015	< 0.010	0.0222	0.0184	62.6	66.8	0.155	< 0.0050	0.180	< 0.0010	64.7	7.43	7.95	0.0049		5.15		0.743	0.870	0.011	1.94	2.01
7/18/2022	E321812	F2_BPO											64.7	7										
7/18/2022	E321812	F2_BPO											181.1	7.32										
7/18/2022	0200097	EV_EC1	< 0.010	< 0.010	0.00122	0.00129	2.20	2.35	15.3	< 0.0050	< 0.0050	0.0042	84.5	8	8.21	0.0070		2.71		0.159	136	< 0.010	204	159
7/18/2022	0200097	EV_EC1											84.5	8										
7/18/2022	E321814	EV_ECOUT	< 0.010	< 0.010	0.00110	0.00117	1.08	1.04	15.6	< 0.0050	< 0.0050	0.0100	115.7	7.66	7.94	0.0096		2.68		0.024	139	< 0.010	164	153
7/18/2022	E321814	EV_ECOUT											115.7	7.66										
7/18/2022	E300091	EV_MC2	< 0.010	< 0.010	0.000890	0.000903	1.46	1.66	1.00	< 0.0010	0.0070	< 0.0010	120.2	8.38	8.27	0.0067		0.832		0.036	9.30	< 0.010	12.2	9.61
7/18/2022	E321812	F2_BPO											182.5	7.38										
7/19/2022	0200097	EV_EC1							15.2				252.6	7.85										149
7/19/2022	E300091	EV_MC2							0.870				243.2	7.75										9.13
7/19/2022	E321791	F2_NWPI			0.0107		115		24.5	0.160	0.363	< 0.0010	200.6	7.31	7.29	0.0037							185	
7/19/2022	E321812	F2_BPO			0.0130		64.9		0.170	< 0.0050	0.189	< 0.0010	169.2	7.46	7.43	0.0051							2.52	2.21
7/19/2022	E321812	F2_BPO											169.2	7.46										
7/19/2022	E206231	EV_GT1	0.032	< 0.010	0.0134	0.0144	30.0	29.7	7.59	0.0110	0.169	< 0.0010	165	8.33	7.70	0.0051		5.26		0.590	69.6	< 0.010	102	88.2
7/19/2022	E206231	EV_GT1											165	8.33										
7/19/2022	E102685	EV_BC1	0.079	< 0.010	0.0128	0.0137	27.7	27.3	6.95	0.0512	0.0189	< 0.0010	246.3	7.75	7.41	0.0124		5.52		1.25	55.4	< 0.010	79.5	69.7
7/19/2022	E102685	EV_BC1											246.3	7.75										
7/19/2022	E321812	F2_BPO											151.1	7.28										
7/20/2022	E300091	EV_MC2							0.876				167.2	7.97										9.71
7/20/2022	0200097	EV_EC1							14.4				63.2	8.06										150
7/20/2022	E321812	F2_BPO							0.520	0.0088	0.177	< 0.0010	237.2	7.36	7.29	0.0030								1.88
7/20/2022	E321812	F2_BPO											237.2	7.36										
7/20/2022	E321791	F2_NWPI							23.4	0.136	0.309	< 0.0010	22.5	7.41	7.04	0.0034								
7/20/2022	E321812	F2_BPO											64.4	7.5										
7/21/2022	0200097	EV_EC1							14.8				166.5	7.95										158
7/21/2022	E300091	EV_MC2							0.863				30											8.87
7/21/2022	E321791	F2_NWPI			0.0130		131		23.9	0.157	0.373	< 0.0010	38.9	7.85	8.04	0.0029							163	
7/21/2022	E321812	F2_BPO											143.6	7.33										
7/21/2022	E321812	F2_BPO			0.0184		65.0		0.158	< 0.0050	0.192	< 0.0010	195.8	7.27	8.11	0.0037							1.75	2.02
7/21/2022	E321812	F2_BPO			0.0180	0.0176	64.4	64.9	0.173	< 0.0050	0.206	< 0.0010			7.32	0.0032		5.19					2.84	2.26
7/21/2022	E321812	F2_BPO			0.0112	0.0117	61.8	65.7	0.146	0.0069	0.217	< 0.0010			7.36	0.0037		5.23					2.49	2.24
7/21/2022	E321812	F2_BPO											67.1	7.49										
7/22/2022	0200097	EV_EC1							15.0				176.1	7.94										167
7/22/2022	E300091	EV_MC2							0.909				112.8	8.09										10.3
7/22/2022	E321791	F2_NWPI							24.0	0.147	0.324	< 0.0010	65.1	7.4	7.78	0.0028								
7/22/2022	E321812	F2_BPO											176.5	7.22										
7/22/2022	E321812	F2_BPO							0.138	< 0.0050	0.191	< 0.0010	108	7.24	7.78	0.0046								2.07
7/22/2022	E321812	F2_BPO											190.9	7.41										
7/23/2022	0200097	EV_EC1							15.3				150.2	7.95										146
7/23/2022	E300091	EV_MC2							0.913				49.4	8.01										10.2
7/23/2022	E321791	F2_NWPI							24.2	0.146	0.348	< 0.0010	39	7.55	7.46	0.0035								
7/23/2022	E321812	F2_BPO											119.9	7.24										

		Parameter	MeSe(IV) – methylselenic acid CH3SeO2H	Methaneselenonic Acid	Molybdenum	Molybdenum	Nickel	Nickel	Nitrate Nitrogen (NO3), As N	Nitrite Nitrogen (NO2), As N	Nitrogen, Ammonia (As N)	Ortho-Phosphate	OXIDATION-REDUCTION POTENTIAL, FIELD	pH, Field	pH, LAB	Phosphorus	Phosphorus	Potassium	Potassium	Se(IV) – selenite SeO3(-2)	Se(VI) – selenate SeO4(-2)	SeCN – selenocyanate SeCN(-1)	Selenium	Selenium
		Fraction	D	D	D	T	D	T	N	N	T	D	N	N	N	T	T	T	T	D	D	D	D	T
		Unit	ug/l	ug/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mv	ph units	ph units	mg/l	ppm	mg/l	ppm	ug/l	ug/l	ug/l	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
7/23/2022	E321812	F2_BPO							0.155	< 0.0050	0.215	< 0.0010	56.2	7.35	7.48	0.0036								2.11
7/23/2022	E321812	F2_BPO											116.4	7.31										
7/24/2022	0200097	EV_EC1							15.2				189.2	7.9										148
7/24/2022	E300091	EV_MC2							0.923				96.9	8.13										10.6
7/24/2022	E321791	F2_NWPI							24.3	0.156	0.387	< 0.0010	96	7.36	7.49	0.0030								
7/24/2022	E321812	F2_BPO							0.159	< 0.0050	0.211	< 0.0010	49.5	7.34	7.61	0.0046								2.16
7/24/2022	E321812	F2_BPO											49.5	7.34										
7/24/2022	E321812	F2_BPO											67	7.36										
7/25/2022	0200097	EV_EC1							15.4				81.1	8.08										147
7/25/2022	E300091	EV_MC2							1.72				78.6	7.89										15.4
7/25/2022	E321791	F2_NWPI	0.013	< 0.010	0.0114	0.0116	112	113	25.0	0.168	0.474	< 0.0010	45	7.89	7.93	0.0024		7.47		4.11	121	< 0.010	137	156
7/25/2022	E321812	F2_BPO	0.015	< 0.010	0.0199	0.0189	66.9	63.3	0.169	< 0.0050	0.211	< 0.0010	112.4	7.3	7.91	< 0.0020		4.89		0.631	0.823	0.015	1.95	2.08
7/25/2022	E321812	F2_BPO											112.4	7.3										
7/25/2022	E321812	F2_BPO											183.1	7.02										
7/26/2022	0200097	EV_EC1							15.0				221.6	7.58										141
7/26/2022	E321812	F2_BPO			0.0230		57.9		0.167	< 0.0050	0.198	< 0.0010	78.1	7.42	7.78	0.0037							2.08	1.97
7/26/2022	E321812	F2_BPO											78.1	7.42										
7/26/2022	E300091	EV_MC2							1.14				15.1	8.12										12.2
7/26/2022	E321791	F2_NWPI			0.0116		110		24.5	0.153	0.358	< 0.0010	1.89	7.31	7.76	0.0034							159	
7/26/2022	E321812	F2_BPO											83.8	7.26										
7/27/2022	0200097	EV_EC1							15.6				165.5	8.26										160
7/27/2022	E300091	EV_MC2							1.50				64.7	8.24										15.0
7/27/2022	E321791	F2_NWPI							25.2	0.145	0.359	< 0.0010	33.9	8.39	8.06	0.0034								
7/27/2022	E321812	F2_BPO							0.179	< 0.0050	0.190	< 0.0010	80.8	7.2	7.88	0.0042								1.85
7/27/2022	E321812	F2_BPO											80.8	7.2										
7/27/2022	E321812	F2_BPO											58.2	7.2										
7/28/2022	E321791	F2_NWPI			0.0164		119		24.6	0.158	0.382	< 0.0010	81.2	8.36	8.19	0.0035							169	
7/28/2022	0200097	EV_EC1							15.5				62	8.13										161
7/28/2022	E300091	EV_MC2							1.09				60.9	8.22										11.8
7/28/2022	E321812	F2_BPO											270.1	7.12										
7/28/2022	E321812	F2_BPO			0.00362		61.8		0.168	< 0.0050	0.197	< 0.0010	32.4	7.41	8.13	0.0037							2.24	2.29
7/28/2022	E321812	F2_BPO											298.8	7.31										
7/29/2022	0200097	EV_EC1							15.2				206.5	7.94										165
7/29/2022	E300091	EV_MC2							1.08				107.7	8.12										11.4
7/29/2022	E321791	F2_NWPI							24.5	0.154	0.355	< 0.0010	77.1	7.38	7.63	0.0025								
7/29/2022	E321812	F2_BPO							0.152	< 0.0050	0.198	< 0.0010	37.2	7.61	7.67	0.0040								1.91
7/29/2022	E321812	F2_BPO											37.2	7.61										
7/29/2022	E321812	F2_BPO												7.7										
7/30/2022	E300091	EV_MC2							1.08				223.3	7.56										11.8
7/30/2022	0200097	EV_EC1							15.1				232.2	7.68										153
7/30/2022	E321791	F2_NWPI							24.6	0.153	0.351	< 0.0010	8.5	7.43	8.00	0.0030								
7/30/2022	E321812	F2_BPO							0.159	< 0.0050	0.195	< 0.0010	28.7	7.7	7.94	0.0050								2.14
7/30/2022	E321812	F2_BPO											28.7	7.7										
7/30/2022	E321812	F2_BPO											208.4	7.22										
7/31/2022	0200097	EV_EC1							15.1				158.4	7.83										153
7/31/2022	E300091	EV_MC2							1.14				56.1	8.06										12.6
7/31/2022	E321791	F2_NWPI							24.5	0.182	0.338	< 0.0010	39.9	7.33	8.18	0.0042								
7/31/2022	E321812	F2_BPO							0.161	< 0.0050	0.196	< 0.0010	124	7.24	8.10	0.0052								2.07

		Parameter	MeSe(IV) – methylselenic acid CH3SeO2H	Methaneselenonic Acid	Molybdenum	Molybdenum	Nickel	Nickel	Nitrate Nitrogen (NO3), As N	Nitrite Nitrogen (NO2), As N	Nitrogen, Ammonia (As N)	Ortho-Phosphate	OXIDATION-REDUCTION POTENTIAL, FIELD	pH, Field	pH, LAB	Phosphorus	Phosphorus	Potassium	Potassium	Se(IV) – selenite SeO3(-2)	Se(VI) – selenate SeO4(-2)	SeCN – selenocyanate SeCN(-1)	Selenium	Selenium
		Fraction	D	D	D	T	D	T	N	N	T	D	N	N	N	T	T	T	T	D	D	D	D	T
		Unit	ug/l	ug/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mv	ph units	ph units	mg/l	ppm	mg/l	ppm	ug/l	ug/l	ug/l	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
7/31/2022	E321812	F2_BPO											124	7.2										
7/31/2022	E321812	F2_BPO												7.3										
8/1/2022	200393	EV_ER1			0.00104	0.00105	0.55	0.67	1.41	< 0.0010	< 0.0050	0.0044	206.3	7.9	8.27	0.0103		0.594					8.14	8.40
8/1/2022	310168	EV_MC2A	< 0.010	< 0.010	0.000651	0.000775	0.83	1.00	0.871	< 0.0010	0.0187	< 0.0010	185.8	8.15	8.29	0.0044		0.718		0.042	7.84	< 0.010	7.81	9.31
8/1/2022	E321812	F2_BPO	0.013	< 0.010	0.00408	0.00368	69.3	59.2	0.173	< 0.0050	0.189	< 0.0010	147.3	7.25	7.80	0.0049		4.64		0.529	0.749	< 0.010	2.25	2.09
8/1/2022	E321812	F2_BPO											147.3	7.25										
8/1/2022	E321812	F2_BPO											14.73	7.25										
8/1/2022	0200203	EV_MC3	< 0.010	< 0.010	0.000751	0.000896	1.25	1.39	0.0848	0.0011	< 0.0050	0.0046	200	8.16	8.26	0.0060		0.722		0.033	1.09	< 0.010	1.45	1.73
8/1/2022	E300091	EV_MC2	< 0.010	< 0.010	0.000805	0.000814	0.90	1.07	1.07	< 0.0010	0.0229	0.0012	77.9	8.08	8.29	0.0040		0.774		0.044	9.21	< 0.010	9.51	11.1
8/1/2022	E321791	F2_NWPI	0.011	< 0.010	0.0116	0.0116	109	106	24.1	0.147	0.321	< 0.0010	3.7	8.32	7.79	0.0043		6.93		3.79	108	< 0.010	147	146
8/1/2022	0200097	EV_EC1	< 0.010	< 0.010	0.00132	0.00127	2.28	2.20	15.2	< 0.0050	< 0.0050	0.0049	113.3	7.93	8.17	0.0050		2.44		0.165	117	< 0.010	141	149
8/1/2022	E321814	EV_ECOUT	< 0.010	< 0.010	0.00106	0.00115	1.00	0.80	15.3	< 0.0050	< 0.0050	0.0218	127.1	7.53	7.94	0.0229		2.42		0.026	116	< 0.010	134	147
8/1/2022	E321814	EV_ECOUT											127.1	7.53										
8/1/2022	E321812	F2_BPO											65.4	7.41										
8/2/2022	E206231	EV_GT1	0.096	< 0.010									106.1	8.18						0.758	140	< 0.010		
8/2/2022	E102685	EV_BC1	0.118	< 0.010									119.2	8.01						1.77	65.3	< 0.010		
8/2/2022	E321791	F2_NWPI			0.0119		111		24.4	0.147	0.330	< 0.0010	139.9	7.37	7.87	< 0.0020							202	
8/2/2022	E321812	F2_BPO			0.00358		61.4		0.342	< 0.0050	0.197	< 0.0010	208.2	7.27	7.92	0.0040							2.54	2.34
8/2/2022	E321812	F2_BPO											208.2	7.27										
8/2/2022	0200097	EV_EC1							15.7				117.8	8.16										161
8/2/2022	E300091	EV_MC2							1.17				202.5	8.1										12.0
8/2/2022	E206231	EV_GT1	0.086	< 0.010	0.00832	0.00853	14.9	16.2	13.5	0.0574	0.251	< 0.0010	240	8.18	8.22	0.0062		4.70		0.785	126	< 0.010	178	156
8/2/2022	E206231	EV_GT1											240	8.18										
8/2/2022	E102685	EV_BC1	0.103	< 0.010	0.0131	0.0130	24.3	25.1	7.84	0.0247	0.0107	0.0019	127.4	7.93	8.16	0.0043		5.17		1.89	57.5	< 0.010	89.3	73.4
8/2/2022	E102685	EV_BC1											127.4	7.93										
8/2/2022	E321812	F2_BPO												7.4										
8/3/2022	E300091	EV_MC2							1.18				204.4	7.8										12.6
8/3/2022	0200097	EV_EC1							14.8				137.3	8.05										162
8/3/2022	E321812	F2_BPO							0.161	< 0.0050	0.188	< 0.0010	205.2	7.46	8.07	0.0049								1.90
8/3/2022	E321812	F2_BPO											205.2	7.46										
8/3/2022	E321791	F2_NWPI							23.7	0.152	0.349	< 0.0010	9	7.71	7.92	0.0022								
8/4/2022	E300091	EV_MC2							1.54				175.4	7.81										16.4
8/4/2022	E321791	F2_NWPI			0.0116		114		24.5	0.142	0.383	< 0.0010	54.8	7.31	8.02	0.0030							156	
8/4/2022	E321812	F2_BPO			0.0214		59.8		0.156	< 0.0050	0.193	< 0.0010	182.4	7.66	8.24	0.0048							2.16	2.11
8/4/2022	E321812	F2_BPO											182.4	7.66										
8/4/2022	0200097	EV_EC1							15.0				59.9	7.94										155
8/4/2022	E321812	F2_BPO											64.8	7.73										
8/5/2022	0200097	EV_EC1							15.6				204.5	7.94										150
8/5/2022	E300091	EV_MC2							1.51				201.5	8.17										15.7
8/5/2022	E321791	F2_NWPI							23.9	0.148	0.326	< 0.0010	158.9	7.4	7.78	0.0027								
8/5/2022	E321812	F2_BPO							0.189	< 0.0050	0.189	< 0.0010	168.7	7.62	7.92	0.0047								2.18
8/5/2022	E321812	F2_BPO											168.7	7.62										
8/5/2022	E321812	F2_BPO											42.7	7.44										
8/6/2022	0200097	EV_EC1							16.2				209.5	7.96										166
8/6/2022	E300091	EV_MC2							1.64				191.8	8.16										17.4
8/6/2022	E321791	F2_NWPI							26.2	0.130	0.332	< 0.0010	132.7	7.42	8.14	0.0027								
8/6/2022	E321812	F2_BPO							0.197	< 0.0050	0.195	< 0.0010	147.7	7.48	8.24	0.0046								1.91
8/6/2022	E321812	F2_BPO											147.7	7.48										

		Parameter	MeSe(IV) – methylselenic acid CH3SeO2H	Methaneselenonic Acid	Molybdenum	Molybdenum	Nickel	Nickel	Nitrate Nitrogen (NO3), As N	Nitrite Nitrogen (NO2), As N	Nitrogen, Ammonia (As N)	Ortho-Phosphate	OXIDATION-REDUCTION POTENTIAL, FIELD	pH, Field	pH, LAB	Phosphorus	Phosphorus	Potassium	Potassium	Se(IV) – selenite SeO3(-2)	Se(VI) – selenate SeO4(-2)	SeCN – selenocyanate SeCN(-1)	Selenium	Selenium
		Fraction	D	D	D	T	D	T	N	N	T	D	N	N	N	T	T	T	T	D	D	D	D	T
		Unit	ug/l	ug/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mv	ph units	ph units	mg/l	ppm	mg/l	ppm	ug/l	ug/l	ug/l	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
8/6/2022	E321812	F2_BPO											55.4	7.58										
8/7/2022	E300091	EV_MC2							1.55				164.2	7.9										15.0
8/7/2022	0200097	EV_EC1							15.2				163.2	7.96										169
8/7/2022	E321791	F2_NWPI							24.2	0.139	0.311	< 0.0010	98.8	7.43	8.01	0.0024								
8/7/2022	E321812	F2_BPO							0.181	< 0.0050	0.192	< 0.0010	141.1	7.39	8.03	0.0053								1.90
8/7/2022	E321812	F2_BPO											141.1	7.39										
8/7/2022	E321812	F2_BPO											57.3	7.34										
8/8/2022	E300091	EV_MC2							1.67				194.5	8.05										15.2
8/8/2022	0200097	EV_EC1							14.9				194.6	7.93										130
8/8/2022	E321791	F2_NWPI	0.013	< 0.010	0.0130	0.0115	123	118	24.3	0.136	0.300	< 0.0010	118.5	7.4	8.16	0.0026		7.54		4.48	137	< 0.010	151	159
8/8/2022	E321812	F2_BPO	0.011	< 0.010	0.0166	0.0193	59.9	64.6	0.172	< 0.0050	0.198	< 0.0010	110.7	7.22	8.24	0.0031		5.20		0.717	0.982	0.017	1.82	2.22
8/8/2022	E321812	F2_BPO											110.7	7.22										
8/8/2022	E321812	F2_BPO											77.5	7.38										
8/9/2022	E321791	F2_NWPI			0.0115		108		24.6	0.116	0.281	0.0014	60.5	7.37	8.32	0.0020							136	
8/9/2022	E300091	EV_MC2							1.50				1023	8.09										14.4
8/9/2022	0200097	EV_EC1							15.2				95.1	7.97										138
8/9/2022	E321814	EV_ECOUT			0.00112	0.00112	0.78	0.87	15.2	< 0.0050	< 0.0050	0.0249	89.3	7.43	8.11	0.0235		2.72					159	162
8/9/2022	E321812	F2_BPO			0.0168		57.5		0.175	< 0.0050	0.199	0.0011	109.9	7.31	8.36	0.0038							1.97	1.98
8/9/2022	E321812	F2_BPO											109.9	7.31										
8/9/2022	0200097	EV_EC1			0.00110	0.00120	1.98	2.11	14.8	< 0.0050	< 0.0050	0.0031	101.6	7.91	8.27	0.0033		2.65					137	160
8/9/2022	0200203	EV_MC3			0.000736	0.000748	0.74	0.89	0.0526	< 0.0010	0.0140	0.0041	50.5	8.55	8.46	0.0059		0.720					1.62	1.34
8/9/2022	E321812	F2_BPO											47.2	7.41										
8/10/2022	E300091	EV_MC2							1.56				137.2	8.03										14.3
8/10/2022	0200097	EV_EC1							15.8				86.5	7.91										138
8/10/2022	E321812	F2_BPO											72.5	7.28										
8/10/2022	E321812	F2_BPO							0.163	< 0.0050	0.194	< 0.0010	72.5	7.28	8.41	0.0034								2.04
8/10/2022	E321791	F2_NWPI							23.4	0.146	0.325	< 0.0010	15.6	7.38	8.31	0.0025								
8/10/2022	E206231	EV_GT1			0.0150	0.0138	29.5	30.0	7.31	0.0169	0.116	< 0.0010	105.1	8.2	8.36	0.0044		5.00					58.8	67.4
8/10/2022	E102685	EV_BC1			0.0116	0.0119	25.3	25.2	13.1	0.0361	0.0117	< 0.0010	104.1	7.82	8.35	0.0024		5.38					162	125
8/10/2022	200393	EV_ER1			0.00126	0.00121	0.54	1.68	1.68	0.0011	< 0.0050	< 0.0010	95.6	8.28	8.47	0.0051		0.675					7.78	9.10
8/10/2022	E300091	EV_MC2			0.00108	0.000992	1.28	2.36	2.15	0.0022	0.0089	< 0.0010	108.8	8.13	8.40	0.0023		1.13					15.5	17.6
8/10/2022	E321812	F2_BPO											60.3	7.3										
8/11/2022	E321791	F2_NWPI			0.00989		102		24.0	0.118	0.285	< 0.0010	120.7	7.36	8.26	0.0030							153	
8/11/2022	E300091	EV_MC2							1.55				138.2	8.09										14.7
8/11/2022	0200097	EV_EC1							17.0				44.4	7.95										183
8/11/2022	E321812	F2_BPO											171	7.02										
8/11/2022	E321812	F2_BPO			0.0136	0.0147	56.0	61.6	0.192	< 0.0050	0.194	0.0017	50.8	7.38	7.95	0.0034		4.97					2.07	1.96
8/11/2022	E206231	EV_GT1	0.046	< 0.010		0.924		82000					116	8.31			11060		12688	0.702	76.0	< 0.010		26000
8/11/2022	E206231	EV_GT1				0.272		19000									2629		2778					5400
8/11/2022	E206231	EV_GT1				1.6		198000									8167		16167					16000
8/11/2022	E206231	EV_GT1				1.1		54000									9198		8544					46000
8/11/2022	E102685	EV_BC1				1.3		98000									4438		6031					15000
8/11/2022	E102685	EV_BC1				0.8		63000									7547		9981					28000
8/11/2022	E102685	EV_BC1				1.2		89000									11287		12748					35000
8/11/2022	E102685	EV_BC1	0.124	< 0.010									93.7	7.96						2.55	123	< 0.010		
8/11/2022	E321812	F2_BPO												7.1										
8/12/2022	E300091	EV_MC2							1.60				150.9	8.07										14.8
8/12/2022	0200097	EV_EC1							15.1				98.3	7.94										145

		Parameter	MeSe(IV) – methylselenic acid CH3SeO2H	Methaneselenonic Acid	Molybdenum	Molybdenum	Nickel	Nickel	Nitrate Nitrogen (NO3), As N	Nitrite Nitrogen (NO2), As N	Nitrogen, Ammonia (As N)	Ortho-Phosphate	OXIDATION-REDUCTION POTENTIAL, FIELD	pH, Field	pH, LAB	Phosphorus	Phosphorus	Potassium	Potassium	Se(IV) – selenite SeO3(-2)	Se(VI) – selenate SeO4(-2)	SeCN – selenocyanate SeCN(-1)	Selenium	Selenium
		Fraction	D	D	D	T	D	T	N	N	T	D	N	N	N	T	T	T	T	D	D	D	D	T
		Unit	ug/l	ug/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mv	ph units	ph units	mg/l	ppm	mg/l	ppm	ug/l	ug/l	ug/l	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
8/12/2022	E321791	F2_NWPI							24.3	0.128	0.286	< 0.0010	1.8	7.43	8.02	0.0026								
8/12/2022	E321812	F2_BPO							0.146	< 0.0050	0.195	< 0.0010	74.7	7.39	8.04	0.0026								1.76
8/12/2022	E321812	F2_BPO											74.7	7.39										
8/12/2022	E321812	F2_BPO											32.7	7.31										
8/13/2022	E300091	EV_MC2							1.62				125	8.16										16.0
8/13/2022	0200097	EV_EC1							15.1				150.1	7.96										153
8/13/2022	E321791	F2_NWPI							23.1	0.138	0.324	< 0.0010	34.6	7.42	7.83	0.0023								
8/13/2022	E321812	F2_BPO							0.142	< 0.0050	0.196	< 0.0010	66.7	7.44	7.80	0.0040								1.66
8/13/2022	E321812	F2_BPO											66.7	7.44										
8/13/2022	E321812	F2_BPO												7.3										
8/14/2022	E300091	EV_MC2							1.63				74.2	8.12										15.7
8/14/2022	0200097	EV_EC1							19.3				79.8	8										151
8/14/2022	E321791	F2_NWPI							23.8	0.140	0.332	< 0.0010	40.3	7.44	7.81	< 0.0020								
8/14/2022	E321812	F2_BPO							0.140	< 0.0050	0.198	< 0.0010	63	7.48	7.88	0.0041								1.71
8/14/2022	E321812	F2_BPO											63	7.48										
8/14/2022	E321812	F2_BPO											50.9	7.3										
8/15/2022	E300091	EV_MC2	< 0.010	< 0.010	0.00114	0.00114	1.56	1.63	1.66	0.0012	0.0121	< 0.0010	179.2	8.11	8.07	0.0036		0.984		0.098	14.9	< 0.010	18.4	15.7
8/15/2022	200393	EV_ER1			0.00122	0.00126	0.59	0.64	1.63	< 0.0010	< 0.0050	0.0012	56.2	8.28	8.02	0.0056		0.641					10.7	8.94
8/15/2022	E321812	F2_BPO	0.014	< 0.010	0.0147	0.0200	58.3	59.9	0.150	< 0.0050	0.192	< 0.0010	77.9	7.29	8.19	0.0044		5.04		0.646	0.799	0.014	2.00	2.03
8/15/2022	E321812	F2_BPO											77.9	7.29										
8/15/2022	310168	EV_MC2A	< 0.010	< 0.010	0.000812	0.000793	0.80	0.88	1.20	0.0010	0.0175	< 0.0010	70.5	8.32	8.09	0.0042		0.751		0.076	11.4	< 0.010	14.1	11.5
8/15/2022	0200203	EV_MC3	< 0.010	< 0.010	0.000776	0.000748	0.88	0.90	0.119	< 0.0010	< 0.0050	< 0.0010	48.8	8.4	8.01	0.0053		0.643		0.052	1.10	< 0.010	1.49	1.25
8/15/2022	E321791	F2_NWPI	0.014	< 0.010	0.0108	0.0116	110	113	24.2	0.138	0.289	< 0.0010	17.9	7.39	8.14	0.0025		7.25		4.12	127	< 0.010	158	146
8/15/2022	0200097	EV_EC1	< 0.010	< 0.010	0.00119	0.00115	2.02	2.07	14.8	< 0.0050	< 0.0050	< 0.0010	82.2	8	8.16	0.0041		2.47		0.186	130	< 0.010	174	142
8/15/2022	0200097	EV_EC1											82.2	8										
8/15/2022	E321814	EV_ECOUT	< 0.010	< 0.010	0.00114	0.00108	< 1.00	1.04	14.9	< 0.0050	< 0.0050	0.0198	116.1	7.56	7.94	0.0208		2.51		0.033	136	< 0.010	154	143
8/15/2022	E321814	EV_ECOUT											116.1	7.56										
8/15/2022	E321812	F2_BPO											68.5	7.45										
8/16/2022	E206231	EV_GT1	0.046	< 0.010	0.0141	0.0146	27.7	28.9	7.72	0.0172	0.101	< 0.0010	202.6	8.36	8.31	0.0038		5.11		0.682	71.4	< 0.010	89.7	75.0
8/16/2022	E206231	EV_GT1											202.6	8.36										
8/16/2022	E321812	F2_BPO			0.0168		60.0		0.158	< 0.0050	0.189	< 0.0010	78.1	7.33	8.04	0.0033							2.63	2.08
8/16/2022	E300091	EV_MC2							1.68				74.1	8.27										15.8
8/16/2022	E321791	F2_NWPI			0.0115		112		24.1	0.128	0.256	< 0.0010	-60.9	8.05	7.94	0.0021							164	
8/16/2022	E102685	EV_BC1	0.095	< 0.010	0.0125	0.0128	24.0	24.4	10.6	0.0188	0.0075	< 0.0010	131.4	7.92	8.23	0.0034		5.32		2.80	89.9	< 0.010	114	96.4
8/16/2022	E102685	EV_BC1											131.4	7.92										
8/16/2022	E300091	EV_MC2			0.00103	0.00110	1.32	1.42	1.86	0.0019	0.0065	< 0.0010	88	8.21	8.19	0.0024		1.09					22.8	17.7
8/16/2022	0200097	EV_EC1							15.2				80.7	8.01										150
8/16/2022	E321812	F2_BPO											54.8	7.41										
8/17/2022	E300091	EV_MC2							1.75				201.6	8.09										14.4
8/17/2022	0200097	EV_EC1							15.6				201.9	7.98										130
8/17/2022	E321791	F2_NWPI							24.2	0.134	0.282	0.0028	69.5	7.44	7.82	0.0024								
8/17/2022	E321812	F2_BPO							0.190	< 0.0050	0.187	< 0.0010	128.4	7.54	7.86	0.0036								1.75
8/17/2022	E321812	F2_BPO											86.5	7.36										
8/17/2022	E321812	F2_BPO											67.2	7.42										
8/18/2022	E300091	EV_MC2							1.74				193.3	8.11										15.2
8/18/2022	0200097	EV_EC1							15.1				204.3	7.97										156
8/18/2022	E321791	F2_NWPI			0.0107		105		24.6	0.113	0.239	< 0.0010	65.9	7.42	8.07	0.0025							154	
8/18/2022	E321812	F2_BPO											96.1	7.34										

Parameter			MeSe(IV) – methylselenic acid CH3SeO2H	Methaneselenonic Acid	Molybdenum	Molybdenum	Nickel	Nickel	Nitrate Nitrogen (NO3), As N	Nitrite Nitrogen (NO2), As N	Nitrogen, Ammonia (As N)	Ortho-Phosphate	OXIDATION-REDUCTION POTENTIAL, FIELD	pH, Field	pH, LAB	Phosphorus	Phosphorus	Potassium	Potassium	Se(IV) – selenite SeO3(-2)	Se(VI) – selenate SeO4(-2)	SeCN – selenocyanate SeCN(-1)	Selenium	Selenium
Fraction			D	D	D	T	D	T	N	N	T	D	N	N	N	T	T	T	T	D	D	D	D	T
Unit			ug/l	ug/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mv	ph units	ph units	mg/l	ppm	mg/l	ppm	ug/l	ug/l	ug/l	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
8/18/2022	E321812	F2_BPO							0.142	< 0.0050	0.194	< 0.0010	147.5	7.52	8.16	< 0.0020								0.770
8/18/2022	E321812	F2_BPO											58.4	7.41										
8/19/2022	E300091	EV_MC2							1.75				187.9	8.14										17.4
8/19/2022	0200097	EV_EC1							15.5				59.5	7.98										156
8/19/2022	E321791	F2_NWPI			0.0117		110		25.1	0.136	0.286	< 0.0010	54.9	7.45	8.01	0.0024							174	
8/19/2022	E321812	F2_BPO							0.260	< 0.0050	0.197	< 0.0010	126	7.55	8.06	0.0029								1.80
8/19/2022	E321812	F2_BPO											98	7.39										
8/19/2022	E321812	F2_BPO											59.9	7.43										
8/20/2022	0200097	EV_EC1							15.6				173.4	7.91										145
8/20/2022	E321791	F2_NWPI							24.3	0.122	0.267	< 0.0010	71.5	7.38	7.93	0.0025								
8/20/2022	E300091	EV_MC2							1.76				189.9	8.12										16.8
8/20/2022	E321812	F2_BPO							0.138	< 0.0050	0.180	< 0.0010	96.5	7.52	7.97	0.0026								1.87
8/20/2022	E321812	F2_BPO											88.8	7.4										
8/21/2022	E300091	EV_MC2							1.95				179.2	8.02										17.2
8/21/2022	0200097	EV_EC1							15.0				192.8	7.91										139
8/21/2022	E321791	F2_NWPI							24.6	0.105	0.232	< 0.0010	58.9	7.4	7.99	0.0039								
8/21/2022	E321812	F2_BPO							0.133	< 0.0050	0.182	< 0.0010	128.8	7.42	8.05	0.0032								1.82
8/21/2022	E321812	F2_BPO																						
8/21/2022	E321812	F2_BPO											53.6	7.47										
8/22/2022	E300091	EV_MC2							1.78				161	8										17.3
8/22/2022	0200097	EV_EC1							15.4				99	7.91										149
8/22/2022	E321812	F2_BPO	0.020	< 0.010	0.0166	0.0164	57.7	57.9	0.240	< 0.0050	0.185	< 0.0010	201	7.32	7.99	0.0042		5.21		0.600	0.781	0.015	2.37	1.85
8/22/2022	E321791	F2_NWPI	0.016	< 0.010	0.0110	0.0116	116	115	24.7	0.114	0.256	< 0.0010	63.8	7.38	7.94	0.0027		7.67		3.53	124	< 0.010	178	150
8/22/2022	E321812	F2_BPO											113.3	7.4										
8/23/2022	E300091	EV_MC2							1.82				173.3	8.05										17.3
8/23/2022	0200097	EV_EC1							15.2				171.9	7.89										155
8/23/2022	E321791	F2_NWPI			0.0106		106		24.2	0.134	0.272	< 0.0010	63.2	7.37	7.94	0.0022							151	
8/23/2022	E321812	F2_BPO			0.0168		57.1		0.163	< 0.0050	0.188	< 0.0010	49.1	7.44	7.98	0.0044							1.80	1.83
8/23/2022	E300091	EV_MC2			0.00115	0.00111	1.22	1.24	2.10	0.0034	0.0076	< 0.0010	80.9	8.29	8.18	0.0026		1.14					23.2	18.8
8/23/2022	E321812	F2_BPO											79.5	7.45										
8/24/2022	E300091	EV_MC2							1.84				135.8	8.02										16.7
8/24/2022	0200097	EV_EC1							15.5				54.4	7.88										153
8/24/2022	E321812	F2_BPO							0.127	< 0.0050	0.190	< 0.0010	177.3	7.37	8.20	0.0032								1.73
8/24/2022	E321791	F2_NWPI							24.3	0.118	0.241	< 0.0010	31.9	7.39	8.09	< 0.0020								
8/24/2022	E321812	F2_BPO											63.2	7.49										
8/25/2022	E321791	F2_NWPI			0.0115		114		24.6	0.122	0.282	< 0.0010	21.9	7.34	8.19	0.0022							169	
8/25/2022	0200097	EV_EC1							15.2				44.3	7.88										136
8/25/2022	E300091	EV_MC2							1.73				36.8	8.11										16.6
8/25/2022	E321812	F2_BPO			0.0160		56.8		0.167	< 0.0050	0.200	< 0.0010	89.4	7.52	8.55	0.0022							2.04	1.69
8/25/2022	E321812	F2_BPO																						
8/25/2022	E321812	F2_BPO											41.5	7.43										
8/26/2022	E300091	EV_MC2							1.74				99.3	7.98										17.4
8/26/2022	0200097	EV_EC1							15.4				31.3	7.86										155
8/26/2022	E321812	F2_BPO							0.136	< 0.0050	0.201	< 0.0010	149.8	7.4	7.83	0.0027								1.40
8/26/2022	E321791	F2_NWPI							24.5	0.111	0.248	< 0.0010	13.9	7.34	7.83	< 0.0020								
8/26/2022	E321812	F2_BPO											47.1	7.45										
8/27/2022	E300091	EV_MC2							1.65				118.3	8.11										15.4
8/27/2022	0200097	EV_EC1							15.1				146	7.89										144

Parameter			MeSe(IV) – methylselenic acid CH3SeO2H	Methaneselenonic Acid	Molybdenum	Molybdenum	Nickel	Nickel	Nitrate Nitrogen (NO3), As N	Nitrite Nitrogen (NO2), As N	Nitrogen, Ammonia (As N)	Ortho-Phosphate	OXIDATION-REDUCTION POTENTIAL, FIELD	pH, Field	pH, LAB	Phosphorus	Phosphorus	Potassium	Potassium	Se(IV) – selenite SeO3(-2)	Se(VI) – selenate SeO4(-2)	SeCN – selenocyanate SeCN(-1)	Selenium	Selenium
Fraction			D	D	D	T	D	T	N	N	T	D	N	N	N	T	T	T	T	D	D	D	D	T
Unit			ug/l	ug/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mv	ph units	ph units	mg/l	ppm	mg/l	ppm	ug/l	ug/l	ug/l	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
8/27/2022	E321791	F2_NWPI							24.2	0.109	0.250	< 0.0010	14.6	7.37	8.13	0.0023								
8/27/2022	E321812	F2_BPO							0.127	< 0.0050	0.202	< 0.0010	168.8	7.48	8.21	0.0037								1.40
8/27/2022	E321812	F2_BPO											1	7.55										
8/28/2022	E300091	EV_MC2							1.69				155	8.07										16.9
8/28/2022	0200097	EV_EC1							15.8				42.9	7.95										149
8/28/2022	E321791	F2_NWPI							24.5	0.117	0.233	< 0.0010	-26.8	7.38	8.18	< 0.0020								
8/28/2022	E321812	F2_BPO			0.0191	0.0194	53.6	55.1	0.156	< 0.0050	0.198	< 0.0010	73.3	7.63	8.30	0.0030		4.81					2.21	1.59
8/28/2022	E321812	F2_BPO											33.5	7.57										
8/28/2022	E321812	F2_BPO			0.0191	0.0194	53.6	55.1	0.237	< 0.0050	0.202	< 0.0010	83.5	7.56	7.84	< 0.0020		4.81					2.21	1.91
8/29/2022	E300091	EV_MC2	< 0.010	< 0.010	0.00103	0.00111	1.34	1.38	1.64	0.0020	0.0085	< 0.0010	13.9	8.13	8.20	0.0023		0.931		0.113	15.8	< 0.010	17.1	14.9
8/29/2022	0200203	EV_MC3	< 0.010	< 0.010	0.000708	0.000751	0.74	0.74	0.137	< 0.0010	0.0080	< 0.0010	136.1	8.37	8.28	0.0046		0.626		0.057	1.22	< 0.010	1.58	1.44
8/29/2022	310168	EV_MC2A	< 0.010	< 0.010	0.000720	0.000823	0.72	0.65	1.16	< 0.0010	0.0194	< 0.0010	146	8.36	8.27	0.0025		0.741		0.094	11.8	< 0.010	13.1	11.3
8/29/2022	E321812	F2_BPO	0.020	< 0.010	0.0183	0.0158	51.0	52.1	0.160	< 0.0050	0.200	0.0014	126.6	7.56	8.10	0.0030		4.15		0.760	0.916	< 0.010	2.58	2.04
8/29/2022	200393	EV_ER1			0.00107	0.00117	0.56	0.59	2.02	0.0012	0.0218	< 0.0010	81.4	8.37	8.27	0.0156		0.627					12.4	10.5
8/29/2022	E321791	F2_NWPI	0.018	< 0.010	0.00977	0.00986	115	114	24.6	0.124	0.254	0.0015	30.4	7.33	7.96	< 0.0020		6.81		4.31	144	< 0.010	177	145
8/29/2022	0200097	EV_EC1	< 0.010	< 0.010	0.00106	0.00119	2.06	1.98	15.1	< 0.0050	< 0.0050	< 0.0010	84.1	8.04	8.18	0.0021		2.54		0.224	151	< 0.010	183	163
8/29/2022	0200097	EV_EC1											84.1	8.04										
8/29/2022	E321814	EV_ECOUT	< 0.010	< 0.010	0.000960	0.00109	0.82	0.74	15.3	< 0.0050	< 0.0050	0.0181	158.1	7.62	7.98	0.0211		2.57		0.037	151	< 0.010	183	152
8/29/2022	E321814	EV_ECOUT											158.1	7.62										
8/29/2022	E321812	F2_BPO											82.3	7.6										
8/30/2022	E321791	F2_NWPI			0.00864		104		24.3	0.0934	0.215	< 0.0010	5.9	7.42	7.74	0.0022							149	
8/30/2022	E321812	F2_BPO			0.0133		49.4		0.163	< 0.0050	0.193	< 0.0010	94.7	7.56	7.88	0.0026							2.16	2.22
8/30/2022	E300091	EV_MC2							1.92				37.5	8.23										18.0
8/30/2022	0200097	EV_EC1							15.1				49	8.02										151
8/30/2022	E300091	EV_MC2			0.00109	0.00117	1.30	1.40	1.67	0.0013	0.0053	< 0.0010	64.1	8.15	8.15	0.0028		1.07					18.7	16.0
8/30/2022	E206231	EV_GT1	0.045	< 0.010	0.0138	0.0153	26.7	28.4	8.79	0.0175	0.117	< 0.0010	89.9	8.37	8.25	0.0038		5.26		0.700	85.6	< 0.010	101	89.8
8/30/2022	E206231	EV_GT1											89.9	8.37										
8/30/2022	E102685	EV_BC1	0.119	< 0.010	0.0129	0.0136	22.0	24.5	7.67	0.0121	0.0057	< 0.0010	113.3	7.99	8.09	0.0045		5.47		2.70	70.1	< 0.010	82.2	75.0
8/30/2022	E102685	EV_BC1											113.3	7.99										
8/30/2022	E321812	F2_BPO											90.3	7.4										
8/31/2022	E321791	F2_NWPI							24.7	0.109	0.219	< 0.0010	89.2	7.42	8.20	0.0020								
8/31/2022	E300091	EV_MC2							1.78				137.6	8.17										17.4
8/31/2022	E321812	F2_BPO											38.7	7.43										
8/31/2022	0200097	EV_EC1							16.5				179	8.03										150
8/31/2022	E321812	F2_BPO											38.7	7.43										
8/31/2022	E321812	F2_BPO							0.152	< 0.0050	0.198	< 0.0010	92.1	7.38	8.13	0.0028								5.51
8/31/2022	E321812	F2_BPO											40.2	7.5										
9/1/2022	E300091	EV_MC2							1.80				177.3	8.09										17.5
9/1/2022	0200097	EV_EC1							14.8				179.4	7.99										168
9/1/2022	E321791	F2_NWPI			0.0110		116		24.4	0.124	0.253	< 0.0010	81.2	7.44	7.80	0.0022							150	
9/1/2022	E321812	F2_BPO			0.0153		57.3		0.161	< 0.0050	0.193	< 0.0010	153.1	7.28	7.81	0.0027							1.93	1.94
9/1/2022	E321812	F2_BPO																						
9/1/2022	E321812	F2_BPO											83.9	7.39										
9/2/2022	0200097	EV_EC1							15.0				193.6	8.01										159
9/2/2022	E300091	EV_MC2							2.01				179.4	7.99										19.1
9/2/2022	E321791	F2_NWPI							24.4	0.111	0.218	< 0.0010	93.9	7.44	8.09	0.0141								
9/2/2022	E321812	F2_BPO							0.157	0.0054	0.193	< 0.0010	129.1	7.58	8.25	0.0039								1.96
9/2/2022	E321812	F2_BPO											78.2	7.46										

		Parameter	MeSe(IV) – methylselenic acid CH3SeO2H	Methaneselenonic Acid	Molybdenum	Molybdenum	Nickel	Nickel	Nitrate Nitrogen (NO3), As N	Nitrite Nitrogen (NO2), As N	Nitrogen, Ammonia (As N)	Ortho-Phosphate	OXIDATION-REDUCTION POTENTIAL, FIELD	pH, Field	pH, LAB	Phosphorus	Phosphorus	Potassium	Potassium	Se(IV) – selenite SeO3(-2)	Se(VI) – selenate SeO4(-2)	SeCN – selenocyanate SeCN(-1)	Selenium	Selenium
		Fraction	D	D	D	T	D	T	N	N	T	D	N	N	N	T	T	T	T	D	D	D	D	T
		Unit	ug/l	ug/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mv	ph units	ph units	mg/l	ppm	mg/l	ppm	ug/l	ug/l	ug/l	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
9/3/2022	E300091	EV_MC2							1.88															18.8
9/3/2022	0200097	EV_EC1							15.1															151
9/3/2022	E321791	F2_NWPI							24.5	0.118	0.241	< 0.0010	76.9	7.44	7.83	< 0.0020								
9/3/2022	E321812	F2_BPO							0.145	< 0.0050	0.192	< 0.0010	161.6	7.35	7.99	0.0025								2.15
9/3/2022	E321812	F2_BPO											50.2	7.41										
9/4/2022	E300091	EV_MC2							1.85				187	7.98										18.2
9/4/2022	0200097	EV_EC1							15.0				180.7	7.86										170
9/4/2022	E321791	F2_NWPI							24.6	0.110	0.213	< 0.0010	58.9	7.31	7.76	0.0024								
9/4/2022	E321812	F2_BPO							0.139	< 0.0050	0.200	< 0.0010	54.6	7.44	7.74	0.0044								1.84
9/4/2022	E321812	F2_BPO																						
9/4/2022	E321812	F2_BPO											85.6	7.47										
9/5/2022	E300091	EV_MC2							2.00				176.1	7.95										20.1
9/5/2022	0200097	EV_EC1							15.2				81.1	7.89										166
9/5/2022	E321812	F2_BPO	0.014	< 0.010	0.0149	0.0143	56.5	55.3	0.145	< 0.0050	0.214	< 0.0010	194.4	7.38	7.82	0.0036		4.51		0.589	0.824	0.016	2.14	1.92
9/5/2022	E321812	F2_BPO																						
9/5/2022	E321791	F2_NWPI	0.019	< 0.010	0.0111	0.0106	110	114	24.5	0.103	0.222	< 0.0010	36.9	7.3	7.74	< 0.0020		6.86		3.76	128	< 0.010	180	147
9/5/2022	E321812	F2_BPO											64.7	7.59										
9/6/2022	E300091	EV_MC2							2.08				140	8.04										23.3
9/6/2022	0200097	EV_EC1							15.2				56.4	7.93										166
9/6/2022	E321812	F2_BPO			0.0155		58.0		0.131	< 0.0050	0.199	< 0.0010	181	7.37	8.13	0.0020							2.01	1.89
9/6/2022	E321791	F2_NWPI			0.0113		116		24.6	0.118	0.220	< 0.0010	20.3	7.32	7.98	< 0.0020							158	
9/6/2022	E300091	EV_MC2	< 0.010	< 0.010	0.00128	0.00120	1.41	1.33	1.78	0.0024	0.0060	< 0.0010	49.7	8.36	8.40	< 0.0020		1.01		0.105	16.9	< 0.010	20.5	17.5
9/6/2022	200393	EV_ER1	< 0.010	< 0.010	0.00132	0.00125	0.51	0.51	2.02	0.0022	< 0.0050	< 0.0010	50.9	8.34	8.42	0.0055		0.634		0.079	9.58	< 0.010	12.5	10.4
9/6/2022	E206231	EV_GT1			0.0153	0.0142	29.1	28.6	8.13	0.0241	0.112	< 0.0010	91.5	8.31	8.29	0.0022		4.89					98.6	85.7
9/6/2022	E102685	EV_BC1			0.0147	0.0138	23.2	22.9	7.33	0.0138	0.0097	< 0.0010	72.7	7.95	8.26	0.0027		5.06					82.8	75.0
9/6/2022	E321812	F2_BPO											70.6	7.47										
9/7/2022	E300091	EV_MC2							2.03				120.6	8										19.9
9/7/2022	0200097	EV_EC1							15.6				50	7.92										159
9/7/2022	E321812	F2_BPO							0.153	< 0.0050	0.188	< 0.0010	181.3	7.39	8.06	0.0043								1.89
9/7/2022	E321791	F2_NWPI							25.1	0.119	0.220	< 0.0010	62.2	7.33	7.92	0.0022								
9/7/2022	E321812	F2_BPO											49.9	7.52										
9/8/2022	E300091	EV_MC2							1.98				112.6	8										21.5
9/8/2022	0200097	EV_EC1							15.1				83.91	7.91										163
9/8/2022	E321812	F2_BPO			0.0213		56.9		0.132	< 0.0050	0.190	< 0.0010	42.3	7.57	8.38	0.0046							1.94	1.86
9/8/2022	E321791	F2_NWPI			0.0101		114		24.8	0.100	0.224	< 0.0010	43.2	7.33	8.22	0.0025							164	
9/8/2022	E321814	EV_ECOUT			0.00103	0.00100	0.86	0.92	15.3	< 0.0050	< 0.0050	0.0171	197.5	7.56	7.76	0.0211		2.52					189	174
9/8/2022	0200097	EV_EC1			0.00109	0.00107	2.08	2.12	15.3	0.0063	< 0.0050	< 0.0010	193.7	7.99	8.08	0.0032		2.52					186	172
9/8/2022	0200203	EV_MC3			0.000736	0.000702	< 0.50	< 0.50	0.0568	< 0.0010	< 0.0050	< 0.0010	146.4	8.76	8.46	0.0047		0.603					1.64	1.42
9/8/2022	E300091	EV_MC2			0.00124	0.00120	1.19	1.28	1.68	0.0029	< 0.0050	< 0.0010	103.3	8.31	8.47	0.0031		1.10					20.9	17.1
9/8/2022	E321812	F2_BPO											3.6	7.84										
9/9/2022	E300091	EV_MC2							1.95				121.3	7.97										20.0
9/9/2022	0200097	EV_EC1							14.9				50.3	7.92										164
9/9/2022	E321812	F2_BPO							0.135	< 0.0050	0.193	< 0.0010	52.6	7.6	8.00	0.0035								1.92
9/9/2022	E321791	F2_NWPI							24.8	0.0856	0.164	< 0.0010	28.6	7.33	7.93	0.0023								
9/9/2022	E300091	EV_MC2			0.00114	0.00123	1.39	1.35	1.84	0.0022	0.0082	< 0.0010	31.4	8.18	8.28	0.0022		1.06					21.8	18.7
9/9/2022	E102685	EV_BC1			0.0128	0.0139	22.8	21.0	7.34	0.0056	< 0.0050	< 0.0010	152.1	7.76	8.17	0.0057		5.33					90.0	76.8
9/9/2022	E206231	EV_GT1			0.0131	0.0141	28.2	27.2	9.08	0.0222	0.0915	< 0.0010	156	7.97	8.27	0.0036		5.22					95.9	97.2
9/9/2022	310168	EV_MC2A			0.000773	0.000854	0.52	< 0.50	1.26	0.0017	0.0080	< 0.0010	153.5	8.26	8.46	0.0031		0.856					16.7	14.0

Parameter			MeSe(IV) – methylselenic acid CH3SeO2H	Methaneselenonic Acid	Molybdenum	Molybdenum	Nickel	Nickel	Nitrate Nitrogen (NO3), As N	Nitrite Nitrogen (NO2), As N	Nitrogen, Ammonia (As N)	Ortho-Phosphate	OXIDATION-REDUCTION POTENTIAL, FIELD	pH, Field	pH, LAB	Phosphorus	Phosphorus	Potassium	Potassium	Se(IV) – selenite SeO3(-2)	Se(VI) – selenate SeO4(-2)	SeCN – selenocyanate SeCN(-1)	Selenium	Selenium
Fraction			D	D	D	T	D	T	N	N	T	D	N	N	N	T	T	T	T	D	D	D	D	T
Unit			ug/l	ug/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mv	ph units	ph units	mg/l	ppm	mg/l	ppm	ug/l	ug/l	ug/l	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
9/9/2022	E321812	F2_BPO											14.4	7.75										
9/10/2022	E300091	EV_MC2							1.94															18.6
9/10/2022	0200097	EV_EC1							15.2															160
9/10/2022	E321791	F2_NWPI							24.8	0.121	0.233	< 0.0010	80.1	7.33	7.96	0.0028								
9/10/2022	E321812	F2_BPO							0.147	< 0.0050	0.198	< 0.0010	67.8	7.61	8.14	0.0045								1.88
9/10/2022	E321812	F2_BPO											44.5	7.55										
9/11/2022	E300091	EV_MC2							2.00				195.7	7.91										18.8
9/11/2022	0200097	EV_EC1							15.1				203.2	7.91										159
9/11/2022	E321791	F2_NWPI							24.6	0.0841	0.188	0.0014	54.1	7.33	7.64	0.0024								
9/11/2022	E321812	F2_BPO							0.141	< 0.0050	0.198	0.0014	118.4	7.49	7.79	0.0056								1.88
9/11/2022	E321812	F2_BPO											73.5	7.41										
9/12/2022	E300091	EV_MC2	< 0.010	< 0.010	0.00107	0.00160	1.10	1.31	1.97	0.0021	0.0169	< 0.0010	141.1	7.8	8.19	0.0027		1.12		0.103	16.4	< 0.010	18.0	19.3
9/12/2022	310168	EV_MC2A	< 0.010	< 0.010	0.00114	0.000821	< 0.50	< 0.50	1.38	0.0014	0.0086	< 0.0010	148.6	8.2	8.31	0.0051		0.879		0.081	11.7	< 0.010	15.8	14.0
9/12/2022	0200203	EV_MC3	< 0.010	< 0.010	0.000791	0.00103	< 0.50	< 0.50	0.0892	< 0.0010	< 0.0050	< 0.0010	55.9	8.24	8.32	0.0045		0.668		0.033	1.00	< 0.010	1.37	1.26
9/12/2022	200393	EV_ER1			0.00139	0.00145	< 0.50	< 0.50	2.16	0.0012	< 0.0050	< 0.0010	155.1	8.24	8.30	0.0031		0.720					9.82	11.6
9/12/2022	E321812	F2_BPO											152.3	7.3										
9/12/2022	E321812	F2_BPO	< 0.010	< 0.010	0.0183	0.0184	47.5	60.0	0.145	< 0.0050	0.194	< 0.0010	149.4	7.3	8.14	0.0026		5.25		0.531	0.743	0.018	1.74	1.86
9/12/2022	E321812	F2_BPO											149.4	7										
9/12/2022	E321791	F2_NWPI	0.022	< 0.010	0.0113	0.0107	106	121	24.2	0.117	0.216	< 0.0010	40.9	7.26	8.06	< 0.0020		7.49		3.39	121	< 0.010	167	153
9/12/2022	0200097	EV_EC1	< 0.010	< 0.010	0.00105	0.00114	1.75	1.92	15.9	< 0.0050	< 0.0050	< 0.0010	16.2	7.91	8.14	0.0027		2.67		0.187	128	< 0.010	161	156
9/12/2022	0200097	EV_EC1											16.2	7.91										
9/12/2022	E321814	EV_ECOUT	< 0.010	< 0.010	0.000920	0.00107	0.66	0.74	15.2	< 0.0050	< 0.0050	0.0177	21.9	7.51	7.90	0.0241		2.72		0.028	127	< 0.010	135	156
9/12/2022	E321814	EV_ECOUT											21.9	7.51										
9/12/2022	E321812	F2_BPO											80.7	7.39										
9/13/2022	E300091	EV_MC2							1.96				165	8.02										20.5
9/13/2022	0200097	EV_EC1							15.1				196.7	7.88										157
9/13/2022	E321812	F2_BPO			0.0142	0.0162	41.0	54.1	0.168	< 0.0050	0.187	0.0019	45.9	7.32	7.93	0.0037		4.66					1.39	1.84
9/13/2022	E206231	EV_GT1	0.050	< 0.010	0.0140	0.0154	27.7	30.2	8.81	0.0117	0.0909	< 0.0010	109.5	8.32	8.33	0.0043		5.31		0.551	77.9	< 0.010	105	88.9
9/13/2022	E206231	EV_GT1											109.5	8.32										
9/13/2022	E102685	EV_BC1	0.105	< 0.010	0.0130	0.0143	20.0	23.2	7.70	0.0060	0.0093	< 0.0010	59.4	7.89	8.32	0.0049		5.37		2.34	59.0	< 0.010	73.7	67.2
9/13/2022	E102685	EV_BC1											59.4	7.89										
9/13/2022	E300091	EV_MC2			0.00133	0.00129	1.62	1.54	1.88	0.0023	0.0083	< 0.0010	139	8.19	8.29	< 0.0020		1.14					29.5	20.1
9/13/2022	E321791	F2_NWPI			0.0108		115		25.0	0.105	0.186	0.0021	51.4	7.43	7.88	0.0030							145	
9/13/2022	E321812	F2_BPO											50.2	7.43										
9/14/2022	E300091	EV_MC2							2.11				190.4	7.97										21.0
9/14/2022	0200097	EV_EC1							15.0				194.3	7.91										145
9/14/2022	E321791	F2_NWPI							24.5	0.111	0.210	< 0.0010	7	7.33	7.68	< 0.0020								
9/14/2022	E321812	F2_BPO							0.144	< 0.0050	0.195	< 0.0010	102.1	7.5	7.83	0.0036								1.82
9/14/2022	E321812	F2_BPO																						
9/14/2022	E321812	F2_BPO											14.7	7.38										
9/15/2022	E300091	EV_MC2							1.85				188.3	8										19.0
9/15/2022	0200097	EV_EC1							15.7				75.2	7.85										160
9/15/2022	E321791	F2_NWPI			0.0103		102		24.8	0.100	0.190	< 0.0010	41.9	7.29	8.08	< 0.0020							149	
9/15/2022	E321812	F2_BPO			0.0186		53.7		0.139	< 0.0050	0.209	< 0.0010	91.4	7.47	8.25	0.0024							1.68	1.90
9/15/2022	0200097	EV_EC1											155.8	7.97										
9/15/2022	310168	EV_MC2A											112.1	8.6										
9/15/2022	0200203	EV_MC3											84.9	8.61										
9/15/2022	E206231	EV_GT1											32.4	8.26										

		Parameter	MeSe(IV) – methylselenic acid CH3SeO2H	Methaneselenonic Acid	Molybdenum	Molybdenum	Nickel	Nickel	Nitrate Nitrogen (NO3), As N	Nitrite Nitrogen (NO2), As N	Nitrogen, Ammonia (As N)	Ortho-Phosphate	OXIDATION-REDUCTION POTENTIAL, FIELD	pH, Field	pH, LAB	Phosphorus	Phosphorus	Potassium	Potassium	Se(IV) – selenite SeO3(-2)	Se(VI) – selenate SeO4(-2)	SeCN – selenocyanate SeCN(-1)	Selenium	Selenium
		Fraction	D	D	D	T	D	T	N	N	T	D	N	N	N	T	T	T	T	D	D	D	D	T
		Unit	ug/l	ug/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mv	ph units	ph units	mg/l	ppm	mg/l	ppm	ug/l	ug/l	ug/l	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
9/15/2022	E102685	EV_BC1											50.8	7.98										
9/15/2022	E300091	EV_MC2											113.9	8.41										
9/15/2022	E321812	F2_BPO											44.1	7.42										
9/16/2022	E300091	EV_MC2							1.90				165.1	7.98										18.6
9/16/2022	0200097	EV_EC1							16.3				62.7	7.9										162
9/16/2022	E321791	F2_NWPI							25.2	0.0926	0.173	< 0.0010	2.9	7.3	8.12	< 0.0020								
9/16/2022	E321812	F2_BPO							0.137	< 0.0050	0.206	< 0.0010	58	7.47	8.18	0.0039								1.97
9/16/2022	E321812	F2_BPO																						
9/16/2022	E321812	F2_BPO											24	7.45										
9/17/2022	E300091	EV_MC2							1.75				188.2	7.99										17.1
9/17/2022	0200097	EV_EC1							14.9				69.2	7.91										154
9/17/2022	E321791	F2_NWPI							25.1	0.0915	0.168	< 0.0010	20.8	7.31	7.84	< 0.0020								
9/17/2022	E321812	F2_BPO							0.143	< 0.0050	0.207	< 0.0010	72.4	7.56	7.96	< 0.0020								1.75
9/17/2022	E321812	F2_BPO											20.5	7.46										
9/18/2022	E300091	EV_MC2							1.85				193.4	7.88										19.2
9/18/2022	0200097	EV_EC1							15.2				174.5	7.9										164
9/18/2022	E321791	F2_NWPI							25.6	0.101	0.189	0.0019	80.2	7.33	8.20	< 0.0020								
9/18/2022	E321812	F2_BPO							0.150	< 0.0050	0.213	0.0018	170	7.55	8.22	< 0.0020								1.72
9/18/2022	E321812	F2_BPO											63.7	7.54										
9/19/2022	E300091	EV_MC2							1.89				153.2	7.95										18.5
9/19/2022	0200097	EV_EC1							15.0				64.5	7.9										152
9/19/2022	E321791	F2_NWPI	< 0.010	< 0.010	0.0106	0.0110	112	126	24.6	0.102	0.189	0.0014	38.1	7.29	8.14	< 0.0020		6.52		3.98	142	< 0.010	144	139
9/19/2022	E321812	F2_BPO	0.016	< 0.010	0.0190	0.0196	52.7	61.2	0.133	< 0.0050	0.206	0.0013	54	7.43	8.25	0.0025		4.64		0.609	0.755	< 0.010	1.78	1.70
9/19/2022	E321812	F2_BPO																						
9/19/2022	E321812	F2_BPO											71.9	7.47										
9/20/2022	E300091	EV_MC2							1.89				91.3	7.17										18.5
9/20/2022	0200097	EV_EC1							15.2				68.6	7.87										146
9/20/2022	E321812	F2_BPO			0.0153		59.1		0.143	< 0.0050	0.209	< 0.0010	195	7.26	8.08	< 0.0020							1.71	1.86
9/20/2022	E321791	F2_NWPI			0.0103		117		24.8	0.0913	0.171	0.0014	33.9	7.32	8.02	< 0.0020							156	
9/20/2022	E321812	F2_BPO											34.6	7.45										
9/21/2022	E300091	EV_MC2							1.96				178.3	8.02										20.1
9/21/2022	0200097	EV_EC1							16.7				193.3	7.95										162
9/21/2022	E321812	F2_BPO							0.140	< 0.0050	0.201	< 0.0010	183.7	7.44	8.18	0.0021								1.75
9/21/2022	E321812	F2_BPO																						
9/21/2022	E321791	F2_NWPI							24.8	0.0915	0.168	< 0.0010	-20.1	7.33	8.10	< 0.0020								
9/21/2022	E321812	F2_BPO											48.5	7.53										
9/22/2022	E300091	EV_MC2							1.89				173.7	8.01										19.5
9/22/2022	0200097	EV_EC1							14.9				190.7	7.94										161
9/22/2022	E321791	F2_NWPI			0.0106		120		24.9	0.104	0.192	< 0.0010	-12.4	7.31	8.22	< 0.0020							152	
9/22/2022	E321812	F2_BPO			0.0153		59.0		0.180	< 0.0050	0.209	< 0.0010	123.7	7.42	8.24	0.0026							1.72	1.79
9/23/2022	E300091	EV_MC2							1.68				160.8	8.02										14.7
9/23/2022	0200097	EV_EC1							15.7				177.4	7.94										152
9/23/2022	E321791	F2_NWPI							26.1	0.101	0.194	< 0.0010	63.3	7.33	8.06	< 0.0020								
9/23/2022	E321812	F2_BPO							0.152	< 0.0050	0.212	< 0.0010	126.7	7.58	8.09	< 0.0020								1.78
9/23/2022	E321812	F2_BPO											9.8	7.58										
9/24/2022	E300091	EV_MC2							1.97				174.5	8.03										17.8
9/24/2022	0200097	EV_EC1							15.6				185.7	7.94										142
9/24/2022	E321791	F2_NWPI							26.0	0.101	0.186	< 0.0010	19.3	7.31	8.10	< 0.0020								

Parameter			MeSe(IV) – methylselenic acid CH3SeO2H	Methaneselenonic Acid	Molybdenum	Molybdenum	Nickel	Nickel	Nitrate Nitrogen (NO3), As N	Nitrite Nitrogen (NO2), As N	Nitrogen, Ammonia (As N)	Ortho-Phosphate	OXIDATION-REDUCTION POTENTIAL, FIELD	pH, Field	pH, LAB	Phosphorus	Phosphorus	Potassium	Potassium	Se(IV) – selenite SeO3(-2)	Se(VI) – selenate SeO4(-2)	SeCN – selenocyanate SeCN(-1)	Selenium	Selenium
Fraction			D	D	D	T	D	T	N	N	T	D	N	N	N	T	T	T	T	D	D	D	D	T
Unit			ug/l	ug/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mv	ph units	ph units	mg/l	ppm	mg/l	ppm	ug/l	ug/l	ug/l	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
9/24/2022	E321812	F2_BPO							0.155	< 0.0050	0.210	< 0.0010	122.3	7.63	8.22	< 0.0020								1.75
9/24/2022	E321812	F2_BPO											27	7.48										
9/25/2022	E300091	EV_MC2							2.02				79.4	8.06										17.8
9/25/2022	0200097	EV_EC1							15.6				101.4	7.92										145
9/25/2022	E321791	F2_NWPI							26.1	0.110	0.221	< 0.0010	35.6	7.3	8.17	0.0031								
9/25/2022	E321812	F2_BPO							0.140	< 0.0050	0.208	< 0.0010	107.4	7.56	8.31	< 0.0020								1.72
9/25/2022	E321812	F2_BPO											53.6	7.36										
9/26/2022	200393	EV_ER1			0.00136	0.00138	0.60	0.70	2.37	0.0017	< 0.0050	< 0.0010	189.3	8.19	8.30	< 0.0020		0.841					13.2	13.2
9/26/2022	310168	EV_MC2A	< 0.010	< 0.010	0.000776	0.000922	0.56	0.70	1.71	0.0014	0.0094	< 0.0010	190.7	8.19	8.27	0.0021		0.973		0.098	14.5	< 0.010	16.3	16.9
9/26/2022	E321812	F2_BPO	< 0.010	< 0.010	0.0137	0.0152	59.5	57.8	1.07	< 0.0050	0.218	< 0.0010	45.2	7.23	7.68	< 0.0020		4.62		0.537	0.687	0.017	1.98	1.57
9/26/2022	E300091	EV_MC2	< 0.010	< 0.010	0.00135	0.00137	1.62	1.81	2.21	0.0024	0.0070	< 0.0010	73.5	8.04	8.24	0.0026		1.16		0.141	18.6	< 0.010	20.9	19.9
9/26/2022	0200203	EV_MC3	< 0.010	< 0.010	0.000774	0.000792	< 0.50	< 0.50	0.0634	< 0.0010	< 0.0050	< 0.0010	175.2	8.26	8.31	< 0.0020		0.711		0.042	1.09	< 0.010	1.44	1.37
9/26/2022	E321791	F2_NWPI	0.021	< 0.010	0.00981	0.0109	115	114	25.7	0.0964	0.187	< 0.0010	-18.1	7.56	7.64	< 0.0020		6.43		3.30	124	< 0.010	152	153
9/26/2022	0200097	EV_EC1	< 0.010	< 0.010	0.00104	0.00109	1.94	2.00	15.3	< 0.0050	< 0.0050	< 0.0010	140.9	7.95	8.13	0.0046		2.71		0.187	141	< 0.010	172	157
9/26/2022	E321814	EV_ECOUT	< 0.010	< 0.010	0.00106	0.00115	0.86	0.90	15.4	< 0.0050	< 0.0050	0.0185	117.49	7.49	7.93	0.0221		2.84		0.033	138	< 0.010	166	163
9/26/2022	E321812	F2_BPO											30.9	7.25										
9/27/2022	E300091	EV_MC2							2.12				126.1	7.88										20.6
9/27/2022	0200097	EV_EC1							15.2				180.2	7.94										149
9/27/2022	E321812	F2_BPO			0.0237		56.3		0.187	< 0.0050	0.207	< 0.0010	74.3	7.3	8.02	0.0039							1.75	1.57
9/27/2022	E206231	EV_GT1	0.018	< 0.010	0.0150	0.0166	28.7	31.8	7.72	0.0179	0.0931	< 0.0010	126.5	8.28	8.28	0.0035		4.69		0.555	65.0	< 0.010	92.2	75.6
9/27/2022	E102685	EV_BC1	0.110	< 0.010	0.0141	0.0146	21.8	22.8	7.39	0.0094	0.0125	< 0.0010	72.1	7.93	8.13	0.0039		5.77		2.21	60.1	< 0.010	84.5	70.9
9/27/2022	E321791	F2_NWPI			0.0104		110		25.2	0.104	0.189	< 0.0010	144.3	7.46	7.97	0.0023							168	
9/27/2022	E321812	F2_BPO											58.8	7.21										
9/28/2022	E300091	EV_MC2							2.16				190.3	8										20.4
9/28/2022	0200097	EV_EC1							15.3				204.3	7.96										156
9/28/2022	E321791	F2_NWPI							25.5	0.0973	0.180	< 0.0010	36.3	7.4	8.13	0.0027								
9/28/2022	E321812	F2_BPO							0.142	0.0085	0.218	< 0.0010	132.1	7.38	8.21	0.0031								1.91
9/28/2022	E321812	F2_BPO												7.81										
9/29/2022	E300091	EV_MC2							2.11				139.2	7.95										20.1
9/29/2022	E321791	F2_NWPI			0.0104		116		25.5	0.0906	0.174	< 0.0010	5.8	7.31	8.22	< 0.0020							159	
9/29/2022	E321812	F2_BPO			0.0129		55.6		0.168	< 0.0050	0.210	< 0.0010	110	7.42	8.61	0.0024							1.37	1.84
9/29/2022	0200097	EV_EC1							15.6				25.5	7.95										154
9/29/2022	E321812	F2_BPO											35.3	7.26										
9/30/2022	E300091	EV_MC2							1.87				178.8	8.08										17.5
9/30/2022	0200097	EV_EC1							15.3				49.8	7.87										154
9/30/2022	E321812	F2_BPO							0.173	< 0.0050	0.194	< 0.0010	124.6	7.43	7.91	0.0022								1.64
9/30/2022	E321812	F2_BPO											-2.1	7.3										
9/30/2022	E321791	F2_NWPI							26.6	0.0750	0.133	< 0.0010	-52.6	7.32	7.84	< 0.0020								
10/1/2022	E300091	EV_MC2							1.85				138.4	8.1										19.4
10/1/2022	0200097	EV_EC1							15.4				187.1	7.93										157
10/1/2022	E321812	F2_BPO							0.136	< 0.0050	0.207	< 0.0010	36.6	7.53	8.20	< 0.0020								1.64
10/1/2022	E321791	F2_NWPI							25.1	0.0795	0.141	< 0.0010	13.4	7.35	8.14	< 0.0020								
10/1/2022	E321812	F2_BPO											53.7	7.37										
10/2/2022	E300091	EV_MC2							2.10				53.7	7.93										21.7
10/2/2022	0200097	EV_EC1							15.2				64.4	7.88										158
10/2/2022	E321791	F2_NWPI							25.3	0.0827	0.150	< 0.0010	-54.3	7.26	8.21	< 0.0020								
10/2/2022	E321812	F2_BPO							0.204	< 0.0050	0.206	< 0.0010	23.2	7.49	8.25	< 0.0020								1.44
10/2/2022	E321812	F2_BPO											93.9	7.3										

		Parameter	MeSe(IV) – methylselenic acid CH3SeO2H	Methaneselenonic Acid	Molybdenum	Molybdenum	Nickel	Nickel	Nitrate Nitrogen (NO3), As N	Nitrite Nitrogen (NO2), As N	Nitrogen, Ammonia (As N)	Ortho-Phosphate	OXIDATION-REDUCTION POTENTIAL, FIELD	pH, Field	pH, LAB	Phosphorus	Phosphorus	Potassium	Potassium	Se(IV) – selenite SeO3(-2)	Se(VI) – selenate SeO4(-2)	SeCN – selenocyanate SeCN(-1)	Selenium	Selenium
		Fraction	D	D	D	T	D	T	N	N	T	D	N	N	N	T	T	T	T	D	D	D	D	T
		Unit	ug/l	ug/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mv	ph units	ph units	mg/l	ppm	mg/l	ppm	ug/l	ug/l	ug/l	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
10/3/2022	E300091	EV_MC2	< 0.010	< 0.010	0.00114	0.00106	1.22	0.99	2.18	0.0019	< 0.0050	< 0.0010	38.4	7.48	8.13	< 0.0020		1.11		0.112	18.6	< 0.010	27.4	21.3
10/3/2022	200393	EV_ER1			0.00147	0.00130	< 0.50	< 0.50	2.47	0.0011	< 0.0050	< 0.0010	80	8.16	8.19	< 0.0020		0.776					16.6	13.2
10/3/2022	0200203	EV_MC3	< 0.010	< 0.010	0.000713	0.000792	< 0.50	< 0.50	0.0501	< 0.0010	< 0.0050	< 0.0010	-59.3	8.21	8.28	< 0.0020		0.680		0.053	1.05	< 0.010	1.53	1.35
10/3/2022	310168	EV_MC2A	< 0.010	< 0.010	0.000926	0.000846	0.62	0.58	1.77	0.0012	0.0074	< 0.0010	-70	8.2	8.27	< 0.0020		0.931		0.093	15.6	< 0.010	19.7	18.0
10/3/2022	E321812	F2_BPO	< 0.010	< 0.010	0.0215	0.0178	55.6	59.9	0.455	< 0.0050	0.199	< 0.0010	70.3	7.33	7.98	< 0.0020		4.96		0.515	0.532	0.012	1.55	1.53
10/3/2022	E321791	F2_NWPI	0.017	< 0.010	0.00983	0.0107	109	117	26.0	0.0969	0.173	< 0.0010	24.1	7.41	7.76	< 0.0020		6.70		3.33	119	< 0.010	140	143
10/3/2022	0200097	EV_EC1	< 0.010	< 0.010	0.00109	0.00116	1.73	1.80	15.6	< 0.0050	< 0.0050	0.0016	-53.5	7.91	8.13	0.0021		2.79		0.172	131	< 0.010	219	177
10/3/2022	E321814	EV_ECOUT	< 0.010	< 0.010	0.00110	0.00111	0.86	0.80	16.1	< 0.0050	< 0.0050	0.0231	5.7	7.9	7.87	0.0239		2.78		0.029	132	< 0.010	223	157
10/3/2022	E321812	F2_BPO											-54.1	7.34										
10/4/2022	E300091	EV_MC2							2.24				-63.2	7.86										23.4
10/4/2022	E321791	F2_NWPI							25.6	0.0825	0.145	< 0.0010	6.9	7.21	7.85	< 0.0020								
10/4/2022	0200097	EV_EC1							15.8				-43	7.92										167
10/4/2022	E321812	F2_BPO							0.145	< 0.0050	0.195	< 0.0010	11.1	7.4	8.13	0.0027								1.63
10/4/2022	E206231	EV_GT1	0.042	< 0.010	0.0141	0.0152	25.1	28.2	10.4	0.0301	0.0963	0.0026	-100.6	8.24	8.31	0.0068		4.89		0.675	94.1	< 0.010	146	111
10/4/2022	E321814	EV_ECOUT			0.00108	0.00234	0.82	0.89	15.3	< 0.0050	0.0098	0.0227	208.1	7.55	7.98	0.0216		2.73					209	160
10/4/2022	E102685	EV_BC1	0.067	< 0.010	0.0142	0.0135	25.2	25.1	10.8	0.0279	0.0811	< 0.0010	33.4	7.98	8.23	0.0034		5.76		1.07	85.7	< 0.010	130	97.1
10/4/2022	E321811	F2_ECIN	0.017	< 0.010	0.0123	0.0134	55.7	57.4	0.410	0.0114	0.169	< 0.0010	-21.4	7.36	8.00	0.0086		4.51		0.878	0.729	< 0.010	2.96	2.45
10/5/2022	E321791	F2_NWPI			0.00979		104		25.3	0.0906	0.150	< 0.0010	71.4	7.24	7.86	0.0021							141	
10/5/2022	E321811	F2_ECIN			0.00104		1.04		15.7	< 0.0050	< 0.0050	0.0188	58.8	7.37	7.95	0.0212							146	
10/5/2022	E321812	F2_BPO			0.0143		50.0		0.139	< 0.0050	0.188	< 0.0010	175	7.34	7.92	0.0029							1.37	1.66
10/5/2022	0200097	EV_EC1			0.00439	0.00624	3.73	4.06	11.7	< 0.0050	0.0072	< 0.0010	193.1	8.1	8.28	0.0027		3.28					157	122
10/6/2022	E321791	F2_NWPI							25.2	0.0897	0.155	< 0.0010	76.7	7.25	7.98	< 0.0020								
10/6/2022	E321812	F2_BPO							0.309	0.0053	0.186	< 0.0010	73	7.42	8.02	< 0.0020								1.41
10/6/2022	E102685	EV_BC1							15.0															153
10/6/2022	0200097	EV_EC1							15.0				-20.4	7.94										153
10/6/2022	E300091	EV_MC2							2.48				11.3	8.32										24.9
10/6/2022	0200203	EV_MC3			0.00267	0.000828	< 0.50	< 0.50	0.0100	< 0.0010	< 0.0050	< 0.0010	170.4	8.65	8.49	0.0030		0.658					1.61	1.20
10/6/2022	E321811	F2_ECIN							15.5	< 0.0050	< 0.0050	0.0171	69.1	7.39	8.10	0.0209								
10/6/2022	200393	EV_ER1			0.00134	0.00158	0.56	0.68	2.39	0.0020	< 0.0050	< 0.0010	176.2	8.44	8.37	0.0021		0.829					16.1	13.2
10/6/2022	E206231	EV_GT1			0.0139	0.0145	27.2	28.0	10.4	0.0191	0.146	< 0.0010	196.5	8.3	8.28	0.0063		5.46					144	112
10/6/2022	E102685	EV_BC1			0.0144	0.0174	25.6	24.3	10.4	0.0242	0.0495	0.0011	190.8	8.06	8.20	0.0030		6.08					124	96.4
10/6/2022	E300091	EV_MC2			0.00141	0.00149	2.03	1.64	2.26	0.0030	< 0.0050	< 0.0010	161.8	8.44	8.42	0.0031		1.22					29.4	23.0
10/6/2022	E321812	F2_BPO											253.2	6.99										
10/7/2022	E321791	F2_NWPI			0.0105		111		25.9	0.0962	0.167	< 0.0010	22.4	7.24	8.03	< 0.0020							181	
10/7/2022	E321811	F2_ECIN			0.00106		0.83		15.9	< 0.0050	< 0.0050	0.0164	80	7.4	8.10	0.0217							194	
10/7/2022	E321812	F2_BPO			0.0139		54.7		0.714	< 0.0050	0.185	< 0.0010	178.4	7.42	8.06	0.0023							1.92	1.69
10/7/2022	E321812	F2_BPO											11.3	7.35										
10/8/2022	E321791	F2_NWPI							25.8	0.0912	0.153	< 0.0010	83.8	7.24	8.03	< 0.0020								
10/8/2022	E321811	F2_ECIN							15.8	< 0.0050	< 0.0050	0.0184	99.8	7.38	8.11	0.0198								
10/8/2022	E321812	F2_BPO							0.168	0.0055	0.188	< 0.0010	61	7.26	8.08	0.0027								1.88
10/8/2022	E321812	F2_BPO											-4.1	7.27										
10/9/2022	E321791	F2_NWPI							26.1	0.0870	0.153	< 0.0010	79.8	7.24	7.97	< 0.0020								
10/9/2022	E321811	F2_ECIN							16.0	< 0.0050	< 0.0050	0.0217	105.7	7.41	7.92	0.0223								
10/9/2022	E321812	F2_BPO							0.164	< 0.0050	0.198	< 0.0010	63.7	7.27	8.00	0.0032								1.76
10/9/2022	E321814	EV_ECOUT	< 0.010	< 0.010	0.00169	0.00153	2.84	3.39	15.3	< 0.0050	0.0084	0.0165	87.9	7.67	8.00	0.0345		2.85		0.118	136	< 0.010	176	148
10/9/2022	E321812	F2_BPO											46.7	7.28										
10/10/2022	E321811	F2_ECIN	< 0.010	< 0.010	0.00105	0.00103	0.75	1.01	15.9	< 0.0050	< 0.0050	0.0221	63.7	7.44	7.91	0.0212		2.65		0.074	138	< 0.010	188	151
10/10/2022	E321791	F2_NWPI	0.021	< 0.010	0.0105	0.0107	113	123	26.2	0.0773	0.146	< 0.0010	31.8	7.29	7.74	0.0038		7.07		3.42	131	< 0.010	180	152

		Parameter	MeSe(IV) – methylselenic acid CH3SeO2H	Methaneselenonic Acid	Molybdenum	Molybdenum	Nickel	Nickel	Nitrate Nitrogen (NO3), As N	Nitrite Nitrogen (NO2), As N	Nitrogen, Ammonia (As N)	Ortho-Phosphate	OXIDATION-REDUCTION POTENTIAL, FIELD	pH, Field	pH, LAB	Phosphorus	Phosphorus	Potassium	Potassium	Se(IV) – selenite SeO3(-2)	Se(VI) – selenate SeO4(-2)	SeCN – selenocyanate SeCN(-1)	Selenium	Selenium
		Fraction	D	D	D	T	D	T	N	N	T	D	N	N	N	T	T	T	T	D	D	D	D	T
		Unit	ug/l	ug/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mv	ph units	ph units	mg/l	ppm	mg/l	ppm	ug/l	ug/l	ug/l	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
10/10/2022	E321812	F2_BPO	< 0.010	< 0.010	0.0231	0.0221	58.3	60.6	0.184	< 0.0050	0.201	< 0.0010	139.5	7.33	7.79	0.0042		4.86		0.613	0.696	0.021	1.92	1.76
10/10/2022	E321812	F2_BPO											30.6	7.34										
10/11/2022	E321811	F2_ECIN							16.1	< 0.0050	< 0.0050	0.0217	41	7.48	7.95	0.0221								
10/11/2022	E321791	F2_NWPI							25.9	0.102	0.182	< 0.0010	15.4	7.32	7.74	0.0027								
10/11/2022	E321812	F2_BPO							0.414	< 0.0050	0.186	< 0.0010	183.6	7.32	7.83	0.0060								1.64
10/11/2022	E300091	EV_MC2			0.00151	0.00146	1.42	1.49	1.76	0.0018	< 0.0050	< 0.0010	104.5	8.3	8.22	0.0046		1.21					19.9	18.4
10/11/2022	E321812	F2_BPO											50.7	7.45										
10/12/2022	E321811	F2_ECIN			0.00114		1.34		16.2	< 0.0050	< 0.0050	0.0159	36.4	7.47	7.97	0.0235							164	
10/12/2022	E321791	F2_NWPI			0.0101		110		26.0	0.0839	0.146	< 0.0010	33.8	7.34	7.95	0.0061							148	
10/12/2022	E321812	F2_BPO			0.0165		57.1		0.199	< 0.0050	0.192	< 0.0010	18.2	7.66	7.97	0.0026							1.51	1.95
10/12/2022	E300091	EV_MC2				0.00135		1.16	1.39	0.0019			-63.5	8.4				1.02						13.9
10/12/2022	E321812	F2_BPO											20.6	7.57										
10/13/2022	E321811	F2_ECIN							15.6	< 0.0050	< 0.0050	0.0220	45.5	7.51	7.78	0.0201								
10/13/2022	E321791	F2_NWPI							26.0	0.0692	0.118	< 0.0010	40.3	7.33	7.77	0.0086								
10/13/2022	E321812	F2_BPO							0.189	< 0.0050	0.205	< 0.0010	124.1	7.67	7.82	0.0028								1.48
10/13/2022	E321812	F2_BPO											54.1	7.37										
10/14/2022	E300091	EV_MC2				0.00154		2.04	1.73	0.0019			186.4	8.01				1.20						17.0
10/14/2022	E321811	F2_ECIN			0.00109		< 1.00		15.6	< 0.0050	< 0.0050	0.0178	80.2	7.54	8.05	0.0208							165	
10/14/2022	E321791	F2_NWPI			0.00941		107		26.0	0.0637	0.108	< 0.0010	93.5	7.4	7.87	0.0032							145	
10/14/2022	E321812	F2_BPO			0.0132		56.8		0.283	< 0.0050	0.222	< 0.0010	167.8	7.63	8.10	< 0.0020							1.58	1.63
10/14/2022	E321812	F2_BPO											30.1	7.41										
10/15/2022	E321811	F2_ECIN							15.6	< 0.0050	< 0.0050	0.0206	94.6	7.53	7.84	0.0224								
10/15/2022	E321791	F2_NWPI							26.1	0.0745	0.125	< 0.0010	58.3	7.37	7.69	< 0.0020								
10/15/2022	E321812	F2_BPO							0.174	< 0.0050	0.223	< 0.0010	-8	7.65	7.76	0.0022								1.62
10/15/2022	E321812	F2_BPO											-9	7.47										
10/16/2022	E321791	F2_NWPI							26.2	0.0619	0.107	< 0.0010	79.3	7.27	8.17	0.0049								
10/16/2022	E321811	F2_ECIN							15.7	< 0.0050	< 0.0050	0.0139	66.9	7.46	8.21	0.0213								
10/16/2022	E321812	F2_BPO							0.162	< 0.0050	0.223	< 0.0010	48.3	7.54	8.28	< 0.0020								1.56
10/16/2022	E321812	F2_BPO											7.9	7.47										
10/17/2022	200393	EV_ER1			0.00125	0.00130	< 1.00	0.56	2.37	0.0010	< 0.0050	< 0.0010	-61.2	8.12	8.21	< 0.0020		0.805					12.4	12.1
10/17/2022	E300091	EV_MC2	< 0.010	< 0.010	0.00141	0.00139	1.32	1.49	1.81	0.0019	< 0.0050	< 0.0010	-57.7	8.03	8.10	0.0023		1.18		0.132	16.3	< 0.010	20.1	17.7
10/17/2022	310168	EV_MC2A	< 0.010	< 0.010	0.00135	0.00134	1.09	1.32	1.14	0.0010	0.0070	< 0.0010	-56.2	8.19	8.20	0.0020		0.991		0.101	11.0	< 0.010	12.7	11.7
10/17/2022	0200203	EV_MC3	< 0.010	< 0.010	0.000710	0.000753	< 1.00	< 0.50	0.0403	< 0.0010	< 0.0050	< 0.0010	58.8	8.21	8.17	0.0027		0.665		0.047	1.07	< 0.010	1.21	1.21
10/17/2022	E321812	F2_BPO	< 0.010	< 0.010	0.0209	0.0198	65.0	62.9	0.148	< 0.0050	0.230	< 0.0010	61.5	7.27	7.83	< 0.0020		5.32		0.637	0.705	0.022	1.73	1.73
10/17/2022	E321791	F2_NWPI	0.025	< 0.010	0.0107	0.0117	133	130	26.6	0.0715	0.116	< 0.0010	19.2	7.23	7.56	< 0.0020		7.43		3.57	151	< 0.010	181	170
10/17/2022	E321811	F2_ECIN	< 0.010	< 0.010	0.00104	0.00104	1.10	1.08	15.8	< 0.0050	< 0.0050	0.0229	30.3	7.37	7.74	0.0203		2.90		0.045	156	< 0.010	177	165
10/17/2022	0200097	EV_EC1	< 0.010	< 0.010	0.00647	0.00737	9.50	12.1	10.6	0.0058	< 0.0050	0.0057	87.3	8.06	8.18	0.0060		3.70		0.315	92.6	< 0.010	117	123
10/17/2022	E321814	EV_ECOUT	< 0.010	< 0.010	0.00581	0.00576	15.2	16.6	11.7	0.0054	0.0408	0.0166	11	7.61	7.99	0.0161		3.47		0.172	105	< 0.010	141	121
10/17/2022	E321812	F2_BPO											27.3	7.44										
10/18/2022	E321791	F2_NWPI							26.5	0.0668	0.107	< 0.0010	35.6	7.13	7.62	< 0.0020								
10/18/2022	E321811	F2_ECIN							15.8	< 0.0050	< 0.0050	0.0204	53	7.32	7.91	0.0196								
10/18/2022	E206231	EV_GT1	0.050	< 0.010	0.00949	0.0111	22.6	24.6	17.2	0.147	0.311	0.0015	67.6	8.22	8.18	0.0038		5.18		0.787	165	< 0.010	162	154
10/18/2022	E321812	F2_BPO							0.692	< 0.0050	0.217	< 0.0010	44.8	7.42	7.92	< 0.0020								1.39
10/18/2022	E102685	EV_BC1	0.111	< 0.010	0.0128	0.0145	22.1	23.7	11.0	0.0266	0.0079	< 0.0010	83.4	7.96	8.13	0.0031		5.89		1.52	93.8	< 0.010	102	104
10/18/2022	E300091	EV_MC2			0.00155	0.00150	1.30	1.30	1.60	0.0021	< 0.0050	< 0.0010	150.5	8.27	8.26	0.0024		0.966					20.9	16.5
10/18/2022	E321812	F2_BPO											13.2	7.39										
10/19/2022	E300091	EV_MC2				0.00132		1.46	1.62	0.0019			118.9	7.93				1.07						14.8
10/19/2022	E321811	F2_ECIN			0.000986		0.86		16.0	< 0.0050	0.0055		29.2	7.56		0.0193							237	

Parameter			MeSe(IV) – methylselenic acid CH3SeO2H	Methaneselenonic Acid	Molybdenum	Molybdenum	Nickel	Nickel	Nitrate Nitrogen (NO3), As N	Nitrite Nitrogen (NO2), As N	Nitrogen, Ammonia (As N)	Ortho-Phosphate	OXIDATION-REDUCTION POTENTIAL, FIELD	pH, Field	pH, LAB	Phosphorus	Phosphorus	Potassium	Potassium	Se(IV) – selenite SeO3(-2)	Se(VI) – selenate SeO4(-2)	SeCN – selenocyanate SeCN(-1)	Selenium	Selenium
Fraction			D	D	D	T	D	T	N	N	T	D	N	N	N	T	T	T	T	D	D	D	D	T
Unit			ug/l	ug/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mv	ph units	ph units	mg/l	ppm	mg/l	ppm	ug/l	ug/l	ug/l	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
10/19/2022	E321812	F2_BPO			0.0175		57.5		0.271	0.0054	0.224		108.2	7.58		< 0.0020							1.99	1.53
10/19/2022	E321812	F2_BPO											35.5	7.4										
10/20/2022	E321811	F2_ECIN							15.8	< 0.0050	< 0.0050	0.0207	78	7.49	7.95	0.0191								
10/20/2022	E321812	F2_BPO							0.194	< 0.0050	0.229	< 0.0010	55.7	7.66	8.01	< 0.0020								1.70
10/20/2022	E321812	F2_BPO											55.7	7.66										
10/20/2022	E321812	F2_BPO											29.6	7.68										
10/20/2022	E321812	F2_BPO											29.6	7.68										
10/21/2022	E300091	EV_MC2				0.00141		1.73	1.54	0.0020			157.1	7.94				1.20						16.0
10/21/2022	E321811	F2_ECIN			0.000988		< 1.00		16.0	< 0.0050	< 0.0050	0.0228	52.8	7.46	8.04	0.0230							168	
10/21/2022	E321812	F2_BPO			0.0185		54.4		0.145	< 0.0050	0.220	< 0.0010	35.8	7.73	8.16	0.0024							1.57	1.60
10/21/2022	E321812	F2_BPO											-6.4	7.58										
10/22/2022	E321811	F2_ECIN							16.7	0.0066	< 0.0050	0.0214	-20.4	7.51	7.99	0.0198								
10/22/2022	E321812	F2_BPO							0.154	< 0.0050	0.214	< 0.0010	-32.4	7.79	8.04	0.0031								1.63
10/22/2022	E321812	F2_BPO											29.1	7.6										
10/23/2022	E321811	F2_ECIN							16.4	0.0054	< 0.0050	0.0220	29.8	7.42	8.05	0.0210								
10/23/2022	E321812	F2_BPO							0.148	< 0.0050	0.216	< 0.0010	40.7	7.66	8.14	0.0022								1.72
10/23/2022	E321812	F2_BPO											15.2	7.6										
10/24/2022	E300091	EV_MC2				0.00133		1.33	1.47	0.0014			187.7	7.92				1.02						14.7
10/24/2022	0200097	EV_EC1	< 0.010	< 0.010									14.4	8.03						0.351	91.9	< 0.010		
10/24/2022	E321811	F2_ECIN	< 0.010	< 0.010	0.00106	0.00112	< 1.00	1.15	16.4	< 0.0050	< 0.0050	0.0183	34.7	7.46	8.02	0.0188		2.64		0.046	145	< 0.010	172	157
10/24/2022	E321812	F2_BPO	< 0.010	< 0.010	0.0115	0.0133	52.4	59.4	0.409	< 0.0050	0.220	< 0.0010	158.4	7.67	8.10	0.0036		4.91		0.561	0.539	0.018	1.37	1.54
10/24/2022	E321814	EV_ECOUT	< 0.010	< 0.010									107	7.61						0.104	127	< 0.010		
10/24/2022	E321812	F2_BPO											-4.9	7.71										
10/25/2022	E321811	F2_ECIN							16.6	< 0.0050	< 0.0050	0.0196	95.1	7.43	8.19	0.0217								
10/25/2022	E321812	F2_BPO							0.148	0.0050	0.230	< 0.0010	17.9	7.71	8.54	0.0033								1.44
10/25/2022	E300091	EV_MC2			0.00136	0.00146	1.12	1.38	1.30	0.0019	< 0.0050	< 0.0010	49.2	8.21	8.33	< 0.0020		1.06					18.2	13.6
10/25/2022	E321812	F2_BPO											44.1	7.76										
10/25/2022	E321812	F2_BPO											44.1	7.76										
10/26/2022	E300091	EV_MC2				0.00117		1.15	1.46	0.0018			187.6	7.75				0.901						12.4
10/26/2022	E321812	F2_BPO			0.0204		57.3		0.216	< 0.0050	0.207	< 0.0010	178.5	7.68	8.55	< 0.0020							1.51	1.32
10/26/2022	E321811	F2_ECIN			0.00101		0.93		16.8	< 0.0050	< 0.0050	0.0224	135.7	7.45	8.19	0.0204							196	
10/26/2022	E321812	F2_BPO											-46.3	8.09										
10/27/2022	E321811	F2_ECIN							15.8	< 0.0050	< 0.0050	0.0201	102	7.44	8.01	0.0193								
10/27/2022	E321812	F2_BPO							0.159	< 0.0050	0.217	< 0.0010	-54.5	7.81	8.19	< 0.0020								1.43
10/27/2022	E321812	F2_BPO											-11.6	7.85										
10/28/2022	E300091	EV_MC2				0.00139		1.44	1.36	0.0017			132	7.96				1.07						14.4
10/28/2022	E321811	F2_ECIN			0.000859		< 1.00		16.0	< 0.0050	< 0.0050	0.0202	78.4	7.44	8.03	0.0172							154	
10/28/2022	E321812	F2_BPO			0.0108		49.0		0.168	< 0.0050	0.230	< 0.0010	144.5	7.89	8.20	0.0026							1.47	1.48
10/28/2022	E321812	F2_BPO											9	7.91										
10/29/2022	E321811	F2_ECIN							16.2	< 0.0050	0.0075	0.0223	36.8	7.43	7.94	0.0189								
10/29/2022	E321812	F2_BPO							0.164	< 0.0050	0.227	< 0.0010	114.6	7.78	8.14	< 0.0020								1.40
10/29/2022	E321812	F2_BPO											-15.9	7.87										
10/30/2022	E321811	F2_ECIN							16.3	< 0.0050	0.0081	0.0217	91.6	7.47	8.14	0.0205								
10/30/2022	E321812	F2_BPO							0.161	< 0.0050	0.236	< 0.0010	-48.5	7.84	8.28	< 0.0020								1.25
10/30/2022	E321812	F2_BPO											18.4	7.74										
10/31/2022	0200203	EV_MC3	< 0.010	< 0.010	0.000602	0.000713	< 0.50	< 0.50	0.109	< 0.0010	0.0073	< 0.0010	39.5	8.14	8.22	0.0072		0.695		0.064	1.17	< 0.010	1.46	1.22
10/31/2022	310168	EV_MC2A	< 0.010	< 0.010	0.00120	0.00145	1.20	1.30	0.862	0.0011	0.0089	< 0.0010	108.1	8.21	8.25	0.0051		0.921		0.114	8.45	< 0.010	10.2	8.46
10/31/2022	200393	EV_ER1			0.00128	0.00144	0.54	0.58	2.29	0.0012	< 0.0050	< 0.0010	139.1	8.21	8.36	0.0031		0.731					13.7	11.1

		Parameter	MeSe(IV) – methylselenic acid CH3SeO2H	Methaneselenonic Acid	Molybdenum	Molybdenum	Nickel	Nickel	Nitrate Nitrogen (NO3), As N	Nitrite Nitrogen (NO2), As N	Nitrogen, Ammonia (As N)	Ortho-Phosphate	OXIDATION-REDUCTION POTENTIAL, FIELD	pH, Field	pH, LAB	Phosphorus	Phosphorus	Potassium	Potassium	Se(IV) – selenite SeO3(-2)	Se(VI) – selenate SeO4(-2)	SeCN – selenocyanate SeCN(-1)	Selenium	Selenium
		Fraction	D	D	D	T	D	T	N	N	T	D	N	N	N	T	T	T	T	D	D	D	D	T
		Unit	ug/l	ug/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mv	ph units	ph units	mg/l	ppm	mg/l	ppm	ug/l	ug/l	ug/l	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
10/31/2022	E321812	F2_BPO	< 0.010	< 0.010	0.0151	0.0154	52.2	57.6	0.179	< 0.0050	0.240	< 0.0010	92	7.76	8.11	0.0031		5.23		0.557	0.566	< 0.010	1.41	1.27
10/31/2022	E300091	EV_MC2	< 0.010	< 0.010	0.00126	0.00126	1.32	1.38	1.23	0.0019	0.0103	< 0.0010	155.6	8.04	8.20	0.0050		0.960		0.140	11.5	< 0.010	13.5	11.1
10/31/2022	E321811	F2_ECIN	< 0.010	< 0.010	0.000997	0.00109	< 1.00	< 1.00	16.4	< 0.0050	0.0060	0.0195	16.8	7.72	7.91	0.0199		2.69		0.053	147	< 0.010	174	148
10/31/2022	0200097	EV_EC1	0.015	< 0.010	0.00757	0.00841	12.4	12.2	9.59	< 0.0050	< 0.0050	0.0024	65.7	8.07	8.18	0.0070		3.62		0.385	89.5	< 0.010	118	97.1
10/31/2022	E321791	F2_NWPI	0.021	< 0.010	0.00948	0.00980	114	117	27.5	0.0775	0.132	< 0.0010	-13	7.53	7.86	< 0.0020		6.84		3.31	142	< 0.010	165	139
10/31/2022	E321814	EV_ECOUT	< 0.010	< 0.010	0.00450	0.00511	11.7	11.8	13.5	< 0.0050	0.0300	0.0149	84.1	7.71	8.04	0.0158		3.29		0.144	124	< 0.010	172	136
10/31/2022	E321812	F2_BPO											79.2	7.72										
11/1/2022	E321811	F2_ECIN							16.1	< 0.0050	< 0.0050	0.0177	16.6	7.55	7.92	0.0177								
11/1/2022	E321791	F2_NWPI							26.8	0.0769	0.124	< 0.0010	45.2	7.27	7.81	< 0.0020								
11/1/2022	E102685	EV_BC1	0.118	< 0.010	0.0123	0.0124	21.4	22.8	15.0	0.0156	0.0052	< 0.0010	114.3	8.06	8.30	0.0027		5.71		1.32	119	< 0.010	138	145
11/1/2022	E321812	F2_BPO							0.169	< 0.0050	0.219	< 0.0010	47.8	7.78	8.15	0.0021								1.33
11/1/2022	E206231	EV_GT1	0.073	< 0.010	0.00677	0.00568	17.0	16.5	23.9	0.0612	0.221	< 0.0010	151	8.28	8.39	0.0141		5.02		0.944	235	< 0.010	276	248
11/1/2022	E300091	EV_MC2			0.00102	0.000955	1.11	1.58	0.781	0.0016	< 0.0050	< 0.0010	167.1	8.22	8.30	0.0067		0.976					8.44	6.64
11/2/2022	E321811	F2_ECIN			0.00105		0.93		16.2	< 0.0050	0.0091	0.0176	44	7.41	7.93	0.0251							188	
11/2/2022	E321791	F2_NWPI			0.0102		116		26.9	0.0769	0.131	< 0.0010	20.7	7.2	7.76	0.0020							183	
11/2/2022	E321812	F2_BPO			0.0204		57.0		0.169	< 0.0050	0.234	< 0.0010	38.9	7.65	7.96	0.0038							1.52	1.47
11/2/2022	E321812	F2_BPO											-16.4	7.79										
11/3/2022	E321811	F2_ECIN							16.1	< 0.0050	< 0.0050	0.0156	206.1	7.56	7.95	0.0233								
11/3/2022	E321791	F2_NWPI							27.2	0.0676	0.108	< 0.0010	188.1	7.36	7.83	< 0.0020								
11/3/2022	E321812	F2_BPO							0.168	< 0.0050	0.230	< 0.0010	20.7	7.67	8.06	0.0039								1.38
11/3/2022	E321812	F2_BPO											15.1	7.55										
11/4/2022	E321811	F2_ECIN			0.000962		1.09		16.1	< 0.0050	< 0.0050	0.0196	57.2	7.42	8.09	0.0198							179	
11/4/2022	E321791	F2_NWPI			0.0100		115		26.7	0.0798	0.131	< 0.0010	45.7	7.24	7.95	< 0.0020							174	
11/4/2022	E321812	F2_BPO			0.0162		54.9		0.214	< 0.0050	0.224	< 0.0010	32.4	7.39	8.20	< 0.0020							1.41	1.22
11/4/2022	E321812	F2_BPO											40.2	7.8										
11/5/2022	E321791	F2_NWPI							26.8	0.100	0.180	< 0.0010	62.8	7.4	7.75	0.0024								
11/5/2022	E321811	F2_ECIN							15.7	< 0.0050	< 0.0050	0.0224	81.2	7.49	7.81	0.0259								
11/5/2022	E321812	F2_BPO							0.160	0.0062	0.219	< 0.0010	133.8	7.64	8.11	0.0046								1.56
11/5/2022	E321812	F2_BPO											180.7	7.53										
11/6/2022	E321811	F2_ECIN							16.2	< 0.0050	< 0.0050	0.0217	25.3	7.9	7.89	0.0234								
11/6/2022	E321791	F2_NWPI							26.9	0.0794	0.135	< 0.0010	-22.9	7.62	7.75	0.0026								
11/6/2022	E321812	F2_BPO							0.161	< 0.0050	0.234	< 0.0010	80.2	7.71	8.11	0.0031								2.01
11/6/2022	E321812	F2_BPO											199.7	7.56										
11/7/2022	E321811	F2_ECIN	< 0.010	< 0.010	0.000976	0.00100	0.89	1.07	16.4	< 0.0050	< 0.0050	0.0179	65.2	7.54	8.07	0.0199		2.79		0.035	147	< 0.010	194	157
11/7/2022	E321791	F2_NWPI	0.015	< 0.010	0.0102	0.0107	121	122	27.2	0.0704	0.108	< 0.0010	61.9	7.29	7.84	< 0.0020		6.88		3.54	149	< 0.010	194	155
11/7/2022	0200097	EV_EC1	< 0.010	< 0.010									2	8.95						0.337	83.4	< 0.010		
11/7/2022	E321814	EV_ECOUT	< 0.010	< 0.010									34.1	8.11						0.127	117	< 0.010		
11/7/2022	E321812	F2_BPO	< 0.010	< 0.010	0.0185	0.0215	59.0	64.1	0.171	< 0.0050	0.240	< 0.0010	65.7	7.68	8.20	0.0029		5.22		0.611	0.876	< 0.010	1.92	1.97
11/7/2022	E321812	F2_BPO											44.5	7.75										
11/8/2022	E321791	F2_NWPI							26.6	0.0740	0.113	< 0.0010	31.8	7.2	7.80	0.0030								
11/8/2022	E321812	F2_BPO							0.156	< 0.0050	0.216	< 0.0010	6.8	7.58	8.04	0.0072								2.10
11/8/2022	E300091	EV_MC2			0.00163	0.00169	1.66	1.68	1.39	0.0022	0.0096	< 0.0010	95.7	8.15	8.25	0.0032		1.04					19.9	14.0
11/8/2022	0200203	EV_MC3			0.000743	0.000677	< 0.50	0.80	0.140	0.0012	0.0107	< 0.0010	102.7	8.62	8.31	0.0266		0.699					2.21	1.39
11/8/2022	E321812	F2_BPO											75.9	7.5										
11/8/2022	E321811	F2_ECIN							16.1	< 0.0050	< 0.0050	0.0220	15.9	7.67	8.08	0.0227								
11/9/2022	E321811	F2_ECIN			0.00103		0.88		16.1	< 0.0050	< 0.0050	0.0143	11.3	7.74	7.92	0.0202							202	
11/9/2022	E321791	F2_NWPI			0.00994		120		26.6	0.0690	0.104	< 0.0010	15.9	7.44	7.74	< 0.0020							195	
11/9/2022	E321812	F2_BPO			0.0159	0.0160	58.7	60.3	0.150	0.0051	0.230	< 0.0010	27	7.52	7.97	0.0021		5.10					2.06	1.80

		Parameter	MeSe(IV) – methylselenic acid CH3SeO2H	Methaneselenonic Acid	Molybdenum	Molybdenum	Nickel	Nickel	Nitrate Nitrogen (NO3), As N	Nitrite Nitrogen (NO2), As N	Nitrogen, Ammonia (As N)	Ortho-Phosphate	OXIDATION-REDUCTION POTENTIAL, FIELD	pH, Field	pH, LAB	Phosphorus	Phosphorus	Potassium	Potassium	Se(IV) – selenite SeO3(-2)	Se(VI) – selenate SeO4(-2)	SeCN – selenocyanate SeCN(-1)	Selenium	Selenium
		Fraction	D	D	D	T	D	T	N	N	T	D	N	N	N	T	T	T	T	D	D	D	D	T
		Unit	ug/l	ug/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mv	ph units	ph units	mg/l	ppm	mg/l	ppm	ug/l	ug/l	ug/l	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
11/9/2022	E321812	F2_BPO											15.4	7.48										
11/10/2022	E321791	F2_NWPI							26.8	0.0715	0.103	< 0.0010	16.5	7.37	8.14	< 0.0020								
11/10/2022	E321811	F2_ECIN							16.1	< 0.0050	< 0.0050	0.0175	50.3	7.49	8.09	0.0226								
11/10/2022	E321812	F2_BPO							0.142	< 0.0050	0.233	< 0.0010	27.2	7.44	8.10	0.0040								1.72
11/10/2022	E321812	F2_BPO											68.5	7.3										
11/11/2022	E321791	F2_NWPI			0.0105		120		26.5	0.0838	0.144	< 0.0010	42.9	7.33	8.02	0.0033							186	
11/11/2022	E321811	F2_ECIN			0.00105		0.93		16.2	< 0.0050	< 0.0050	0.0234	82.1	7.48	8.19	0.0213							186	
11/11/2022	E321812	F2_BPO			0.0265		66.6		0.147	0.0061	0.235	< 0.0010	19.9	7.43	8.14	< 0.0020							2.18	1.84
11/11/2022	E321812	F2_BPO											-8.7	7.32										
11/12/2022	E321811	F2_ECIN							16.3	< 0.0050	< 0.0050	0.0155	89.9	7.51	8.34	0.0170								
11/12/2022	E321791	F2_NWPI							26.5	0.0726	0.103	< 0.0010	43.2	7.42	8.26	< 0.0020								
11/12/2022	E321812	F2_BPO							0.157	< 0.0050	0.230	< 0.0010	93.9	7.46	8.35	0.0034								2.23
11/12/2022	E321812	F2_BPO											6.6	7.42										
11/13/2022	E321811	F2_ECIN							16.3	< 0.0050	0.0057	0.0181	70.2	7.51	8.25	0.0175								
11/13/2022	E321812	F2_BPO							0.133	< 0.0050	0.231	< 0.0010	90.9	7.49	8.33	0.0030								2.32
11/13/2022	E321791	F2_NWPI							26.3	0.0740	0.111	< 0.0010	52.2	7.49	8.32	< 0.0020								
11/13/2022	E321812	F2_BPO											43.7	7.39										
11/14/2022	200393	EV_ER1			0.00132	0.00143	0.69	0.68	2.25	0.0010	< 0.0050	< 0.0010	200.5	7.73	8.39	< 0.0020		0.767					13.1	12.5
11/14/2022	0200203	EV_MC3	< 0.010	< 0.010	0.000671	0.000735	< 0.50	< 0.50	0.173	< 0.0010	< 0.0050	< 0.0010	212.1	7.98	8.38	0.0062		0.659		0.024	1.26	< 0.010	1.61	1.67
11/14/2022	310168	EV_MC2A	< 0.010	< 0.010	0.00129	0.00138	1.35	1.46	0.978	0.0011	0.0080	< 0.0010	216.6	8.01	8.42	< 0.0020		0.888		0.064	8.64	< 0.010	10.5	10.3
11/14/2022	E300091	EV_MC2	< 0.010	< 0.010	0.00165	0.00176	2.05	2.09	1.67	0.0016	0.0128	< 0.0010	207.1	7.82	8.39	< 0.0020		1.16		0.079	14.3	< 0.010	17.3	16.4
11/14/2022	E321812	F2_BPO	< 0.010	< 0.010	0.0220	0.0219	68.3	64.2	0.222	< 0.0050	0.226	< 0.0010	1.3	7.43	8.29	0.0036		5.31		0.587	0.822	0.026	2.58	2.21
11/14/2022	E321811	F2_ECIN	< 0.010	< 0.010	0.00109	0.00101	0.83	0.99	16.2	< 0.0050	< 0.0050	0.0208	23.1	7.49	8.19	0.0210		2.75		0.037	135	< 0.010	255	173
11/14/2022	E321791	F2_NWPI	0.013	< 0.010	0.0104	0.0104	120	119	26.3	0.0708	0.105	< 0.0010	11.1	7.4	8.24	< 0.0020		6.86		3.07	133	< 0.010	209	171
11/14/2022	0200097	EV_EC1	< 0.010	< 0.010	0.00821	0.00788	14.2	13.9	10.0	< 0.0050	< 0.0050	0.0019	66.1	8.73	8.33	0.0064		3.56		0.318	77.9	< 0.010	122	95.5
11/14/2022	E300091	EV_MC2			0.00178	0.00182	2.14	2.12	1.71	0.0016	0.0055	< 0.0010	109.4	8.1	8.26	< 0.0020		1.13					18.9	16.8
11/14/2022	E321814	EV_ECOUT	< 0.010	< 0.010	0.00462	0.00491	14.3	14.0	13.0	0.0055	0.0349	0.0146	98.9	7.94	8.27	0.0167		3.23		0.147	109	< 0.010	160	140
11/14/2022	200393	EV_ER1			0.00134	0.00133	0.69	0.70	2.21	0.0011	< 0.0050	< 0.0010	150.8	8.43	8.38	< 0.0020		0.725					14.7	11.8
11/14/2022	E102685	EV_BC1			0.0115	0.0122	24.3	26.2	21.6	0.0530	0.166	< 0.0010	174.8	8.03	8.20	0.0053		6.57					250	233
11/14/2022	E206231	EV_GT1			0.0141	0.0150	27.2	26.9	9.17	0.0102	0.0974	< 0.0010	135.4	8.41	8.35	0.0069		5.08					115	109
11/14/2022	E321812	F2_BPO											-19.5	7.43										
11/15/2022	E206231	EV_GT1	0.014	< 0.010	0.0156	0.0158	26.6	26.8	8.44	0.0073	0.0888	< 0.0010	196.5	8.23	8.36	0.0062		5.05		0.561	72.6	< 0.010	99.4	78.7
11/15/2022	E321812	F2_BPO							0.158	< 0.0050	0.248	< 0.0010	105.1	7.4	8.36	0.0049								2.25
11/15/2022	E321811	F2_ECIN							16.5	< 0.0050	0.0053	0.0168	81	7.62	8.19	0.0228								
11/15/2022	E321791	F2_NWPI							26.3	0.0768	0.118	< 0.0010	61.6	7.43	8.29	< 0.0020								
11/15/2022	E102685	EV_BC1	0.037	< 0.010	0.0128	0.0128	24.2	24.3	20.4	0.0445	0.147	< 0.0010	97.1	8.25	8.27	0.0042		5.98		0.997	170	< 0.010	226	180
11/15/2022	0200097	EV_EC1			0.00850	0.00856	14.4	14.4	2.86	< 0.0050	< 0.0050	< 0.0010	105.9	8.09	8.34	0.0051		3.56					111	95.8
11/15/2022	E321814	EV_ECOUT			0.00182	0.00175	3.37	3.54	16.1	< 0.0050	0.0099	0.0193	216.1	7.67	8.23	0.0208		2.75					180	148
11/15/2022	E321812	F2_BPO											2.6	7.48										
11/16/2022	E321811	F2_ECIN			0.000994		0.91		16.6	< 0.0050	< 0.0050	0.0197	63.1	7.68	8.14	0.0230							245	
11/16/2022	E321791	F2_NWPI			0.0103		111		26.4	0.0752	0.108	< 0.0010	31.4	7.53	8.33	< 0.0020							246	
11/16/2022	E321812	F2_BPO			0.0144		52.4		0.148	< 0.0050	0.259	< 0.0010	14.9	7.39	8.34	0.0054							1.99	1.74
11/16/2022	E321812	F2_BPO											30.4	7.48										
11/17/2022	E321811	F2_ECIN							16.9	< 0.0050	< 0.0050	0.0218	-51.3	7.46	8.15	0.0205								
11/17/2022	E321791	F2_NWPI							26.0	0.0772	0.110	< 0.0010	-30.9	7.39	8.33	< 0.0020								
11/17/2022	E321812	F2_BPO							0.135	< 0.0050	0.249	< 0.0010	5.6	7.49	8.52	0.0027								2.06
11/17/2022	E321812	F2_BPO											-35.7	7.5										
11/18/2022	E321811	F2_ECIN			0.00102		0.89		16.2	< 0.0050	< 0.0050	0.0169	-64.1	7.48	8.09	0.0225							245	

		Parameter	MeSe(IV) – methylselenic acid CH3SeO2H	Methaneselenonic Acid	Molybdenum	Molybdenum	Nickel	Nickel	Nitrate Nitrogen (NO3), As N	Nitrite Nitrogen (NO2), As N	Nitrogen, Ammonia (As N)	Ortho-Phosphate	OXIDATION-REDUCTION POTENTIAL, FIELD	pH, Field	pH, LAB	Phosphorus	Phosphorus	Potassium	Potassium	Se(IV) – selenite SeO3(-2)	Se(VI) – selenate SeO4(-2)	SeCN – selenocyanate SeCN(-1)	Selenium	Selenium
		Fraction	D	D	D	T	D	T	N	N	T	D	N	N	N	T	T	T	T	D	D	D	D	T
		Unit	ug/l	ug/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mv	ph units	ph units	mg/l	ppm	mg/l	ppm	ug/l	ug/l	ug/l	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
11/18/2022	E321791	F2_NWPI			0.0106		111		25.7	0.0814	0.116	< 0.0010	-53.2	7.42	8.24	< 0.0020							235	
11/18/2022	E321812	F2_BPO			0.0207		51.3		0.122	< 0.0050	0.243	< 0.0010	-67.9	7.55	8.51	0.0050							2.47	1.98
11/18/2022	E321812	F2_BPO											60.6	7.64										
11/19/2022	E321811	F2_ECIN							16.5	< 0.0050	< 0.0050	0.0217	-26.7	7.49	8.11	0.0200								
11/19/2022	E321791	F2_NWPI							26.0	0.0810	0.122	< 0.0010	-39.1	7.43	8.32	0.0023								
11/19/2022	E321812	F2_BPO							0.142	< 0.0050	0.253	< 0.0010	-59.8	7.62	8.33	0.0034								1.88
11/19/2022	E321812	F2_BPO											-11.1	7.59										
11/20/2022	E321811	F2_ECIN							16.5	< 0.0050	< 0.0050	0.0216	-37	7.62	8.13	0.0212								
11/20/2022	E321791	F2_NWPI							26.4	0.0734	0.107	< 0.0010	-39.1	7.55	8.32	< 0.0020								
11/20/2022	E321812	F2_BPO							0.338	0.0061	0.242	< 0.0010	-48.1	7.74	8.43	0.0051								2.07
11/20/2022	E321812	F2_BPO											15	7.51										
11/21/2022	0200097	EV_EC1	< 0.010	< 0.010					9.41	0.0075			200.1	8.08						0.372	85.0	< 0.010		
11/21/2022	E321814	EV_ECOUT	< 0.010	< 0.010					14.5	0.0081			6.3	7.78						0.115	130	< 0.010		
11/21/2022	E321811	F2_ECIN	< 0.010	< 0.010	0.00100	0.00102	0.76	0.88	16.4	0.0064	< 0.0050	0.0237	24.2	7.68	8.21	0.0224		2.76		0.042	153	< 0.010	186	166
11/21/2022	E321791	F2_NWPI	0.012	< 0.010	0.0104	0.0106	118	117	27.2	0.0777	0.115	< 0.0010	3	7.62	8.20	< 0.0020		6.75		3.16	150	< 0.010	190	170
11/21/2022	E321812	F2_BPO											51	7.43										
11/21/2022	E321812	F2_BPO	< 0.010	< 0.010	0.0199	0.0209	63.8	63.9	0.143	0.0057	0.238	< 0.0010	24.5	7.65	8.26	0.0043		5.20		0.612	0.908	0.028	3.03	1.94
11/21/2022	E321812	F2_BPO											56.2	7.49										
11/22/2022	E321811	F2_ECIN							16.5	< 0.0050	< 0.0050	0.0209	102.1	7.65	8.15	0.0216								
11/22/2022	E321791	F2_NWPI							26.2	0.0803	0.113	< 0.0010	30.6	7.59	8.19	0.0023								
11/22/2022	E321812	F2_BPO							0.127	< 0.0050	0.232	< 0.0010	-34.1	7.66	8.17	0.0035								2.05
11/22/2022	E321812	F2_BPO											60.1	7.43										
11/23/2022	E321811	F2_ECIN			0.00102		< 1.00		16.4	< 0.0050	< 0.0050	0.0269	31.2	7.63	8.19	0.0237							200	
11/23/2022	E321791	F2_NWPI			0.0101		115		25.9	0.0761	0.113	< 0.0010	0.4	7.57	8.30	0.0026							198	
11/23/2022	E321812	F2_BPO			0.0158		63.0		0.138	< 0.0050	0.242	< 0.0010	-27	7.67	8.31	0.0032							2.44	1.90
11/23/2022	E321812	F2_BPO											-17.7	7.58										
11/24/2022	E321791	F2_NWPI							26.0	0.0787	0.114	< 0.0010	58.8	7.56	8.23	0.0024								
11/24/2022	E321811	F2_ECIN							16.4	< 0.0050	< 0.0050	0.0216	38.7	7.65	8.18	0.0223								
11/24/2022	E321812	F2_BPO							0.130	0.0050	0.236	< 0.0010	3.3	7.7	8.26	0.0040								2.05
11/24/2022	E321812	F2_BPO											-6.1	7.43										
11/25/2022	E321811	F2_ECIN			0.000852		< 1.00		16.3	< 0.0050	< 0.0050	0.0186	84.5	7.66	8.02	0.0216							178	
11/25/2022	E321791	F2_NWPI			0.00848		110		26.0	0.0798	0.114	< 0.0010	32.6	7.6	8.00	< 0.0020							183	
11/25/2022	E321812	F2_BPO			0.0110		57.4		0.124	< 0.0050	0.237	< 0.0010	36.4	7.71	8.05	0.0025							1.87	1.87
11/25/2022	E321812	F2_BPO											-12.4	7.76										
11/26/2022	E321811	F2_ECIN							17.1	< 0.0050	< 0.0050	0.0230	67.1	8.02	7.94	0.0223								
11/26/2022	E321791	F2_NWPI							26.9	0.0790	0.116	< 0.0010	52.1	7.68	7.92	0.0020								
11/26/2022	E321812	F2_BPO							0.115	< 0.0050	0.259	< 0.0010	93.5	7.47	7.87	0.0046								1.87
11/26/2022	E321812	F2_BPO											13.7	7.47										
11/27/2022	E321811	F2_ECIN							16.1	< 0.0050	< 0.0050	0.0214	-1	7.61	8.18	0.0213								
11/27/2022	E321791	F2_NWPI							27.2	0.0844	0.122	< 0.0010	16.3	7.53	8.22	0.0030								
11/27/2022	E321812	F2_BPO							0.191	0.0095	0.241	< 0.0010	9.2	7.66	8.31	0.0043								1.92
11/27/2022	E321812	F2_BPO											82.1	7.36										
11/28/2022	200393	EV_ER1			0.00137	0.00140	0.70	0.72	2.52	< 0.0010	< 0.0050	< 0.0010	179.2	8.19	8.51	0.0025		0.728					19.1	12.6
11/28/2022	0200203	EV_MC3	< 0.010	< 0.010	0.000703	0.000703	< 0.50	< 0.50	0.168	< 0.0010	0.0079	0.0022	180.9	8.22	8.48	0.0040		0.580		0.027	1.17	< 0.010	2.14	1.32
11/28/2022	E321812	F2_BPO	< 0.010	< 0.010	0.0160	0.0156	62.5	66.5	0.167	0.0064	0.249	0.0024	28.5	7.75	8.54	0.0045		5.04		0.611	0.852	0.025	2.95	2.24
11/28/2022	310168	EV_MC2A	< 0.010	< 0.010	0.00141	0.00135	1.48	1.48	0.968	0.0010	0.0150	0.0013	14.5	8.22	8.52	0.0038		0.912		0.048	8.36	< 0.010	14.2	8.96
11/28/2022	E300091	EV_MC2	< 0.010	< 0.010	0.00185	0.00186	2.51	2.70	1.60	0.0017	0.0126	0.0011	106.7	8.09	8.50	0.0032		1.17		0.075	13.3	< 0.010	22.8	14.9
11/28/2022	E321811	F2_ECIN	< 0.010	< 0.010	0.00103	0.00106	0.99	1.16	17.0	< 0.0050	< 0.0050	0.0236	78.1	7.52	8.06	0.0240		2.78		0.044	145	< 0.010	260	168

		Parameter	MeSe(IV) – methylselenic acid CH3SeO2H	Methaneselenonic Acid	Molybdenum	Molybdenum	Nickel	Nickel	Nitrate Nitrogen (NO3), As N	Nitrite Nitrogen (NO2), As N	Nitrogen, Ammonia (As N)	Ortho-Phosphate	OXIDATION-REDUCTION POTENTIAL, FIELD	pH, Field	pH, LAB	Phosphorus	Phosphorus	Potassium	Potassium	Se(IV) – selenite SeO3(-2)	Se(VI) – selenate SeO4(-2)	SeCN – selenocyanate SeCN(-1)	Selenium	Selenium
		Fraction	D	D	D	T	D	T	N	N	T	D	N	N	N	T	T	T	T	D	D	D	D	T
		Unit	ug/l	ug/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mv	ph units	ph units	mg/l	ppm	mg/l	ppm	ug/l	ug/l	ug/l	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
11/28/2022	E321791	F2_NWPI	< 0.010	< 0.010	0.0102	0.0111	118	131	26.4	0.0778	0.112	< 0.0010	18.1	7.43	8.25	0.0023		7.17		3.41	146	< 0.010	249	177
11/28/2022	0200097	EV_EC1	< 0.010	< 0.010	0.00892	0.00870	16.0	17.4	9.08	< 0.0050	< 0.0050	0.0059	120.4	8.13	8.16	0.0061		3.76		0.395	78.6	< 0.010	109	88.1
11/28/2022	E321814	EV_ECOUT	< 0.010	< 0.010	0.00446	0.00447	12.6	13.9	13.8	0.0076	0.0287	0.0183	38.4	7.71	8.17	0.0185		3.19		0.145	117	< 0.010	168	128
11/28/2022	E321812	F2_BPO											7.7	7.62										
11/29/2022	E206231	EV_GT1	0.015	< 0.010	0.0161	0.0154	30.8	32.8	7.28	0.0094	0.117	0.0042	199.7	8.35	8.40	0.0048		4.98		0.530	60.5	< 0.010	98.5	68.0
11/29/2022	E321791	F2_NWPI							26.7	0.0658	0.0856	< 0.0010	53	7.41	8.19	0.0022								
11/29/2022	E321811	F2_ECIN							16.6	< 0.0050	< 0.0050	0.0183	74.2	7.45	8.04	0.0191								
11/29/2022	E321812	F2_BPO							0.107	< 0.0050	0.232	< 0.0010	78.3	7.66	8.60	0.0045								1.97
11/29/2022	E102685	EV_BC1	0.020	< 0.010	0.0163	0.0154	28.3	30.2	8.88	0.0161	0.0558	0.0012	40.2	8.13	8.33	0.0038		5.32		0.770	69.5	< 0.010	114	80.6
11/29/2022	E321812	F2_BPO											19.3	8.04										
11/30/2022	E321811	F2_ECIN			0.000984		1.03		16.6	< 0.0050	< 0.0050	0.0242	36.6	7.55	8.24	0.0225							234	
11/30/2022	E321791	F2_NWPI			0.0104		119		26.6	0.0652	0.0927	< 0.0010	15.9	7.51	8.28	< 0.0020							235	
11/30/2022	E321812	F2_BPO			0.0202		65.1		0.126	< 0.0050	0.249	0.0012	26.6	7.47	8.32	0.0042							2.13	1.87
11/30/2022	E321812	F2_BPO											6.1	7.5										
12/1/2022	E321811	F2_ECIN							16.0	< 0.0050	0.0050	0.0184	37.7	7.4	8.14	0.0215								
12/1/2022	E321791	F2_NWPI							26.1	0.0652	0.0889	< 0.0010	71.7	7.45	8.11	< 0.0020								
12/1/2022	E321812	F2_BPO							0.110	< 0.0050	0.241	< 0.0010	22.4	8.02	8.21	0.0047								2.02
12/1/2022	E321812	F2_BPO											-13.7	7.61										
12/2/2022	E321811	F2_ECIN			0.00110		0.87		16.4	< 0.0050	< 0.0050	0.0197	8.7	7.67	8.20	0.0212							190	
12/2/2022	E321791	F2_NWPI			0.0111		122		26.4	0.0668	0.0893	< 0.0010	-3.2	7.55	8.23	< 0.0020							200	
12/2/2022	E321812	F2_BPO			0.0164		62.2		0.115	< 0.0050	0.244	< 0.0010	61.4	7.41	8.27	0.0050							2.14	2.13
12/2/2022	E321812	F2_BPO											4.4	7.49										
12/3/2022	E321791	F2_NWPI							27.6	0.0681	0.0894	< 0.0010	64	7.51	8.03	< 0.0020								
12/3/2022	E321811	F2_ECIN							17.1	< 0.0050	< 0.0050	0.0231	95.5	7.56	8.08	0.0211								
12/3/2022	E321812	F2_BPO							0.122	0.0053	0.236	< 0.0010	50	7.62	8.09	0.0031								2.29
12/3/2022	E321812	F2_BPO											11	7.64										
12/4/2022	E321811	F2_ECIN							17.0	< 0.0050	< 0.0050	0.0231	72.8	7.43	7.86	0.0231								
12/4/2022	E321791	F2_NWPI							27.6	0.0687	0.0843	< 0.0010	30.5	7.4	7.84	< 0.0020								
12/4/2022	E321812	F2_BPO							0.119	< 0.0050	0.229	< 0.0010	26.3	8.28	7.89	0.0026								2.25
12/4/2022	E321812	F2_BPO											-9.4	7.47										
12/5/2022	0200097	EV_EC1	< 0.010	< 0.010					8.72	< 0.0050			213.5	7.92						0.457	86.4	< 0.010		
12/5/2022	E321812	F2_BPO	< 0.010	< 0.010	0.0161	0.0170	62.4	61.6	0.132	< 0.0050	0.242	< 0.0010	193.6	7.48	8.22	0.0049		5.32		0.646	0.816	0.032	2.66	1.98
12/5/2022	E321811	F2_ECIN	< 0.010	< 0.010	0.00101	0.00110	0.94	1.07	16.5	< 0.0050	< 0.0050	0.0238	56.1	7.96	8.25	0.0216		2.95		0.052	151	< 0.010	245	180
12/5/2022	E321791	F2_NWPI	< 0.010	< 0.010	0.0100	0.0108	116	118	26.7	0.0681	0.111	< 0.0010	24.9	7.74	8.21	0.0110		7.04		3.09	141	< 0.010	246	184
12/5/2022	E321814	EV_ECOUT	< 0.010	< 0.010					16.2	< 0.0050			45.9	8.55						0.059	162	< 0.010		
12/5/2022	E321812	F2_BPO											151.9	7.72										
12/5/2022	E321812	F2_BPO											49.1	7.38										
12/6/2022	E321811	F2_ECIN							16.6	< 0.0100	< 0.0050	0.0216	99.1	7.53	8.05	0.0255								
12/6/2022	E321791	F2_NWPI							26.0	0.0470	0.0824	< 0.0010	100.2	7.46	8.01	0.0030								
12/6/2022	E321812	F2_BPO							0.109	< 0.0100	0.214	< 0.0010	-7.1	7.63	8.10	0.0044							2.18	2.03
12/6/2022	E321814	EV_ECOUT			0.00746	0.00758	24.1	24.0	10.2	0.0063	0.0575	0.0147	186.8	7.71	8.26	0.0119		3.88					118	110
12/6/2022	0200203	EV_MC3			0.000704	0.000692	< 0.50	< 0.50	0.183	< 0.0010	< 0.0050	0.0030	152	8.37	8.34	0.0038		0.596					1.83	1.69
12/6/2022	E206231	EV_GT1			0.0151	0.0158	34.0	33.5	6.87	0.0089	0.106	0.0036	161.9	8.3	8.43	0.0041		5.17					78.3	77.6
12/6/2022	E300091	EV_MC2	< 0.010	< 0.010	0.00193	0.00182	2.56	2.38	1.42	0.0014	0.0071	0.0016	162.8	8.2	8.34	0.0022		1.14		0.046	9.59	< 0.010	16.5	14.4
12/6/2022	E321812	F2_BPO											80.6	7.79										
12/6/2022	E102685	EV_BC1			0.0158	0.0164	31.2	30.8	7.41	0.0124	0.0540	< 0.0010	182.6	8.2	8.33	0.0022		5.46					76.2	74.7
12/7/2022	E321811	F2_ECIN			0.000973		1.00		16.4	< 0.0050	< 0.0050	0.0245	119.1	7.5	8.15	0.0228							207	
12/7/2022	E321791	F2_NWPI			0.00998		111		26.6	0.0665	0.0873	< 0.0010	118.4	7.45	8.21	< 0.0020							225	

		Parameter	MeSe(IV) – methylselenic acid CH3SeO2H	Methaneselenonic Acid	Molybdenum	Molybdenum	Nickel	Nickel	Nitrate Nitrogen (NO3), As N	Nitrite Nitrogen (NO2), As N	Nitrogen, Ammonia (As N)	Ortho-Phosphate	OXIDATION-REDUCTION POTENTIAL, FIELD	pH, Field	pH, LAB	Phosphorus	Phosphorus	Potassium	Potassium	Se(IV) – selenite SeO3(-2)	Se(VI) – selenate SeO4(-2)	SeCN – selenocyanate SeCN(-1)	Selenium	Selenium
		Fraction	D	D	D	T	D	T	N	N	T	D	N	N	N	T	T	T	T	D	D	D	D	T
		Unit	ug/l	ug/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mv	ph units	ph units	mg/l	ppm	mg/l	ppm	ug/l	ug/l	ug/l	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
12/7/2022	E321812	F2_BPO			0.0174		59.5		0.0830	< 0.0050	0.228	< 0.0010	201.2	7.77	8.31	0.0049							2.59	2.24
12/7/2022	200393	EV_ER1	< 0.010	< 0.010	0.00143	0.00142	0.80	0.95	2.38	0.0010	< 0.0050	< 0.0010	135.1	8.34	8.30	< 0.0020		0.855		0.060	11.4	< 0.010	14.7	12.6
12/7/2022	E321812	F2_BPO											43.5	7.76										
12/8/2022	E321811	F2_ECIN							16.3	< 0.0050	0.0136	0.0205	-2.1	7.48	8.20	0.0204								
12/8/2022	E321791	F2_NWPI							26.6	0.0660	0.0895	< 0.0010	3.2	7.42	8.10	0.0025								
12/8/2022	E321812	F2_BPO							0.113	< 0.0050	0.237	< 0.0010	39.7	7.58	8.19	0.0038								2.16
12/8/2022	0200097	EV_EC1			0.00848	0.00951	16.6	18.9	8.43	0.0050	< 0.0050	0.0026	99.9	8.05	8.29	0.0058		3.84					113	87.9
12/8/2022	E321812	F2_BPO											30.1	7.54										
12/9/2022	E321811	F2_ECIN			0.000805		< 1.00		16.6	< 0.0050	< 0.0050	0.0217	59.8	7.66	7.94	0.0220							199	
12/9/2022	E321791	F2_NWPI			0.00843		126		26.8	0.0684	0.0859	< 0.0010	43.9	7.63	7.86	< 0.0020							191	
12/9/2022	E321812	F2_BPO			0.0105		61.2		0.0952	< 0.0050	0.256	< 0.0010	17.2	7.67	7.92	0.0033							1.80	1.87
12/9/2022	E321812	F2_BPO											10.8	7.46										
12/10/2022	E321811	F2_ECIN							16.2	< 0.0050	< 0.0050	0.0244	82.1	7.67	8.14	0.0220								
12/10/2022	E321791	F2_NWPI							26.5	0.0680	0.0885	< 0.0010	36.2	7.62	8.09	< 0.0020								
12/10/2022	E321812	F2_BPO							0.0911	< 0.0050	0.229	< 0.0010	107.6	7.78	8.28	0.0027								1.92
12/10/2022	E321812	F2_BPO											-22.5	7.5										
12/11/2022	E321811	F2_ECIN							16.3	< 0.0050	< 0.0050	0.0248	-116.1	7.69	8.10	0.0210								
12/11/2022	E321791	F2_NWPI							26.3	0.0675	0.0871	< 0.0010	-140.4	7.54	8.08	< 0.0020								
12/11/2022	E321812	F2_BPO							0.178	< 0.0050	0.227	< 0.0010	-154.3	7.58	8.22	0.0027								1.92
12/11/2022	E321812	F2_BPO											107.1	7.23										
12/12/2022	E321811	F2_ECIN	< 0.010	< 0.010	0.00109	0.00113	1.07	< 1.00	16.3	< 0.0050	< 0.0050	0.0246	51.3	7.58	8.09	0.0230		2.70		0.050	145	< 0.010	194	168
12/12/2022	E321791	F2_NWPI	< 0.010	< 0.010	0.0102	0.00796	118	117	26.8	0.0689	0.0948	0.0024	23.3	7.54	8.23	0.0023		6.72		3.14	146	< 0.010	197	169
12/12/2022	200393	EV_ER1			0.00139	0.00130	0.79	0.77	2.47	0.0011	< 0.0050	0.0013	-95.9	8.18	8.46	0.0030		0.816					14.9	12.8
12/12/2022	E321812	F2_BPO	< 0.010	< 0.010	0.0200	0.0209	61.7	67.0	0.0898	< 0.0050	0.246	< 0.0010	84.6	7.58	8.64	0.0037		5.24		0.643	0.678	0.042	1.80	2.10
12/12/2022	E300091	EV_MC2	< 0.010	< 0.010	0.00183	0.00194	2.61	2.86	1.45	0.0020	0.0154	0.0019	80	8.01	8.56	0.0030		1.20		0.038	12.9	< 0.010	15.4	14.0
12/12/2022	0200203	EV_MC3	< 0.010	< 0.010	0.000727	0.000698	< 0.50	< 0.50	0.203	< 0.0010	0.0122	0.0034	112.8	8.27	8.54	0.0035		0.594		0.034	1.36	< 0.010	1.70	1.64
12/12/2022	0200097	EV_EC1	< 0.010	< 0.010	0.00910	0.00943	18.0	19.0	8.31	0.0085	< 0.0050	0.0062	-14.7	8.1	8.15	0.0074		4.06		0.438	77.1	< 0.010	96.3	89.1
12/12/2022	E321814	EV_ECOUT	< 0.010	< 0.010	0.00475	0.00462	13.4	14.1	13.2	0.0076	0.0345	0.0188	-76.6	7.69	8.02	0.0190		3.22		0.165	120	< 0.010	150	132
12/12/2022	E321812	F2_BPO											10	7.49										
12/13/2022	E321811	F2_ECIN							16.6	< 0.0050	< 0.0050	0.0245	73.1	7.62	8.00	0.0230								
12/13/2022	E321791	F2_NWPI							27.9	0.0744	0.0946	< 0.0010	34.4	7.54	7.92	< 0.0020								
12/13/2022	E206231	EV_GT1	0.023	< 0.010	0.0176	0.0163	31.9	33.5	6.68	0.0128	0.122	0.0029	206.2	8.37	8.52	0.0041		4.95		0.549	56.9	< 0.010	71.2	61.0
12/13/2022	E102685	EV_BC1	0.023	< 0.010	0.0179	0.0168	31.2	32.9	6.62	0.0204	0.0531	< 0.0010	216.5	8.16	8.44	0.0028		5.12		0.649	53.4	< 0.010	70.6	58.4
12/13/2022	E321812	F2_BPO							0.101	0.0071	0.243	< 0.0010	77.8	7.51	7.97	0.0034								2.11
12/13/2022	E321812	F2_BPO											28.7	7.51										
12/14/2022	E321791	F2_NWPI			0.0103		113		26.2	0.0683	0.0933	< 0.0010	54.6	7.51	8.29	< 0.0020							171	
12/14/2022	E321811	F2_ECIN			0.00101		< 1.00		17.0	< 0.0050	< 0.0050	0.0242	85.8	7.55	8.12	0.0229							161	
12/14/2022	E321812	F2_BPO			0.0177		54.4		0.0945	< 0.0050	0.240	< 0.0010	36.5	7.57	8.64	0.0035							1.70	2.00
12/14/2022	E321812	F2_BPO											27.3	7.56										
12/14/2022	E321812	F2_BPO											18.7	7.54										
12/15/2022	E321811	F2_ECIN							16.6	< 0.0050	0.0071	0.0249	42.9	7.52	8.24	0.0216								
12/15/2022	E321791	F2_NWPI							28.0	0.0738	0.0963	< 0.0010	13.9	7.49	8.29	< 0.0020								
12/15/2022	E321812	F2_BPO							0.0873	< 0.0050	0.229	< 0.0010	-54.3	7.59	8.34	0.0033								2.13
12/15/2022	E321812	F2_BPO											4.3	7.46										
12/16/2022	E321791	F2_NWPI			0.0102		121		26.5	0.0679	0.0938	0.0014	-9.1	7.46	8.05	< 0.0020							183	
12/16/2022	E321811	F2_ECIN			0.00103		< 1.00		16.1	< 0.0050	< 0.0050	0.0267	26.2	7.56	7.96	0.0242							183	
12/16/2022	E321812	F2_BPO			0.0145		59.2		0.0845	< 0.0050	0.236	0.0010	3.3	7.6	8.07	0.0025							1.79	2.08
12/16/2022	E321812	F2_BPO											22	7.55										

		Parameter	MeSe(IV) – methylselenic acid CH3SeO2H	Methaneselenonic Acid	Molybdenum	Molybdenum	Nickel	Nickel	Nitrate Nitrogen (NO3), As N	Nitrite Nitrogen (NO2), As N	Nitrogen, Ammonia (As N)	Ortho-Phosphate	OXIDATION-REDUCTION POTENTIAL, FIELD	pH, Field	pH, LAB	Phosphorus	Phosphorus	Potassium	Potassium	Se(IV) – selenite SeO3(-2)	Se(VI) – selenate SeO4(-2)	SeCN – selenocyanate SeCN(-1)	Selenium	Selenium
		Fraction	D	D	D	T	D	T	N	N	T	D	N	N	N	T	T	T	T	D	D	D	D	T
		Unit	ug/l	ug/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mv	ph units	ph units	mg/l	ppm	mg/l	ppm	ug/l	ug/l	ug/l	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
12/17/2022	E321811	F2_ECIN							16.0	< 0.0050	< 0.0050	0.0238	16.2	7.59	8.07	0.0209								
12/17/2022	E321791	F2_NWPI							26.7	0.0709	0.0942	< 0.0010	-4.6	7.51	8.10	< 0.0020								
12/17/2022	E321812	F2_BPO							0.102	0.0050	0.245	< 0.0010	-16.7	7.67	8.14	0.0044								1.78
12/17/2022	E321812	F2_BPO											15.9	7.7										
12/18/2022	E321811	F2_ECIN							16.3	< 0.0050	< 0.0050	0.0242	9	7.57	8.13	0.0217								
12/18/2022	E321791	F2_NWPI							26.6	0.0705	0.0966	< 0.0010	0.3	7.52	8.12	< 0.0020								
12/18/2022	E321812	F2_BPO							0.309	< 0.0050	0.234	< 0.0010	-42.4	7.8	8.16	0.0036								2.31
12/18/2022	E321812	F2_BPO											66.9	7.62										
12/19/2022	0200097	EV_EC1	0.012	< 0.010					8.62	< 0.0050			27.5	7.91						0.351	72.2	< 0.010		
12/19/2022	E321814	EV_ECOUT	< 0.010	< 0.010					12.9	0.0055			45.5	7.84						0.163	107	< 0.010		
12/19/2022	E321811	F2_ECIN	< 0.010	< 0.010	0.00114	0.000984	1.03	1.06	16.2	< 0.0050	< 0.0050	0.0227	33.4	7.56	7.96	0.0219		2.82		0.038	141	< 0.010	207	170
12/19/2022	E321812	F2_BPO	< 0.010	< 0.010	0.0185	0.0155	56.3	60.8	0.111	< 0.0050	0.226	< 0.0010	171.7	7.63	7.95	0.0037		5.01		0.611	0.611	0.032	1.82	1.88
12/19/2022	E321791	F2_NWPI	< 0.010	< 0.010	0.0116	0.00962	116	121	27.0	0.0733	0.0915	< 0.0010	20.4	7.46	7.94	< 0.0020		6.93		3.12	144	< 0.010	216	182
12/19/2022	E321812	F2_BPO											6.9	7.64										
12/20/2022	E321811	F2_ECIN							16.6	< 0.0050	< 0.0050	0.0203	107.1	7.55	8.12	0.0209								
12/20/2022	E321791	F2_NWPI							27.2	0.0736	0.0895	< 0.0010	71.3	7.47	8.09	< 0.0020								
12/20/2022	E321812	F2_BPO							0.0932	0.0053	0.222	< 0.0010	108.7	7.49	8.06	0.0026								1.81
12/20/2022	E321812	F2_BPO											62.4	7.5										
12/21/2022	E321811	F2_ECIN			0.000960		< 1.00		16.5	< 0.0050	< 0.0050	0.0190	73.7	7.65	8.12	0.0225							194	
12/21/2022	E321812	F2_BPO			0.0129		58.6		0.0882	< 0.0050	0.233	< 0.0010	143.8	7.51	8.14	0.0031							2.02	1.94
12/21/2022	E321812	F2_BPO											39.6	7.66										
12/21/2022	E321791	F2_NWPI			0.00995		118		27.2	0.0720	0.0938	< 0.0010	-37.3	7.62	8.10	< 0.0020							194	
12/22/2022	E321791	F2_NWPI							27.3	0.0752	0.0902	< 0.0010	94.1	7.53	8.04	0.0023								
12/22/2022	E321812	F2_BPO							0.0686	0.0057	0.220	< 0.0010	-3.7	7.59	8.19	0.0054								1.72
12/22/2022	E321811	F2_ECIN							16.6	< 0.0050	< 0.0050	0.0236	-12.8	7.67	8.15	0.0241								
12/22/2022	E321812	F2_BPO											5	7.46										
12/23/2022	E321791	F2_NWPI			0.0110		115		26.9	0.0741	0.0929	< 0.0010	64.2	7.61	8.00	0.0024							203	
12/23/2022	E321811	F2_ECIN			0.00113		0.82		15.8	< 0.0050	< 0.0050	0.0208	76.2	7.61	8.08	0.0279							201	
12/23/2022	E321812	F2_BPO			0.0208		56.2		0.0651	< 0.0050	0.232	< 0.0010	174.4	7.5	8.02	0.0110							1.78	1.68
12/23/2022	E321812	F2_BPO											36.8	7.54										
12/24/2022	E321811	F2_ECIN							15.6	< 0.0050	< 0.0050	0.0197	13.7	7.49	7.98	0.0217								
12/24/2022	E321791	F2_NWPI							26.3	0.0696	0.0920	< 0.0010	28.1	7.41	7.94	< 0.0020								
12/24/2022	E321812	F2_BPO							0.0780	< 0.0050	0.223	< 0.0010	-23.3	7.42	7.96	0.0031								1.80
12/24/2022	E321812	F2_BPO											43	7.38										
12/25/2022	E321811	F2_ECIN							16.8	< 0.0050	0.0092	0.0213	30.1	7.57	8.03	0.0218								
12/25/2022	E321791	F2_NWPI							27.6	0.0745	0.100	< 0.0010	52.5	7.51	7.86	0.0022								
12/25/2022	E321812	F2_BPO							0.0771	0.0070	0.231	< 0.0010	9.1	7.51	7.97	0.0038								1.59
12/25/2022	E321812	F2_BPO											40.2	7.5										
12/26/2022	E321811	F2_ECIN			0.00108		0.96		16.8	< 0.0050	< 0.0050	0.0218	81.5	7.53	7.99	0.0230							193	
12/26/2022	E321791	F2_NWPI			0.0102		110		27.6	0.0730	0.101	< 0.0010	79.7	7.5	7.92	< 0.0020							201	
12/26/2022	E321812	F2_BPO			0.0178		55.0		0.0762	< 0.0050	0.234	< 0.0010	55	7.46	7.89	0.0034							1.56	1.68
12/26/2022	E321812	F2_BPO											35.8	7.37										
12/27/2022	200393	EV_ER1			0.00141	0.00134	0.68	0.76	2.37	0.0015	0.0077	< 0.0010	41.2	8.21	8.27	0.0022		0.765					15.2	12.3
12/27/2022	0200203	EV_MC3	< 0.010	< 0.010	0.000640	0.000663	< 0.50	< 0.50	0.249	0.0013	0.0075	0.0033	119.3	8.11	8.22	0.0060		0.595		0.023	1.42	< 0.010	1.58	1.59
12/27/2022	E321812	F2_BPO	< 0.010	< 0.010	0.0233	0.0223	56.8	58.8	0.0968	0.0071	0.238	< 0.0010	102.6	7.23	8.02	0.0049		5.12		0.634	0.613	0.036	1.69	1.57
12/27/2022	E300091	EV_MC2	< 0.010	< 0.010	0.00191	0.00181	2.48	2.45	1.29	0.0031	0.0185	< 0.0010	9.9	8.07	8.18	0.0054		1.19		0.080	11.4	< 0.010	13.2	11.2
12/27/2022	E321811	F2_ECIN	< 0.010	< 0.010	0.000970	0.000980	0.95	0.97	16.7	0.0067	< 0.0050	0.0229	43.9	7.51	8.17	0.0269		2.84		0.059	164	< 0.010	193	168
12/27/2022	E321791	F2_NWPI	0.011	< 0.010	0.0109	0.00972	117	114	27.7	0.0757	0.102	< 0.0010	-2.2	7.456	8.04	< 0.0020		6.86		3.64	169	< 0.010	242	177

		Parameter	MeSe(IV) – methylselenic acid CH3SeO2H	Methaneselenonic Acid	Molybdenum	Molybdenum	Nickel	Nickel	Nitrate Nitrogen (NO3), As N	Nitrite Nitrogen (NO2), As N	Nitrogen, Ammonia (As N)	Ortho-Phosphate	OXIDATION-REDUCTION POTENTIAL, FIELD	pH, Field	pH, LAB	Phosphorus	Phosphorus	Potassium	Potassium	Se(IV) – selenite SeO3(-2)	Se(VI) – selenate SeO4(-2)	SeCN – selenocyanate SeCN(-1)	Selenium	Selenium
		Fraction	D	D	D	T	D	T	N	N	T	D	N	N	N	T	T	T	T	D	D	D	D	T
		Unit	ug/l	ug/l	mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mv	ph units	ph units	mg/l	ppm	mg/l	ppm	ug/l	ug/l	ug/l	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
12/27/2022	0200097	EV_EC1	< 0.010	< 0.010	0.0103	0.00978	18.2	17.8	7.99	< 0.0050	< 0.0050	0.0045	51.5	8.06	8.38	0.0064		3.88		0.441	75.9	< 0.010	88.1	80.5
12/27/2022	E321814	EV_ECOUT	< 0.010	< 0.010	0.00646	0.00572	18.0	16.5	12.3	0.0080	0.0450	0.0149	106.1	7.73	8.05	0.0148		3.36		0.208	114	< 0.010	130	124
12/27/2022	E321812	F2_BPO											48.1	7.39										
12/28/2022	E206231	EV_GT1			0.0153	0.0148	32.3	31.1	6.38	0.0108	0.0636	0.0022	154.4	8.44	8.41	0.0054		5.05					79.4	62.8
12/28/2022	E321811	F2_ECIN							16.6	< 0.0050	< 0.0050	0.0232	130.9	7.45	8.10	0.0208								
12/28/2022	E321791	F2_NWPI							27.4	0.0729	0.0993	< 0.0010	71.8	7.4	8.03	< 0.0020								
12/28/2022	E102685	EV_BC1			0.0153	0.0150	31.4	31.0	5.98	0.0133	0.0331	< 0.0010	111.3	8.31	8.31	0.0090		5.12					68.8	51.7
12/28/2022	E321812	F2_BPO							0.0998	0.0062	0.197	< 0.0010	95.2	7.47	8.20	< 0.0020								1.54
12/28/2022	E321812	F2_BPO											20.3	7.59										
12/29/2022	E321811	F2_ECIN							16.6	< 0.0050	< 0.0050	0.0234	57.5	7.54	8.04	0.0201								
12/29/2022	E321791	F2_NWPI							27.5	0.0712	0.0932	< 0.0010	29.1	7.24	7.91	< 0.0020								
12/29/2022	E321812	F2_BPO							0.0902	0.0076	0.219	< 0.0010	146.2	7.49	8.06	0.0029								1.80
12/29/2022	E321812	F2_BPO											-10.1	7.61										
12/30/2022	E321791	F2_NWPI			0.00973		121		26.7	0.0715	0.0945	< 0.0010	14.2	7.42	8.10	0.0041							220	
12/30/2022	E321811	F2_ECIN			0.000960		0.99		16.2	< 0.0050	< 0.0050	0.0210	22.2	7.51	8.12	0.0230							220	
12/30/2022	E321812	F2_BPO			0.0133		57.9		0.109	0.0059	0.218	< 0.0010	93.1	7.5	8.17	0.0032							2.11	1.94
12/30/2022	E321812	F2_BPO											72.7	7.51										
12/31/2022	E321811	F2_ECIN							16.5	< 0.0050	< 0.0050	0.0232	114.1	7.55	8.23	0.0229								
12/31/2022	E321791	F2_NWPI							27.2	0.0726	0.0957	< 0.0010	52.9	7.5	8.20	< 0.0020								
12/31/2022	E321812	F2_BPO							0.291	0.0062	0.220	< 0.0010	60.7	7.61	8.25	0.0034								1.85
12/31/2022	E321812	F2_BPO											4.3	7.66										

		Parameter	Selenosulfate, SeSO3	SeMe – selenomethionine CH3SeCH2CH2CH(NH2)CO2H	Silver	Silver	Sodium	Sodium	Specific conductivity, temperature corrected value (25 C)	Specific conductivity, temperature corrected value (25 C)	Strontium	Strontium	Strontium	Sulphate (As SO4)	Sulphide (as S)	Sulphide (as S)	Temperature, Field	Thallium	Thallium	Tin	Tin	Tin	Titanium	Titanium
		Fraction	D	D	D	T	T	T	N	N	D	T	T	D	D	T	N	D	T	D	T	T	D	T
		Unit	ug/l	ug/l	ug/l	ug/l	mg/l	ppm	us/cm	uS/cm at 25 C	mg/l	mg/l	ppm	mg/l	mg/l	mg/l	deg c	ug/l	ug/l	mg/l	mg/l	ppm	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
1/1/2022	E321811	F2_ECIN							2047					841		< 0.0015	4.8							
1/1/2022	E321791	F2_NWPI							1892					828		< 0.0015	4.2							
1/1/2022	E321812	F2_BPO							2030					873		< 0.0015	4.2							
1/1/2022	E321812	F2_BPO								2086							4.1							
1/2/2022	E321812	F2_BPO								2090							4.13							
1/2/2022	E321811	F2_ECIN								2047				815		< 0.0015	5.3							
1/2/2022	E321791	F2_NWPI								1893				800		< 0.0015	4.2							
1/2/2022	E321812	F2_BPO								2107				839		< 0.0015	3.94							
1/2/2022	E321812	F2_BPO															3.94							
1/3/2022	E321811	F2_ECIN			< 0.020					2070	0.232			810		< 0.0015	5.5	< 0.020		0.00052			< 0.60	
1/3/2022	E321791	F2_NWPI			< 0.010					1906	1.05			798		< 0.0015	4.4	0.078		< 0.00010			< 0.30	
1/3/2022	E206231	EV_GT1	< 0.010	< 0.010	< 0.020	< 0.020	2.71			1901	0.291	0.333		941		< 0.0015	0.6	0.028	0.044	< 0.00020	< 0.00020		< 0.60	< 0.60
1/3/2022	E321812	F2_BPO			< 0.010					2012	0.376			852		< 0.0015	4.87	0.086		< 0.00010			< 0.30	
1/3/2022	E321812	F2_BPO								2075							4.8							
1/3/2022	E102685	EV_BC1	< 0.010	< 0.010	< 0.020	< 0.020	7.44			2220	1.62	1.71		957		< 0.0015	1.3	0.025	0.031	< 0.00020	< 0.00020		< 0.60	< 0.60
1/3/2022	E321812	F2_BPO								2079							4.81							
1/4/2022	E321812	F2_BPO								2072							4.22							
1/4/2022	E321812	F2_BPO							2095								4.22							
1/4/2022	E321812	F2_BPO	< 0.010	< 0.010	< 0.020	< 0.020	6.36			2012	0.380	0.383		855		0.0030	4.87	0.090	0.093	< 0.00020	< 0.00020		< 0.60	< 0.60
1/4/2022	E321811	F2_ECIN	< 0.010	< 0.010	< 0.010	< 0.010	3.44		2123		0.243	0.248		832		< 0.0015	5.1	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
1/4/2022	E321791	F2_NWPI	< 0.010	< 0.010	< 0.010	< 0.010	9.97		1926		1.09	1.15		832		< 0.0015	4.2	0.080	0.079	< 0.00010	< 0.00010		< 0.30	< 0.90
1/4/2022	E321812	F2_BPO								2095							3.9							
1/5/2022	E321812	F2_BPO								2100				882		< 0.0015	3.83							
1/5/2022	E321812	F2_BPO								2079							3.848							
1/5/2022	E321811	F2_ECIN								2041				720		< 0.0015	5.1							
1/5/2022	E321791	F2_NWPI								1886				795		< 0.0015	4.3							
1/5/2022	0200097	EV_EC1	< 0.010	< 0.010	< 0.010	< 0.020	6.42		1947		0.365	0.367		824		< 0.0015	1.23	0.049	0.044		< 0.00020		< 0.30	< 0.60
1/5/2022	E321812	F2_BPO															3.89							
1/5/2022	0200203	EV_MC3	< 0.010	< 0.010	< 0.010	< 0.010	5.47		2978		0.180	0.178		64.5		< 0.0015	-0.1	< 0.010	< 0.010		< 0.00010		< 0.30	< 0.30
1/6/2022	E321811	F2_ECIN	< 0.010	< 0.010	< 0.010					2051	0.253			830		< 0.0015	5.1	< 0.010		< 0.00010			< 0.30	
1/6/2022	E321791	F2_NWPI			< 0.010					1892	1.12			823		< 0.0015	4.2	0.078		0.00028			< 0.30	
1/6/2022	E321812	F2_BPO	< 0.010	< 0.010	< 0.020					2099	0.390			860		< 0.0015	4.16	0.086		< 0.00020			< 0.60	
1/6/2022	E321814	EV_ECOUT	< 0.010	< 0.010	< 0.010	< 0.010	5.99		2024		0.348	0.358		861		< 0.0015	4.5	0.057	0.059	< 0.00010	< 0.00010		< 0.30	< 0.30
1/6/2022	310168	EV_MC2A	< 0.010	< 0.010	< 0.010	< 0.010	5.04		507		0.175	0.177		106		< 0.0015	-0.01	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
1/6/2022	E300091	EV_MC2	< 0.010	< 0.010	< 0.010	< 0.010	5.25		559		0.191	0.190		122		0.0029	0	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
1/6/2022	E321812	F2_BPO								2082							4.33							
1/6/2022	200393	EV_ER1			< 0.010	< 0.010	3.81		462.7		0.225	0.228		95.2		< 0.0015	-0.01	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
1/7/2022	E321811	F2_ECIN								2033				805		< 0.0015	5.5							
1/7/2022	E321791	F2_NWPI								1886				796		< 0.0015	4.4							
1/7/2022	E321812	F2_BPO								2095				832		< 0.0015	4.7							
1/7/2022	E321812	F2_BPO								2074							4.717							
1/7/2022	E321812	F2_BPO								2071							4.452							
1/8/2022	E321811	F2_ECIN								2059				864		< 0.0015	5.5							
1/8/2022	E321791	F2_NWPI								1898				864		< 0.0015	4.2							
1/8/2022	E321812	F2_BPO								2089				893		< 0.0015	4.32							
1/8/2022	E321812	F2_BPO								2067							4.224							
1/8/2022	E321812	F2_BPO								2068							3.898							
1/9/2022	E321811	F2_ECIN								2073				871		< 0.0015	5.5							

		Parameter	Selenosulfate, SeSO3	SeMe – selenomethionine CH3SeCH2CH2CH(NH2)CO2H	Silver	Silver	Sodium	Sodium	Specific conductivity, temperature corrected value (25 C)	Specific conductivity, temperature corrected value (25 C)	Strontium	Strontium	Strontium	Sulphate (As SO4)	Sulphide (as S)	Sulphide (as S)	Temperature, Field	Thallium	Thallium	Tin	Tin	Tin	Titanium	Titanium
		Fraction	D	D	D	T	T	T	N	N	D	T	T	D	D	T	N	D	T	D	T	T	D	T
		Unit	ug/l	ug/l	ug/l	ug/l	mg/l	ppm	us/cm	uS/cm at 25 C	mg/l	mg/l	ppm	mg/l	mg/l	mg/l	deg c	ug/l	ug/l	mg/l	mg/l	ppm	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
1/9/2022	E321791	F2_NWPI								1898				857		< 0.0015	4.2							
1/9/2022	E321812	F2_BPO								1977				894		< 0.0015	3.9							
1/9/2022	E321812	F2_BPO								2092							3.987							
1/9/2022	E321812	F2_BPO								2092							4.079							
1/10/2022	E321811	F2_ECIN	< 0.010	< 0.010	< 0.020	< 0.010	3.45			2089	0.263	0.233		843		< 0.0015	5.8	< 0.020	< 0.010	< 0.00020	< 0.00010		< 0.60	< 0.30
1/10/2022	E321791	F2_NWPI	< 0.010	< 0.010	< 0.010	< 0.010	10.3			1907	1.16	1.06		821		< 0.0015	6.3	0.084	0.076	< 0.00010	< 0.00010		< 0.30	< 0.60
1/10/2022	E321814	EV_ECOUT	< 0.010	< 0.010																				
1/10/2022	E321812	F2_BPO								2129							4.554							
1/10/2022	E321812	F2_BPO	< 0.010	< 0.010	< 0.020	< 0.010	7.08			1986	0.418	0.376		860		< 0.0015	4.5	0.100	0.089	< 0.00020	< 0.00010		< 0.60	< 0.30
1/10/2022	E321812	F2_BPO								2128							4.629							
1/11/2022	E321811	F2_ECIN			< 0.010					2056	0.234			854		< 0.0015	5.8	< 0.010		< 0.00010			< 0.30	
1/11/2022	E321791	F2_NWPI			< 0.010					1899	1.03			835		< 0.0015	4.3	0.081		< 0.00010			< 0.30	
1/11/2022	0200097	EV_EC1	< 0.010	< 0.010																				
1/11/2022	E321812	F2_BPO								2126							4.666							
1/11/2022	E321812	F2_BPO			< 0.010					2127	0.356			867		< 0.0015	4.68	0.084		< 0.00010			< 0.30	
1/11/2022	E321812	F2_BPO								2124							4.672							
1/12/2022	E321811	F2_ECIN								2040				831		< 0.0015	5.8							
1/12/2022	E321791	F2_NWPI								1889				829		< 0.0015	4.3							
1/12/2022	E321812	F2_BPO								2112							4.9							
1/12/2022	E321812	F2_BPO								1971				850		0.0019	4.9							
1/12/2022	E321812	F2_BPO								2080							5.06							
1/13/2022	E321811	F2_ECIN	< 0.010	< 0.010	< 0.010					1864	0.245			854		< 0.0015	5.8	< 0.010		< 0.00010			< 0.30	
1/13/2022	E321791	F2_NWPI			< 0.010					1886	1.12			850		< 0.0015	4.4	0.075		< 0.00010			< 0.30	
1/13/2022	E321814	EV_ECOUT	< 0.010	< 0.010					1992								5.5							
1/13/2022	E321812	F2_BPO	< 0.010	< 0.010	< 0.010					1960	0.394			876		< 0.0015	5.3	0.088		< 0.00010			< 0.30	
1/13/2022	E321814	EV_ECOUT			< 0.010	< 0.010	4.62			2088	0.328	0.316		855			5.5	0.038	0.035	< 0.00010	< 0.00010		< 0.30	< 0.30
1/13/2022	E321812	F2_BPO								2116							5.527							
1/13/2022	0200097	EV_EC1	< 0.010	< 0.010					1884								4.9							
1/14/2022	E321811	F2_ECIN								2045				835		< 0.0015	5.6							
1/14/2022	E321791	F2_NWPI								1883				834		< 0.0015	4.3							
1/14/2022	E321812	F2_BPO								2082							5.57							
1/14/2022	E321812	F2_BPO								2082				864		0.0019	5.57							
1/14/2022	E321812	F2_BPO								2086							5.67							
1/15/2022	E321811	F2_ECIN								1993				891		< 0.0015	5.7							
1/15/2022	E321791	F2_NWPI								1851				882		< 0.0015	4.5							
1/15/2022	E321812	F2_BPO								2089				923		< 0.0015	5.28							
1/15/2022	E321812	F2_BPO															5.17							
1/16/2022	E321811	F2_ECIN								2043				906		< 0.0015	5.5							
1/16/2022	E321791	F2_NWPI								1889				900		< 0.0015	4.3							
1/16/2022	E321812	F2_BPO								2053				929		< 0.0015	4.77							
1/16/2022	E321812	F2_BPO															4.99							
1/17/2022	E321812	F2_BPO	< 0.010	< 0.010	< 0.020	< 0.010	6.58			2065	0.377	0.373		929		< 0.0015	4.9	0.094	0.113	< 0.00020	< 0.00010		< 0.60	< 0.30
1/17/2022	E321811	F2_ECIN	< 0.010	< 0.010	< 0.010	< 0.010	3.47			2089	0.232	0.245		902		< 0.0015	5.97	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
1/17/2022	E321791	F2_NWPI	< 0.010	< 0.010	< 0.020	< 0.010	9.61			1938	1.03	1.04		892		< 0.0015	4.57	0.080	0.083	< 0.00020	< 0.00010		< 0.60	1.08
1/17/2022	0200097	EV_EC1			< 0.010	< 0.010	5.68			2003	0.319	0.328		850			4.8	0.046	0.048	< 0.00010	< 0.00010		< 0.30	< 0.30
1/17/2022	E321812	F2_BPO								2077							5.063							
1/17/2022	0200097	EV_EC1	< 0.010	< 0.010	< 0.010	< 0.010	5.65			1924	0.321	0.321		868		< 0.0015	4.8	0.045	0.042		< 0.00010		< 0.30	< 0.30
1/17/2022	0200203	EV_MC3	< 0.010	< 0.010	< 0.010	< 0.010	4.82			417.1	0.166	0.165		73.5		< 0.0015	0.5	< 0.010	< 0.010		< 0.00010		< 0.30	0.42

		Parameter	Selenosulfate, SeSO3	SeMe – selenomethionine CH3SeCH2CH2CH(NH2)CO2H	Silver	Silver	Sodium	Sodium	Specific conductivity, temperature corrected value (25 C)	Specific conductivity, temperature corrected value (25 C)	Strontium	Strontium	Strontium	Sulphate (As SO4)	Sulphide (as S)	Sulphide (as S)	Temperature, Field	Thallium	Thallium	Tin	Tin	Tin	Titanium	Titanium
		Fraction	D	D	D	T	T	T	N	N	D	T	T	D	D	T	N	D	T	D	T	T	D	T
		Unit	ug/l	ug/l	ug/l	ug/l	mg/l	ppm	us/cm	uS/cm at 25 C	mg/l	mg/l	ppm	mg/l	mg/l	mg/l	deg c	ug/l	ug/l	mg/l	mg/l	ppm	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
1/17/2022	310168	EV_MC2A	< 0.010	< 0.010	< 0.010	< 0.010	4.50			515	0.168	0.167		109		< 0.0015	1.5	< 0.010	< 0.010		< 0.00010		< 0.30	< 0.30
1/17/2022	0200203	EV_MC3			< 0.010	< 0.010	4.81			422.9	0.164	0.168		74.1			0.5	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	0.51
1/17/2022	E321814	EV_ECOUT	< 0.010	< 0.010	< 0.010	< 0.010	4.73			2064	0.284	0.303		846		< 0.0015	5.682	0.034	0.043		< 0.00010		< 0.30	< 0.30
1/17/2022	200393	EV_ER1			< 0.010	< 0.010	3.49			515	0.213	0.214		95.6		< 0.0015	1.7	< 0.010	< 0.010		< 0.00010		< 0.30	< 0.30
1/17/2022	E300091	EV_MC2	< 0.010	< 0.010	< 0.010	< 0.010	4.71			554	0.177	0.177		118		0.0017	0.3	< 0.010	< 0.010		< 0.00010		< 0.30	0.40
1/17/2022	E206231	EV_GT1			< 0.020	< 0.020	2.78			2001	0.305	0.322		969			1.7	0.037	0.040	< 0.00020	< 0.00020		< 0.60	0.99
1/17/2022	E321812	F2_BPO															5.38							
1/18/2022	E321812	F2_BPO			< 0.020					2066	0.392					< 0.0015	5.09	0.103		< 0.00020			< 0.60	
1/18/2022	E321811	F2_ECIN			< 0.020					2120	0.234					< 0.0015	5.4	< 0.020		< 0.00020			< 0.60	
1/18/2022	E321791	F2_NWPI			< 0.020					1944	1.05					< 0.0015	4.2	0.074		< 0.00020			< 0.60	
1/18/2022	E206231	EV_GT1	< 0.010	< 0.010	< 0.010	< 0.020	2.70			1922	0.326	0.336		1010		< 0.0015	1.5	0.035	0.041	< 0.00010	< 0.00020		< 0.30	< 1.20
1/18/2022	E102685	EV_BC1	< 0.010	< 0.010	< 0.020	< 0.020	7.30			2305	1.51	1.57		1100		< 0.0015	2.7	0.030	0.034	< 0.00020	< 0.00020		< 0.60	< 0.60
1/18/2022	200393	EV_ER1			< 0.010	< 0.010	3.54			529	0.218	0.230		95.3			0.6	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
1/18/2022	E102685	EV_BC1			< 0.020	< 0.020	7.13			2453	1.54	1.62		1080			2.9	0.030	0.036	< 0.00020	< 0.00020		< 0.60	< 0.60
1/18/2022	E300091	EV_MC2			< 0.010	< 0.010	5.22			611	0.186	0.199		128			0.3	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
1/18/2022	E321812	F2_BPO								2063							4.87							
1/19/2022	E321811	F2_ECIN								2080				815		< 0.0015	6.2							
1/19/2022	E321791	F2_NWPI								1920				821		< 0.0015	4.4							
1/19/2022	E321812	F2_BPO								2084							4.36							
1/19/2022	E321812	F2_BPO								2069				849		< 0.0015	4.31							
1/19/2022	E321812	F2_BPO								2086							4.15							
1/20/2022	E321811	F2_ECIN	< 0.010	< 0.010	< 0.010					2077	0.239			889		< 0.0015	5.4	< 0.010		< 0.00010			< 0.30	
1/20/2022	E321791	F2_NWPI			< 0.010					1918	1.06			894		< 0.0015	4.4	0.077		< 0.00010			< 0.30	
1/20/2022	E321814	EV_ECOUT	< 0.010	< 0.010						2014							5							
1/20/2022	E321812	F2_BPO	< 0.010	< 0.010	< 0.010					2060	0.384			929		< 0.0015	4.57	0.095		< 0.00010			< 0.30	
1/20/2022	E321812	F2_BPO								2078							4.61							
1/20/2022	0200097	EV_EC1	< 0.010	< 0.010						1893							3.5							
1/20/2022	E321812	F2_BPO								2075							4.7							
1/21/2022	E321811	F2_ECIN								2088				832		< 0.0015	5.5							
1/21/2022	E321811	F2_ECIN												832										
1/21/2022	E321791	F2_NWPI								1928				838		< 0.0015	4.4							
1/21/2022	E321812	F2_BPO								2065				865		< 0.0015	4.79							
1/21/2022	E321812	F2_BPO												865										
1/21/2022	E321812	F2_BPO								2082							4.7							
1/21/2022	E321812	F2_BPO								2082							5.085							
1/22/2022	E321811	F2_ECIN								2069				805		< 0.0015	5.7							
1/22/2022	E321791	F2_NWPI								1642				804		< 0.0015	4.4							
1/22/2022	E321812	F2_BPO								1995				844		< 0.0015	4.9							
1/22/2022	E321812	F2_BPO								2049							4.9							
1/22/2022	E321812	F2_BPO								2053							5.1							
1/23/2022	E321811	F2_ECIN								2006				848		< 0.0015	5.4							
1/23/2022	E321791	F2_NWPI								1854				838		< 0.0015	4.4							
1/23/2022	E321812	F2_BPO								2053							4.63							
1/23/2022	E321812	F2_BPO								2103				888		< 0.0015	4.59							
1/23/2022	E321812	F2_BPO								2053							4.8							
1/24/2022	E321811	F2_ECIN	< 0.010	< 0.010	< 0.010	< 0.010	3.34			2008	0.238	0.232		869		< 0.0015	5.4	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
1/24/2022	E321791	F2_NWPI	< 0.010	< 0.010	< 0.010	< 0.010	9.40			1858	1.05	1.04		864		< 0.0015	4.4	0.068	0.079	0.00058	< 0.00010		< 0.30	0.89
1/24/2022	E321814	EV_ECOUT	< 0.010	< 0.010																				

		Parameter	Selenosulfate, SeSO3	SeMe – selenomethionine CH3SeCH2CH2CH(NH2)CO2H	Silver	Silver	Sodium	Sodium	Specific conductivity, temperature corrected value (25 C)	Specific conductivity, temperature corrected value (25 C)	Strontium	Strontium	Strontium	Sulphate (As SO4)	Sulphide (as S)	Sulphide (as S)	Temperature, Field	Thallium	Thallium	Tin	Tin	Tin	Titanium	Titanium
		Fraction	D	D	D	T	T	T	N	N	D	T	T	D	D	T	N	D	T	D	T	T	D	T
		Unit	ug/l	ug/l	ug/l	ug/l	mg/l	ppm	us/cm	uS/cm at 25 C	mg/l	mg/l	ppm	mg/l	mg/l	mg/l	deg c	ug/l	ug/l	mg/l	mg/l	ppm	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
1/24/2022	E321812	F2_BPO	< 0.010	< 0.010	< 0.010	< 0.020	6.56			2110	0.377	0.382		909		< 0.0015	4.93	0.089	0.100	< 0.00010	< 0.00020		< 0.30	< 0.60
1/24/2022	0200097	EV_EC1	< 0.010	< 0.010																				
1/24/2022	E321812	F2_BPO								2058							5.1							
1/25/2022	E321811	F2_ECIN			< 0.010					1969	0.247			799		< 0.0015	5.5	< 0.010		< 0.00010			< 0.30	
1/25/2022	E321791	F2_NWPI			< 0.010					1825	1.07			792		< 0.0015	4.5	0.072		0.0194			< 0.30	
1/25/2022	E321812	F2_BPO			< 0.010					1944	0.384			835		< 0.0015	5	0.092		< 0.00010			< 0.30	
1/25/2022	E321812	F2_BPO								2108							5.138							
1/26/2022	E321811	F2_ECIN								2008				755		< 0.0015	5.5							
1/26/2022	E321791	F2_NWPI								1863				750		< 0.0015	4.4							
1/26/2022	E321812	F2_BPO								2107				796		< 0.0015	4.56							
1/26/2022	E321812	F2_BPO								2058							4.62							
1/26/2022	E321812	F2_BPO								2060							4.68							
1/27/2022	E321811	F2_ECIN	< 0.010	< 0.010	< 0.010					2012	0.240			800		< 0.0015	5.4	< 0.010		< 0.00010			< 0.30	
1/27/2022	E321791	F2_NWPI			< 0.010					1859	1.03			796		< 0.0015	4.3	0.065		< 0.00010			< 0.30	
1/27/2022	E321814	EV_ECOUT	< 0.010	< 0.010					1945								4.8							
1/27/2022	E321812	F2_BPO	< 0.010	< 0.010	< 0.010					2105	0.379			836		< 0.0015	4.542	0.087		< 0.00010			< 0.30	
1/27/2022	E321812	F2_BPO																						
1/27/2022	0200097	EV_EC1	< 0.010	< 0.010					1837								2.6							
1/27/2022	E321812	F2_BPO								2053							4.537							
1/28/2022	E321811	F2_ECIN								2012				786		< 0.0015	5.4							
1/28/2022	E321791	F2_NWPI								1862				776		< 0.0015	4.4							
1/28/2022	E321812	F2_BPO								2055							3.928							
1/28/2022	E321812	F2_BPO								2102				817		< 0.0015	3.94							
1/28/2022	E321812	F2_BPO								2098							4.398							
1/29/2022	E321811	F2_ECIN								1978				780		< 0.0015	5.3							
1/29/2022	E321791	F2_NWPI								1835				768		< 0.0015	4.4							
1/29/2022	E321812	F2_BPO								2101				801		< 0.0015	3.89							
1/29/2022	E321812	F2_BPO								2101							3.89							
1/29/2022	E321812	F2_BPO								2100							4.43							
1/30/2022	E321811	F2_ECIN								2031				786		< 0.0015	5.6							
1/30/2022	E321791	F2_NWPI								1881				776		< 0.0015	4.5							
1/30/2022	E321812	F2_BPO								2008				827		< 0.0015	4.01							
1/30/2022	E321812	F2_BPO								2008							4.01							
1/30/2022	E321812	F2_BPO															4.3							
1/31/2022	E300091	EV_MC2	< 0.010	< 0.010	< 0.010	< 0.010	5.12			561	0.165	0.197		128		0.0019	0.35	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	0.33
1/31/2022	E321812	F2_BPO	< 0.010	< 0.010	< 0.010	< 0.020	6.58			1995	0.345	0.405		827		< 0.0015	4.1	0.082	0.089	< 0.00010	< 0.00020		< 0.30	< 0.60
1/31/2022	E321812	F2_BPO								2058							4.19							
1/31/2022	0200097	EV_EC1	< 0.010	< 0.010	< 0.010	< 0.020	5.94			1863	0.300	0.352		827		< 0.0015	3.9	0.039	0.040	< 0.00010	< 0.00020		< 0.30	< 0.60
1/31/2022	0200203	EV_MC3	< 0.010	< 0.010	< 0.010	< 0.010	5.01			416.5	0.160	0.182		73.2		< 0.0015	0.11	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
1/31/2022	310168	EV_MC2A	< 0.010	< 0.010	< 0.010	< 0.010	4.76			516	0.158	0.182		109		0.0028	0.15	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
1/31/2022	E321811	F2_ECIN	< 0.010	< 0.010	< 0.010	< 0.010	3.51			1897	0.222	0.253		794		< 0.0015	5.6	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
1/31/2022	E321791	F2_NWPI	< 0.010	< 0.010	< 0.010	< 0.010	10.3			1815	1.00	1.08		788		< 0.0015	4.4	0.071	0.073	< 0.00010	< 0.00010		< 0.30	< 0.60
1/31/2022	E321814	EV_ECOUT	< 0.010	< 0.010	< 0.010	< 0.020	4.99			1917	0.298	0.320		826		< 0.0015	5.1	0.043	0.044	< 0.00010	< 0.00020		< 0.30	< 0.60
1/31/2022	200393	EV_ER1			< 0.010	< 0.010	3.81			614	0.207	0.238		95.8		< 0.0015	1.02	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
1/31/2022	E321812	F2_BPO															4.45							
2/1/2022	E321812	F2_BPO								1953							3.5							
2/1/2022	E206231	EV_GT1	< 0.010	< 0.010	< 0.020	< 0.020	2.51			1871	0.350	0.360		1010		< 0.0015	0.7	0.034	0.032	< 0.00020	< 0.00020		< 0.60	< 0.60
2/1/2022	E321812	F2_BPO			< 0.010					2000	0.412			818		< 0.0015	3.49	0.091		< 0.00010			< 0.30	

		Parameter	Selenosulfate, SeSO3	SeMe – selenomethionine CH3SeCH2CH2CH(NH2)CO2H	Silver	Silver	Sodium	Sodium	Specific conductivity, temperature corrected value (25 C)	Specific conductivity, temperature corrected value (25 C)	Strontium	Strontium	Strontium	Sulphate (As SO4)	Sulphide (as S)	Sulphide (as S)	Temperature, Field	Thallium	Thallium	Tin	Tin	Tin	Titanium	Titanium
		Fraction	D	D	D	T	T	T	N	N	D	T	T	D	D	T	N	D	T	D	T	T	D	T
		Unit	ug/l	ug/l	ug/l	ug/l	mg/l	ppm	us/cm	uS/cm at 25 C	mg/l	mg/l	ppm	mg/l	mg/l	mg/l	deg c	ug/l	ug/l	mg/l	mg/l	ppm	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2/1/2022	E102685	EV_BC1	< 0.010	< 0.010	< 0.020	< 0.020	7.28			2311	1.60	1.63		1140		< 0.0015	1.1	0.024	0.027	< 0.00020	< 0.00020		< 0.60	< 0.60
2/1/2022	E300091	EV_MC2			< 0.010	< 0.010	5.41		627		0.201	0.206		151			0.2	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
2/1/2022	E321811	F2_ECIN			< 0.010					1811	0.261			779		< 0.0015	5.2	< 0.010		< 0.00010			< 0.30	
2/1/2022	E321791	F2_NWPI			< 0.010					1818	1.09			790		< 0.0015	3.7	0.077		< 0.00010			< 0.30	
2/1/2022	E321812	F2_BPO															2.998							
2/2/2022	E321791	F2_NWPI								1857				788		< 0.0015	4							
2/2/2022	E321812	F2_BPO								2068							2.8							
2/2/2022	E321812	F2_BPO								2006				821		< 0.0015	2.83							
2/2/2022	E321812	F2_BPO															3.19							
2/2/2022	E321811	F2_ECIN								2005				792		< 0.0015	4.8							
2/3/2022	E321811	F2_ECIN	< 0.010	< 0.010	< 0.010					1942	0.232			839		< 0.0015	4.9	< 0.010		< 0.00010			< 0.30	
2/3/2022	E321791	F2_NWPI			< 0.010					1817	1.01			843		< 0.0015	4.1	0.072		< 0.00010			< 0.30	
2/3/2022	E321812	F2_BPO	< 0.010	< 0.010	< 0.010					2017	0.350			873		< 0.0015	3.51	0.086		< 0.00010			< 0.30	
2/3/2022	E321812	F2_BPO								2071							3.568							
2/3/2022	E321814	EV_ECOUT	< 0.010	< 0.010						2031							4.32							
2/3/2022	0200097	EV_EC1								1844							1							
2/3/2022	0200097	EV_EC1	< 0.010	< 0.010																				
2/3/2022	E321812	F2_BPO								2049							3.898							
2/4/2022	E321811	F2_ECIN								2030				826		< 0.0015	5.3							
2/4/2022	E321791	F2_NWPI								1885				833		< 0.0015	4.1							
2/4/2022	E321812	F2_BPO								1912				866		< 0.0015	4.4							
2/4/2022	E321812	F2_BPO								1912							4.4							
2/4/2022	E321812	F2_BPO								1999							4.5							
2/5/2022	E321811	F2_ECIN								1910				826		< 0.0015	5.7							
2/5/2022	E321791	F2_NWPI								1783				818		< 0.0015	4.4							
2/5/2022	E321812	F2_BPO								1994				851		< 0.0015	4.49							
2/5/2022	E321812	F2_BPO								2034							4.513							
2/5/2022	E321812	F2_BPO								2029							4.806							
2/6/2022	E321811	F2_ECIN								2138				821		< 0.0015	5.4							
2/6/2022	E321791	F2_NWPI								1981				822		< 0.0015	4.4							
2/6/2022	E321812	F2_BPO								2078				853		< 0.0015	4.4							
2/6/2022	E321812	F2_BPO								2077							4.38							
2/6/2022	E321812	F2_BPO								2122							5.04							
2/7/2022	E321811	F2_ECIN	< 0.010	< 0.010	< 0.010	< 0.010	3.17			2150	0.246	0.238		842		< 0.0015	5.7	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
2/7/2022	E321791	F2_NWPI	< 0.010	< 0.010	< 0.010	< 0.010	8.97			1985	0.998	1.04		831		< 0.0015	4.4	0.072	0.073	< 0.00010	< 0.00010		< 0.30	0.30
2/7/2022	E321812	F2_BPO	< 0.010	< 0.010	< 0.020	< 0.020	6.63			2113	0.389	0.409		877		< 0.0015	4.69	0.096	0.108	< 0.00020	< 0.00020		< 0.60	< 0.60
2/7/2022	E321812	F2_BPO								2138							4.6							
2/7/2022	E321812	F2_BPO								2152							5.01							
2/8/2022	E321811	F2_ECIN			< 0.010					2151	0.233			832		< 0.0015	5.5	< 0.010		< 0.00010			< 0.30	
2/8/2022	E321791	F2_NWPI			< 0.010					1995	0.993			839		< 0.0015	4.4	0.069		< 0.00010			< 0.30	
2/8/2022	E321814	EV_ECOUT			< 0.010	< 0.010	5.78			2071	0.336	0.359		860			5	0.073	0.085	< 0.00010	< 0.00010		< 0.30	< 0.30
2/8/2022	E321812	F2_BPO								2125							4.328							
2/8/2022	E321812	F2_BPO			< 0.010					2160	0.367			887		< 0.0015	4.33	0.096		< 0.00010			< 0.30	
2/8/2022	0200203	EV_MC3			< 0.010	< 0.010	4.70			423.3	0.161	0.169		69.4			0.4	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
2/8/2022	200393	EV_ER1	< 0.010	< 0.010	< 0.010	< 0.010	3.66			530	0.229	0.225		102			2	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
2/8/2022	E206231	EV_GT1			< 0.010	< 0.020	4.90			1906	0.468	0.491		886			1.6	0.032	0.032	< 0.00010	< 0.00020		< 0.30	< 0.60
2/8/2022	E102685	EV_BC1			< 0.020	< 0.020	7.15			2192	0.942	1.01		1030			2.6	0.027	0.028	< 0.00020	< 0.00020		< 0.60	< 0.60
2/8/2022	E300091	EV_MC2	< 0.010	< 0.010	< 0.010	< 0.010	4.76			582	0.190	0.185		132			0.5	< 0.010	< 0.010	< 0.00010	0.00012		< 0.30	< 0.30

		Parameter	Selenosulfate, SeSO3	SeMe – selenomethionine CH3SeCH2CH2CH(NH2)CO2H	Silver	Silver	Sodium	Sodium	Specific conductivity, temperature corrected value (25 C)	Specific conductivity, temperature corrected value (25 C)	Strontium	Strontium	Strontium	Sulphate (As SO4)	Sulphide (as S)	Sulphide (as S)	Temperature, Field	Thallium	Thallium	Tin	Tin	Tin	Titanium	Titanium
		Fraction	D	D	D	T	T	T	N	N	D	T	T	D	D	T	N	D	T	D	T	T	D	T
		Unit	ug/l	ug/l	ug/l	ug/l	mg/l	ppm	us/cm	uS/cm at 25 C	mg/l	mg/l	ppm	mg/l	mg/l	mg/l	deg c	ug/l	ug/l	mg/l	mg/l	ppm	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2/8/2022	E321812	F2_BPO								2122							4.56							
2/9/2022	E321811	F2_ECIN								2135				805		< 0.0015	5.9							
2/9/2022	E321791	F2_NWPI								1980				822		< 0.0015	4.5							
2/9/2022	E321812	F2_BPO								2127				876		< 0.0015	4.6							
2/9/2022	E321812	F2_BPO								2157							4.66							
2/9/2022	E321812	F2_BPO								2153							6.02							
2/10/2022	E321811	F2_ECIN			< 0.010					2110	0.241			858		< 0.0015	6.3	< 0.010		< 0.00010			< 0.30	
2/10/2022	E321791	F2_NWPI			< 0.020					1980	1.10			874		< 0.0015	4.4	0.074		< 0.00020			< 0.60	
2/10/2022	E321812	F2_BPO			< 0.020					2094	0.440			912		< 0.0015	5.2	0.101		< 0.00020			< 0.60	
2/10/2022	E321812	F2_BPO								2148							5.3							
2/10/2022	E321812	F2_BPO								2143							5.8							
2/11/2022	E321811	F2_ECIN								2158				845		< 0.0015	5.6							
2/11/2022	E321791	F2_NWPI								2008				839		< 0.0015	4.2							
2/11/2022	E321812	F2_BPO								2087				886		< 0.0015	5							
2/11/2022	E321812	F2_BPO								2147							5.06							
2/11/2022	E321812	F2_BPO															5.51							
2/12/2022	E321811	F2_ECIN								2143				840		< 0.0015	5.5							
2/12/2022	E321791	F2_NWPI								1996				842		< 0.0015	4.2							
2/12/2022	E321812	F2_BPO								2084				894		< 0.0015	5.17							
2/12/2022	E321812	F2_BPO								2144							5.1							
2/12/2022	E321812	F2_BPO								2143							6							
2/13/2022	E321811	F2_ECIN								2011				814		< 0.0015	5.5							
2/13/2022	E321791	F2_NWPI								1876				812		< 0.0015	4.2							
2/13/2022	E321812	F2_BPO								2082				856		< 0.0015	5.51							
2/13/2022	E321812	F2_BPO								2142							5.44							
2/13/2022	E321812	F2_BPO															6.35							
2/14/2022	E321812	F2_BPO	< 0.010	< 0.010	< 0.010	< 0.010	6.69			2080	0.379	0.393		890		< 0.0015	5.65	0.095	0.100	< 0.00010	< 0.00010		< 0.30	< 0.30
2/14/2022	E321811	F2_ECIN	< 0.010	< 0.010	< 0.010	< 0.010	3.64			1998	0.233	0.249		662		< 0.0015	5.5	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
2/14/2022	E321791	F2_NWPI	< 0.010	< 0.010	< 0.010	< 0.020	10.8			1860	1.02	1.17		843		< 0.0015	4.1	0.080	0.090	< 0.00010	< 0.00020		< 0.30	< 0.60
2/14/2022	E321812	F2_BPO								2141							5.64							
2/14/2022	0200097	EV_EC1	< 0.010	< 0.010	< 0.010	< 0.020	6.23			1879	0.302	0.372		862		< 0.0015	4.1	0.043	0.066	< 0.00010	< 0.00020		< 0.30	< 0.60
2/14/2022	0200203	EV_MC3	< 0.010	< 0.010	< 0.010	< 0.010	4.69			408.8	0.155	0.180		67.1		< 0.0015	0.2	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
2/14/2022	310168	EV_MC2A	< 0.010	< 0.010	< 0.010	< 0.010	4.35			535	0.156	0.181		118		< 0.0015	0.9	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
2/14/2022	200393	EV_ER1			0.010	< 0.010	3.85			528	0.213	0.233		103		< 0.0015	1.3	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
2/14/2022	E321814	EV_ECOUT	< 0.010	< 0.010	< 0.010	< 0.020	4.88			2078	0.272	0.309		851		< 0.0015	5.75	0.032	0.034	< 0.00010	< 0.00020		< 0.30	< 0.60
2/14/2022	E300091	EV_MC2	< 0.010	< 0.010	< 0.010	< 0.010	4.87			607	0.180	0.200		147		0.0018	1.5	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
2/14/2022	E321812	F2_BPO															5.91							
2/15/2022	E321811	F2_ECIN			< 0.010					2077	0.237			825		< 0.0015	5.7	< 0.010		< 0.00010			< 0.30	
2/15/2022	E321791	F2_NWPI			< 0.010					1933	1.06			825		< 0.0015	4.1	0.084		< 0.00010			< 0.30	
2/15/2022	E321812	F2_BPO			< 0.010					2071	0.378			869		< 0.0015	5.48	0.098		< 0.00010			< 0.30	
2/15/2022	E321812	F2_BPO								2071							5.48							
2/15/2022	E102685	EV_BC1	< 0.010	< 0.010	< 0.020	< 0.020	6.88			1989	0.792	0.832		944		< 0.0015	2.8	0.029	0.030	< 0.00020	< 0.00020		< 0.60	< 0.60
2/15/2022	E206231	EV_GT1	< 0.010	< 0.010	< 0.020	< 0.020	5.60			1903	0.638	0.636		906		< 0.0015	3.3	0.032	0.034	< 0.00020	< 0.00020		< 0.60	< 0.60
2/15/2022	E300091	EV_MC2			< 0.010	< 0.010	5.53		669		0.200	0.208		152			1.8	< 0.010	< 0.010	< 0.00010	0.00017		< 0.30	< 0.30
2/15/2022	E321812	F2_BPO															5.7							
2/16/2022	E321811	F2_ECIN								2039				806		< 0.0015	5.4							
2/16/2022	E321791	F2_NWPI								1898				808		< 0.0015	3.9							
2/16/2022	E321812	F2_BPO								2061				838		< 0.0015	5.11							

		Parameter	Selenosulfate, SeSO3	SeMe – selenomethionine CH3SeCH2CH2CH(NH2)CO2H	Silver	Silver	Sodium	Sodium	Specific conductivity, temperature corrected value (25 C)	Specific conductivity, temperature corrected value (25 C)	Strontium	Strontium	Strontium	Sulphate (As SO4)	Sulphide (as S)	Sulphide (as S)	Temperature, Field	Thallium	Thallium	Tin	Tin	Tin	Titanium	Titanium
		Fraction	D	D	D	T	T	T	N	N	D	T	T	D	D	T	N	D	T	D	T	T	D	T
		Unit	ug/l	ug/l	ug/l	ug/l	mg/l	ppm	us/cm	uS/cm at 25 C	mg/l	mg/l	ppm	mg/l	mg/l	mg/l	deg c	ug/l	ug/l	mg/l	mg/l	ppm	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2/16/2022	E321812	F2_BPO								2061							5.11							
2/16/2022	0200097	EV_EC1			< 0.010	< 0.010	5.40			1975	0.305	0.318		836			3.6	0.044	0.049	< 0.00010	0.00056		< 0.30	< 0.30
2/16/2022	E321812	F2_BPO															5.24							
2/17/2022	E321811	F2_ECIN			< 0.010					2079	0.224			808		< 0.0015	5.5	< 0.010		< 0.00010			< 0.30	
2/17/2022	E321791	F2_NWPI			< 0.010					1941	1.02			806		< 0.0015	4.1	0.078		< 0.00010			< 0.30	
2/17/2022	E321812	F2_BPO			< 0.010					1948	0.388			841		0.0028	4.6	0.099		< 0.00010			< 0.30	
2/17/2022	E321812	F2_BPO								2120							4.7							
2/17/2022	E321812	F2_BPO								2122							5.01							
2/18/2022	E321811	F2_ECIN								2357				845		< 0.0015	5.9							
2/18/2022	E321791	F2_NWPI								2190				855		0.0033	4.4							
2/18/2022	E321812	F2_BPO								2037				886		< 0.0015	5.1							
2/18/2022	E321812	F2_BPO								2123							4.911							
2/18/2022	E321812	F2_BPO								2133							5.613							
2/19/2022	E321811	F2_ECIN								2314				808		< 0.0015	6							
2/19/2022	E321791	F2_NWPI								2190				811		< 0.0015	4.5							
2/19/2022	E321812	F2_BPO								2278				856		< 0.0015	5.3							
2/19/2022	E321812	F2_BPO								2146							5.15							
2/19/2022	E321812	F2_BPO								2147							4.84							
2/20/2022	E321811	F2_ECIN								2097				832		< 0.0015	5.8							
2/20/2022	E321791	F2_NWPI								2015				841		< 0.0015	4.3							
2/20/2022	E321812	F2_BPO								2121				881		< 0.0015	4.5							
2/20/2022	E321812	F2_BPO								2094							4.369							
2/20/2022	E321812	F2_BPO								2097							4.192							
2/21/2022	E321811	F2_ECIN	< 0.010	< 0.010	< 0.010	< 0.010	3.56			2038	0.235	0.240		839		< 0.0015	5.1	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
2/21/2022	E321791	F2_NWPI	< 0.010	< 0.010	< 0.010	< 0.010	9.93			1431	1.01	1.06		838		< 0.0015	4.2	0.074	0.076	< 0.00010	< 0.00010		< 0.30	0.40
2/21/2022	E321812	F2_BPO	< 0.010	< 0.010	< 0.010	< 0.010	6.89			2104	0.371	0.394		883		< 0.0015	2.71	0.089	0.096	< 0.00010	< 0.00010		< 0.30	< 0.30
2/21/2022	E321812	F2_BPO								2104							2.64							
2/21/2022	E321812	F2_BPO								2105							2.58							
2/22/2022	E321811	F2_ECIN			< 0.010					2422	0.246			808		< 0.0015	5.3	< 0.010		< 0.00010			< 0.30	
2/22/2022	E321791	F2_NWPI			< 0.010					2300	1.06			812		< 0.0015	4.2	0.081		< 0.00010			< 0.30	
2/22/2022	E321812	F2_BPO								2107							2.6							
2/22/2022	E321812	F2_BPO			< 0.010					2108	0.380			853		< 0.0015	2.6	0.094		< 0.00010			< 0.30	
2/22/2022	E300091	EV_MC2			< 0.010	< 0.010	7.06			797	0.242	0.252		212			0.3	< 0.010	0.010	< 0.00010	0.00032		< 0.30	< 0.30
2/22/2022	E321812	F2_BPO								2115							3							
2/22/2022	E321812	F2_BPO								2116							3							
2/23/2022	E321811	F2_ECIN								2360				831		< 0.0015	5.6							
2/23/2022	E321791	F2_NWPI								2249				840		0.0030	4.3							
2/23/2022	E321812	F2_BPO								2088				867		< 0.0015	3.67							
2/23/2022	E321812	F2_BPO								2088							3.72							
2/23/2022	E321812	F2_BPO								2080							3.78							
2/24/2022	E321811	F2_ECIN			< 0.010					2410	0.237			860		< 0.0015	5.2	< 0.010		0.00065			< 0.30	
2/24/2022	E321791	F2_NWPI			< 0.010					2279	0.999			868		< 0.0015	4.2	0.072		< 0.00010			< 0.30	
2/24/2022	E321812	F2_BPO								2312							3.9							
2/24/2022	E321812	F2_BPO			< 0.010					2312	0.367			915		< 0.0015	3.9	0.089		< 0.00010			< 0.30	
2/24/2022	E321812	F2_BPO															4.26							
2/25/2022	E321811	F2_ECIN								2190				853		< 0.0015	5.1							
2/25/2022	E321791	F2_NWPI								2079				855		< 0.0015	4.3							
2/25/2022	E321812	F2_BPO								2069				883		0.0041	4.24							

Parameter			Selenosulfate, SeSO3	SeMe – selenomethionine CH3SeCH2CH2CH(NH2)CO2H	Silver	Silver	Sodium	Sodium	Specific conductivity, temperature corrected value (25 C)	Specific conductivity, temperature corrected value (25 C)	Strontium	Strontium	Strontium	Sulphate (As SO4)	Sulphide (as S)	Sulphide (as S)	Temperature, Field	Thallium	Thallium	Tin	Tin	Tin	Titanium	Titanium
Fraction			D	D	D	T	T	T	N	N	D	T	T	D	D	T	N	D	T	D	T	T	D	T
Unit			ug/l	ug/l	ug/l	ug/l	mg/l	ppm	us/cm	uS/cm at 25 C	mg/l	mg/l	ppm	mg/l	mg/l	mg/l	deg c	ug/l	ug/l	mg/l	mg/l	ppm	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2/25/2022	E321812	F2_BPO								2069							4.24							
2/25/2022	E321812	F2_BPO															4.39							
2/26/2022	E321811	F2_ECIN								1975				838		< 0.0015	5.6							
2/26/2022	E321791	F2_NWPI								1894				830		< 0.0015	4.7							
2/26/2022	E321812	F2_BPO								2079				869		< 0.0015	4.45							
2/26/2022	E321812	F2_BPO								2080							5.1							
2/27/2022	E321811	F2_ECIN								2206				844		< 0.0015	5.8							
2/27/2022	E321791	F2_NWPI								2096				840		< 0.0015	4.5							
2/27/2022	E321812	F2_BPO								2060							4.4							
2/27/2022	E321812	F2_BPO								1909				882		< 0.0015	4.4							
2/27/2022	E321812	F2_BPO															4.44							
2/28/2022	E321812	F2_BPO	< 0.010	< 0.010	< 0.010	< 0.010	6.84			2082	0.383	0.386		864		< 0.0015	4.99	0.081	0.095	< 0.00010	< 0.00010		< 0.30	< 0.30
2/28/2022	E321811	F2_ECIN	< 0.010	< 0.010	< 0.010	< 0.010	3.39			2288	0.262	0.240		834		< 0.0015	6	< 0.010	< 0.010	< 0.00010	0.00054		< 0.30	< 0.30
2/28/2022	E321791	F2_NWPI	< 0.010	< 0.010	< 0.010	< 0.010	9.65			2191	1.13	1.04		838		< 0.0015	4.6	0.079	0.083	< 0.00010	< 0.00010		< 0.30	< 0.30
2/28/2022	E321812	F2_BPO								2054							4.99							
2/28/2022	0200097	EV_EC1	< 0.010	< 0.010	< 0.020	< 0.010	6.11			2152	0.348	0.337		848		< 0.0015	4.1	0.051	0.054	< 0.00020	< 0.00010		< 0.60	< 0.30
2/28/2022	200393	EV_ER1			< 0.010	< 0.010	4.00			725	0.234	0.224		103		< 0.0015	1	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
2/28/2022	E321812	F2_BPO															5.24							
2/28/2022	E321814	EV_ECOUT	< 0.010	< 0.010	< 0.010	< 0.020	5.66			2197	0.349	0.333		852		< 0.0015	5.7	0.062	0.057	< 0.00010	< 0.00020		< 0.30	< 0.60
3/1/2022	0200203	EV_MC3	< 0.010	< 0.010	< 0.010	< 0.010	4.82			436.6	0.177	0.164		65.5		< 0.0015	0.04	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
3/1/2022	E321812	F2_BPO			< 0.010					2077	0.377			877		< 0.0015	5.26	0.090		< 0.00010			< 0.30	
3/1/2022	E321811	F2_ECIN			< 0.010					2284	0.231			844		< 0.0015	6	< 0.010		< 0.00010			< 0.30	
3/1/2022	E321791	F2_NWPI			< 0.010					2091	0.999			841		< 0.0015	4.4	0.084		< 0.00010			< 0.30	
3/1/2022	E300091	EV_MC2			< 0.010	< 0.010	6.17			617	0.179	0.188		138			0.6	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.90
3/1/2022	E321812	F2_BPO								2044							5.26							
3/1/2022	310168	EV_MC2A	< 0.010	< 0.010	< 0.010	< 0.010	4.54			551	0.179	0.172		116		< 0.0015	-0.007	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
3/1/2022	E102685	EV_BC1	< 0.010	< 0.010	< 0.020	< 0.020	8.46			2259	0.934	0.948		990		< 0.0015	2.2	0.027	0.033	< 0.00020	< 0.00020		< 0.60	0.78
3/1/2022	E206231	EV_GT1	< 0.010	< 0.010	< 0.010	< 0.020	6.48			2099	0.487	0.517		948		< 0.0015	1.7	0.032	0.035	< 0.00010	< 0.00020		< 0.30	< 0.60
3/1/2022	E300091	EV_MC2	< 0.010	< 0.010	< 0.010	< 0.010	5.15			611	0.197	0.194		138		< 0.0015	0.378	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
3/1/2022	E321812	F2_BPO															5.77							
3/2/2022	E321811	F2_ECIN	< 0.010	< 0.010	< 0.010	< 0.010	3.34			2188	0.253	0.244		838		< 0.0015	5.9	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
3/2/2022	E321791	F2_NWPI	< 0.010	< 0.010	< 0.010	< 0.010	9.42			2179	1.14	1.09		834		< 0.0015	4.6	0.082	0.080	< 0.00010	< 0.00010		< 0.30	< 0.30
3/2/2022	E321812	F2_BPO	< 0.010	< 0.010	< 0.010	< 0.010	6.82			2077	0.395	0.398		869		< 0.0015	5.96	0.090	0.087	< 0.00010	< 0.00010		< 0.30	< 0.30
3/2/2022	E321812	F2_BPO								1276							6.11							
3/2/2022	E321812	F2_BPO															6.41							
3/3/2022	E321811	F2_ECIN			< 0.010					2005	0.232			814		< 0.0015	5.7	< 0.010		0.00023			0.56	
3/3/2022	E321791	F2_NWPI			< 0.010					1891	1.02			809		< 0.0015	4.2	0.081		0.00030			< 0.30	
3/3/2022	E321812	F2_BPO			< 0.010					2070	0.371			821		< 0.0015	5.89	0.091		< 0.00010			< 0.30	
3/3/2022	E321812	F2_BPO								2039							6.09							
3/3/2022	E321812	F2_BPO								2042							6.159							
3/4/2022	E321811	F2_ECIN								1925				838		< 0.0015	6.3							
3/4/2022	E321812	F2_BPO								2035				854		< 0.0015	5.27							
3/4/2022	E321812	F2_BPO								2061							5.3							
3/4/2022	E321791	F2_NWPI								2137				840		< 0.0015	4.8							
3/4/2022	E321812	F2_BPO								2062							5.41							
3/5/2022	E321811	F2_ECIN								2274				854		< 0.0015	5.6							
3/5/2022	E321791	F2_NWPI								2161				856		< 0.0015	4.4							
3/5/2022	E321812	F2_BPO								2063				872		< 0.0015	5.04							

		Parameter	Selenosulfate, SeSO3	SeMe – selenomethionine CH3SeCH2CH2CH(NH2)CO2H	Silver	Silver	Sodium	Sodium	Specific conductivity, temperature corrected value (25 C)	Specific conductivity, temperature corrected value (25 C)	Strontium	Strontium	Strontium	Sulphate (As SO4)	Sulphide (as S)	Sulphide (as S)	Temperature, Field	Thallium	Thallium	Tin	Tin	Tin	Titanium	Titanium
		Fraction	D	D	D	T	T	T	N	N	D	T	T	D	D	T	N	D	T	D	T	T	D	T
		Unit	ug/l	ug/l	ug/l	ug/l	mg/l	ppm	us/cm	uS/cm at 25 C	mg/l	mg/l	ppm	mg/l	mg/l	mg/l	deg c	ug/l	ug/l	mg/l	mg/l	ppm	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
3/5/2022	E321812	F2_BPO								2038							5.04							
3/6/2022	E321811	F2_ECIN								2112				827		< 0.0015	5.6							
3/6/2022	E321791	F2_NWPI								2024				828		< 0.0015	4.4							
3/6/2022	E321812	F2_BPO								2042				842		< 0.0015	5.4							
3/6/2022	E321812	F2_BPO								2139							5.46							
3/6/2022	E321812	F2_BPO								2143							6.575							
3/7/2022	E321814	EV_ECOUT			< 0.010	< 0.010	6.30			1940	0.338	0.347		888			5.6	0.072	0.071	< 0.00010	< 0.00010		< 0.30	< 0.30
3/7/2022	E321812	F2_BPO			< 0.010	< 0.010	7.53			2148	0.373	0.370		869		< 0.0015	5.43	0.091	0.098	< 0.00010	< 0.00010		< 0.30	< 0.30
3/7/2022	E321811	F2_ECIN	< 0.010	< 0.010	< 0.010	< 0.010	3.67			2193	0.239	0.242		856		< 0.0015	5.35	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
3/7/2022	E321791	F2_NWPI	< 0.010	< 0.010	< 0.010	< 0.010	9.57			2065	1.07	1.03		850		< 0.0015	4.53	0.081	0.085	< 0.00010	< 0.00010		< 0.30	< 0.60
3/7/2022	E321812	F2_BPO								2149							6.56							
3/8/2022	E321811	F2_ECIN			< 0.010					1930	0.238			841		< 0.0015	5.5	< 0.010		< 0.00010			< 0.30	
3/8/2022	E321791	F2_NWPI			< 0.010					1842	1.05			842		< 0.0015	4.3	0.085		< 0.00010			< 0.30	
3/8/2022	E300091	EV_MC2			< 0.010	< 0.010	4.76			591	0.189	0.187		138			0.1	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
3/8/2022	E321812	F2_BPO			< 0.010					2151	0.366			858		< 0.0015	4.55	0.092		< 0.00010			< 0.30	
3/8/2022	E321812	F2_BPO								2151							4.55							
3/8/2022	E321812	F2_BPO								2150							4.806							
3/9/2022	E321811	F2_ECIN								1851				800		< 0.0015	5.2							
3/9/2022	E321791	F2_NWPI								1847				817		< 0.0015	4.2							
3/9/2022	E321812	F2_BPO								2152							3.6							
3/9/2022	E321812	F2_BPO								2120				824		< 0.0015	3.66							
3/9/2022	E321812	F2_BPO								2146							4.6							
3/10/2022	E321791	F2_NWPI			< 0.010					1965	1.06			838		< 0.0015	4.3	0.081		< 0.00010			< 0.30	
3/10/2022	E321812	F2_BPO	< 0.010	< 0.010	< 0.010					2118	0.375			851		< 0.0015	3.78	0.084		< 0.00010			< 0.30	
3/10/2022	E321812	F2_BPO								2143							3.983							
3/10/2022	E321811	F2_ECIN			< 0.010					2194	0.242			831		< 0.0015	5.12	< 0.010		< 0.00010			< 0.30	
3/10/2022	E321812	F2_BPO															5.34							
3/11/2022	E321811	F2_ECIN								2194				863		< 0.0015	5.3							
3/11/2022	E321791	F2_NWPI								2042				860		< 0.0015	4.5							
3/11/2022	E321812	F2_BPO								2145				884		< 0.0015	4.34							
3/11/2022	E321812	F2_BPO								2140							5.3							
3/12/2022	E321811	F2_ECIN								2132				855		< 0.0015	5.8							
3/12/2022	E321791	F2_NWPI								2030				854		< 0.0015	4.5							
3/12/2022	E321812	F2_BPO								2142							4.84							
3/12/2022	E321812	F2_BPO								2116				875		< 0.0015	4.85							
3/12/2022	E321812	F2_BPO															4.93							
3/13/2022	E321811	F2_ECIN								1914				813		< 0.0015	5.8							
3/13/2022	E321791	F2_NWPI								1811				812		< 0.0015	4.6							
3/13/2022	E321812	F2_BPO								2068				825		< 0.0015	4.99							
3/13/2022	E321812	F2_BPO															6.21							
3/14/2022	E321812	F2_BPO	< 0.010	< 0.010	< 0.010	< 0.020	8.14			2041	0.390	0.434		844		< 0.0015	5.5	0.086	0.105	< 0.00010	< 0.00020		< 0.30	< 0.60
3/14/2022	E321812	F2_BPO								2071							5.37							
3/14/2022	0200097	EV_EC1	< 0.010	< 0.010	< 0.010	< 0.010	6.04			1856	0.308	0.323		900		< 0.0015	5.1	0.052	0.051	< 0.00010	< 0.00010		< 0.30	< 0.30
3/14/2022	0200203	EV_MC3	< 0.010	< 0.010	< 0.010	< 0.010	3.96			393.1	0.153	0.160		64.8		< 0.0015	0.7	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
3/14/2022	E321811	F2_ECIN	< 0.010	< 0.010	< 0.010	< 0.010	3.68			2147	0.238	0.284		830		< 0.0015	5.86	0.011	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
3/14/2022	310168	EV_MC2A	< 0.010	< 0.010	< 0.010	< 0.010	4.15			520	0.156	0.171		119		< 0.0015	1.9	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
3/14/2022	E321791	F2_NWPI	< 0.010	< 0.010	< 0.010	< 0.010	9.93			2029	1.10	1.21		832		< 0.0015	4.32	0.082	0.091	< 0.00010	< 0.00010		< 0.30	0.64

		Parameter	Selenosulfate, SeSO3	SeMe – selenomethionine CH3SeCH2CH2CH(NH2)CO2H	Silver	Silver	Sodium	Sodium	Specific conductivity, temperature corrected value (25 C)	Specific conductivity, temperature corrected value (25 C)	Strontium	Strontium	Strontium	Sulphate (As SO4)	Sulphide (as S)	Sulphide (as S)	Temperature, Field	Thallium	Thallium	Tin	Tin	Tin	Titanium	Titanium
		Fraction	D	D	D	T	T	T	N	N	D	T	T	D	D	T	N	D	T	D	T	T	D	T
		Unit	ug/l	ug/l	ug/l	ug/l	mg/l	ppm	us/cm	uS/cm at 25 C	mg/l	mg/l	ppm	mg/l	mg/l	mg/l	deg c	ug/l	ug/l	mg/l	mg/l	ppm	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
3/14/2022	200393	EV_ER1			< 0.010	< 0.010	3.85			539	0.214	0.227		112		< 0.0015	2.9	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
3/14/2022	E300091	EV_MC2	< 0.010	< 0.010	< 0.010	< 0.010	5.16			618	0.190	0.198		159		< 0.0015	2.4	0.013	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
3/14/2022	E321814	EV_ECOUT	< 0.010	< 0.010	< 0.010	< 0.010	6.45			2104	0.322	0.356		841		< 0.0015	6.07	0.072	0.067	< 0.00010	< 0.00010		< 0.30	< 0.30
3/14/2022	E321812	F2_BPO															5.39							
3/15/2022	E321812	F2_BPO			< 0.010	< 0.010	7.20			1979	0.360	0.382		881		< 0.0015	5.4	0.090	0.083	< 0.00010	< 0.00010		< 0.30	< 0.30
3/15/2022	E321812	F2_BPO								2094							5.25							
3/15/2022	E321811	F2_ECIN			< 0.010	< 0.010	3.40			2020	0.225	0.246		869		< 0.0015	5.9	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
3/15/2022	E321791	F2_NWPI			< 0.010	< 0.010	8.99			1847	1.01	1.08		876		< 0.0015	4.5	0.084	0.074	< 0.00010	< 0.00010		< 0.30	0.38
3/15/2022	E300091	EV_MC2			< 0.010	< 0.010	4.85			635	0.180	0.177		136			1.8	< 0.010	0.012	< 0.00010	< 0.00010		< 0.30	< 0.30
3/15/2022	E102685	EV_BC1	< 0.010	< 0.010	< 0.020	< 0.020	7.79			1950	0.902	1.04		1030		< 0.0015	3	0.028	0.026	< 0.00020	< 0.00020		< 0.60	0.85
3/15/2022	E206231	EV_GT1	< 0.010	< 0.010	< 0.010	< 0.010	6.46			1766	0.515	0.632		834		< 0.0015	3	0.028	0.035	< 0.00010	< 0.00010		< 0.30	3.73
3/15/2022	E321812	F2_BPO															5.7							
3/16/2022	E321811	F2_ECIN								2119				840		< 0.0015	5.8							
3/16/2022	E321791	F2_NWPI								1990				842		< 0.0015	4.5							
3/16/2022	E321812	F2_BPO								2063							5.21							
3/16/2022	0200203	EV_MC3			< 0.010	< 0.010	3.94			398.8	0.164	0.162		60.2			0.2	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	0.58
3/16/2022	E321812	F2_BPO								2097				857		< 0.0015	5.21							
3/16/2022	E206231	EV_GT1			< 0.010	< 0.010	5.54			1795	0.552	0.561		836			2.3	0.031	0.039	< 0.00010	< 0.00010		< 0.30	7.65
3/16/2022	E102685	EV_BC1			< 0.010	< 0.010	6.92			2091	0.947	0.921		920			3	0.030	0.032	< 0.00010	< 0.00010		< 0.30	1.23
3/16/2022	E300091	EV_MC2			< 0.010	< 0.010	5.00			615	0.193	0.196		138			1.9	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	0.32
3/16/2022	E321812	F2_BPO															5.88							
3/17/2022	E321811	F2_ECIN			< 0.010					1996	0.234			840		< 0.0015	5.6	< 0.010		< 0.00010			< 0.30	
3/17/2022	E321791	F2_NWPI			< 0.010					1872	1.04			843		< 0.0015	4.3	0.079		< 0.00010			< 0.30	
3/17/2022	E321812	F2_BPO			< 0.010					1887	0.364			872		< 0.0015	5.1	0.089		< 0.00010			< 0.30	
3/17/2022	E321812	F2_BPO								1887							5.1							
3/17/2022	200393	EV_ER1			< 0.010	< 0.010	3.83			538	0.233	0.234		99.9			2.9	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
3/17/2022	0200097	EV_EC1			< 0.010	< 0.010	7.04			1937	0.329	0.339		826			4.4	0.048	0.052	< 0.00010	< 0.00010		< 0.30	< 0.30
3/17/2022	E321812	F2_BPO								2061							5.69							
3/18/2022	E321811	F2_ECIN								2021				838		< 0.0015	5.9							
3/18/2022	E321791	F2_NWPI								1913				822		< 0.0015	4.5							
3/18/2022	E321812	F2_BPO								1904				844		< 0.0015	5.5							
3/18/2022	E321812	F2_BPO								2063							5.401							
3/18/2022	E321812	F2_BPO								2055							6.03							
3/19/2022	E321811	F2_ECIN								2017				863		< 0.0015	6							
3/19/2022	E321791	F2_NWPI								1910				874		< 0.0015	4.6							
3/19/2022	E321812	F2_BPO								1941				887		< 0.0015	5.7							
3/19/2022	E321812	F2_BPO								2053							5.658							
3/19/2022	E321812	F2_BPO								2039							6.497							
3/20/2022	E321811	F2_ECIN			< 0.010					1986	0.236			897		< 0.0015	5.8	< 0.010		< 0.00010			< 0.30	
3/20/2022	E321791	F2_NWPI			< 0.010					1872	1.06			901		< 0.0015	4.6	0.078		< 0.00010			< 0.30	
3/20/2022	E321812	F2_BPO			< 0.010					1869	0.377			912		< 0.0015	5.4	0.083		< 0.00010			< 0.30	
3/20/2022	E321812	F2_BPO								2035							5.28							
3/20/2022	E321812	F2_BPO								2040							5.9							
3/21/2022	E321812	F2_BPO			< 0.010	< 0.010	8.26			1982	0.351	0.384		877		< 0.0015	4.7	0.084	0.094	< 0.00010	< 0.00010		< 0.30	< 0.30
3/21/2022	E321811	F2_ECIN	< 0.010	< 0.010	< 0.010	< 0.010	3.71			2087	0.223	0.246		850		< 0.0015	5.83	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
3/21/2022	E321791	F2_NWPI	< 0.010	< 0.010	< 0.010	< 0.010	10.2			1977	1.02	1.06		859		< 0.0015	4.47	0.081	0.084	< 0.00010	< 0.00010		< 0.30	0.65
3/21/2022	0200097	EV_EC1			< 0.010	< 0.010	6.80			1775	0.330	0.323		821		< 0.0015	4.8	0.047	0.047	< 0.00010	< 0.00010		< 0.30	< 0.30
3/21/2022	E321812	F2_BPO								2058							4.672							

		Parameter	Selenosulfate, SeSO3	SeMe – selenomethionine CH3SeCH2CH2CH(NH2)CO2H	Silver	Silver	Sodium	Sodium	Specific conductivity, temperature corrected value (25 C)	Specific conductivity, temperature corrected value (25 C)	Strontium	Strontium	Strontium	Sulphate (As SO4)	Sulphide (as S)	Sulphide (as S)	Temperature, Field	Thallium	Thallium	Tin	Tin	Tin	Titanium	Titanium
		Fraction	D	D	D	T	T	T	N	N	D	T	T	D	D	T	N	D	T	D	T	T	D	T
		Unit	ug/l	ug/l	ug/l	ug/l	mg/l	ppm	us/cm	uS/cm at 25 C	mg/l	mg/l	ppm	mg/l	mg/l	mg/l	deg c	ug/l	ug/l	mg/l	mg/l	ppm	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
3/21/2022	0200203	EV_MC3			< 0.010	< 0.010	4.24			390.7	0.162	0.162		65.7		< 0.0015	1.2	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	0.49
3/21/2022	310168	EV_MC2A			< 0.010	< 0.010	5.46			519	0.171	0.166		115		< 0.0015	1.9	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	0.71
3/21/2022	E321814	EV_ECOUT			< 0.010	< 0.010	6.67			2049	0.328	0.335		864		< 0.0015	5.56	0.058	0.058	< 0.00010	< 0.00010		< 0.30	< 0.30
3/21/2022	200393	EV_ER1			< 0.010	< 0.010	4.29			521	0.229	0.230		107		< 0.0015	2.6	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
3/21/2022	E300091	EV_MC2			< 0.010	< 0.010	5.46			595	0.191	0.191		144		< 0.0015	3.7	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
3/21/2022	E321812	F2_BPO								2052							5.15							
3/22/2022	E321812	F2_BPO			< 0.010					2033	0.377			889		< 0.0015	4.93	0.083		< 0.00010			< 0.30	
3/22/2022	E321811	F2_ECIN			< 0.010					1967	0.236			865		< 0.0015	5.8	< 0.010		< 0.00010			< 0.30	
3/22/2022	E321791	F2_NWPI			< 0.010					1858	1.06			873		< 0.0015	4.6	0.078		< 0.00010			< 0.30	
3/22/2022	0200097	EV_EC1																						
3/22/2022	E321812	F2_BPO								2042							5.02							
3/22/2022	E102685	EV_BC1			< 0.010	< 0.010	7.13			1888	0.939	0.862		973		< 0.0015	3.6	0.024	0.026	< 0.00010	< 0.00010		< 0.30	< 0.30
3/22/2022	E206231	EV_GT1			< 0.010	< 0.010	4.06			1643	0.532	0.477		778		< 0.0015	3.3	0.028	0.032	< 0.00010	< 0.00010		< 0.30	1.55
3/22/2022	0200203	EV_MC3			< 0.010	< 0.010	4.41			405.3	0.160	0.171		66.4			1.2	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	0.69
3/22/2022	E206231	EV_GT1																						
3/22/2022	E102685	EV_BC1																						
3/22/2022	E300091	EV_MC2			< 0.010	< 0.010	5.57			622	0.189	0.204		150			4.9	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	1.22
3/22/2022	200393	EV_ER1			< 0.010	< 0.010	4.32			547	0.223	0.235		111			4.3	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	0.88
3/22/2022	E321812	F2_BPO								2030							6.74							
3/23/2022	E321811	F2_ECIN								1978				840		< 0.0015	5.9							
3/23/2022	E321791	F2_NWPI								1882				843		< 0.0015	4.6							
3/23/2022	E321812	F2_BPO								2014				749		< 0.0015	6							
3/23/2022	E321812	F2_BPO								2029							6.01							
3/23/2022	E321812	F2_BPO								2024							6.898							
3/24/2022	E321812	F2_BPO								2021							6.07							
3/24/2022	E321812	F2_BPO			< 0.010					2020	0.375			902		< 0.0015	5.99	0.081		< 0.00010			< 0.30	
3/24/2022	E321811	F2_ECIN			< 0.010					1885	0.234			897		< 0.0015	5.6	< 0.010		< 0.00010			< 0.30	
3/24/2022	E321791	F2_NWPI			< 0.010					1808	1.07			896		< 0.0015	4.5	0.077		< 0.00010			< 0.30	
3/24/2022	E321812	F2_BPO								2019							6.23							
3/25/2022	E321811	F2_ECIN								1977				850		< 0.0015	5.6							
3/25/2022	E321791	F2_NWPI								2003				852		< 0.0015	4.3							
3/25/2022	E321812	F2_BPO	< 0.010	< 0.010						1849				861		< 0.0015	5.8							
3/25/2022	E321812	F2_BPO								2012							6.946							
3/26/2022	E321811	F2_ECIN								1964				879		< 0.0015	5.8							
3/26/2022	E321791	F2_NWPI								1877				896		< 0.0015	4.3							
3/26/2022	E321812	F2_BPO								2013				884		< 0.0015	6.37							
3/26/2022	E321812	F2_BPO								2013							6.37							
3/26/2022	E321812	F2_BPO															6.45							
3/28/2022	0200097	EV_EC1												828										
3/28/2022	0200203	EV_MC3	< 0.010	< 0.010	< 0.010	< 0.010	3.98			450	0.154	0.156		56.8		< 0.0015	1.3	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 3.30
3/28/2022	E321814	EV_ECOUT	< 0.010	< 0.010	< 0.010	< 0.010	3.35			1954	0.229	0.231		808		< 0.0015	6	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
3/28/2022	E321812	F2_BPO								2040							7.086							
3/28/2022	200393	EV_ER1			< 0.010	< 0.010	3.99			553	0.216	0.226		96.6		< 0.0015	3.1	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	0.93
3/28/2022	E321812	F2_BPO	< 0.010	< 0.010	< 0.010	< 0.010	7.07			1996	0.365	0.381		835		0.0018	7.01	0.082	0.089	< 0.00010	< 0.00010		< 0.30	< 0.30
3/28/2022	310168	EV_MC2A	< 0.010	< 0.010	< 0.010	< 0.010	4.22			490.4	0.157	0.163		84.5		< 0.0015	2.8	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 2.10
3/28/2022	E300091	EV_MC2	< 0.010	< 0.010	< 0.010	< 0.010	4.57			560	0.164	0.174		104		< 0.0015	3.9	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 1.50
3/28/2022	E300091	EV_MC2												118										
3/28/2022	E321791	F2_NWPI								1970				820		< 0.0015	4.87							

		Parameter	Selenosulfate, SeSO3	SeMe – selenomethionine CH3SeCH2CH2CH(NH2)CO2H	Silver	Silver	Sodium	Sodium	Specific conductivity, temperature corrected value (25 C)	Specific conductivity, temperature corrected value (25 C)	Strontium	Strontium	Strontium	Sulphate (As SO4)	Sulphide (as S)	Sulphide (as S)	Temperature, Field	Thallium	Thallium	Tin	Tin	Tin	Titanium	Titanium
		Fraction	D	D	D	T	T	T	N	N	D	T	T	D	D	T	N	D	T	D	T	T	D	T
		Unit	ug/l	ug/l	ug/l	ug/l	mg/l	ppm	us/cm	uS/cm at 25 C	mg/l	mg/l	ppm	mg/l	mg/l	mg/l	deg c	ug/l	ug/l	mg/l	mg/l	ppm	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
3/28/2022	E321811	F2_ECIN								2064				769		< 0.0015	5.52							
3/28/2022	0200097	EV_EC1	< 0.010	< 0.010	< 0.010	< 0.010	3.47			1851	0.235	0.244		771		< 0.0015	4	0.028	0.027	< 0.00010	< 0.00010		< 0.30	< 0.30
3/29/2022	E321812	F2_BPO								2031							6.729							
3/29/2022	E102685	EV_BC1	< 0.010	< 0.010	< 0.010	< 0.010	7.22			1807	0.802	0.832		892		< 0.0015	6.2	0.028	0.025	< 0.00010	< 0.00010		< 0.30	< 0.30
3/29/2022	E321812	F2_BPO			< 0.010					1994	0.405			818		< 0.0015	6.73	0.082		< 0.00010			< 0.30	
3/29/2022	E206231	EV_GT1	< 0.010	< 0.010	< 0.010	0.039	2.37			1373	0.259	0.271		575		< 0.0015	5	0.035	0.072	< 0.00010	< 0.00010		< 0.30	8.18
3/29/2022	E206231	EV_GT1																						
3/29/2022	0200203	EV_MC3			< 0.010	0.028	4.28			362.9	0.155	0.168		59.4			2.1	< 0.010	0.050	< 0.00010	< 0.00010		< 0.30	51.5
3/29/2022	E300091	EV_MC2			< 0.010	< 0.010	5.05			522	0.165	0.178		108			3.3	< 0.010	0.014	< 0.00010	< 0.00010		< 0.30	3.73
3/29/2022	E206231	EV_GT1																						
3/29/2022	E321811	F2_ECIN			< 0.010	< 0.010	3.86			1923	0.246	0.252		802		< 0.0015	5.1	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
3/29/2022	E321791	F2_NWPI			< 0.010	< 0.010	10.2			1890	1.15	1.14		809		< 0.0015	4.4	0.138	0.141	< 0.00010	< 0.00010		< 0.30	< 0.60
3/29/2022	E102685	EV_BC1																						
3/29/2022	200393	EV_ER1			< 0.010	< 0.010	4.25			520	0.219	0.234		103			5.4	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	2.92
3/29/2022	E321812	F2_BPO								2030							7.28							
3/30/2022	E321812	F2_BPO								2003				854		< 0.0015	7.01							
3/30/2022	E321811	F2_ECIN								2250				843		< 0.0015	5.7							
3/30/2022	E321791	F2_NWPI								1979				866		< 0.0015	4.4							
3/30/2022	E321812	F2_BPO								2036							7.01							
3/30/2022	0200097	EV_EC1																						
3/30/2022	E321812	F2_BPO															7.39							
3/31/2022	E321811	F2_ECIN			< 0.010					2073	0.242			810		< 0.0015	5.8	< 0.010		< 0.00010			< 0.30	
3/31/2022	E321791	F2_NWPI			< 0.010					1997	1.04			830		< 0.0015	4.3	0.080		< 0.00010			< 0.30	
3/31/2022	E321812	F2_BPO			< 0.010					2006	0.371			897		< 0.0015	5.7	0.081		< 0.00010			< 0.30	
3/31/2022	E321812	F2_BPO								2006							5.7							
3/31/2022	E321812	F2_BPO								2045							6.16							
4/1/2022	E321811	F2_ECIN								2110				776		< 0.0015	5.8							
4/1/2022	E321791	F2_NWPI								2041				770		< 0.0015	4.4							
4/1/2022	E321812	F2_BPO								2016				768		< 0.0015	5.09							
4/1/2022	E321812	F2_BPO								2048							6.34							
4/2/2022	E321811	F2_ECIN								2235				850		< 0.0015	5.9							
4/2/2022	E321791	F2_NWPI								2218				861		< 0.0015	4.4							
4/2/2022	E321812	F2_BPO								2019				880		< 0.0015	5.54							
4/2/2022	E321812	F2_BPO								2058							5.53							
4/2/2022	E321812	F2_BPO								2058							6.36							
4/3/2022	E321811	F2_ECIN								2136				859		< 0.0015	5.7							
4/3/2022	E321791	F2_NWPI								2083				870		< 0.0015	4.4							
4/3/2022	E321812	F2_BPO								2063				874		< 0.0015	5.63							
4/3/2022	E321812	F2_BPO								2048							5.63							
4/3/2022	E321812	F2_BPO								2048							6.25							
4/4/2022	E321812	F2_BPO	< 0.010	< 0.010	< 0.010	< 0.010	8.22			2065	0.386	0.387		872		< 0.0015	5.5	0.095	0.092	< 0.00010	0.00013		< 0.30	< 0.30
4/4/2022	0200097	EV_EC1			< 0.010	< 0.010	8.06			1918	0.290	0.343		772		< 0.0015	4.9	0.029	0.030	< 0.00010	0.00017		< 0.30	< 0.30
4/4/2022	E321812	F2_BPO								2056							5.5							
4/4/2022	0200203	EV_MC3			< 0.010	< 0.010	5.51			409.3	0.150	0.185		53.2		< 0.0015	1.8	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 1.50
4/4/2022	310168	EV_MC2A			< 0.010	< 0.010	4.92			500	0.156	0.168		86.7		< 0.0015	2.5	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	1.33
4/4/2022	E321811	F2_ECIN	< 0.010	< 0.010	< 0.010	< 0.010	3.16			2094	0.223	0.221		845		< 0.0015	5.67	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
4/4/2022	E321791	F2_NWPI	< 0.010	< 0.010	< 0.010	< 0.010	11.1			2002	1.03	1.24		865		< 0.0015	4.38	0.083	0.081	< 0.00010	0.00012		< 0.30	< 0.30
4/4/2022	200393	EV_ER1			< 0.010	< 0.010	4.16			587	0.211	0.224		97.6		< 0.0015	3.5	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.60

		Parameter	Selenosulfate, SeSO3	SeMe – selenomethionine CH3SeCH2CH2CH(NH2)CO2H	Silver	Silver	Sodium	Sodium	Specific conductivity, temperature corrected value (25 C)	Specific conductivity, temperature corrected value (25 C)	Strontium	Strontium	Strontium	Sulphate (As SO4)	Sulphide (as S)	Sulphide (as S)	Temperature, Field	Thallium	Thallium	Tin	Tin	Tin	Titanium	Titanium
		Fraction	D	D	D	T	T	T	N	N	D	T	T	D	D	T	N	D	T	D	T	T	D	T
		Unit	ug/l	ug/l	ug/l	ug/l	mg/l	ppm	us/cm	uS/cm at 25 C	mg/l	mg/l	ppm	mg/l	mg/l	mg/l	deg c	ug/l	ug/l	mg/l	mg/l	ppm	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
4/4/2022	E321814	EV_ECOUT			< 0.010	< 0.020	4.97			2081	0.254	0.286		803		< 0.0015	5.74	0.019	< 0.020	< 0.00010	< 0.00020		< 0.30	< 0.60
4/4/2022	E300091	EV_MC2			< 0.010	< 0.010	4.63			548	0.169	0.176		100		< 0.0015	3.2	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	1.10
4/4/2022	E321812	F2_BPO								2055							5.66							
4/5/2022	E321791	F2_NWPI			< 0.010					1977	1.03			936		< 0.0015	4.8	0.095		< 0.00010			< 0.30	
4/5/2022	E321811	F2_ECIN			< 0.010					2036	0.223			937		< 0.0015	5.6	< 0.010		< 0.00010			< 0.30	
4/5/2022	E206231	EV_GT1			< 0.010	< 0.010	4.55			1771	0.494	0.492		858		< 0.0015	4.6	0.033	0.039	< 0.00010	< 0.00010		< 0.30	0.38
4/5/2022	E102685	EV_BC1			< 0.020	< 0.010	7.06			2050	0.882	0.865		1020		< 0.0015	4.7	0.024	0.028	< 0.00020	< 0.00010		< 0.60	< 0.30
4/5/2022	E321812	F2_BPO			< 0.010					2072	0.380			916		< 0.0015	4.51	0.096		< 0.00010			< 0.30	
4/5/2022	0200203	EV_MC3			< 0.010	< 0.010	4.36			387.3	0.154	0.161		52.6			0.9	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	1.65
4/5/2022	E321812	F2_BPO								2065							4.5							
4/5/2022	E206231	EV_GT1																						
4/5/2022	E102685	EV_BC1																						
4/5/2022	E300091	EV_MC2			< 0.010	< 0.010	5.81			551	0.174	0.193		128			1.8	< 0.010	0.010	< 0.00010	< 0.00010		< 0.30	0.98
4/5/2022	200393	EV_ER1			< 0.010	< 0.010	4.14			562	0.226	0.239		99.8			2.6	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	0.41
4/5/2022	E321812	F2_BPO								2060							5.1							
4/6/2022	E321811	F2_ECIN								2134				861		< 0.0015	5.7							
4/6/2022	E321791	F2_NWPI								2031				876		< 0.0015	4.8							
4/6/2022	E321812	F2_BPO								2082				884		< 0.0015	4.53							
4/6/2022	E321812	F2_BPO								2070							4.53							
4/6/2022	0200097	EV_EC1																						
4/6/2022	E321812	F2_BPO								2062							6.42							
4/7/2022	E321811	F2_ECIN			< 0.010					2185	0.219			795		< 0.0015	5.6	< 0.010		< 0.00010			< 0.30	
4/7/2022	E321791	F2_NWPI			< 0.010					2032	1.03			819		< 0.0015	4.7	0.092		< 0.00010			< 0.30	
4/7/2022	E321812	F2_BPO								2066							5.58							
4/7/2022	E321812	F2_BPO			0.074					2074	0.362			817		< 0.0015	5.6	0.094		< 0.00010			< 0.30	
4/7/2022	E321812	F2_BPO								2060							7.1							
4/8/2022	E321811	F2_ECIN								2164				836		< 0.0015	6							
4/8/2022	E321791	F2_NWPI								2070				847		< 0.0015	4.7							
4/8/2022	E321812	F2_BPO								2072				869		< 0.0015	6.59							
4/8/2022	E321812	F2_BPO								2065							6.7							
4/9/2022	E321811	F2_ECIN								1978				858		< 0.0015	6.2							
4/9/2022	E321791	F2_NWPI								2019				882		< 0.0015	4.8							
4/9/2022	E321812	F2_BPO								2066				893		< 0.0015	5.76							
4/9/2022	E321812	F2_BPO								2061							6.1							
4/10/2022	E300091	EV_MC2							564					114			1.1							
4/10/2022	0200097	EV_EC1							1860					817			3.3							
4/10/2022	E321791	F2_NWPI								1984				868		< 0.0015	4.4							
4/10/2022	E321812	F2_BPO								2036				890		< 0.0015	5.3							
4/10/2022	E321812	F2_BPO								2056							5.9							
4/11/2022	E321791	F2_NWPI	< 0.010	< 0.010	< 0.010	0.012	10.0			2097	1.23	1.09		896		< 0.0015	4.5	0.091	0.093	0.00017	< 0.00010		< 0.30	0.70
4/11/2022	E321812	F2_BPO	< 0.010	< 0.010	< 0.010	0.010	7.67			2046	0.429	0.384		907		< 0.0015	4.41	0.086	0.086	< 0.00010	< 0.00010		< 0.30	< 0.30
4/11/2022	E321812	F2_BPO								2046							4.41							
4/11/2022	E300091	EV_MC2	< 0.010	< 0.010	< 0.010	< 0.010	4.39			644	0.193	0.176		109		0.0017	0.7	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	0.54
4/11/2022	E300091	EV_MC2												115										
4/11/2022	310168	EV_MC2A	< 0.010	< 0.010	< 0.010	< 0.010	3.90			565	0.180	0.154		83.4		0.0015	0.5	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	0.50
4/11/2022	0200097	EV_EC1	< 0.010	< 0.010	< 0.010	< 0.010	3.46			1914	0.268	0.231		791		< 0.0015	3.3	0.021	0.023	< 0.00010	< 0.00010		< 0.30	< 0.30
4/11/2022	0200097	EV_EC1												830										
4/11/2022	0200203	EV_MC3	< 0.010	< 0.010	< 0.010	< 0.010	4.23			428.3	0.177	0.159		53.7		< 0.0015	0.4	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	0.64

		Parameter	Selenosulfate, SeSO3	SeMe – selenomethionine CH3SeCH2CH2CH(NH2)CO2H	Silver	Silver	Sodium	Sodium	Specific conductivity, temperature corrected value (25 C)	Specific conductivity, temperature corrected value (25 C)	Strontium	Strontium	Strontium	Sulphate (As SO4)	Sulphide (as S)	Sulphide (as S)	Temperature, Field	Thallium	Thallium	Tin	Tin	Tin	Titanium	Titanium
		Fraction	D	D	D	T	T	T	N	N	D	T	T	D	D	T	N	D	T	D	T	T	D	T
		Unit	ug/l	ug/l	ug/l	ug/l	mg/l	ppm	us/cm	uS/cm at 25 C	mg/l	mg/l	ppm	mg/l	mg/l	mg/l	deg c	ug/l	ug/l	mg/l	mg/l	ppm	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
4/11/2022	200393	EV_ER1			< 0.010	< 0.010	3.66			638	0.245	0.222		105		< 0.0015	2.3	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
4/11/2022	E321814	EV_ECOUT	< 0.010	< 0.010	< 0.010	< 0.010	3.69			206.9	0.239	0.258		825		< 0.0015	5.29	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
4/11/2022	E321812	F2_BPO															4.5							
4/12/2022	0200097	EV_EC1							1963					824			2.9							
4/12/2022	E102685	EV_BC1			< 0.010	< 0.010	7.20			2039	0.862	0.848		1000		< 0.0015	3.3	0.027	0.026	< 0.00010	< 0.00010		< 0.30	< 0.30
4/12/2022	E206231	EV_GT1	< 0.010	< 0.010	< 0.010	< 0.010	5.94			1974	0.563	0.581		889		< 0.0015	3.7	0.035	0.034	< 0.00010	< 0.00010		< 0.30	< 0.30
4/12/2022	E206231	EV_GT1			< 0.010	< 0.020	6.86			1920	0.567	0.676		859			3.3	0.034	0.042	< 0.00010	< 0.00020		< 0.30	< 0.60
4/12/2022	E321812	F2_BPO			< 0.010					2044	0.379			863		< 0.0015	3.23	0.082		< 0.00010			< 0.30	
4/12/2022	E321812	F2_BPO								2044							3.23							
4/12/2022	E300091	EV_MC2							595					119			0.5							
4/12/2022	E102685	EV_BC1	< 0.010	< 0.010	< 0.010	< 0.010	7.27			2137	0.858	0.849		961		< 0.0015	3.6	0.026	0.025	< 0.00010	< 0.00010		< 0.30	< 0.30
4/12/2022	E300091	EV_MC2			< 0.010	< 0.010	5.18			561	0.181	0.202		112			1.9	< 0.010	< 0.010	0.00022	< 0.00010		< 0.30	< 0.30
4/12/2022	E321812	F2_BPO															3.397							
4/12/2022	E321791	F2_NWPI			< 0.010					2094	1.14			852		< 0.0015	4.7	0.099		< 0.00010			< 0.30	
4/13/2022	E300091	EV_MC2							1350					133			0.5							
4/13/2022	0200097	EV_EC1							2459					775			2.6							
4/13/2022	E321791	F2_NWPI								2096				916		< 0.0015	4.5							
4/13/2022	E321812	F2_BPO								2045				904		< 0.0015	2.6							
4/13/2022	E321812	F2_BPO								2022							2.529							
4/13/2022	0200097	EV_EC1			< 0.010	< 0.010	3.61			1925	0.238	0.246		780			2.3	0.019	0.022	< 0.00010	< 0.00010		< 0.30	< 0.30
4/13/2022	0200203	EV_MC3			< 0.010	< 0.010	4.45			382.2	0.165	0.174		51.3			0	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	0.58
4/13/2022	200393	EV_ER1			< 0.010	< 0.010	3.81			560	0.231	0.240		102			1.9	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
4/13/2022	E321812	F2_BPO								2019							3.26							
4/14/2022	E321791	F2_NWPI			< 0.010					2192	1.18			877		< 0.0015	4.7	0.106		< 0.00010			< 0.30	
4/14/2022	E300091	EV_MC2							646					118			0.2							
4/14/2022	0200097	EV_EC1							2100					748			2.5							
4/14/2022	E321812	F2_BPO			< 0.010					2028	0.395			866		< 0.0015	2.71	0.084		< 0.00010			< 0.30	
4/14/2022	E321812	F2_BPO								2018							2.517							
4/14/2022	E321812	F2_BPO								2011							3.77							
4/15/2022	E321791	F2_NWPI								2225				876		< 0.0015	5.5							
4/15/2022	E300091	EV_MC2							562					124			3.8							
4/15/2022	0200097	EV_EC1							2202					775			3.5							
4/15/2022	E321812	F2_BPO								2108				866		< 0.0015	3.46							
4/15/2022	E321812	F2_BPO								2108							3.46							
4/15/2022	E321812	F2_BPO								2102							4.392							
4/16/2022	0200097	EV_EC1							2125					842			3.2							
4/16/2022	E300091	EV_MC2							672					125			1							
4/16/2022	E321791	F2_NWPI							280					865		< 0.0015	5.1							
4/16/2022	E321812	F2_BPO							2312					860		< 0.0015	4.4							
4/16/2022	E321812	F2_BPO								2312							4.4							
4/16/2022	E321812	F2_BPO								2104							4.6							
4/16/2022	E321812	F2_BPO								2103							4.7							
4/17/2022	E300091	EV_MC2							635					114			1.6							
4/17/2022	E321791	F2_NWPI								2142				820		< 0.0015	5.5							
4/17/2022	0200097	EV_EC1							2157					819			3.8							
4/17/2022	E321812	F2_BPO								2106							4.38							
4/17/2022	E321812	F2_BPO								2103				807		0.0018	4.44							
4/17/2022	E321812	F2_BPO								2091							6.45							

		Parameter	Selenosulfate, SeSO3	SeMe – selenomethionine CH3SeCH2CH2CH(NH2)CO2H	Silver	Silver	Sodium	Sodium	Specific conductivity, temperature corrected value (25 C)	Specific conductivity, temperature corrected value (25 C)	Strontium	Strontium	Strontium	Sulphate (As SO4)	Sulphide (as S)	Sulphide (as S)	Temperature, Field	Thallium	Thallium	Tin	Tin	Tin	Titanium	Titanium
		Fraction	D	D	D	T	T	T	N	N	D	T	T	D	D	T	N	D	T	D	T	T	D	T
		Unit	ug/l	ug/l	ug/l	ug/l	mg/l	ppm	us/cm	uS/cm at 25 C	mg/l	mg/l	ppm	mg/l	mg/l	mg/l	deg c	ug/l	ug/l	mg/l	mg/l	ppm	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
4/18/2022	E321812	F2_BPO	< 0.010	< 0.010	< 0.010	< 0.010	7.28			1997	0.376	0.395		873		< 0.0015	5.08	0.075	0.077	< 0.00010	< 0.00010		< 0.30	< 0.30
4/18/2022	E321791	F2_NWPI	< 0.010	< 0.010	< 0.010	< 0.010	10.6			2104	1.09	1.19		888		< 0.0015	4.68	0.117	0.112	< 0.00010	< 0.00010		< 0.30	< 0.30
4/18/2022	E300091	EV_MC2			< 0.010	< 0.010	4.62			617	0.193	0.184		130		< 0.0015	0.75	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	0.36
4/18/2022	E300091	EV_MC2																						
4/18/2022	0200097	EV_EC1			< 0.010	< 0.010	4.74			2025	0.226	0.236		833		< 0.0015	3.37	0.018	0.016	< 0.00010	< 0.00010		< 0.30	< 0.30
4/18/2022	0200097	EV_EC1																						
4/18/2022	0200203	EV_MC3			< 0.010	< 0.010	4.52			407.4	0.168	0.164		57.9		< 0.0015	0.61	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	0.41
4/18/2022	E321814	EV_ECOUT			< 0.010	< 0.010	3.54			2050	0.236	0.239		843		< 0.0015	5.38	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
4/18/2022	310168	EV_MC2A			< 0.010	< 0.010	4.36			534	0.167	0.173		99.8		< 0.0015	1.5	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	0.35
4/18/2022	200393	EV_ER1			< 0.010	< 0.010	3.88			601	0.234	0.242		117		< 0.0015	3.21	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
4/18/2022	E321812	F2_BPO								1987							6.04							
4/19/2022	E300091	EV_MC2							595					118			2.59							
4/19/2022	0200097	EV_EC1							2012					762			4.18							
4/19/2022	E206231	EV_GT1			< 0.010	< 0.020	6.27			2067	0.576	0.607		923		< 0.0015	4.87	0.035	0.036	< 0.00010	< 0.00020		< 0.30	< 0.60
4/19/2022	E102685	EV_BC1			< 0.020	< 0.010	7.63			2102	0.710	0.758		927		< 0.0015	4.14	0.023	0.028	< 0.00020	< 0.00010		< 0.60	< 0.30
4/19/2022	E321812	F2_BPO			< 0.010				1987		0.379			809		< 0.0015	5.15	0.069		< 0.00010			< 0.30	
4/19/2022	E321812	F2_BPO								1987							5.15							
4/19/2022	E321791	F2_NWPI			< 0.010				2113		1.25			826		< 0.0015	4.79	0.126		< 0.00010			< 0.30	
4/19/2022	E321814	EV_ECOUT			< 0.010	< 0.010	3.47			2045	0.227	0.255		837			5.3	< 0.010	< 0.010	< 0.00010	0.00012		< 0.30	< 0.30
4/19/2022	0200203	EV_MC3			< 0.010	< 0.010	4.71			380.8	0.157	0.177		56.2			2.5	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	0.54
4/19/2022	E206231	EV_GT1																						
4/19/2022	E102685	EV_BC1																						
4/19/2022	E300091	EV_MC2			< 0.010	< 0.010	5.09			570	0.177	0.208		125			4.5	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	0.46
4/19/2022	200393	EV_ER1			< 0.010	< 0.010	3.90			562	0.220	0.250		114			4.6	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
4/19/2022	E321812	F2_BPO								1986							5.555							
4/20/2022	E300091	EV_MC2							577					121			2							
4/20/2022	0200097	EV_EC1							1902					762			4							
4/20/2022	E321791	F2_NWPI							1963					892		< 0.0015	4.7							
4/20/2022	E321812	F2_BPO							2092					872		0.0016	4.41							
4/20/2022	E321812	F2_BPO								2092							4.41							
4/20/2022	0200097	EV_EC1																						
4/21/2022	E300091	EV_MC2							579					109			2.2							
4/21/2022	0200097	EV_EC1							1903					781			3.9							
4/21/2022	E321812	F2_BPO							2091								4.64							
4/21/2022	E321791	F2_NWPI			< 0.010					1980	1.28			846		< 0.0015	4.7	0.129		< 0.00010			< 0.30	
4/21/2022	E321812	F2_BPO			< 0.010					2091	0.407			831		< 0.0015	4.64	0.085		< 0.00010			< 0.30	
4/21/2022	E321812	F2_BPO															4.95							
4/22/2022	E300091	EV_MC2							564					115			3.1							
4/22/2022	0200097	EV_EC1							1867					777			4.4							
4/22/2022	E321791	F2_NWPI							1836					834		< 0.0015	4.9							
4/22/2022	E321812	F2_BPO							1998								5.28							
4/22/2022	E321812	F2_BPO							1996					833		< 0.0015	5.32							
4/22/2022	E321812	F2_BPO							1996								6.72							
4/23/2022	0200097	EV_EC1							1872					758			4.4							
4/23/2022	E300091	EV_MC2							551					127			3.5							
4/23/2022	E321791	F2_NWPI							1974					845		< 0.0015	5							
4/23/2022	E321812	F2_BPO							1979					844		< 0.0015	6.5							
4/23/2022	E321812	F2_BPO							2094								6.82							

		Parameter	Selenosulfate, SeSO3	SeMe – selenomethionine CH3SeCH2CH2CH(NH2)CO2H	Silver	Silver	Sodium	Sodium	Specific conductivity, temperature corrected value (25 C)	Specific conductivity, temperature corrected value (25 C)	Strontium	Strontium	Strontium	Sulphate (As SO4)	Sulphide (as S)	Sulphide (as S)	Temperature, Field	Thallium	Thallium	Tin	Tin	Tin	Titanium	Titanium
		Fraction	D	D	D	T	T	T	N	N	D	T	T	D	D	T	N	D	T	D	T	T	D	T
		Unit	ug/l	ug/l	ug/l	ug/l	mg/l	ppm	us/cm	uS/cm at 25 C	mg/l	mg/l	ppm	mg/l	mg/l	mg/l	deg c	ug/l	ug/l	mg/l	mg/l	ppm	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
4/24/2022	E300091	EV_MC2							535					149			2.7							
4/24/2022	0200097	EV_EC1							1828					809			4							
4/24/2022	E321791	F2_NWPI							1933					881		< 0.0015	4.8							
4/24/2022	E321812	F2_BPO							2103								6.68							
4/24/2022	E321812	F2_BPO							1911					869		< 0.0015	6.9							
4/24/2022	E321812	F2_BPO							2044								7.71							
4/25/2022	E300091	EV_MC2																						
4/25/2022	E300091	EV_MC2	< 0.010	< 0.010	< 0.010	< 0.010	4.45		533		0.173	0.180		99.8		< 0.0015	2.9	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	1.04
4/25/2022	200393	EV_ER1			< 0.010	< 0.010	3.61		570		0.226	0.223		102		< 0.0015	4.1	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
4/25/2022	310168	EV_MC2A	< 0.010	< 0.010	< 0.010	< 0.010	4.12		476		0.160	0.165		79.1		< 0.0015	2.5	< 0.010	< 0.010	< 0.00010	< 0.00010		1.45	0.95
4/25/2022	E321812	F2_BPO	< 0.010	< 0.010	< 0.020	< 0.010	6.51		2054		0.386	0.387		852		< 0.0015	7.38	0.071	0.076	< 0.00020	< 0.00010		< 0.60	< 0.30
4/25/2022	0200203	EV_MC3	< 0.010	< 0.010	< 0.010	< 0.010	4.15		380.5		0.153	0.154		50.4		< 0.0015	2	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	1.34
4/25/2022	E321812	F2_BPO							2043								7.4							
4/25/2022	0200097	EV_EC1	< 0.010	< 0.010	< 0.010	< 0.010	3.28		1938		0.229	0.238		758		< 0.0015	4.2	0.012	0.014	< 0.00010	< 0.00010		< 0.30	< 0.30
4/25/2022	0200097	EV_EC1																						
4/25/2022	E321791	F2_NWPI	< 0.010	< 0.010	< 0.020	< 0.010	9.67		2060		1.16	1.17		851		< 0.0015	4.9	0.116	0.112	< 0.00020	< 0.00010		< 0.60	< 0.30
4/25/2022	E321814	EV_ECOUT	< 0.010	< 0.010	< 0.010	< 0.010	3.19		2079		0.234	0.226		787		< 0.0015	5.92	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
4/25/2022	E321812	F2_BPO							2041								8.82							
4/26/2022	E321791	F2_NWPI			< 0.010				2063		1.16			791		< 0.0015	5.1	0.110		< 0.00010			< 0.30	
4/26/2022	E300091	EV_MC2							512					106			3.4							
4/26/2022	E300091	EV_MC2																						
4/26/2022	E300091	EV_MC2																						
4/26/2022	0200097	EV_EC1							1926					741			4.4							
4/26/2022	E206231	EV_GT1	< 0.010	< 0.010	< 0.010	< 0.010	5.41		2025		0.599	0.592		897		< 0.0015	6.6	0.035	0.033	< 0.00010	< 0.00010		< 0.30	< 0.30
4/26/2022	E321812	F2_BPO			< 0.010				2025		0.406			879		< 0.0015	7.74	0.086		< 0.00010			< 0.30	
4/26/2022	E321812	F2_BPO							2067								7.74							
4/26/2022	0200203	EV_MC3			< 0.010	< 0.010	4.23		345.7		0.155	0.148		48.7			2.6	< 0.010	0.011	< 0.00010	< 0.00010		< 0.30	3.30
4/26/2022	E206231	EV_GT1																						
4/26/2022	E102685	EV_BC1	< 0.010	< 0.010	< 0.010	< 0.010	7.08		2006		0.723	0.719		895		< 0.0015	8.3	0.026	0.026	< 0.00010	< 0.00010		< 0.30	< 0.30
4/26/2022	E102685	EV_BC1																						
4/26/2022	E300091	EV_MC2			< 0.010	< 0.010	4.39		479.5		0.174	0.168		95.2			3.6	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 1.80
4/26/2022	200393	EV_ER1			< 0.010	< 0.010	3.67		541		0.203	0.216		106			5.5	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	1.74
4/26/2022	E321812	F2_BPO															8.03							
4/27/2022	E321791	F2_NWPI							2062					896		< 0.0015	4.9							
4/27/2022	0200097	EV_EC1							1888					773			4.3							
4/27/2022	E300091	EV_MC2							464.8					79.0			2.6							
4/27/2022	E300091	EV_MC2																						
4/27/2022	E300091	EV_MC2																						
4/27/2022	E321812	F2_BPO							2077					875		< 0.0015	6.67							
4/27/2022	E321812	F2_BPO							2077								6.67							
4/27/2022	0200097	EV_EC1																						
4/27/2022	E321812	F2_BPO															7.2							
4/28/2022	E300091	EV_MC2							464.9					83.9			2.1							
4/28/2022	0200097	EV_EC1							1920					792			3.9							
4/28/2022	E321791	F2_NWPI			< 0.010				2065		1.16			857		< 0.0015	4.9	0.122		< 0.00010			< 0.30	
4/28/2022	E321812	F2_BPO			< 0.010				2099		0.380			865		0.0018	6.1	0.100		< 0.00010			< 0.30	
4/28/2022	E321812	F2_BPO							2099								6.1							
4/28/2022	E321812	F2_BPO							2088								7.5							

		Parameter	Selenosulfate, SeSO3	SeMe – selenomethionine CH3SeCH2CH2CH(NH2)CO2H	Silver	Silver	Sodium	Sodium	Specific conductivity, temperature corrected value (25 C)	Specific conductivity, temperature corrected value (25 C)	Strontium	Strontium	Strontium	Sulphate (As SO4)	Sulphide (as S)	Sulphide (as S)	Temperature, Field	Thallium	Thallium	Tin	Tin	Tin	Titanium	Titanium
		Fraction	D	D	D	T	T	T	N	N	D	T	T	D	D	T	N	D	T	D	T	T	D	T
		Unit	ug/l	ug/l	ug/l	ug/l	mg/l	ppm	us/cm	uS/cm at 25 C	mg/l	mg/l	ppm	mg/l	mg/l	mg/l	deg c	ug/l	ug/l	mg/l	mg/l	ppm	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
4/29/2022	E321791	F2_NWPI							2061					718		< 0.0015	4.8							
4/29/2022	E300091	EV_MC2							473					89.0			2.3							
4/29/2022	0200097	EV_EC1							1840					655			3.8							
4/29/2022	E321812	F2_BPO							2106					751		< 0.0015	6.87							
4/29/2022	E321812	F2_BPO							2106								6.87							
4/29/2022	E321812	F2_BPO							2099								8.058							
4/30/2022	E300091	EV_MC2							515					104			2.8							
4/30/2022	0200097	EV_EC1							1927					815			3.9							
4/30/2022	E321791	F2_NWPI							2063					903		< 0.0015	4.9							
4/30/2022	E321812	F2_BPO							2116					897		< 0.0015	7.39							
4/30/2022	E321812	F2_BPO							2116								7.39							
4/30/2022	E321812	F2_BPO							2116								7.84							
5/1/2022	E300091	EV_MC2							447.1					108			3.7							
5/1/2022	E300091	EV_MC2																						
5/1/2022	E300091	EV_MC2																						
5/1/2022	0200097	EV_EC1							1941					815			4.8							
5/1/2022	E321791	F2_NWPI							2083					909		< 0.0015	5							
5/1/2022	E321812	F2_BPO							2055					914		0.0020	7.77							
5/1/2022	E321812	F2_BPO							2055								7.77							
5/1/2022	E321812	F2_BPO							2052								7.889							
5/2/2022	0200097	EV_EC1			< 0.010	< 0.010	3.61		1942		0.205	0.223		801		< 0.0015	4.4	0.013	0.011	< 0.00010	< 0.00010		< 0.30	< 0.30
5/1/2022	E321812	F2_BPO							2052								7.889							
5/2/2022	0200097	EV_EC1			< 0.010	< 0.010	3.61		1942		0.205	0.223		801		< 0.0015	4.4	0.013	0.011	< 0.00010	< 0.00010		< 0.30	< 0.30
5/2/2022	0200097	EV_EC1																						
5/2/2022	310168	EV_MC2A			< 0.010	< 0.010	3.78		397.5		0.131	0.141		63.9		< 0.0015	2.9	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	2.88
5/2/2022	0200203	EV_MC3			< 0.010	0.015	4.24		335		0.130	0.140		47.7		< 0.0015	2.5	< 0.010	0.011	< 0.00010	< 0.00010		< 0.30	< 3.90
5/2/2022	200393	EV_ER1			< 0.010	< 0.010	3.37		519		0.182	0.185		96.0		< 0.0015	4	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	1.34
5/2/2022	E321812	F2_BPO	< 0.010	< 0.010	< 0.010	< 0.010	8.84		2057		0.363	0.400		908		0.0019	7.51	0.097	0.095	< 0.00010	< 0.00010		< 0.30	< 0.30
5/2/2022	E300091	EV_MC2			< 0.010	< 0.010	4.01		430		0.137	0.146		78.3		< 0.0015	3.2	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	2.38
5/2/2022	E300091	EV_MC2																						
5/2/2022	E321814	EV_ECOUT			< 0.010	< 0.010	3.50		2101		0.213	0.227		836		< 0.0015	5.6	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	0.35
5/2/2022	E321812	F2_BPO							2136								7.4							
5/2/2022	E321791	F2_NWPI	< 0.010	< 0.010	< 0.010	< 0.010	11.2		2083		1.14	1.22		891		< 0.0015	5.1	0.119	0.114	< 0.00010	< 0.00010		< 0.30	< 0.30
5/2/2022	E321812	F2_BPO							2137								7.48							
5/3/2022	E300091	EV_MC2							411					84.8			3.3							
5/3/2022	0200097	EV_EC1							1935					821			4.4							
5/3/2022	E206231	EV_GT1			< 0.010	< 0.010	6.16		2044		0.561	0.584		972		< 0.0015	7.1	0.035	0.038	< 0.00010	< 0.00010		< 0.30	< 0.30
5/3/2022	E321812	F2_BPO			< 0.010				2060		0.386			901		< 0.0015	7.63	0.094		< 0.00010			< 0.30	
5/3/2022	E321812	F2_BPO							2060								7.63							
5/3/2022	0200203	EV_MC3			< 0.010	0.012	3.84		306.4		0.132	0.136		44.2			2.2	< 0.010	0.020	< 0.00010	< 0.00010		< 0.30	7.10
5/3/2022	E102685	EV_BC1			< 0.010	< 0.010	7.02		2017		0.679	0.720		973		< 0.0015	8.8	0.027	0.029	< 0.00010	< 0.00010		< 0.30	< 0.30
5/3/2022	E102685	EV_BC1			< 0.010	< 0.010	6.77		1972		0.678	0.688		861			9.5	0.027	0.027	< 0.00010	< 0.00010		< 0.30	< 0.30
5/3/2022	E321791	F2_NWPI			< 0.010				2080		1.18			898		< 0.0015	5	0.112		< 0.00010			< 0.30	
5/3/2022	E206231	EV_GT1			< 0.010	< 0.010	6.06		1996		0.545	0.552		945			7.1	0.038	0.037	< 0.00010	< 0.00010		< 0.30	< 0.30
5/3/2022	E300091	EV_MC2			< 0.010	< 0.010	3.70		399.3		0.136	0.145		71.3			3.6	< 0.010	0.014	< 0.00010	< 0.00010		< 0.30	6.22
5/3/2022	E321814	EV_ECOUT			< 0.010	< 0.010	3.28		2027		0.230	0.234		840			5.5	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
5/3/2022	200393	EV_ER1			< 0.010	< 0.010	3.20		485		0.188	0.189		91.0			6.1	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	1.89
5/3/2022	E321812	F2_BPO							2053								8.42							
5/4/2022	0200097	EV_EC1				5		4282					1.6						129			0.437		3000
5/4/2022	E300091	EV_MC2							368.3					55.1			3.7							

		Parameter	Selenosulfate, SeSO3	SeMe – selenomethionine CH3SeCH2CH2CH(NH2)CO2H	Silver	Silver	Sodium	Sodium	Specific conductivity, temperature corrected value (25 C)	Specific conductivity, temperature corrected value (25 C)	Strontium	Strontium	Strontium	Sulphate (As SO4)	Sulphide (as S)	Sulphide (as S)	Temperature, Field	Thallium	Thallium	Tin	Tin	Tin	Titanium	Titanium
		Fraction	D	D	D	T	T	T	N	N	D	T	T	D	D	T	N	D	T	D	T	T	D	T
		Unit	ug/l	ug/l	ug/l	ug/l	mg/l	ppm	us/cm	uS/cm at 25 C	mg/l	mg/l	ppm	mg/l	mg/l	mg/l	deg c	ug/l	ug/l	mg/l	mg/l	ppm	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
5/4/2022	0200097	EV_EC1							1930					772			5.1							
5/4/2022	E321812	F2_BPO							2062					875		0.0015	8.19							
5/4/2022	E321812	F2_BPO							2062								8.19							
5/4/2022	E321791	F2_NWPI							2076					852		< 0.0015	4.9							
5/4/2022	0200097	EV_EC1			< 0.010	< 0.010	3.62		1882		0.219	0.241		796		< 0.0015	5.4	0.013	0.015	< 0.00010	< 0.00010		< 0.30	< 0.30
5/4/2022	E321812	F2_BPO							2056								8.603							
5/4/2022	0200203	EV_MC3			< 0.010	0.026	3.40		259.7		0.113	0.126		35.2		< 0.0015	5.9	< 0.010	0.035	< 0.00010	< 0.00010		1.42	< 19.5
5/4/2022	E321814	EV_ECOUT			< 0.010	< 0.010	3.43		2047		0.222	0.234		841		< 0.0015	5.6	< 0.010	< 0.010	0.00106	< 0.00010		< 0.30	< 0.30
5/5/2022	0200097	EV_EC1				< 1		1640					0.240						89			0.255		757
5/5/2022	E300091	EV_MC2							355.8					65.5			3.3							
5/5/2022	0200097	EV_EC1							1929					778			4.8							
5/5/2022	E321812	F2_BPO							2072								7.61							
5/5/2022	E321812	F2_BPO			< 0.010	< 0.010	9.00		2072		0.390	0.407		879		< 0.0015	7.61	0.098	0.107	< 0.00010	< 0.00010		< 0.30	< 0.30
5/5/2022	0200097	EV_EC1			< 0.010	< 0.010	3.18		1883		0.222	0.219		797		< 0.0015	5	0.011	0.013	< 0.00010	< 0.00010		< 0.30	< 0.30
5/5/2022	0200203	EV_MC3			< 0.010	0.031	2.83		245		0.103	0.102		31.9		< 0.0015	3.8	< 0.010	0.041	< 0.00010	< 0.00010		< 0.30	16.0
5/5/2022	E321814	EV_ECOUT			< 0.010	< 0.010	3.26		2044		0.221	0.222		832		< 0.0015	5.6	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
5/5/2022	E321812	F2_BPO							2068								8							
5/6/2022	0200097	EV_EC1							1984					780			2.5							
5/6/2022	0200097	EV_EC1			< 0.010	< 0.010	3.34		1835		0.214	0.225		740		< 0.0015	5	< 0.010	0.013	< 0.00010	< 0.00010		< 0.30	< 0.30
5/6/2022	E321812	F2_BPO							2054					858		< 0.0015	7.19							
5/6/2022	0200203	EV_MC3			< 0.010	< 0.010	2.13		198.4		0.0812	0.0928		21.4		0.0019	2.5	< 0.010	0.027	< 0.00010	< 0.00010		0.51	5.50
5/6/2022	E300091	EV_MC2							306.8					30.4			3.2							
5/6/2022	E321814	EV_ECOUT			< 0.010	< 0.010	3.40		2022		0.221	0.232		803		< 0.0015	5.4	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
5/6/2022	E321812	F2_BPO							2129								7.47							
5/6/2022	E321791	F2_NWPI			< 0.010				2074		1.12			834		< 0.0015	5	0.105		< 0.00010			< 0.30	
5/7/2022	E321791	F2_NWPI							2034					851		< 0.0015	5							
5/7/2022	0200097	EV_EC1							1912					759			4.9							
5/7/2022	0200097	EV_EC1			< 0.010	< 0.010	3.24		1852		0.210	0.213		802		< 0.0015	4.7	0.011	0.011	< 0.00010	< 0.00010		< 0.30	< 0.30
5/7/2022	0200203	EV_MC3			< 0.010	0.036	2.47		216.7		0.0870	0.0933		25.2		< 0.0015	2.5	< 0.010	0.042	< 0.00010	< 0.00010		0.43	6.94
5/7/2022	E300091	EV_MC2							316.6					46.5			3.1							
5/7/2022	E321812	F2_BPO							2133					869		< 0.0015	7.06							
5/7/2022	E321812	F2_BPO							2057								7.08							
5/7/2022	E321814	EV_ECOUT			< 0.010	< 0.010	3.32		2020		0.222	0.229		849		< 0.0015	5.4	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
5/7/2022	E321812	F2_BPO							2053								7.88							
5/8/2022	E321791	F2_NWPI							2080					850		< 0.0015	4.9							
5/8/2022	0200097	EV_EC1							1911					757			4.7							
5/8/2022	0200097	EV_EC1			< 0.010	< 0.010	3.13		1848		0.214	0.216		769		< 0.0015	4.5	0.011	0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
5/8/2022	0200203	EV_MC3			< 0.010	0.021	2.76		231.3		0.0969	0.0945		27.3		< 0.0015	2.5	< 0.010	0.027	< 0.00010	< 0.00010		1.60	4.56
5/8/2022	E300091	EV_MC2							322.6					52.5			3.1							
5/8/2022	E321812	F2_BPO							2088					869		< 0.0015	6.81							
5/8/2022	E321812	F2_BPO							2092								6.812							
5/8/2022	E321814	EV_ECOUT			< 0.010	< 0.010	3.45		2022		0.225	0.229		820		< 0.0015	5.3	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
5/8/2022	E321812	F2_BPO															7.11							
5/9/2022	E300091	EV_MC2	< 0.010	< 0.010	< 0.010	0.012	3.84		354.7		0.118	0.121		55.5		< 0.0015	2.7	< 0.010	0.016	< 0.00010	0.00011		< 0.30	4.60
5/9/2022	E321791	F2_NWPI	< 0.010	< 0.010	< 0.010	< 0.010	11.0		2022		1.22	1.26		875		< 0.0015	5	0.114	0.113	< 0.00010	< 0.00010		< 0.30	0.72
5/9/2022	E321812	F2_BPO	< 0.010	< 0.010	< 0.010	< 0.010	9.64		2092		0.394	0.406		885		< 0.0015	6.08	0.095	0.099	< 0.00010	< 0.00010		< 0.30	< 0.30
5/9/2022	310168	EV_MC2A			< 0.010	0.015	3.10				0.102	0.106		37.2		< 0.0015		< 0.010	0.016	< 0.00010	< 0.00010		< 0.30	< 5.10
5/9/2022	E321812	F2_BPO							2092								6.05							

		Parameter	Selenosulfate, SeSO3	SeMe – selenomethionine CH3SeCH2CH2CH(NH2)CO2H	Silver	Silver	Sodium	Sodium	Specific conductivity, temperature corrected value (25 C)	Specific conductivity, temperature corrected value (25 C)	Strontium	Strontium	Strontium	Sulphate (As SO4)	Sulphide (as S)	Sulphide (as S)	Temperature, Field	Thallium	Thallium	Tin	Tin	Tin	Titanium	Titanium
		Fraction	D	D	D	T	T	T	N	N	D	T	T	D	D	T	N	D	T	D	T	T	D	T
		Unit	ug/l	ug/l	ug/l	ug/l	mg/l	ppm	us/cm	uS/cm at 25 C	mg/l	mg/l	ppm	mg/l	mg/l	mg/l	deg c	ug/l	ug/l	mg/l	mg/l	ppm	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
5/9/2022	0200097	EV_EC1			< 0.010	< 0.010	3.17		1882		0.211	0.210		785			4.4	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
5/9/2022	0200203	EV_MC3			< 0.010	0.014	3.08		234.3		0.101	0.105		30.8			2.3	< 0.010	0.019	< 0.00010	< 0.00010		1.31	13.0
5/9/2022	0200097	EV_EC1	< 0.010	< 0.010	< 0.010	< 0.010	3.47		1882		0.218	0.217		762		< 0.0015	4.11	0.012	0.011	< 0.00010	< 0.00010		< 0.30	< 0.30
5/9/2022	200393	EV_ER1			< 0.010	< 0.010	2.73		4047		0.157	0.154		61.5		< 0.0015	4.3	< 0.010	0.012	< 0.00010	< 0.00010		< 0.30	6.01
5/9/2022	E321814	EV_ECOUT			< 0.010	< 0.010	3.25		1909		0.226	0.226		823			5.5	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
5/9/2022	E321814	EV_ECOUT	< 0.010	< 0.010	< 0.010	< 0.010	3.54		2025		0.233	0.223		832		< 0.0015	5.71	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
5/9/2022	E321812	F2_BPO							2090								6.83							
5/10/2022	E300091	EV_MC2							337.7					73.7			2.9							
5/10/2022	0200097	EV_EC1							1894					794			4.6							
5/10/2022	0200097	EV_EC1							1894								4.6							
5/10/2022	E321812	F2_BPO							2092								6.00							
5/10/2022	E321791	F2_NWPI			< 0.010				2053		1.20			905		< 0.0015	4.7	0.113		< 0.00010			< 0.30	
5/10/2022	E321812	F2_BPO			< 0.010				2089		0.392			928		< 0.0015	6.33	0.106		< 0.00010			< 0.30	
5/10/2022	E206231	EV_GT1	< 0.010	< 0.010	< 0.010	< 0.010	7.08		1950		0.495	0.557		940		< 0.0015	6.9	0.039	0.036	< 0.00010	< 0.00010		< 0.30	< 0.30
5/10/2022	E206231	EV_GT1							1950								6.9							
5/10/2022	E321812	F2_BPO							2091								6.45							
5/10/2022	0200097	EV_EC1			< 0.010	< 0.010	3.26		1751		0.212	0.221		738			4.6	0.011	0.011	< 0.00010	< 0.00010		< 0.30	< 0.30
5/10/2022	0200203	EV_MC3			< 0.010	0.016	3.43		264.6		0.112	0.118		33.5			2.6	< 0.010	0.022	< 0.00010	< 0.00010		< 0.30	< 12.0
5/10/2022	E102685	EV_BC1	< 0.010	< 0.010	< 0.010	0.019	7.38		1963		0.664	0.740		948		< 0.0015	10	0.030	0.025	< 0.00010	< 0.00010		< 0.30	< 0.30
5/10/2022	E102685	EV_BC1							1963								10							
5/10/2022	E321814	EV_ECOUT			< 0.010	< 0.010	3.26		2019		0.226	0.230		789			5.5	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
5/10/2022	E102685	EV_BC1							1963								10							
5/10/2022	E321814	EV_ECOUT			< 0.010	< 0.010	3.26		2019		0.226	0.230		789			5.5	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
5/10/2022	E321814	EV_ECOUT							2025								5.7							
5/10/2022	E321812	F2_BPO															7.19							
5/11/2022	E300091	EV_MC2							364.1								2.7							
5/11/2022	0200097	EV_EC1							1892								4.3							
5/11/2022	E321812	F2_BPO							2097								6.65							
5/11/2022	E321791	F2_NWPI							2051					834		< 0.0015	5.2							
5/11/2022	E321812	F2_BPO							2097					927		< 0.0015	6.65							
5/11/2022	310168	EV_MC2A	< 0.010	< 0.010					290.8								2.2							
5/11/2022	0200203	EV_MC3	< 0.010	< 0.010	< 0.010	0.016	3.36		253.3		0.107	0.105		29.9		< 0.0015	2.1	0.010	0.018	< 0.00010	< 0.00010		3.86	4.81
5/11/2022	E300091	EV_MC2			< 0.010	< 0.010	3.58		362.9		0.129	0.122		54.3			3.7	< 0.010	0.012	< 0.00010	< 0.00010		< 0.30	3.50
5/11/2022	E102685	EV_BC1																						
5/11/2022	E206231	EV_GT1																						
5/11/2022	E321812	F2_BPO							2093								8.03							
5/12/2022	E300091	EV_MC2							368.8								2.6							
5/12/2022	0200097	EV_EC1							1941								4							
5/12/2022	E321791	F2_NWPI			0.034				2052		1.23			885		< 0.0015	5.1	0.106		< 0.00010			< 0.30	
5/12/2022	E321812	F2_BPO							2135								7.6							
5/12/2022	E321812	F2_BPO			< 0.010				2101		0.393			895		0.0021	7.8	0.102		< 0.00010			< 0.30	
5/12/2022	200393	EV_ER1			< 0.010	< 0.010	2.88		431.4		0.182	0.175		68.4			6.9	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 1.20
5/12/2022	E321812	F2_BPO							2094								9.039							
5/13/2022	E321791	F2_NWPI							2055					880		< 0.0015	4.9							
5/13/2022	0200097	EV_EC1							1917								4.5							
5/13/2022	E321812	F2_BPO							2102					900		< 0.0015	7.7							
5/13/2022	E300091	EV_MC2							399.3								3.4							
5/13/2022	E321812	F2_BPO							2110								7.77							
5/13/2022	E321812	F2_BPO							2102								7.74							
5/14/2022	E321791	F2_NWPI							2053					890		< 0.0015	5							

		Parameter	Selenosulfate, SeSO3	SeMe – selenomethionine CH3SeCH2CH2CH(NH2)CO2H	Silver	Silver	Sodium	Sodium	Specific conductivity, temperature corrected value (25 C)	Specific conductivity, temperature corrected value (25 C)	Strontium	Strontium	Strontium	Sulphate (As SO4)	Sulphide (as S)	Sulphide (as S)	Temperature, Field	Thallium	Thallium	Tin	Tin	Tin	Titanium	Titanium
		Fraction	D	D	D	T	T	T	N	N	D	T	T	D	D	T	N	D	T	D	T	T	D	T
		Unit	ug/l	ug/l	ug/l	ug/l	mg/l	ppm	us/cm	uS/cm at 25 C	mg/l	mg/l	ppm	mg/l	mg/l	mg/l	deg c	ug/l	ug/l	mg/l	mg/l	ppm	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
5/14/2022	0200097	EV_EC1							1920								4.2							
5/14/2022	E321812	F2_BPO							2120					914		0.0019	6.5							
5/14/2022	E321812	F2_BPO							2120								6.5							
5/14/2022	E300091	EV_MC2							398.7								2.7							
5/14/2022	E321812	F2_BPO							2101								7.93							
5/15/2022	E300091	EV_MC2							384								4.1							
5/15/2022	0200097	EV_EC1							1919								4.8							
5/15/2022	E321812	F2_BPO							2155					917		0.0015	7.13							
5/15/2022	E321791	F2_NWPI							2057					895		< 0.0015	5							
5/15/2022	E321812	F2_BPO							2155								7.13							
5/15/2022	E321812	F2_BPO							2151								8.601							
5/16/2022	E321791	F2_NWPI	< 0.010	< 0.010	0.022	0.030	11.6		2019		1.28	1.23		930		< 0.0015	5.1	0.120	0.105	< 0.00010	< 0.00010		< 0.30	0.72
5/16/2022	E300091	EV_MC2			< 0.010	< 0.010	3.78		350		0.125	0.130		60.0		< 0.0015	4.8	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	1.42
5/16/2022	E300091	EV_MC2																						
5/16/2022	E321812	F2_BPO	< 0.010	< 0.010	< 0.010	0.010	10.8		2156		0.409	0.407		927		< 0.0015	8.32	0.114	0.104	< 0.00010	< 0.00010		< 0.30	< 0.30
5/16/2022	E321812	F2_BPO							2156								8.32							
5/16/2022	0200097	EV_EC1			< 0.010	0.011	3.56		1892		0.232	0.226		821		< 0.0015	5.5	0.010	0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
5/16/2022	0200097	EV_EC1																						
5/16/2022	0200203	EV_MC3			< 0.010	< 0.010	3.85		276.6		0.120	0.119		40.6		< 0.0015	4.5	< 0.010	0.011	< 0.00010	< 0.00010		< 0.30	2.38
5/16/2022	310168	EV_MC2A			< 0.010	< 0.010	3.54		325.9		0.124	0.125		51.0		< 0.0015	4.9	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	1.65
5/16/2022	E321814	EV_ECOUT			0.022	< 0.010	3.64		2080		0.223	0.234		844		< 0.0015	5.77	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
5/16/2022	200393	EV_ER1			< 0.010	< 0.010	3.01		426.2		0.170	0.175		71.8		< 0.0015	6.7	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	0.84
5/17/2022	E300091	EV_MC2			< 0.010	< 0.010	2.69		296.5		0.109	0.122		45.4			3.9	< 0.010	0.012	< 0.00010	< 0.00010		0.50	2.79
5/17/2022	E321791	F2_NWPI			< 0.010				2027		1.28			843		< 0.0015	5.1	0.115		< 0.00010			< 0.30	
5/17/2022	0200097	EV_EC1							1892								5.1							
5/17/2022	E206231	EV_GT1			< 0.010	< 0.010	4.10		1793		0.556	0.540		852		< 0.0015	9.3	0.036	0.033	< 0.00010	< 0.00010		< 0.30	0.88
5/17/2022	E321812	F2_BPO			< 0.010				2150		0.416			856		0.0016	7.98	0.106		< 0.00010			< 0.30	
5/17/2022	E300091	EV_MC2							280.1								3.8							
5/17/2022	E102685	EV_BC1			< 0.020	< 0.010	7.94		1961		0.802	0.762		933		< 0.0015	11.4	0.032	0.030	< 0.00020	< 0.00010		< 0.60	< 0.30
5/17/2022	200393	EV_ER1			< 0.010	< 0.010	2.37		377		0.156	0.182		57.8			6.4	< 0.010	< 0.010	< 0.00010	0.00012		< 0.30	2.91
5/17/2022	0200203	EV_MC3			< 0.010	0.013	2.46		227.5		0.0949	0.112		29.1			5.6	< 0.010	0.016	< 0.00010	0.00012		< 0.30	4.24
5/17/2022	E206231	EV_GT1																						
5/17/2022	E102685	EV_BC1																						
5/18/2022	E321791	F2_NWPI							2025					874		< 0.0015	5							
5/18/2022	0200097	EV_EC1							1895								4.7							
5/18/2022	E321812	F2_BPO							2157					882		< 0.0015	7.34							
5/18/2022	E321812	F2_BPO							2157								7.34							
5/18/2022	E300091	EV_MC2							303.4								3.4							
5/18/2022	0200097	EV_EC1																						
5/19/2022	E321791	F2_NWPI			< 0.010				2022		1.22			880		< 0.0015	5	0.109		< 0.00010			< 0.30	
5/19/2022	E300091	EV_MC2							312.7								3.1							
5/19/2022	E321812	F2_BPO							2104								6.5							
5/19/2022	0200097	EV_EC1							1892								4.9							
5/19/2022	E321812	F2_BPO			< 0.010				2104		0.385			893		< 0.0015	6.5	0.103		< 0.00010			< 0.30	
5/20/2022	E321791	F2_NWPI							2026					892		< 0.0015	5							
5/20/2022	E321791	F2_NWPI														< 0.0015								
5/20/2022	E300091	EV_MC2							326.4								3.5							
5/20/2022	0200097	EV_EC1							1891								4.8							

		Parameter	Selenosulfate, SeSO3	SeMe – selenomethionine CH3SeCH2CH2CH(NH2)CO2H	Silver	Silver	Sodium	Sodium	Specific conductivity, temperature corrected value (25 C)	Specific conductivity, temperature corrected value (25 C)	Strontium	Strontium	Strontium	Sulphate (As SO4)	Sulphide (as S)	Sulphide (as S)	Temperature, Field	Thallium	Thallium	Tin	Tin	Tin	Titanium	Titanium
		Fraction	D	D	D	T	T	T	N	N	D	T	T	D	D	T	N	D	T	D	T	T	D	T
		Unit	ug/l	ug/l	ug/l	ug/l	mg/l	ppm	us/cm	uS/cm at 25 C	mg/l	mg/l	ppm	mg/l	mg/l	mg/l	deg c	ug/l	ug/l	mg/l	mg/l	ppm	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
5/20/2022	E321812	F2_BPO							2150								5.9							
5/20/2022	E321812	F2_BPO							2144					912			5.99							
5/20/2022	E321812	F2_BPO														< 0.0015								
5/20/2022	E321812	F2_BPO							2143								6.5							
5/21/2022	E321791	F2_NWPI							2031					889		< 0.0015	5.1							
5/21/2022	E300091	EV_MC2							339.1								3.2							
5/21/2022	0200097	EV_EC1							1894								4.5							
5/21/2022	E321812	F2_BPO							2147								6.2							
5/21/2022	E321812	F2_BPO							2157					892		< 0.0015	6.18							
5/21/2022	E321812	F2_BPO															6.65							
5/22/2022	E321791	F2_NWPI							2017					888		< 0.0015	5.1							
5/22/2022	E300091	EV_MC2							367								2.8							
5/22/2022	0200097	EV_EC1							1901								4.2							
5/22/2022	E321812	F2_BPO							2158								7.05							
5/22/2022	E321812	F2_BPO							2153					921		< 0.0015	7.2							
5/23/2022	E321791	F2_NWPI	< 0.010	< 0.010	< 0.010	0.013	10.6		1931		1.25	1.27		828		< 0.0015	5.1	0.115	0.120	< 0.00010	< 0.00010		< 0.30	< 0.60
5/23/2022	E321812	F2_BPO	< 0.010	< 0.010	< 0.010	< 0.010	11.0		2155		0.401	0.426		870		0.0016	7.49	0.108	0.106	< 0.00010	< 0.00010		< 0.30	< 0.30
5/23/2022	E321812	F2_BPO							2155								7.50							
5/23/2022	E300091	EV_MC2	< 0.010	< 0.010	< 0.010	< 0.010	3.48		359.5		0.126	0.133		64.0		< 0.0015	3.1	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	2.40
5/23/2022	310168	EV_MC2A	< 0.010	< 0.010	< 0.010	< 0.010	2.89		319.4		0.116	0.120		50.1		< 0.0015	2.8	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 3.30
5/23/2022	0200203	EV_MC3	< 0.010	< 0.010	< 0.010	< 0.010	3.26		267.8		0.114	0.119		39.4		< 0.0015	2.6	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	1.59
5/23/2022	E321812	F2_BPO							2110								7.53							
5/23/2022	0200097	EV_EC1	< 0.010	< 0.010	< 0.010	< 0.010	3.45		1843		0.218	0.235		787		< 0.0015	4.4	< 0.010	0.011	< 0.00010	< 0.00010		< 0.30	< 0.30
5/23/2022	0200097	EV_EC1							1843								4.4							
5/23/2022	200393	EV_ER1			< 0.010	< 0.010	2.68		412.7		0.172	0.184		69.3		< 0.0015	5.9	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	0.84
5/23/2022	E321814	EV_ECOUT	< 0.010	< 0.010	< 0.010	< 0.010	3.40		2061		0.227	0.234		851		< 0.0015	6.22	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
5/23/2022	E321814	EV_ECOUT							2061								6.2							
5/23/2022	E321812	F2_BPO															8.75							
5/24/2022	0200097	EV_EC1							1843								4.6							
5/24/2022	E321791	F2_NWPI			< 0.010				1976		1.35			830		< 0.0015	5.2	0.117		< 0.00010			0.36	
5/24/2022	E300091	EV_MC2			< 0.010	< 0.010	2.91		359.4		0.115	0.124		58.2			4.1	< 0.010	< 0.010	0.00019	< 0.00010		< 0.30	< 2.40
5/24/2022	E102685	EV_BC1	< 0.010	< 0.010	< 0.010	< 0.020	7.75		2018		0.932	0.879		947		< 0.0015	10.5	0.032	0.030	< 0.00010	< 0.00020		< 0.30	< 0.60
5/24/2022	E102685	EV_BC1							2018								10.5							
5/24/2022	E300091	EV_MC2							338.1								3.8							
5/24/2022	E321812	F2_BPO			< 0.010				2141		0.418			849		0.0021	8.08	0.106		< 0.00010			< 0.30	
5/24/2022	E321812	F2_BPO							2141								8.08							
5/24/2022	E206231	EV_GT1	< 0.010	< 0.010	< 0.010	< 0.010	8.26		1988		0.532	0.524		908		< 0.0015	6.7	0.037	0.038	< 0.00010	< 0.00010		< 0.30	< 0.30
5/24/2022	E206231	EV_GT1							1988								6.7							
5/24/2022	0200203	EV_MC3			< 0.010	< 0.010	2.72		256.2		0.103	0.108		33.1			5.3	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	2.73
5/24/2022	E206231	EV_GT1																						
5/24/2022	E102685	EV_BC1																						
5/24/2022	200393	EV_ER1			< 0.010	< 0.010	2.42		409.9		0.155	0.172		61.7			7.6	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	1.11
5/24/2022	E321812	F2_BPO							2152								9.22							
5/25/2022	E321791	F2_NWPI							1960					849		< 0.0015	5.4							
5/25/2022	E300091	EV_MC2							313.4								4.7							
5/25/2022	0200097	EV_EC1							1841								5.4							
5/25/2022	E321812	F2_BPO							2129								8.4							
5/25/2022	E321812	F2_BPO							2129					877		0.0022	8.4							

		Parameter	Selenosulfate, SeSO3	SeMe – selenomethionine CH3SeCH2CH2CH(NH2)CO2H	Silver	Silver	Sodium	Sodium	Specific conductivity, temperature corrected value (25 C)	Specific conductivity, temperature corrected value (25 C)	Strontium	Strontium	Strontium	Sulphate (As SO4)	Sulphide (as S)	Sulphide (as S)	Temperature, Field	Thallium	Thallium	Tin	Tin	Tin	Titanium	Titanium
		Fraction	D	D	D	T	T	T	N	N	D	T	T	D	D	T	N	D	T	D	T	T	D	T
		Unit	ug/l	ug/l	ug/l	ug/l	mg/l	ppm	us/cm	uS/cm at 25 C	mg/l	mg/l	ppm	mg/l	mg/l	mg/l	deg c	ug/l	ug/l	mg/l	mg/l	ppm	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
5/25/2022	0200097	EV_EC1																						
5/25/2022	E321812	F2_BPO							2107								9.44							
5/26/2022	E321791	F2_NWPI			< 0.010				1960		1.27			884		< 0.0015	5.2	0.103		< 0.00010			< 0.30	
5/26/2022	E300091	EV_MC2							297.7								4.3							
5/26/2022	0200097	EV_EC1							1836								5.3							
5/26/2022	E321812	F2_BPO			< 0.010				2157		0.418			899		0.0022	8.13	0.102		< 0.00010			< 0.30	
5/26/2022	E321812	F2_BPO							2157								8.13							
5/26/2022	E321812	F2_BPO							2149								8.5							
5/27/2022	E321791	F2_NWPI							1970					851		< 0.0015	5.1							
5/27/2022	E300091	EV_MC2							272.4								4.6							
5/27/2022	0200097	EV_EC1							1848								5.6							
5/27/2022	E321812	F2_BPO							2154					854		0.0020	8.14							
5/27/2022	E321812	F2_BPO							2154								8.14							
5/27/2022	E321812	F2_BPO							2144								8.659							
5/28/2022	E321791	F2_NWPI							1974					841		< 0.0015	5.1							
5/28/2022	0200097	EV_EC1							1840								5.5							
5/28/2022	E300091	EV_MC2							232.3								4							
5/28/2022	E321812	F2_BPO							2147					840		0.0022	8.07							
5/28/2022	E321812	F2_BPO							2147								8.07							
5/28/2022	E321812	F2_BPO							2095								8.35							
5/29/2022	E321791	F2_NWPI							1967					828		< 0.0015	5							
5/29/2022	0200097	EV_EC1							1847								4.6							
5/29/2022	E300091	EV_MC2							244.6								3.1							
5/29/2022	E321812	F2_BPO							2111					847		< 0.0015	7.45							
5/29/2022	E321812	F2_BPO							2111								7.45							
5/29/2022	E321812	F2_BPO							2084								7.699							
5/30/2022	E321791	F2_NWPI	< 0.010	< 0.010	0.046	0.045	10.9		2031		1.26	1.26		900		< 0.0015	5.1	0.112	0.117	< 0.00010	< 0.00010		< 0.30	0.96
5/30/2022	E321814	EV_ECOUT	< 0.010	< 0.010	< 0.020	0.032	3.03		2034		0.221	0.240		817		< 0.0015	5.2	< 0.020	< 0.010	< 0.00020	< 0.00010		< 0.60	< 0.30
5/30/2022	E321812	F2_BPO	< 0.010	< 0.010	0.010	< 0.020	11.0		2110		0.417	0.417		912		0.0023	7.7	0.106	0.106	0.00061	< 0.00020		< 0.30	< 0.60
5/30/2022	E321812	F2_BPO							2110								7.7							
5/30/2022	E300091	EV_MC2			0.012	0.020	1.92		288.6		0.0910	0.0965		45.4		< 0.0015	4.1	< 0.010	0.018	< 0.00010	< 0.00010		< 0.30	4.28
5/30/2022	E300091	EV_MC2																						
5/30/2022	200393	EV_ER1			0.024	0.035	1.65		334.5		0.131	0.144		44.9		< 0.0015	5.1	< 0.010	0.015	< 0.00010	< 0.00010		< 0.30	3.46
5/30/2022	0200097	EV_EC1			0.013	0.014	2.99		1902		0.219	0.244		800		< 0.0015	5.4	0.011	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
5/30/2022	0200097	EV_EC1																						
5/30/2022	0200203	EV_MC3			0.016	0.024	1.92		217		0.0850	0.0927		27.5		< 0.0015	5	< 0.010	0.017	< 0.00010	< 0.00010		< 0.30	4.40
5/30/2022	310168	EV_MC2A			0.010	0.017	1.78		253.3		0.0895	0.0957		31.4		< 0.0015	5.1	< 0.010	0.014	< 0.00010	< 0.00010		< 0.30	3.61
5/30/2022	E321812	F2_BPO							2081								7.94							
5/31/2022	E321791	F2_NWPI			0.013				2044		1.27			955		< 0.0015	5.1	0.114		< 0.00010			< 0.30	
5/31/2022	E300091	EV_MC2			< 0.010	< 0.010	2.40		290.3		0.0985	0.0978		46.4			3.5	< 0.010	0.017	< 0.00010	< 0.00010		< 0.30	4.36
5/31/2022	E102685	EV_BC1			0.021	< 0.020	8.50		2077		0.851	0.897		913		< 0.0015	10.9	0.035	0.034	< 0.00010	< 0.00020		< 0.30	< 0.60
5/31/2022	E300091	EV_MC2							311.9								3.5							
5/31/2022	E321812	F2_BPO			< 0.010				2095		0.419			975		< 0.0015	7.8	0.103		< 0.00010			< 0.30	
5/31/2022	E321812	F2_BPO							2095								7.8							
5/31/2022	E206231	EV_GT1			0.012	0.013	8.94		2032		0.554	0.577		842		< 0.0015	7.8	0.047	0.045	< 0.00010	< 0.00010		< 0.30	< 0.30
5/31/2022	0200097	EV_EC1							1911								4.7							
5/31/2022	0200097	EV_EC1																						
5/31/2022	0200203	EV_MC3			< 0.010	< 0.010	2.15		216		0.0855	0.0858		28.6			6	< 0.010	0.018	< 0.00010	< 0.00010		< 0.30	4.90

Parameter			Selenosulfate, SeSO3	SeMe – selenomethionine CH3SeCH2CH2CH(NH2)CO2H	Silver	Silver	Sodium	Sodium	Specific conductivity, temperature corrected value (25 C)	Specific conductivity, temperature corrected value (25 C)	Strontium	Strontium	Strontium	Sulphate (As SO4)	Sulphide (as S)	Sulphide (as S)	Temperature, Field	Thallium	Thallium	Tin	Tin	Tin	Titanium	Titanium
Fraction			D	D	D	T	T	T	N	N	D	T	T	D	D	T	N	D	T	D	T	T	D	T
Unit			ug/l	ug/l	ug/l	ug/l	mg/l	ppm	us/cm	uS/cm at 25 C	mg/l	mg/l	ppm	mg/l	mg/l	mg/l	deg c	ug/l	ug/l	mg/l	mg/l	ppm	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
5/31/2022	E206231	EV_GT1																						
5/31/2022	E102685	EV_BC1																						
5/31/2022	200393	EV_ER1			< 0.010	< 0.010	1.90		333.6		0.144	0.138		45.5			6.1	< 0.010	0.016	0.00011	< 0.00010		< 0.30	3.32
5/31/2022	E321812	F2_BPO							2080								7.84							
6/1/2022	E321791	F2_NWPI							2033					861		< 0.0015	5.1							
6/1/2022	E300091	EV_MC2							317.3								3.5							
6/1/2022	E321812	F2_BPO							2102					885		0.0016	7.78							
6/1/2022	0200097	EV_EC1							1916								4.6							
6/1/2022	E321812	F2_BPO							2102								7.78							
6/1/2022	E321812	F2_BPO							2078								8.08							
6/2/2022	0200097	EV_EC1	< 0.010	< 0.010	< 0.010	< 0.010	3.23		1916		0.203	0.222		765		< 0.0015	4.8	< 0.010	0.012	< 0.00010	< 0.00010		< 0.30	< 0.30
6/2/2022	E300091	EV_MC2							335.7								3.8							
6/2/2022	E321791	F2_NWPI			< 0.010				2023		1.14			870		< 0.0015	5.1	0.107		< 0.00010			< 0.30	
6/2/2022	E321812	F2_BPO							2102								8.29							
6/2/2022	E321814	EV_ECOUT	< 0.010	< 0.010	< 0.010	< 0.010	3.19		2034		0.226	0.224		843		< 0.0015	5.5	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
6/2/2022	E321812	F2_BPO			< 0.010				2105		0.418			884		< 0.0015	8.4	0.101		< 0.00010			< 0.30	
6/2/2022	E321812	F2_BPO															8.62							
6/3/2022	E321791	F2_NWPI							2031					974		< 0.0015	5.1							
6/3/2022	E300091	EV_MC2							301.7								3.9							
6/3/2022	0200097	EV_EC1							1916								5							
6/3/2022	E321812	F2_BPO							2100								8.3							
6/3/2022	E321812	F2_BPO							2108					1010		< 0.0015	8.6							
6/3/2022	E321812	F2_BPO							2072								8.6							
6/4/2022	E321791	F2_NWPI							2041					883		< 0.0015	5.1							
6/4/2022	E300091	EV_MC2							276.6								4.6							
6/4/2022	0200097	EV_EC1							1929								5.6							
6/4/2022	E321812	F2_BPO							2114								8.56							
6/4/2022	E321812	F2_BPO							2114					905		< 0.0015	8.6							
6/4/2022	E321812	F2_BPO							2108								8.55							
6/5/2022	E321791	F2_NWPI							2001					821		< 0.0015	5.3							
6/5/2022	E300091	EV_MC2							267.8								4.7							
6/5/2022	0200097	EV_EC1							1902								5.8							
6/5/2022	E321812	F2_BPO							2067					846		< 0.0015	8.7							
6/5/2022	E321812	F2_BPO							2067								8.7							
6/5/2022	E321812	F2_BPO							2131								8.7							
6/6/2022	E321791	F2_NWPI	< 0.010	< 0.010	< 0.010	< 0.010	11.5		2003		1.20	1.22		1000		< 0.0015	5.1	0.112	0.112	< 0.00010	< 0.00010		< 0.30	< 0.30
6/6/2022	E300091	EV_MC2	< 0.010	< 0.010	< 0.010	0.027	1.48		238.5		0.0772	0.0794		32.5		< 0.0015	4.3	< 0.010	0.049	< 0.00010	< 0.00010		< 0.30	7.59
6/6/2022	E321812	F2_BPO	< 0.010	< 0.010	< 0.020	< 0.010	11.1		2133		0.404	0.426		1030		0.0037	8.37	0.100	0.107	< 0.00020	< 0.00010		< 0.60	< 0.30
6/6/2022	E321812	F2_BPO							2133								8.40							
6/6/2022	E321812	F2_BPO							2133								8.37							
6/6/2022	200393	EV_ER1			< 0.010	0.029	1.37		276.7		0.106	0.116		36.9		0.0019	5	< 0.010	0.047	< 0.00010	< 0.00010		< 0.30	6.36
6/6/2022	0200203	EV_MC3			< 0.010	0.020	1.50		184.7		0.0728	0.0737		21.4			4.4	< 0.010	0.042	< 0.00010	< 0.00010		< 0.30	< 8.70
6/6/2022	310168	EV_MC2A	< 0.010	< 0.010	< 0.010	0.028	1.38		216.2		0.0734	0.0782		26.4		< 0.0015	4.2	< 0.010	0.044	< 0.00010	< 0.00010		< 0.30	5.92
6/6/2022	0200203	EV_MC3	< 0.010	< 0.010	< 0.010	0.025	1.42		186.1		0.0690	0.0726		23.8		< 0.0015	4.1	< 0.010	0.043	< 0.00010	< 0.00010		< 0.30	5.74
6/6/2022	0200097	EV_EC1			< 0.010	< 0.010	3.05		1863		0.209	0.213		839			5.6	0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
6/6/2022	0200097	EV_EC1	< 0.010	< 0.010	< 0.010	< 0.010	3.43		1895		0.218	0.218		776		< 0.0015	5.7	0.012	0.012	< 0.00010	< 0.00010		0.75	< 0.30
6/6/2022	0200097	EV_EC1							189.5								5.7							
6/6/2022	E206231	EV_GT1			< 0.010	< 0.010	8.43		1924		0.533	0.519		924			9.3	0.048	0.047	< 0.00010	< 0.00010		< 0.30	< 0.30

		Parameter	Selenosulfate, SeSO3	SeMe – selenomethionine CH3SeCH2CH2CH(NH2)CO2H	Silver	Silver	Sodium	Sodium	Specific conductivity, temperature corrected value (25 C)	Specific conductivity, temperature corrected value (25 C)	Strontium	Strontium	Strontium	Sulphate (As SO4)	Sulphide (as S)	Sulphide (as S)	Temperature, Field	Thallium	Thallium	Tin	Tin	Tin	Titanium	Titanium
		Fraction	D	D	D	T	T	T	N	N	D	T	T	D	D	T	N	D	T	D	T	T	D	T
		Unit	ug/l	ug/l	ug/l	ug/l	mg/l	ppm	us/cm	uS/cm at 25 C	mg/l	mg/l	ppm	mg/l	mg/l	mg/l	deg c	ug/l	ug/l	mg/l	mg/l	ppm	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
6/6/2022	E102685	EV_BC1			< 0.010	< 0.010	10.0		1968		0.712	0.674		984			10.1	0.042	0.042	< 0.00010	< 0.00010		< 0.30	< 0.30
6/6/2022	E300091	EV_MC2	< 0.010	< 0.010	< 0.010	0.013	1.59		240.2		0.0796	0.0830		4.58			4.8	< 0.010	0.028	< 0.00010	< 0.00010		< 0.30	13.1
6/6/2022	E321814	EV_ECOUT	< 0.010	< 0.010	< 0.010	< 0.010	3.10		2028		0.229	0.227		785		< 0.0015	5.73	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
6/6/2022	E321814	EV_ECOUT							2028								5.7							
6/6/2022	200393	EV_ER1	< 0.010	< 0.010	< 0.010	0.023	1.45		273.8		0.111	0.124		33.7			5.6	< 0.010	0.050	< 0.00010	< 0.00010		< 0.30	25.4
6/6/2022	E321812	F2_BPO															9.5							
6/7/2022	E321791	F2_NWPI			0.010				2001		1.18			904		< 0.0015	5.1	0.106		< 0.00010			< 0.30	
6/7/2022	E300091	EV_MC2			< 0.010	0.034	1.65		236.9		0.0852	0.0932		31.8			4.3	< 0.010	0.050	< 0.00010	< 0.00010		< 0.30	7.46
6/7/2022	E321812	F2_BPO			< 0.010				2125		0.404			938		0.0015	8.5	0.099		< 0.00010			< 0.30	
6/7/2022	E321812	F2_BPO							2125								8.5							
6/7/2022	E102685	EV_BC1	< 0.010	< 0.010	< 0.010	< 0.010	10.1		1898		0.691	0.710		831		< 0.0015	10.3	0.045	0.045	< 0.00010	< 0.00010		< 0.30	< 0.30
6/7/2022	E102685	EV_BC1							1848								10.3							
6/7/2022	E300091	EV_MC2							248.1								4.5							
6/7/2022	0200097	EV_EC1							1882								5.7							
6/7/2022	E206231	EV_GT1	< 0.010	< 0.010	< 0.010	< 0.010	8.71		1933		0.517	0.532		822		< 0.0015	9.5	0.048	0.046	< 0.00010	< 0.00010		< 0.30	< 0.30
6/7/2022	E206231	EV_GT1							1933								9.5							
6/7/2022	E321812	F2_BPO							2085								8.52							
6/8/2022	E321791	F2_NWPI							2002					924		< 0.0015	5.1							
6/8/2022	E300091	EV_MC2							224.4								4							
6/8/2022	E321812	F2_BPO							2103					902		0.0020	8.39							
6/8/2022	0200097	EV_EC1							1891								5.3							
6/8/2022	E321812	F2_BPO							2103								8.39							
6/8/2022	E321814	EV_ECOUT			< 0.010	< 0.010	3.35		197.8		0.225	0.223		739			5.5	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
6/8/2022	E321812	F2_BPO							2081								8.83							
6/9/2022	E321791	F2_NWPI			< 0.010				2017		1.16			849		< 0.0015	5.2	0.109		< 0.00010			< 0.30	
6/9/2022	0200097	EV_EC1							1900								5.4							
6/9/2022	E300091	EV_MC2							245.1								4.3							
6/9/2022	E321812	F2_BPO			< 0.010				2115		0.389			900		0.0016	8.4	0.108		< 0.00010			< 0.30	
6/9/2022	E321812	F2_BPO							2115								8.4							
6/9/2022	E321812	F2_BPO							2124								9.388							
6/9/2022	0200203	EV_MC3			< 0.010	0.018	1.38		186.9		0.0691	0.0670		21.5			6.8	< 0.010	0.026	< 0.00010	< 0.00010		< 0.30	18.9
6/9/2022	0200097	EV_EC1			< 0.010	< 0.010	3.21		1897		0.231	0.207		715			6.7	0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
6/9/2022	E321814	EV_ECOUT			< 0.010	< 0.010	3.49		2012		0.227	0.218		748			5.8	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
6/10/2022	E321791	F2_NWPI							1997					824		< 0.0015	5.2							
6/10/2022	E300091	EV_MC2							214.6								5							
6/10/2022	0200097	EV_EC1							1898								5.8							
6/10/2022	E321812	F2_BPO							2072								9.11							
6/10/2022	0200097	EV_EC1			< 0.010	< 0.010	3.32		1872		0.213	0.213		766			6.1	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
6/10/2022	E321812	F2_BPO							2058					843		< 0.0015	10.1							
6/10/2022	E321812	F2_BPO							2074								10.51							
6/11/2022	0200097	EV_EC1			< 0.010	< 0.010	3.27		1912		0.215	0.210		902			5.9	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
6/11/2022	0200097	EV_EC1																						
6/11/2022	E300091	EV_MC2							212.8								4.9							
6/11/2022	E321791	F2_NWPI							2008					903		< 0.0015	5.5							
6/11/2022	E321812	F2_BPO							2070					898		< 0.0015	9.1							
6/11/2022	E321812	F2_BPO							2120								8.998							
6/11/2022	E321812	F2_BPO							2113								9.753							
6/12/2022	E321791	F2_NWPI							1967					854		< 0.0015	5.1							

		Parameter	Selenosulfate, SeSO3	SeMe – selenomethionine CH3SeCH2CH2CH(NH2)CO2H	Silver	Silver	Sodium	Sodium	Specific conductivity, temperature corrected value (25 C)	Specific conductivity, temperature corrected value (25 C)	Strontium	Strontium	Strontium	Sulphate (As SO4)	Sulphide (as S)	Sulphide (as S)	Temperature, Field	Thallium	Thallium	Tin	Tin	Tin	Titanium	Titanium
		Fraction	D	D	D	T	T	T	N	N	D	T	T	D	D	T	N	D	T	D	T	T	D	T
		Unit	ug/l	ug/l	ug/l	ug/l	mg/l	ppm	us/cm	uS/cm at 25 C	mg/l	mg/l	ppm	mg/l	mg/l	mg/l	deg c	ug/l	ug/l	mg/l	mg/l	ppm	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
6/12/2022	0200097	EV_EC1			< 0.010	< 0.010	3.61		1868		0.232	0.232		833			5.5	< 0.010	0.012	< 0.00010	< 0.00010		< 0.30	< 0.30
6/12/2022	0200097	EV_EC1																						
6/12/2022	E300091	EV_MC2							211.7								4.5							
6/12/2022	E321812	F2_BPO							2115								8.965							
6/12/2022	E321812	F2_BPO							2030					735		0.0016	8.9							
6/12/2022	E321812	F2_BPO							2079								9.028							
6/13/2022	E321791	F2_NWPI	< 0.010	< 0.010	< 0.020	< 0.010	11.2		1976		1.23	1.24		836		< 0.0015	5.3	0.110	0.110	< 0.00020	< 0.00010		< 0.60	< 0.30
6/13/2022	E321814	EV_ECOUT			< 0.010	< 0.010	3.30		1986		0.220	0.233		829		< 0.0015	5.3	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
6/13/2022	E300091	EV_MC2			0.026	0.011	2.64		243.8		0.0731	0.0790		28.7		< 0.0015	5	< 0.010	0.025	< 0.00010	< 0.00010		< 0.30	5.32
6/13/2022	E321812	F2_BPO	< 0.010	< 0.010	< 0.020	< 0.020	10.9		2115		0.414	0.426		816		0.0030	9.5	0.105	0.108	< 0.00020	< 0.00020		< 0.60	< 0.60
6/13/2022	E321812	F2_BPO							2115								9.5							
6/13/2022	0200097	EV_EC1			< 0.010	< 0.010	3.24		1884		0.206	0.218		791		< 0.0015	5.8	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
6/13/2022	0200203	EV_MC3			< 0.010	0.011	1.14		171.6		0.0610	0.0626		18.3		< 0.0015	4.6	< 0.010	0.013	< 0.00010	< 0.00010		< 0.30	1.04
6/13/2022	310168	EV_MC2A			0.017	< 0.010	1.14		203.2		0.0625	0.0678		20.1		< 0.0015	4.8	< 0.010	0.013	< 0.00010	< 0.00010		< 0.30	2.25
6/13/2022	0200203	EV_MC3			0.010	0.046	1.15		166.6		0.0625	0.0675		18.3			4.4	0.020	0.071	< 0.00010	< 0.00010		28.2	9.78
6/13/2022	200393	EV_ER1			0.070	0.013	1.21		262.7		0.101	0.112		28.1		< 0.0015	5.5	< 0.010	0.021	< 0.00010	< 0.00010		< 0.30	2.54
6/13/2022	E206231	EV_GT1																						
6/13/2022	E102685	EV_BC1																						
6/13/2022	E300091	EV_MC2			< 0.010	0.040	1.46		221.2		0.0764	0.0784		29.4			4.7	< 0.010	0.062	< 0.00010	< 0.00010		1.90	8.79
6/13/2022	200393	EV_ER1			< 0.010	0.050	1.27		253.4		0.0991	0.119		27.8			5.2	< 0.010	0.078	< 0.00010	< 0.00010		1.12	9.21
6/13/2022	E321812	F2_BPO							2077								8.68							
6/14/2022	E206231	EV_GT1																						
6/14/2022	0200097	EV_EC1			< 0.010	< 0.010	3.25		1702		0.201	0.202		641			4.8	< 0.010	0.011	< 0.00010	< 0.00010		< 0.30	< 0.30
6/14/2022	E102685	EV_BC1			< 0.010	< 0.010	9.55		1875		0.674	0.700		866		< 0.0015	9.88	0.044	0.049	< 0.00010	< 0.00010		< 0.30	0.73
6/14/2022	E206231	EV_GT1			< 0.010	0.050	6.78		1716		0.446	0.468		662		< 0.0015	7.17	0.047	0.085	< 0.00010	< 0.00010		< 0.30	4.10
6/14/2022	E206231	EV_GT1																						
6/14/2022	E300091	EV_MC2							242.7								3.61							
6/14/2022	E321791	F2_NWPI			< 0.010				2042		1.29			910		< 0.0015	5.71	0.107		< 0.00010			< 0.30	
6/14/2022	E321812	F2_BPO			< 0.020				2047		0.410			884		0.0032	6.2	0.091		< 0.00020			< 0.60	
6/14/2022	E321812	F2_BPO							2047								6.2							
6/14/2022	E300091	EV_MC2			< 0.010	0.026	1.60		264.9		0.0841	0.0864		28.9			4.4	< 0.010	0.040	< 0.00010	< 0.00010		< 0.30	5.67
6/14/2022	E206231	EV_GT1																						
6/15/2022	0200097	EV_EC1			< 0.010	< 0.010	3.23		1795		0.204	0.211		774			5.3	< 0.010	0.013	< 0.00010	< 0.00010		< 0.30	< 0.30
6/15/2022	0200097	EV_EC1																						
6/15/2022	E300091	EV_MC2							251.1								4.4							
6/15/2022	E321791	F2_NWPI							1976					842		< 0.0015	5.3							
6/15/2022	E321812	F2_BPO							1969					850		0.0020	6.3							
6/15/2022	E321812	F2_BPO							1969								6.3							
6/15/2022	E321812	F2_BPO							2013								7.3							
6/16/2022	0200097	EV_EC1			< 0.010	< 0.010	3.38		1823		0.208	0.225		716			5.2	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
6/16/2022	0200203	EV_MC3			< 0.010	0.022	1.55		196.9		0.0708	0.0816		21.8			4.3	< 0.010	0.026	< 0.00010	< 0.00010		< 0.30	< 8.10
6/16/2022	E300091	EV_MC2							268								4.6							
6/16/2022	E321812	F2_BPO							2083								7.84							
6/16/2022	E321791	F2_NWPI			0.013				1938		1.11			839		< 0.0015	5.1	0.087		< 0.00010			< 0.30	
6/16/2022	E321814	EV_ECOUT			< 0.010	0.066	3.23		1985		0.209	0.232		767			5.5	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
6/16/2022	E321812	F2_BPO			< 0.010				2080		0.412			866		0.0030	8.14	0.102		< 0.00010			< 0.30	
6/16/2022	E321812	F2_BPO							2080								8.7							
6/17/2022	E321791	F2_NWPI							1952					858		< 0.0015	5.3							

		Parameter	Selenosulfate, SeSO3	SeMe – selenomethionine CH3SeCH2CH2CH(NH2)CO2H	Silver	Silver	Sodium	Sodium	Specific conductivity, temperature corrected value (25 C)	Specific conductivity, temperature corrected value (25 C)	Strontium	Strontium	Strontium	Sulphate (As SO4)	Sulphide (as S)	Sulphide (as S)	Temperature, Field	Thallium	Thallium	Tin	Tin	Tin	Titanium	Titanium
		Fraction	D	D	D	T	T	T	N	N	D	T	T	D	D	T	N	D	T	D	T	T	D	T
		Unit	ug/l	ug/l	ug/l	ug/l	mg/l	ppm	us/cm	uS/cm at 25 C	mg/l	mg/l	ppm	mg/l	mg/l	mg/l	deg c	ug/l	ug/l	mg/l	mg/l	ppm	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
6/17/2022	E300091	EV_MC2							267.4								5.4							
6/17/2022	0200097	EV_EC1							1852								5.8							
6/17/2022	E321812	F2_BPO							2090								9.04							
6/17/2022	E321812	F2_BPO							2075					854		< 0.0015	9.55							
6/17/2022	E321812	F2_BPO							2074								10							
6/18/2022	E321791	F2_NWPI							1750					864		< 0.0015	5.3							
6/18/2022	E300091	EV_MC2							200.5								5.3							
6/18/2022	0200097	EV_EC1							1624								5.9							
6/18/2022	E321812	F2_BPO							2086								10.09							
6/18/2022	E321812	F2_BPO							2076					901		< 0.0015	10.3							
6/18/2022	E321812	F2_BPO															10.12							
6/19/2022	E321791	F2_NWPI							1901					890		< 0.0015	5.3							
6/19/2022	E300091	EV_MC2							245.1								5.1							
6/19/2022	0200097	EV_EC1							1782								5.7							
6/19/2022	E321812	F2_BPO							2077								8.11							
6/19/2022	E321812	F2_BPO							1957					895		< 0.0015	10.1							
6/19/2022	E321812	F2_BPO							2031								10.65							
6/20/2022	E321791	F2_NWPI	< 0.010	< 0.010	< 0.010	< 0.010	11.0		1909		1.23	1.28		896		< 0.0015	5.4	0.098	0.094	< 0.00010	< 0.00010		< 0.30	0.98
6/20/2022	E321812	F2_BPO	< 0.010	< 0.010	< 0.010	< 0.010	10.4		2039		0.437	0.468		923		0.0025	9.8	0.102	0.102	< 0.00010	< 0.00010		< 0.30	< 0.30
6/20/2022	E321812	F2_BPO							2034								9.8							
6/20/2022	200393	EV_ER1			< 0.010	0.014	1.44		264.6		0.0706	0.0726		18.2		< 0.0015	6.1	< 0.010	0.024	< 0.00010	< 0.00010		< 0.30	5.86
6/20/2022	E321812	F2_BPO							2039								9.8							
6/20/2022	E300091	EV_MC2	< 0.010	< 0.010	< 0.010	0.016	1.75		243.6		0.0834	0.0887		31.6		< 0.0015	5.4	< 0.010	0.028	< 0.00010	< 0.00010		< 0.30	6.60
6/20/2022	310168	EV_MC2A	< 0.010	< 0.010	< 0.010	0.013	1.41		216.4		0.0777	0.0830		21.0		< 0.0015	5.3	< 0.010	0.025	< 0.00010	< 0.00010		< 0.30	4.27
6/20/2022	0200203	EV_MC3	< 0.010	< 0.010	< 0.010	< 0.010	3.16		180.4		0.228	0.230		755		< 0.0015	5.3	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
6/20/2022	0200097	EV_EC1	< 0.010	< 0.010	< 0.010	< 0.010	3.07		1780 1780		0.202	0.222		730		< 0.0015	5.8 5.8	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.60	< 0.30
6/20/2022	E321814	EV_ECOUT	< 0.010	< 0.010	< 0.010	0.054	1.33		1968		0.109	0.134		25.9		0.0042	5.3	< 0.010	0.099	< 0.00010	< 0.00010		< 0.30	31.5
6/20/2022	E321814	EV_ECOUT							1968								5.3							
6/20/2022	E321812	F2_BPO							2013								10.4							
6/21/2022	E321791	F2_NWPI			< 0.020				1953		1.17			857		< 0.0015	5.2	0.093		< 0.00020			< 0.60	
6/21/2022	E321812	F2_BPO			< 0.020				1971		0.443			874		0.0017	9.6	0.101		< 0.00020			< 0.60	
6/21/2022	E321812	F2_BPO							1971								9.6							
6/21/2022	E206231	EV_GT1	< 0.010	< 0.010	< 0.010	< 0.010	8.22		1864		0.560	0.544		818		< 0.0015	9.9	0.051	0.052	< 0.00010	< 0.00010		< 0.30	< 0.60
6/21/2022	0200203	EV_MC3			< 0.010	0.018	1.55		194.9		0.0733	0.0806		21.8			6.2	< 0.010	0.029	< 0.00010	< 0.00010		< 0.30	< 16.5
6/21/2022	E300091	EV_MC2							168.7								5.9							
6/21/2022	E206231	EV_GT1																						
6/21/2022	E102685	EV_BC1	< 0.010	< 0.010	< 0.020	< 0.010	9.61		1949		0.747	0.704		870		< 0.0015	13.6	0.042	0.047	< 0.00020	< 0.00010		< 0.60	< 0.30
6/21/2022	E102685	EV_BC1																						
6/21/2022	E300091	EV_MC2			< 0.010	< 0.010	1.80		267.3		0.0843	0.0980		32.1			6.6	< 0.010	0.020	< 0.00010	< 0.00010		< 0.30	< 6.90
6/21/2022	200393	EV_ER1			< 0.010	0.032	1.46		283.7		0.109	0.137		29.5			7.9	< 0.010	0.060	< 0.00010	0.00014		< 0.30	9.42
6/21/2022	E321812	F2_BPO															10.3							
6/22/2022	0200097	EV_EC1							1861								5.5							
6/22/2022	E321791	F2_NWPI							1902					849		< 0.0015	5.4							
6/22/2022	E300091	EV_MC2							266.5								6.1							
6/22/2022	E321812	F2_BPO							2055					875		0.0020	9.3							
6/22/2022	E321812	F2_BPO							2055								9.3							
6/22/2022	0200097	EV_EC1							1785								5.9							

		Parameter	Selenosulfate, SeSO3	SeMe – selenomethionine CH3SeCH2CH2CH(NH2)CO2H	Silver	Silver	Sodium	Sodium	Specific conductivity, temperature corrected value (25 C)	Specific conductivity, temperature corrected value (25 C)	Strontium	Strontium	Strontium	Sulphate (As SO4)	Sulphide (as S)	Sulphide (as S)	Temperature, Field	Thallium	Thallium	Tin	Tin	Tin	Titanium	Titanium
		Fraction	D	D	D	T	T	T	N	N	D	T	T	D	D	T	N	D	T	D	T	T	D	T
		Unit	ug/l	ug/l	ug/l	ug/l	mg/l	ppm	us/cm	uS/cm at 25 C	mg/l	mg/l	ppm	mg/l	mg/l	mg/l	deg c	ug/l	ug/l	mg/l	mg/l	ppm	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
6/22/2022	E321812	F2_BPO							2012								10.1							
6/23/2022	E321791	F2_NWPI			< 0.020				1891		1.23			846		< 0.0015	5.3	0.095		< 0.00020			< 0.60	
6/23/2022	0200097	EV_EC1							1779								5.7							
6/23/2022	E300091	EV_MC2							255.6								5.9							
6/23/2022	E321812	F2_BPO			< 0.010				2031		0.462			875		< 0.0015	9.19	0.103		< 0.00010			< 0.30	
6/23/2022	E321812	F2_BPO							2031								9.19							
6/23/2022	0200097	EV_EC1																						
6/23/2022	E321812	F2_BPO							2008								10.33							
6/24/2022	E321791	F2_NWPI							1916					856		< 0.0015	5.4							
6/24/2022	0200097	EV_EC1							1780								4.8							
6/24/2022	E300091	EV_MC2							281.3								4.4							
6/24/2022	E321812	F2_BPO							2026								8.299							
6/24/2022	E321812	F2_BPO							1971					888		< 0.0015	8.3							
6/24/2022	E321812	F2_BPO							1991								8.156							
6/25/2022	E321791	F2_NWPI							1879					841		0.0017	5.4							
6/25/2022	0200097	EV_EC1							1767								5.4							
6/25/2022	E300091	EV_MC2							296.9								5.4							
6/25/2022	E321812	F2_BPO							1879					874		< 0.0015	8.4							
6/25/2022	E321812	F2_BPO							1879								8.4							
6/25/2022	E321812	F2_BPO							2013								8.7							
6/26/2022	E321791	F2_NWPI							1915					855		< 0.0015	5.5							
6/26/2022	0200097	EV_EC1							1779								5							
6/26/2022	E300091	EV_MC2							306								4.9							
6/26/2022	E321812	F2_BPO							1987					899		0.0019	9.1							
6/26/2022	E321812	F2_BPO							1987								9.1							
6/26/2022	E321812	F2_BPO							2023								9.7							
6/27/2022	E321791	F2_NWPI	< 0.010	< 0.010	< 0.010	< 0.010	11.0		1916		1.43	1.27		874		< 0.0015	5.7	0.109	0.097	< 0.00010	< 0.00010		< 0.30	< 1.20
6/27/2022	E321814	EV_ECOUT	< 0.010	< 0.010	< 0.010	< 0.010	3.03		1870		0.225	0.216		775		< 0.0015	5.1	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	0.58
6/27/2022	E321812	F2_BPO	< 0.010	< 0.010	< 0.010	< 0.010	10.5		2080		0.409	0.448		948		0.0018	10.13	0.094	0.102	< 0.00010	< 0.00010		< 0.30	< 0.30
6/27/2022	E321812	F2_BPO							2080								10.13							
6/27/2022	200393	EV_ER1			< 0.010	< 0.010	1.47		313.9		0.131	0.128		40.2		< 0.0015	6.5	< 0.010	0.019	< 0.00010	< 0.00010		< 0.30	< 4.20
6/27/2022	310168	EV_MC2A			< 0.010	< 0.010	1.63		267.6		0.0923	0.0890		35.4		< 0.0015	5.8	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	1.28
6/27/2022	0200203	EV_MC3			< 0.010	< 0.010	1.96		227.2		0.0933	0.0931		30.5		< 0.0015	6.4	< 0.010	0.010	< 0.00010	< 0.00010		< 0.30	1.50
6/27/2022	0200097	EV_EC1			< 0.010	< 0.010	3.00		1769		0.217	0.211		805		< 0.0015	5.6	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
6/27/2022	E300091	EV_MC2			< 0.010	< 0.010	2.75		325.5		0.112	0.110		62.1		< 0.0015	7.2	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	1.57
6/27/2022	E321812	F2_BPO							2023								10.338							
6/28/2022	E321791	F2_NWPI			< 0.010				1912		1.22			825		< 0.0015	5.4	0.097		< 0.00010			< 0.30	
6/28/2022	E300091	EV_MC2							312.4								6.4							
6/28/2022	0200097	EV_EC1							1766								5.5							
6/28/2022	E321812	F2_BPO			< 0.010				2029		0.460			856		0.0021	10.9	0.106		< 0.00010			< 0.30	
6/28/2022	E321812	F2_BPO							2029								10.9							
6/28/2022	E206231	EV_GT1			< 0.010	< 0.010	7.95		1875		0.565	0.546		896		< 0.0015	9.9	0.051	0.058	< 0.00010	< 0.00010		< 0.30	< 0.30
6/28/2022	E102685	EV_BC1			< 0.020	< 0.010	10.0		1885		0.718	0.794		877		< 0.0015	14.2	0.046	0.048	< 0.00020	< 0.00010		< 0.60	< 0.30
6/28/2022	0200203	EV_MC3			< 0.010	< 0.010	1.91		236.1		0.0897	0.0982		25.6			8.4	< 0.010	0.014	< 0.00010	< 0.00010		< 0.30	2.23
6/28/2022	E206231	EV_GT1																						
6/28/2022	E102685	EV_BC1																						
6/28/2022	E300091	EV_MC2			< 0.010	< 0.010	2.73		355.1		0.104	0.122		49.8			8.5	< 0.010	0.015	< 0.00010	< 0.00010		< 0.30	8.06
6/28/2022	200393	EV_ER1			< 0.010	0.011	1.58		327.5		0.124	0.147		36.4			9.2	< 0.010	0.024	< 0.00010	< 0.00010		< 0.30	< 4.50

		Parameter	Selenosulfate, SeSO3	SeMe – selenomethionine CH3SeCH2CH2CH(NH2)CO2H	Silver	Silver	Sodium	Sodium	Specific conductivity, temperature corrected value (25 C)	Specific conductivity, temperature corrected value (25 C)	Strontium	Strontium	Strontium	Sulphate (As SO4)	Sulphide (as S)	Sulphide (as S)	Temperature, Field	Thallium	Thallium	Tin	Tin	Tin	Titanium	Titanium
		Fraction	D	D	D	T	T	T	N	N	D	T	T	D	D	T	N	D	T	D	T	T	D	T
		Unit	ug/l	ug/l	ug/l	ug/l	mg/l	ppm	us/cm	uS/cm at 25 C	mg/l	mg/l	ppm	mg/l	mg/l	mg/l	deg c	ug/l	ug/l	mg/l	mg/l	ppm	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
6/28/2022	E321812	F2_BPO							1974								10.6							
6/29/2022	E321791	F2_NWPI							1916							< 0.0015	5.5							
6/29/2022	E300091	EV_MC2							300.6					843			6.6							
6/29/2022	0200097	EV_EC1							1757								5.7							
6/29/2022	E321812	F2_BPO							1854					877		< 0.0015	11.1							
6/29/2022	E321812	F2_BPO							1854								11.1							
6/29/2022	0200097	EV_EC1																						
6/29/2022	E321812	F2_BPO							1857								10.4							
6/30/2022	E321791	F2_NWPI			< 0.010						1.18			864		< 0.0015		0.090		< 0.00010			< 0.30	
6/30/2022	E300091	EV_MC2							336.8								5							
6/30/2022	0200097	EV_EC1							1750								5.3							
6/30/2022	E321812	F2_BPO			< 0.010				2058		0.425			889		< 0.0015	9.1	0.109		< 0.00010			< 0.30	
6/30/2022	E321812	F2_BPO							2058								9.1							
6/30/2022	E321791	F2_NWPI							1911								5.6							
6/30/2022	E321812	F2_BPO							2067								9.2							
7/1/2022	E321812	F2_BPO							1997					872		0.0017	9.1							
7/1/2022	E321791	F2_NWPI							1909					836		< 0.0015	5.5							
7/1/2022	E300091	EV_MC2							321.6								5.9							
7/1/2022	0200097	EV_EC1							1748								5.2							
7/2/2022	E300091	EV_MC2							303								7							
7/2/2022	0200097	EV_EC1							1627								5.6							
7/2/2022	E321791	F2_NWPI							1780					834		< 0.0015	5.5							
7/2/2022	E321812	F2_BPO							1855					872		< 0.0015	11							
7/2/2022	E321812	F2_BPO							1855								11							
7/2/2022	E321812	F2_BPO							1988								11.13							
7/3/2022	0200097	EV_EC1							1847								5.9							
7/3/2022	E300091	EV_MC2							336.4								7.8							
7/3/2022	E321791	F2_NWPI							2024					837		< 0.0015	5.6							
7/3/2022	E321812	F2_BPO							2102								10.6							
7/3/2022	E321812	F2_BPO							402					881		< 0.0015	10.6							
7/3/2022	E321812	F2_BPO															10.8							
7/4/2022	E321791	F2_NWPI	< 0.010	< 0.010	< 0.010	< 0.010	11.2		2023		1.15	1.18		835		< 0.0015	5.4	0.088	0.094	< 0.00010	< 0.00010		< 0.30	< 1.20
7/4/2022	E321812	F2_BPO	< 0.010	< 0.010	< 0.010	< 0.010	11.1		2099		0.421	0.432		871		0.0022	9.7	0.104	0.105	< 0.00010	< 0.00010		< 0.30	< 0.30
7/4/2022	E321812	F2_BPO							2099								9.7							
7/4/2022	200393	EV_ER1			< 0.010	< 0.010	1.53		336.4		0.137	0.138		38.1		< 0.0015	7	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 2.10
7/4/2022	E321812	F2_BPO							2099								9.7							
7/4/2022	310168	EV_MC2A	< 0.010	< 0.010	< 0.010	< 0.010	1.83		303.7		0.102	0.0979		37.3		< 0.0015	6.7	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	0.78
7/4/2022	0200203	EV_MC3	< 0.010	< 0.010	< 0.010	< 0.010	1.98		257.2		0.0983	0.101		30.4		< 0.0015	6.9	< 0.010	0.010	< 0.00010	< 0.00010		< 0.30	1.12
7/4/2022	0200097	EV_EC1	< 0.010	< 0.010	< 0.010	< 0.010	3.16		1841		0.216	0.212		702		< 0.0015	5.8	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
7/4/2022	0200097	EV_EC1							1841								5.8							
7/4/2022	E300091	EV_MC2	< 0.010	< 0.010	< 0.010	< 0.010	2.45		337		0.116	0.111		54.6		< 0.0015	7.5	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	0.75
7/4/2022	E321814	EV_ECOUT	< 0.010	< 0.010	< 0.010	< 0.010	3.12		1979		0.221	0.213		715		< 0.0015	5.7	< 0.010	< 0.010	< 0.00010	0.00011		< 0.30	< 0.30
7/4/2022	E321814	EV_ECOUT							1979								5.7							
7/4/2022	E321812	F2_BPO							1959								9.49							
7/5/2022	E300091	EV_MC2							331.4								6.6							
7/5/2022	E321791	F2_NWPI			< 0.010				2058		1.15			845		< 0.0015	5.6	0.092		< 0.00010			< 0.30	
7/5/2022	0200097	EV_EC1							1834								5.5							
7/5/2022	E321812	F2_BPO			< 0.010				2121		0.435			870		< 0.0015	9.5	0.104		< 0.00010			< 0.30	

		Parameter	Selenosulfate, SeSO3	SeMe – selenomethionine CH3SeCH2CH2CH(NH2)CO2H	Silver	Silver	Sodium	Sodium	Specific conductivity, temperature corrected value (25 C)	Specific conductivity, temperature corrected value (25 C)	Strontium	Strontium	Strontium	Sulphate (As SO4)	Sulphide (as S)	Sulphide (as S)	Temperature, Field	Thallium	Thallium	Tin	Tin	Tin	Titanium	Titanium
		Fraction	D	D	D	T	T	T	N	N	D	T	T	D	D	T	N	D	T	D	T	T	D	T
		Unit	ug/l	ug/l	ug/l	ug/l	mg/l	ppm	us/cm	uS/cm at 25 C	mg/l	mg/l	ppm	mg/l	mg/l	mg/l	deg c	ug/l	ug/l	mg/l	mg/l	ppm	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
7/5/2022	E321812	F2_BPO							2121								9.5							
7/5/2022	E206231	EV_GT1	< 0.010	< 0.010	< 0.010	< 0.010	8.74		1988		0.603	0.655		866		< 0.0015	10.1	0.049	0.058	< 0.00010	< 0.00010		< 0.30	< 0.60
7/5/2022	E206231	EV_GT1							1988								10.1							
7/5/2022	E102685	EV_BC1	< 0.010	< 0.010	< 0.010	< 0.010	10.0		1970		0.810	0.841		847		< 0.0015	13.3	0.046	0.049	< 0.00010	< 0.00010		< 0.30	< 0.30
7/5/2022	E102685	EV_BC1							1970								13.3							
7/5/2022	E321814	EV_ECOUT			< 0.010	< 0.010	3.27		1888		0.207	0.213		712			5.5	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
7/5/2022	0200203	EV_MC3			< 0.010	< 0.010	1.96		241.6		0.0906	0.0990		28.8			9	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 1.50
7/5/2022	E206231	EV_GT1			< 0.010	< 0.010	8.58		1928		0.563	0.589		849			13	0.053	0.055	< 0.00010	< 0.00010		< 0.30	0.68
7/5/2022	E300091	EV_MC2			< 0.010	< 0.010	2.24		339		0.102	0.106		49.0			8.9	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	0.98
7/5/2022	E321812	F2_BPO							2085								10.1							
7/5/2022	E102685	EV_BC1			< 0.010	< 0.010	9.97		1907		0.766	0.836		852			15.1	0.049	0.050	< 0.00010	< 0.00010		< 0.30	< 0.30
7/6/2022	0200097	EV_EC1							1871								5.3							
7/6/2022	E321812	F2_BPO							2094					864		< 0.0015	9.5							
7/6/2022	E300091	EV_MC2							372								6.3							
7/6/2022	E321812	F2_BPO							2094								9.34							
7/6/2022	E321791	F2_NWPI							2057					693		< 0.0015	5.7							
7/6/2022	200393	EV_ER1			< 0.010	< 0.010	1.47		326.4		0.143	0.144		38.4			7.4	< 0.010	0.023	< 0.00010	< 0.00010		< 0.30	5.89
7/6/2022	0200097	EV_EC1			< 0.010	< 0.010	2.97		1776		0.207	0.208		711			6.3	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
7/6/2022	E321812	F2_BPO							1957								9.53							
7/7/2022	E300091	EV_MC2							394.4								7.6							
7/7/2022	0200097	EV_EC1							1876								5.6							
7/7/2022	E321791	F2_NWPI			< 0.010				2053		1.16			848		< 0.0015	5.4	0.089		< 0.00010			< 0.30	
7/7/2022	E321812	F2_BPO			< 0.010				2093		0.439			879		0.0016	9.6	0.109		< 0.00010			< 0.30	
7/7/2022	E321812	F2_BPO							2093								9.6							
7/7/2022	E321812	F2_BPO							2088								10.5							
7/8/2022	E300091	EV_MC2							401.9								7.5							
7/8/2022	0200097	EV_EC1							1871								5.6							
7/8/2022	E321791	F2_NWPI							2049					859		< 0.0015	5.8							
7/8/2022	E321812	F2_BPO							2088					904		0.0024	10.5							
7/8/2022	E321812	F2_BPO							2088								10.5							
7/8/2022	E321812	F2_BPO							2082								11.6							
7/9/2022	0200097	EV_EC1							1870								5.5							
7/9/2022	E300091	EV_MC2							399.1								7.3							
7/9/2022	E321812	F2_BPO							2130					850		< 0.0015	11.4							
7/9/2022	E321791	F2_NWPI							2051					817		< 0.0015	6.2							
7/9/2022	E321812	F2_BPO							1986								12.71							
7/9/2022	E321812	F2_BPO							2130								11.4							
7/10/2022	0200097	EV_EC1							1808								5.6							
7/10/2022	E300091	EV_MC2							416.8								7.7							
7/10/2022	E321791	F2_NWPI							1963					936		< 0.0015	6.5							
7/10/2022	E321812	F2_BPO							2056					974		0.0023	11							
7/10/2022	E321812	F2_BPO							2056								11							
7/10/2022	E321812	F2_BPO							2010								11.59							
7/11/2022	200393	EV_ER1			< 0.010	< 0.010	1.60		353.4		0.144	0.154		44.2		< 0.0015	7.8	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	2.46
7/11/2022	E321791	F2_NWPI	< 0.010	< 0.010	< 0.010	< 0.010	11.1		1889		1.18	1.31		818		< 0.0015	7.5	0.085	0.095	< 0.00010	< 0.00010		< 0.30	0.76
7/11/2022	E321812	F2_BPO	< 0.010	< 0.010	< 0.010	< 0.010	11.0		1955		0.458	0.456		852		0.0016	10	0.111	0.104	< 0.00010	< 0.00010		< 0.30	< 0.30
7/11/2022	E321812	F2_BPO							1955								10							
7/11/2022	0200097	EV_EC1			< 0.010	< 0.010	3.15		1805		0.203	0.206		730		< 0.0015	5.4	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30

		Parameter	Selenosulfate, SeSO3	SeMe – selenomethionine CH3SeCH2CH2CH(NH2)CO2H	Silver	Silver	Sodium	Sodium	Specific conductivity, temperature corrected value (25 C)	Specific conductivity, temperature corrected value (25 C)	Strontium	Strontium	Strontium	Sulphate (As SO4)	Sulphide (as S)	Sulphide (as S)	Temperature, Field	Thallium	Thallium	Tin	Tin	Tin	Titanium	Titanium
		Fraction	D	D	D	T	T	T	N	N	D	T	T	D	D	T	N	D	T	D	T	T	D	T
		Unit	ug/l	ug/l	ug/l	ug/l	mg/l	ppm	us/cm	uS/cm at 25 C	mg/l	mg/l	ppm	mg/l	mg/l	mg/l	deg c	ug/l	ug/l	mg/l	mg/l	ppm	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
7/11/2022	0200203	EV_MC3			< 0.010	< 0.010	2.38		293.5		0.112	0.116		38.5		< 0.0015	7.3	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	0.30
7/11/2022	E321814	EV_ECOUT			< 0.010	< 0.010	3.15		1816		0.210	0.218		731		< 0.0015	5.2	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
7/11/2022	310168	EV_MC2A			< 0.010	< 0.010	2.23		344.9		0.111	0.110		50.2		< 0.0015	7	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	0.47
7/11/2022	E300091	EV_MC2			< 0.010	< 0.010	3.35		404.4		0.136	0.137		80.0		< 0.0015	7.4	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	0.36
7/11/2022	E321812	F2_BPO							1964								10.4							
7/12/2022	E321791	F2_NWPI			< 0.010				1983		1.21			901		< 0.0015	5.5	0.092		< 0.00010			< 0.30	
7/12/2022	0200097	EV_EC1							1717								5.6							
7/12/2022	E206231	EV_GT1			< 0.010	< 0.020	8.69		1824		0.618	0.623		936		< 0.0015	11.2	0.055	0.050	< 0.00010	< 0.00020		< 0.30	< 0.60
7/12/2022	E300091	EV_MC2							375.2								8							
7/12/2022	E321812	F2_BPO			< 0.010				2061		0.462			920		0.0022	11	0.104		< 0.00010			< 0.30	
7/12/2022	E321812	F2_BPO							2061								11							
7/12/2022	E102685	EV_BC1			< 0.010	< 0.010	9.84		1793		0.979	0.961		847		< 0.0015	14.9	0.048	0.045	< 0.00010	< 0.00010		< 0.30	< 0.30
7/12/2022	200393	EV_ER1			< 0.010	< 0.010	1.60		354.9		0.160	0.150		42.3			9.5	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	3.46
7/12/2022	0200203	EV_MC3			< 0.010	< 0.010	2.38		291.2		0.124	0.111		36.6			10.5	< 0.010	< 0.010	0.00010	< 0.00010		< 0.30	0.61
7/12/2022	E206231	EV_GT1																						
7/12/2022	E102685	EV_BC1																						
7/12/2022	E300091	EV_MC2			< 0.010	< 0.010	2.54		402.9		0.134	0.124		65.5			10.9	< 0.010	< 0.010	< 0.00010	0.00030		< 0.30	0.52
7/12/2022	E321812	F2_BPO							2061								11.1							
7/13/2022	E321791	F2_NWPI							1930					857		< 0.0015	5.6							
7/13/2022	E300091	EV_MC2							392.5								8.7							
7/13/2022	E321812	F2_BPO							2053					894		< 0.0015	11.2							
7/13/2022	0200097	EV_EC1							1718								5.8							
7/13/2022	E321812	F2_BPO							2053								11.2							
7/13/2022	0200097	EV_EC1																						
7/13/2022	E321812	F2_BPO							2047								12.4							
7/14/2022	E321791	F2_NWPI			< 0.050				1888		1.22					< 0.0015	5.4	0.111		< 0.00050			< 1.50	
7/14/2022	E300091	EV_MC2							429.7								8.4							
7/14/2022	0200097	EV_EC1							1656								5.5							
7/14/2022	E321812	F2_BPO			< 0.050				2005		0.475					< 0.0015	11.12	0.126		< 0.00050			< 1.50	
7/14/2022	E321812	F2_BPO							2005								11.12							
7/14/2022	E321812	F2_BPO															11.71							
7/15/2022	E321791	F2_NWPI							2000					915		< 0.0015	5.4							
7/15/2022	E300091	EV_MC2							399.8								8.5							
7/15/2022	0200097	EV_EC1							1707								5.4							
7/15/2022	E321812	F2_BPO							2074					952		< 0.0015	11.5							
7/15/2022	E321812	F2_BPO							2074								11.5							
7/15/2022	E321812	F2_BPO							1946								12.5							
7/16/2022	E321791	F2_NWPI							1990					885		< 0.0015	5.6							
7/16/2022	E300091	EV_MC2							476.4								8.8							
7/16/2022	0200097	EV_EC1							1811								5.6							
7/16/2022	E321812	F2_BPO							1954								10.8							
7/16/2022	E321812	F2_BPO							1954					912		< 0.0015	10.8							
7/16/2022	E321812	F2_BPO															11.6							
7/17/2022	E300091	EV_MC2							436.1								9.2							
7/17/2022	0200097	EV_EC1							1731								5.6							
7/17/2022	E321791	F2_NWPI							1897					847		< 0.0015	5.5							
7/17/2022	E321812	F2_BPO							1973					871		< 0.0015	11.5							
7/17/2022	E321812	F2_BPO							1973								11.5							

		Parameter	Selenosulfate, SeSO3	SeMe – selenomethionine CH3SeCH2CH2CH(NH2)CO2H	Silver	Silver	Sodium	Sodium	Specific conductivity, temperature corrected value (25 C)	Specific conductivity, temperature corrected value (25 C)	Strontium	Strontium	Strontium	Sulphate (As SO4)	Sulphide (as S)	Sulphide (as S)	Temperature, Field	Thallium	Thallium	Tin	Tin	Tin	Titanium	Titanium
		Fraction	D	D	D	T	T	T	N	N	D	T	T	D	D	T	N	D	T	D	T	T	D	T
		Unit	ug/l	ug/l	ug/l	ug/l	mg/l	ppm	us/cm	uS/cm at 25 C	mg/l	mg/l	ppm	mg/l	mg/l	mg/l	deg c	ug/l	ug/l	mg/l	mg/l	ppm	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
7/17/2022	E321812	F2_BPO															13							
7/18/2022	200393	EV_ER1			< 0.010	< 0.010	1.74		371.6		0.165	0.168		49.4		< 0.0015	10.1	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	0.72
7/18/2022	E321791	F2_NWPI	< 0.010	< 0.010	< 0.020	< 0.010	11.2		1904		1.16	1.22		853		< 0.0015	5.5	0.095	0.090	< 0.00020	< 0.00010		< 0.60	1.13
7/18/2022	310168	EV_MC2A	< 0.010	< 0.010	< 0.010	< 0.010	2.38		388.9		0.126	0.125		62.3		< 0.0015	9.7	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	0.38
7/18/2022	0200203	EV_MC3	< 0.010	< 0.010	< 0.010	< 0.010	2.72		328.6		0.138	0.132		47.9		< 0.0015	10.1	< 0.010	0.011	< 0.00010	< 0.00010		< 0.30	< 0.30
7/18/2022	E321812	F2_BPO	< 0.010	< 0.010	< 0.020	< 0.010	11.0		1979		0.446	0.486		886		< 0.0015	11.5	0.114	0.120	< 0.00020	< 0.00010		< 0.60	< 0.30
7/18/2022	E321812	F2_BPO							1979								11.50							
7/18/2022	E321812	F2_BPO							2087								11.3							
7/18/2022	0200097	EV_EC1	< 0.010	< 0.010	< 0.010	< 0.010	3.26		1734		0.214	0.213		721		< 0.0015	6	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
7/18/2022	0200097	EV_EC1							1734								6							
7/18/2022	E321814	EV_ECOUT	< 0.010	< 0.010	< 0.020	< 0.010	3.21		1831		0.213	0.217		722		< 0.0015	5.3	< 0.020	< 0.010	< 0.00020	< 0.00010		< 0.60	< 0.30
7/18/2022	E321814	EV_ECOUT							1831								5.3							
7/18/2022	E300091	EV_MC2	< 0.010	< 0.010	< 0.010	< 0.010	3.46		451.7		0.148	0.150		90.4		< 0.0015	9.5	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	0.48
7/18/2022	E321812	F2_BPO							2069								10.95							
7/19/2022	0200097	EV_EC1							1782								5.4							
7/19/2022	E300091	EV_MC2							456.3								7.8							
7/19/2022	E321791	F2_NWPI			< 0.010				1926		1.12			839		< 0.0015	5.8	0.077		< 0.00010			< 0.30	
7/19/2022	E321812	F2_BPO			< 0.010				1972		0.445			880		< 0.0015	9.6	0.094		< 0.00010			< 0.30	
7/19/2022	E321812	F2_BPO							1972								9.6							
7/19/2022	E206231	EV_GT1	< 0.010	< 0.010	< 0.010	< 0.010	9.27		1972		0.646	0.678		900		< 0.0015	10.6	0.046	0.061	< 0.00010	< 0.00010		< 0.30	< 0.30
7/19/2022	E206231	EV_GT1							1972								10.6							
7/19/2022	E102685	EV_BC1	< 0.010	< 0.010	< 0.010	< 0.010	10.3		1812		0.845	0.904		816		< 0.0015	16.7	0.035	0.052	< 0.00010	< 0.00010		< 0.30	< 0.30
7/19/2022	E102685	EV_BC1							1812								16.7							
7/19/2022	E321812	F2_BPO							2041								11.3							
7/20/2022	E300091	EV_MC2							469.1								9.5							
7/20/2022	0200097	EV_EC1							1738								5.7							
7/20/2022	E321812	F2_BPO							2039					869		< 0.0015	10.4							
7/20/2022	E321812	F2_BPO							2039								10.4							
7/20/2022	E321791	F2_NWPI							1900					819		< 0.0015	5.8							
7/20/2022	E321812	F2_BPO							2037								12.8							
7/21/2022	0200097	EV_EC1							1747								5.6							
7/21/2022	E300091	EV_MC2							500								9.1							
7/21/2022	E321791	F2_NWPI			< 0.050				1915		1.29			822		< 0.0015	5.7	0.106		< 0.00050			< 1.50	
7/21/2022	E321812	F2_BPO							2038								11.1							
7/21/2022	E321812	F2_BPO			< 0.050		11.2		2110		0.467			866		< 0.0015	11.1	0.122		< 0.00050			< 1.50	
7/21/2022	E321812	F2_BPO			< 0.010	< 0.010	11.2				0.471	0.450		881				0.114	0.104	< 0.00010	< 0.00010		< 0.30	< 0.30
7/21/2022	E321812	F2_BPO			< 0.010	< 0.010	11.1				0.471	0.477		893				0.112	0.112	< 0.00010	< 0.00010		< 0.30	< 0.30
7/21/2022	E321812	F2_BPO							2033								12.6							
7/22/2022	0200097	EV_EC1							1751								5.7							
7/22/2022	E300091	EV_MC2							473								9.4							
7/22/2022	E321791	F2_NWPI							1916					852		< 0.0015	5.5							
7/22/2022	E321812	F2_BPO							2086								11.301							
7/22/2022	E321812	F2_BPO							2039					890		< 0.0015	11.3							
7/22/2022	E321812	F2_BPO							2036								12.129							
7/23/2022	0200097	EV_EC1							1737								5.4							
7/23/2022	E300091	EV_MC2							524								8.4							
7/23/2022	E321791	F2_NWPI							1898					833		< 0.0015	6.7							
7/23/2022	E321812	F2_BPO							2033								10.7							

		Parameter	Selenosulfate, SeSO3	SeMe – selenomethionine CH3SeCH2CH2CH(NH2)CO2H	Silver	Silver	Sodium	Sodium	Specific conductivity, temperature corrected value (25 C)	Specific conductivity, temperature corrected value (25 C)	Strontium	Strontium	Strontium	Sulphate (As SO4)	Sulphide (as S)	Sulphide (as S)	Temperature, Field	Thallium	Thallium	Tin	Tin	Tin	Titanium	Titanium
		Fraction	D	D	D	T	T	T	N	N	D	T	T	D	D	T	N	D	T	D	T	T	D	T
		Unit	ug/l	ug/l	ug/l	ug/l	mg/l	ppm	us/cm	uS/cm at 25 C	mg/l	mg/l	ppm	mg/l	mg/l	mg/l	deg c	ug/l	ug/l	mg/l	mg/l	ppm	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
7/23/2022	E321812	F2_BPO							1979					874		< 0.0015	10.7							
7/23/2022	E321812	F2_BPO							2031								10.8							
7/24/2022	0200097	EV_EC1							1776								5.5							
7/24/2022	E300091	EV_MC2							532								8.8							
7/24/2022	E321791	F2_NWPI							1956					839		< 0.0015	5.5							
7/24/2022	E321812	F2_BPO							2027					879		< 0.0015	10.9							
7/24/2022	E321812	F2_BPO							2027								10.9							
7/24/2022	E321812	F2_BPO							1996								11.2							
7/25/2022	0200097	EV_EC1							1789								6.0							
7/25/2022	E300091	EV_MC2							586								10.5							
7/25/2022	E321791	F2_NWPI	< 0.010	< 0.010	< 0.050	< 0.010	10.9		1964		1.19	1.18		867		< 0.0015	5.7	0.098	0.096	< 0.00050	< 0.00010		< 1.50	0.99
7/25/2022	E321812	F2_BPO	< 0.010	< 0.010	< 0.050	< 0.010	10.6		2041		0.479	0.449		888		< 0.0015	11.2	0.117	0.111	< 0.00050	< 0.00010		< 1.50	< 0.30
7/25/2022	E321812	F2_BPO							2041								11.2							
7/25/2022	E321812	F2_BPO							1981								11.486							
7/26/2022	0200097	EV_EC1							1786								5.8							
7/26/2022	E321812	F2_BPO			< 0.020				2036		0.454			886		< 0.0015	10.7	0.108		< 0.00020			< 0.60	
7/26/2022	E321812	F2_BPO							2036								10.7							
7/26/2022	E300091	EV_MC2							506								10.1							
7/26/2022	E321791	F2_NWPI			< 0.020				1968		1.16			851		< 0.0015	8.5	0.091		< 0.00020			< 0.60	
7/26/2022	E321812	F2_BPO							2042								11.6							
7/27/2022	0200097	EV_EC1							1784								5.9							
7/27/2022	E300091	EV_MC2							535								10.5							
7/27/2022	E321791	F2_NWPI							1959					876		< 0.0015	5.7							
7/27/2022	E321812	F2_BPO							2044					934		< 0.0015	11.4							
7/27/2022	E321812	F2_BPO							2044								11.4							
7/27/2022	E321812	F2_BPO							2031								11.7							
7/28/2022	E321791	F2_NWPI			< 0.010				1961		1.64			852		< 0.0015	5.5	0.131		< 0.00010			< 0.30	
7/28/2022	0200097	EV_EC1							1786								5.9							
7/28/2022	E300091	EV_MC2							530								10.8							
7/28/2022	E321812	F2_BPO							1909								11.45							
7/28/2022	E321812	F2_BPO			< 0.010				2034		0.478			887		< 0.0015	11.5	0.110		< 0.00010			< 0.30	
7/28/2022	E321812	F2_BPO							1907								11.68							
7/29/2022	0200097	EV_EC1							1783								5.9							
7/29/2022	E300091	EV_MC2							534								10.9							
7/29/2022	E321791	F2_NWPI							1956					847		< 0.0015	5.7							
7/29/2022	E321812	F2_BPO							2024					882		< 0.0015	12							
7/29/2022	E321812	F2_BPO							2024								12							
7/29/2022	E321812	F2_BPO															12.5							
7/30/2022	E300091	EV_MC2							543								10.7							
7/30/2022	0200097	EV_EC1							1783								5.8							
7/30/2022	E321791	F2_NWPI							1951					856		< 0.0015	5.7							
7/30/2022	E321812	F2_BPO							2031					882		< 0.0015	11.9							
7/30/2022	E321812	F2_BPO							2031								11.9							
7/30/2022	E321812	F2_BPO							1985								11.9							
7/31/2022	0200097	EV_EC1							1701								5.9							
7/31/2022	E300091	EV_MC2							457								11.2							
7/31/2022	E321791	F2_NWPI							1861					833		< 0.0015	5.6							
7/31/2022	E321812	F2_BPO							1929					879		< 0.0015	11.4							

		Parameter	Selenosulfate, SeSO3	SeMe – selenomethionine CH3SeCH2CH2CH(NH2)CO2H	Silver	Silver	Sodium	Sodium	Specific conductivity, temperature corrected value (25 C)	Specific conductivity, temperature corrected value (25 C)	Strontium	Strontium	Strontium	Sulphate (As SO4)	Sulphide (as S)	Sulphide (as S)	Temperature, Field	Thallium	Thallium	Tin	Tin	Tin	Titanium	Titanium
		Fraction	D	D	D	T	T	T	N	N	D	T	T	D	D	T	N	D	T	D	T	T	D	T
		Unit	ug/l	ug/l	ug/l	ug/l	mg/l	ppm	us/cm	uS/cm at 25 C	mg/l	mg/l	ppm	mg/l	mg/l	mg/l	deg c	ug/l	ug/l	mg/l	mg/l	ppm	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
7/31/2022	E321812	F2_BPO							1929								11.4							
7/31/2022	E321812	F2_BPO															12.2							
8/1/2022	200393	EV_ER1			< 0.010	< 0.010	1.90		385.3		0.174	0.184		56.6		< 0.0015	10.9	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	0.53
8/1/2022	310168	EV_MC2A	< 0.010	< 0.010	< 0.010	< 0.010	2.94		443.4		0.126	0.143		84.8		< 0.0015	10.2	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
8/1/2022	E321812	F2_BPO	< 0.010	< 0.010	< 0.020	< 0.010	9.48		2171		0.504	0.471		898		< 0.0015	11.9	0.119	0.117	< 0.00020	< 0.00010		< 0.60	< 0.30
8/1/2022	E321812	F2_BPO							2171								11.9							
8/1/2022	E321812	F2_BPO							2171								11.9							
8/1/2022	0200203	EV_MC3	< 0.010	< 0.010	< 0.010	< 0.010	3.65		330.4		0.158	0.185		57.1		< 0.0015	10.2	< 0.010	0.011	< 0.00010	< 0.00010		< 0.30	< 0.30
8/1/2022	E300091	EV_MC2	< 0.010	< 0.010	< 0.010	< 0.010	3.21		503		0.152	0.151		96.3		< 0.0015	10.2	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
8/1/2022	E321791	F2_NWPI	< 0.010	< 0.010	< 0.020	< 0.010	9.93		2096		1.13	1.14		837		< 0.0015	5.8	0.092	0.089	< 0.00020	< 0.00010		< 0.60	0.39
8/1/2022	0200097	EV_EC1	< 0.010	< 0.010	< 0.020	< 0.010	2.95		1583		0.202	0.206		718		< 0.0015	5.7	< 0.020	< 0.010	< 0.00020	< 0.00010		< 0.60	< 0.30
8/1/2022	E321814	EV_ECOUT	< 0.010	< 0.010	< 0.020	< 0.010	3.00		1785		0.207	0.210		716		< 0.0015	6	< 0.020	< 0.010	< 0.00020	< 0.00010		< 0.60	< 0.30
8/1/2022	E321814	EV_ECOUT							1785								6							
8/1/2022	E321812	F2_BPO							1934								12.7							
8/2/2022	E206231	EV_GT1	< 0.010	< 0.010					1281								19.5							
8/2/2022	E102685	EV_BC1	< 0.010	< 0.010					1895								21.7							
8/2/2022	E321791	F2_NWPI			< 0.010				1859		1.18			867		< 0.0015	5.6	0.086		< 0.00010			< 0.30	
8/2/2022	E321812	F2_BPO			< 0.010				2172		0.470			883		< 0.0015	11.3	0.105		< 0.00010			< 0.30	
8/2/2022	E321812	F2_BPO							2172								11.3							
8/2/2022	0200097	EV_EC1							1685								6							
8/2/2022	E300091	EV_MC2							533								11							
8/2/2022	E206231	EV_GT1	< 0.010	< 0.010	< 0.020	< 0.010	6.34		1802		0.861	0.911		906		< 0.0015	16.5	0.050	0.053	< 0.00020	< 0.00010		< 0.60	< 0.30
8/2/2022	E206231	EV_GT1							1802								16.5							
8/2/2022	E102685	EV_BC1	< 0.010	< 0.010	< 0.020	< 0.010	9.80		1803		0.845	0.856		863		< 0.0015	20.3	0.053	0.055	< 0.00020	< 0.00010		< 0.60	< 0.30
8/2/2022	E102685	EV_BC1							1803								20.3							
8/2/2022	E321812	F2_BPO															12.4							
8/3/2022	E300091	EV_MC2							507								10.1							
8/3/2022	0200097	EV_EC1							1685								5.6							
8/3/2022	E321812	F2_BPO							1994					884		< 0.0015	11.28							
8/3/2022	E321812	F2_BPO							1994								11.28							
8/3/2022	E321791	F2_NWPI							1853					844		< 0.0015	5.8							
8/4/2022	E300091	EV_MC2							552								10.5							
8/4/2022	E321791	F2_NWPI			< 0.020				1850		1.13			840		< 0.0015	5.9	0.097		< 0.00020			< 0.60	
8/4/2022	E321812	F2_BPO			< 0.020				1928		0.453			850		< 0.0015	11.1	0.121		< 0.00020			< 0.60	
8/4/2022	E321812	F2_BPO							1928								11.1							
8/4/2022	0200097	EV_EC1							1808								6.6							
8/4/2022	E321812	F2_BPO							1926								11.2							
8/5/2022	0200097	EV_EC1							1810								5.7							
8/5/2022	E300091	EV_MC2							578								9.3							
8/5/2022	E321791	F2_NWPI							2000					851		< 0.0015	5.7							
8/5/2022	E321812	F2_BPO							2075					889		< 0.0015	9.6							
8/5/2022	E321812	F2_BPO							2075								9.6							
8/5/2022	E321812	F2_BPO							1932								10							
8/6/2022	0200097	EV_EC1							1814								5.4							
8/6/2022	E300091	EV_MC2							587								9							
8/6/2022	E321791	F2_NWPI							2002					955		< 0.0015	5.6							
8/6/2022	E321812	F2_BPO							2078					989		< 0.0015	9.3							
8/6/2022	E321812	F2_BPO							2078								9.3							

		Parameter	Selenosulfate, SeSO3	SeMe – selenomethionine CH3SeCH2CH2CH(NH2)CO2H	Silver	Silver	Sodium	Sodium	Specific conductivity, temperature corrected value (25 C)	Specific conductivity, temperature corrected value (25 C)	Strontium	Strontium	Strontium	Sulphate (As SO4)	Sulphide (as S)	Sulphide (as S)	Temperature, Field	Thallium	Thallium	Tin	Tin	Tin	Titanium	Titanium
		Fraction	D	D	D	T	T	T	N	N	D	T	T	D	D	T	N	D	T	D	T	T	D	T
		Unit	ug/l	ug/l	ug/l	ug/l	mg/l	ppm	us/cm	uS/cm at 25 C	mg/l	mg/l	ppm	mg/l	mg/l	mg/l	deg c	ug/l	ug/l	mg/l	mg/l	ppm	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
8/6/2022	E321812	F2_BPO							1929								9.9							
8/7/2022	E300091	EV_MC2							596								9.4							
8/7/2022	0200097	EV_EC1							1724								5.4							
8/7/2022	E321791	F2_NWPI							1897					841		< 0.0015	5.6							
8/7/2022	E321812	F2_BPO							1971					882		< 0.0015	10.2							
8/7/2022	E321812	F2_BPO							1971								10.2							
8/7/2022	E321812	F2_BPO							1995								10.8							
8/8/2022	E300091	EV_MC2							560								10.7							
8/8/2022	0200097	EV_EC1							1730								5.7							
8/8/2022	E321791	F2_NWPI	< 0.010	< 0.010	< 0.020	< 0.010	11.2		1898		1.30	1.12		853		< 0.0015	5.7	0.107	0.098	< 0.00020	< 0.00010		< 0.60	0.38
8/8/2022	E321812	F2_BPO	< 0.010	< 0.010	< 0.020	< 0.010	11.6		2008		0.434	0.474		883		< 0.0015	10.7	0.103	0.128	< 0.00020	< 0.00010		< 0.60	0.49
8/8/2022	E321812	F2_BPO							2008								10.7							
8/8/2022	E321812	F2_BPO							1979								11.9							
8/9/2022	E321791	F2_NWPI			< 0.020				1894		1.10			892		< 0.0015	5.7	0.093		< 0.00020			< 0.60	
8/9/2022	E300091	EV_MC2							577								11.1							
8/9/2022	0200097	EV_EC1							1703								5.9							
8/9/2022	E321814	EV_ECOUT			< 0.010	< 0.010	3.30		1890		0.213	0.219		744			5.2	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
8/9/2022	E321812	F2_BPO			< 0.020				1985		0.449			887		< 0.0015	10.5	0.115		< 0.00020			< 0.60	
8/9/2022	E321812	F2_BPO							1985								10.5							
8/9/2022	0200097	EV_EC1			< 0.010	< 0.010	3.19		1762		0.187	0.206		740			7.3	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
8/9/2022	0200203	EV_MC3			< 0.010	< 0.010	3.76		385.2		0.157	0.164		60.4			16.5	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
8/9/2022	E321812	F2_BPO							1980								11.2							
8/10/2022	E300091	EV_MC2							574								11.6							
8/10/2022	0200097	EV_EC1							1731								6							
8/10/2022	E321812	F2_BPO							1988								11.3							
8/10/2022	E321812	F2_BPO							1988					882		< 0.0015	11.3							
8/10/2022	E321791	F2_NWPI							1898					840		< 0.0015	6.1							
8/10/2022	E206231	EV_GT1			< 0.010	< 0.020	8.74		2018		0.658	0.586		937			12.4	0.062	0.051	< 0.00010	< 0.00020		< 0.30	< 0.60
8/10/2022	E102685	EV_BC1			< 0.010	< 0.020	9.02		2013		0.939	0.894		929			18.7	0.051	0.059	< 0.00010	< 0.00020		< 0.30	< 0.60
8/10/2022	200393	EV_ER1			< 0.010	< 0.010	2.27		437		0.210	0.191		68.8			11.2	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
8/10/2022	E300091	EV_MC2			< 0.010	< 0.010	5.18		615		0.211	0.187		162			11.2	0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
8/10/2022	E321812	F2_BPO							1966								11.1							
8/11/2022	E321791	F2_NWPI			< 0.020				1895		0.964			840		< 0.0015	5.8	0.087		< 0.00020			< 0.60	
8/11/2022	E300091	EV_MC2							579								10.8							
8/11/2022	0200097	EV_EC1							1733								5.9							
8/11/2022	E321812	F2_BPO							1986								10.99							
8/11/2022	E321812	F2_BPO			< 0.020	< 0.010	10.8		1963		0.416	0.449		882		< 0.0015	11	0.107	0.110	< 0.00020	< 0.00010		< 0.60	< 0.30
8/11/2022	E206231	EV_GT1	< 0.010	< 0.010		132		5330		2188			115				11.9		186			0.544		481000
8/11/2022	E206231	EV_GT1				88		1711					19						28			0.2		41000
8/11/2022	E206231	EV_GT1				268		13749					177						203			0.986		1051000
8/11/2022	E206231	EV_GT1				95		2031					110						323			0.622		642000
8/11/2022	E102685	EV_BC1				146		2577					81						87			0.394		298000
8/11/2022	E102685	EV_BC1				308		6247					83						81			0.222		197000
8/11/2022	E102685	EV_BC1				464		6938					201						113			0.626		266000
8/11/2022	E102685	EV_BC1	< 0.010	< 0.010						2155							20.3							
8/11/2022	E321812	F2_BPO															11.36							
8/12/2022	E300091	EV_MC2							575								11.5							
8/12/2022	0200097	EV_EC1							1728								5.9							

		Parameter	Selenosulfate, SeSO3	SeMe – selenomethionine CH3SeCH2CH2CH(NH2)CO2H	Silver	Silver	Sodium	Sodium	Specific conductivity, temperature corrected value (25 C)	Specific conductivity, temperature corrected value (25 C)	Strontium	Strontium	Strontium	Sulphate (As SO4)	Sulphide (as S)	Sulphide (as S)	Temperature, Field	Thallium	Thallium	Tin	Tin	Tin	Titanium	Titanium
		Fraction	D	D	D	T	T	T	N	N	D	T	T	D	D	T	N	D	T	D	T	T	D	T
		Unit	ug/l	ug/l	ug/l	ug/l	mg/l	ppm	us/cm	uS/cm at 25 C	mg/l	mg/l	ppm	mg/l	mg/l	mg/l	deg c	ug/l	ug/l	mg/l	mg/l	ppm	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
8/12/2022	E321791	F2_NWPI							1891					838		0.0016	6.1							
8/12/2022	E321812	F2_BPO							1960					883		0.0022	11.5							
8/12/2022	E321812	F2_BPO							1960								11.5							
8/12/2022	E321812	F2_BPO							1962								11.5							
8/13/2022	E300091	EV_MC2							575								11							
8/13/2022	0200097	EV_EC1							1713								5.8							
8/13/2022	E321791	F2_NWPI							1895					803		< 0.0015	6							
8/13/2022	E321812	F2_BPO							1953					845		< 0.0015	4.5							
8/13/2022	E321812	F2_BPO							1953								11.5							
8/13/2022	E321812	F2_BPO															12.1							
8/14/2022	E300091	EV_MC2							506								13.9							
8/14/2022	0200097	EV_EC1							1706								5.6							
8/14/2022	E321791	F2_NWPI							1921					800		< 0.0015	6.7							
8/14/2022	E321812	F2_BPO							1974					841		< 0.0015	11.1							
8/14/2022	E321812	F2_BPO							1974								11.1							
8/14/2022	E321812	F2_BPO							1953								11.7							
8/15/2022	E300091	EV_MC2	< 0.010	< 0.010	< 0.010	< 0.010	3.84		596		0.185	0.182		145		< 0.0015	10.1	< 0.010	< 0.010	0.00044	< 0.00010		< 0.30	< 0.30
8/15/2022	200393	EV_ER1			< 0.010	< 0.010	2.14		429		0.206	0.199		71.2		< 0.0015	10.4	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
8/15/2022	E321812	F2_BPO	< 0.010	< 0.010	0.012	< 0.010	10.8		1964		0.458	0.469		871		< 0.0015	11.4	0.109	0.112	< 0.00010	< 0.00010		< 0.30	0.48
8/15/2022	E321812	F2_BPO							1964								11.4							
8/15/2022	310168	EV_MC2A	< 0.010	< 0.010	< 0.010	< 0.010	3.12		504		0.160	0.153		107		< 0.0015	9.6	< 0.010	< 0.010	0.00010	< 0.00010		< 0.30	< 0.30
8/15/2022	E321812	F2_BPO							1964								11.4							
8/15/2022	310168	EV_MC2A	< 0.010	< 0.010	< 0.010	< 0.010	3.12		504		0.160	0.153		107		< 0.0015	9.6	< 0.010	< 0.010	0.00010	< 0.00010		< 0.30	< 0.30
8/15/2022	0200203	EV_MC3	< 0.010	< 0.010	0.020	< 0.010	3.49		390.6		0.171	0.162		64.8		< 0.0015	9.5	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
8/15/2022	E321791	F2_NWPI	< 0.010	< 0.010	< 0.010	0.011	10.6		1864		1.07	1.10		839		< 0.0015	6	0.086	0.091	< 0.00010	< 0.00010		< 0.30	0.52
8/15/2022	0200097	EV_EC1	< 0.010	< 0.010	< 0.010	< 0.010	2.90		1741		0.204	0.195		747		< 0.0015	5.6	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
8/15/2022	0200097	EV_EC1							1741								5.6							
8/15/2022	E321814	EV_ECOUT	< 0.010	< 0.010	< 0.020	< 0.010	2.98		1887		0.214	0.199		742		< 0.0015	6.1	< 0.020	< 0.010	< 0.00020	< 0.00010		< 0.60	< 0.30
8/15/2022	E321814	EV_ECOUT							1857								6.1							
8/15/2022	E321812	F2_BPO							1938								11.3							
8/16/2022	E206231	EV_GT1	0.015	< 0.010	< 0.010	< 0.010	9.20		1965		0.636	0.644		926		< 0.0015	12.1	0.056	0.060	< 0.00010	< 0.00010		< 0.30	< 0.30
8/16/2022	E206231	EV_GT1							1956								12.1							
8/16/2022	E321812	F2_BPO			< 0.010				1927		0.482			876		< 0.0015	11.6	0.121		< 0.00010			< 0.30	
8/16/2022	E300091	EV_MC2							591								10							
8/16/2022	E321791	F2_NWPI			0.014				1860		1.12			835		< 0.0015	6.3	0.090		< 0.00010			< 0.30	
8/16/2022	E102685	EV_BC1	< 0.010	< 0.010	< 0.010	< 0.010	9.62		1888		0.836	0.858		947		< 0.0015	18	0.044	0.051	< 0.00010	< 0.00010		< 0.30	< 0.30
8/16/2022	E102685	EV_BC1							1888								18							
8/16/2022	E300091	EV_MC2			< 0.010	< 0.010	4.83		595		0.190	0.195		149			10.4	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
8/16/2022	0200097	EV_EC1							1742								5.7							
8/16/2022	E321812	F2_BPO							1936								11.8							
8/17/2022	E300091	EV_MC2							600								10.7							
8/17/2022	0200097	EV_EC1							1745								5.8							
8/17/2022	E321791	F2_NWPI							1913					831		< 0.0015	5.8							
8/17/2022	E321812	F2_BPO							1967					877		< 0.0015	12.1							
8/17/2022	E321812	F2_BPO							1944								12.1							
8/17/2022	E321812	F2_BPO							1933								11.8							
8/18/2022	E300091	EV_MC2							601								11.3							
8/18/2022	0200097	EV_EC1							1743								5.9							
8/18/2022	E321791	F2_NWPI			< 0.020				1899		1.03			850		< 0.0015	5.8	0.089		< 0.00020			< 0.60	
8/18/2022	E321812	F2_BPO							1942								11.9							

		Parameter	Selenosulfate, SeSO3	SeMe – selenomethionine CH3SeCH2CH2CH(NH2)CO2H	Silver	Silver	Sodium	Sodium	Specific conductivity, temperature corrected value (25 C)	Specific conductivity, temperature corrected value (25 C)	Strontium	Strontium	Strontium	Sulphate (As SO4)	Sulphide (as S)	Sulphide (as S)	Temperature, Field	Thallium	Thallium	Tin	Tin	Tin	Titanium	Titanium
		Fraction	D	D	D	T	T	T	N	N	D	T	T	D	D	T	N	D	T	D	T	T	D	T
		Unit	ug/l	ug/l	ug/l	ug/l	mg/l	ppm	us/cm	uS/cm at 25 C	mg/l	mg/l	ppm	mg/l	mg/l	mg/l	deg c	ug/l	ug/l	mg/l	mg/l	ppm	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
8/18/2022	E321812	F2_BPO							1960					873		< 0.0015	11.9							
8/18/2022	E321812	F2_BPO							1932								12.2							
8/19/2022	E300091	EV_MC2							600								11.4							
8/19/2022	0200097	EV_EC1							1746								5.9							
8/19/2022	E321791	F2_NWPI			< 0.010				1906		1.11			869		< 0.0015	5.8	0.087		< 0.00010			< 0.30	
8/19/2022	E321812	F2_BPO							1964					892		< 0.0015	12							
8/19/2022	E321812	F2_BPO							1945								12							
8/19/2022	E321812	F2_BPO							1930								12.2							
8/20/2022	0200097	EV_EC1							1822								5.7							
8/20/2022	E321791	F2_NWPI							1909					888		< 0.0015	5.9							
8/20/2022	E300091	EV_MC2							586								11.2							
8/20/2022	E321812	F2_BPO							1960					929		< 0.0015	12.1							
8/20/2022	E321812	F2_BPO							1932								11.8							
8/21/2022	E300091	EV_MC2							601								10.9							
8/21/2022	0200097	EV_EC1							1732								5.9							
8/21/2022	E321791	F2_NWPI							1884					890		< 0.0015	6.7							
8/21/2022	E321812	F2_BPO							1921					906		< 0.0015	11.5							
8/21/2022	E321812	F2_BPO																						
8/21/2022	E321812	F2_BPO							1990								12.9							
8/22/2022	E300091	EV_MC2							546								15.4							
8/22/2022	0200097	EV_EC1							1726								5.9							
8/22/2022	E321812	F2_BPO	< 0.010	< 0.010	< 0.010	< 0.010	10.9		2014		0.466	0.485		927		< 0.0015	11.6	0.112	0.114	< 0.00010	< 0.00010		< 0.30	< 0.30
8/22/2022	E321791	F2_NWPI	< 0.010	< 0.010	< 0.010	< 0.010	11.0		1884		1.10	1.09		909		< 0.0015	5.9	0.092	0.089	< 0.00010	< 0.00010		< 0.30	0.48
8/22/2022	E321812	F2_BPO							1997								12.2							
8/23/2022	E300091	EV_MC2							599								12.1							
8/23/2022	0200097	EV_EC1							1730								6.2							
8/23/2022	E321791	F2_NWPI			< 0.020				1884		1.04			837		< 0.0015	5.9	0.088		< 0.00020			< 0.60	
8/23/2022	E321812	F2_BPO			< 0.020				1936		0.483			856		< 0.0015	12	0.120		< 0.00020			< 0.60	
8/23/2022	E300091	EV_MC2			< 0.010	< 0.010	4.80		625		0.204	0.200		163			13.6	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
8/23/2022	E321812	F2_BPO							1922								12							
8/24/2022	E300091	EV_MC2							612								11.3							
8/24/2022	0200097	EV_EC1							1724								5.9							
8/24/2022	E321812	F2_BPO							1999					917		< 0.0015	11.7							
8/24/2022	E321791	F2_NWPI							1874					866		< 0.0015	6.6							
8/24/2022	E321812	F2_BPO							1984								11.6							
8/25/2022	E321791	F2_NWPI			< 0.010				1886		1.15			899		< 0.0015	6	0.092		< 0.00010			< 0.30	
8/25/2022	0200097	EV_EC1							1734								6.2							
8/25/2022	E300091	EV_MC2							592								11.1							
8/25/2022	E321812	F2_BPO			< 0.010				1923		0.478			948		< 0.0015	10.8	0.111		< 0.00010			< 0.30	
8/25/2022	E321812	F2_BPO																						
8/25/2022	E321812	F2_BPO							1915								11							
8/26/2022	E300091	EV_MC2							412.1								11							
8/26/2022	0200097	EV_EC1							1731								5.9							
8/26/2022	E321812	F2_BPO							1920					879		< 0.0015	11.1							
8/26/2022	E321791	F2_NWPI							1881					847		< 0.0015	6							
8/26/2022	E321812	F2_BPO							1889								11							
8/27/2022	E300091	EV_MC2							576								11.2							
8/27/2022	0200097	EV_EC1							1734								6.1							

		Parameter	Selenosulfate, SeSO3	SeMe – selenomethionine CH3SeCH2CH2CH(NH2)CO2H	Silver	Silver	Sodium	Sodium	Specific conductivity, temperature corrected value (25 C)	Specific conductivity, temperature corrected value (25 C)	Strontium	Strontium	Strontium	Sulphate (As SO4)	Sulphide (as S)	Sulphide (as S)	Temperature, Field	Thallium	Thallium	Tin	Tin	Tin	Titanium	Titanium
		Fraction	D	D	D	T	T	T	N	N	D	T	T	D	D	T	N	D	T	D	T	T	D	T
		Unit	ug/l	ug/l	ug/l	ug/l	mg/l	ppm	us/cm	uS/cm at 25 C	mg/l	mg/l	ppm	mg/l	mg/l	mg/l	deg c	ug/l	ug/l	mg/l	mg/l	ppm	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
8/27/2022	E321791	F2_NWPI							1884					822		< 0.0015	6.5							
8/27/2022	E321812	F2_BPO							1929					868		< 0.0015	11							
8/27/2022	E321812	F2_BPO							1976								11.3							
8/28/2022	E300091	EV_MC2							567								9.5							
8/28/2022	0200097	EV_EC1							1720								5.4							
8/28/2022	E321791	F2_NWPI							1881					835		< 0.0015	6.3							
8/28/2022	E321812	F2_BPO			< 0.020	< 0.020	10.5		1939		0.472	0.480		869		< 0.0015	9.6	0.116	0.120	< 0.00020	< 0.00020		< 0.60	< 0.60
8/28/2022	E321812	F2_BPO							1927								10.9							
8/28/2022	E321812	F2_BPO			< 0.020	< 0.020	10.5		1921		0.472	0.480		937		< 0.0015	10.9	0.116	0.120	< 0.00020	< 0.00020		< 0.60	< 0.60
8/29/2022	E300091	EV_MC2	< 0.010	< 0.010	< 0.010	< 0.010	4.17		587		0.189	0.201		139		< 0.0015	8.9	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
8/29/2022	0200203	EV_MC3	< 0.010	< 0.010	< 0.010	< 0.010	3.79		400		0.173	0.181		65.5		< 0.0015	8.4	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
8/29/2022	310168	EV_MC2A	< 0.010	< 0.010	< 0.010	< 0.010	3.46		501		0.162	0.173		103		< 0.0015	8.3	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
8/29/2022	E321812	F2_BPO	< 0.010	< 0.010	< 0.010	< 0.020	11.7		1915		0.471	0.531		872		0.0016	9.9	0.099	0.109	< 0.00010	< 0.00020		< 0.30	< 0.60
8/29/2022	200393	EV_ER1			< 0.010	< 0.010	2.26		437.3		0.203	0.219		75.8		< 0.0015	9.1	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	0.35
8/29/2022	E321791	F2_NWPI	< 0.010	< 0.010	< 0.010	0.054	11.6		1868		1.09	1.22		842		< 0.0015	6.8	0.079	0.104	< 0.00010	< 0.00020		< 0.30	< 0.60
8/29/2022	0200097	EV_EC1	< 0.010	< 0.010	< 0.010	< 0.010	3.12		1735		0.211	0.216		731		< 0.0015	5.3	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
8/29/2022	0200097	EV_EC1							1735								5.3							
8/29/2022	E321814	EV_ECOUT	< 0.010	< 0.010	< 0.010	< 0.010	3.11		1845		0.215	0.227		725		< 0.0015	6.1	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
8/29/2022	E321814	EV_ECOUT							1845								6.1							
8/29/2022	E321812	F2_BPO							1906								9.9							
8/30/2022	E321791	F2_NWPI			< 0.020				1896		1.12			826		< 0.0015	5.8	0.073		< 0.00020			< 0.60	
8/30/2022	E321812	F2_BPO			< 0.020				1928		0.521			868		< 0.0015	10.4	0.104		< 0.00020			< 0.60	
8/30/2022	E300091	EV_MC2							484								9.6							
8/30/2022	0200097	EV_EC1							1735								5.6							
8/30/2022	E300091	EV_MC2			< 0.010	< 0.010	4.72		617		0.176	0.185		140			9.7	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
8/30/2022	E206231	EV_GT1	< 0.010	< 0.010	< 0.020	< 0.020	10.4		1946		0.649	0.719		929		< 0.0015	11.6	0.063	0.054	< 0.00020	< 0.00020		< 0.60	< 0.60
8/30/2022	E206231	EV_GT1							1946								11.6							
8/30/2022	E102685	EV_BC1	< 0.010	< 0.010	< 0.020	< 0.020	10.9		1799		0.776	0.788		873		< 0.0015	17.5	0.049	0.051	< 0.00020	< 0.00020		< 0.60	< 0.60
8/30/2022	E102685	EV_BC1							1799								17.5							
8/30/2022	E321812	F2_BPO							1902								10.6							
8/31/2022	E321791	F2_NWPI							1896					836		< 0.0015	5.8							
8/31/2022	E300091	EV_MC2							608								10.2							
8/31/2022	E321812	F2_BPO							1921								11.1							
8/31/2022	0200097	EV_EC1							1737								5.7							
8/31/2022	E321812	F2_BPO							1921								11.1							
8/31/2022	E321812	F2_BPO							1932					877		< 0.0015	11.1							
8/31/2022	E321812	F2_BPO							1941								11.1							
9/1/2022	E300091	EV_MC2							553								11							
9/1/2022	0200097	EV_EC1							1745								6							
9/1/2022	E321791	F2_NWPI			< 0.020				1901		1.10			832			5.8	0.085		< 0.00020			< 0.60	
9/1/2022	E321812	F2_BPO			< 0.020				1943		0.488			862		< 0.0015	11.2	0.112		< 0.00020			< 0.60	
9/1/2022	E321812	F2_BPO																						
9/1/2022	E321812	F2_BPO							1925								12							
9/2/2022	0200097	EV_EC1							1744								5.8							
9/2/2022	E300091	EV_MC2							1745								6							
9/2/2022	E321791	F2_NWPI							1894					834		< 0.0015	5.8							
9/2/2022	E321812	F2_BPO							1946					868		< 0.0015	11.4							
9/2/2022	E321812	F2_BPO							1925								11.7							

		Parameter	Selenosulfate, SeSO3	SeMe – selenomethionine CH3SeCH2CH2CH(NH2)CO2H	Silver	Silver	Sodium	Sodium	Specific conductivity, temperature corrected value (25 C)	Specific conductivity, temperature corrected value (25 C)	Strontium	Strontium	Strontium	Sulphate (As SO4)	Sulphide (as S)	Sulphide (as S)	Temperature, Field	Thallium	Thallium	Tin	Tin	Tin	Titanium	Titanium
		Fraction	D	D	D	T	T	T	N	N	D	T	T	D	D	T	N	D	T	D	T	T	D	T
		Unit	ug/l	ug/l	ug/l	ug/l	mg/l	ppm	us/cm	uS/cm at 25 C	mg/l	mg/l	ppm	mg/l	mg/l	mg/l	deg c	ug/l	ug/l	mg/l	mg/l	ppm	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
9/3/2022	E300091	EV_MC2																						
9/3/2022	0200097	EV_EC1																						
9/3/2022	E321791	F2_NWPI							1911					838		< 0.0015	6							
9/3/2022	E321812	F2_BPO							1951					868		< 0.0015	11.5							
9/3/2022	E321812	F2_BPO							1929								11.5							
9/4/2022	E300091	EV_MC2							626								10.5							
9/4/2022	0200097	EV_EC1							1738								5.9							
9/4/2022	E321791	F2_NWPI							1885					838		< 0.0015	6.1							
9/4/2022	E321812	F2_BPO							1935					860		0.0267	11.3							
9/4/2022	E321812	F2_BPO																						
9/4/2022	E321812	F2_BPO							1914								11.6							
9/5/2022	E300091	EV_MC2							630								10.2							
9/5/2022	0200097	EV_EC1							1732								5.8							
9/5/2022	E321812	F2_BPO	< 0.010	< 0.010	< 0.010	0.041	10.4		1918		0.526	0.471		855		< 0.0015	10.3	0.114	0.110	< 0.00010	< 0.00010		< 0.30	< 0.30
9/5/2022	E321812	F2_BPO																						
9/5/2022	E321791	F2_NWPI	< 0.010	< 0.010	< 0.010	< 0.020	10.1		1889		1.15	1.02		820		< 0.0015	6.1	0.090	0.082	< 0.00010	< 0.00010		< 0.30	1.01
9/5/2022	E321812	F2_BPO							1907								11.5							
9/6/2022	E300091	EV_MC2							604								9.2							
9/6/2022	0200097	EV_EC1							1733								5.5							
9/6/2022	E321812	F2_BPO			< 0.020				1922		0.488			896		< 0.0015	10	0.114		< 0.00020			< 0.60	
9/6/2022	E321791	F2_NWPI			< 0.020				1888		1.08			856		< 0.0015	6.2	0.086		< 0.00020			0.63	
9/6/2022	E300091	EV_MC2	< 0.010	< 0.010	< 0.010	< 0.010	4.23		640		0.200	0.181		155			10.6	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
9/6/2022	200393	EV_ER1	< 0.010	< 0.010	< 0.010	< 0.010	2.18		461.1		0.221	0.204		76.3			11.9	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
9/6/2022	E206231	EV_GT1			< 0.010	< 0.010	9.44		2035		0.683	0.621		964			11.8	0.050	0.052	< 0.00010	< 0.00010		< 0.30	< 0.30
9/6/2022	E102685	EV_BC1			< 0.010	< 0.010	10.1		1893		0.849	0.780		891			17.8	0.041	0.044	< 0.00010	< 0.00010		< 0.30	< 0.30
9/6/2022	E321812	F2_BPO							1900								10.9							
9/7/2022	E300091	EV_MC2							516								13.6							
9/7/2022	0200097	EV_EC1							1731								5.4							
9/7/2022	E321812	F2_BPO							1919					886		< 0.0015	10.3							
9/7/2022	E321791	F2_NWPI							1888					849		< 0.0015	6							
9/7/2022	E321812	F2_BPO							1899								11.6							
9/8/2022	E300091	EV_MC2							631								9.3							
9/8/2022	0200097	EV_EC1							1736								5.8							
9/8/2022	E321812	F2_BPO			< 0.010				1902		0.441			868		< 0.0015	10.2	0.106		< 0.00010			< 0.30	
9/8/2022	E321791	F2_NWPI			< 0.010				1888		0.947			829		< 0.0015	6.2	0.082		< 0.00010			< 0.30	
9/8/2022	E321814	EV_ECOUT			< 0.010	< 0.010	3.37		1907		0.194	0.218		732			5.4	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
9/8/2022	0200097	EV_EC1			< 0.010	< 0.010	3.39		1765		0.186	0.198		731			6.2	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
9/8/2022	0200203	EV_MC3			< 0.010	< 0.010	3.87		400.8		0.155	0.167		62.8			11.5	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
9/8/2022	E300091	EV_MC2			< 0.010	< 0.010	4.18		584		0.192	0.188		148			12.1	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
9/8/2022	E321812	F2_BPO							1891								10.2							
9/9/2022	E300091	EV_MC2							624								8.7							
9/9/2022	0200097	EV_EC1							1725								5.6							
9/9/2022	E321812	F2_BPO							1894					864		< 0.0015	9							
9/9/2022	E321791	F2_NWPI							1880					817		< 0.0015	6.3							
9/9/2022	E300091	EV_MC2			< 0.010	< 0.010	4.11		638		0.195	0.188		153			8.5	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
9/9/2022	E102685	EV_BC1			< 0.010	< 0.010	9.84		1690		0.811	0.785		881			14.8	0.041	0.048	< 0.00010	0.00014		< 0.30	< 0.30
9/9/2022	E206231	EV_GT1			< 0.020	< 0.010	9.29		1931		0.627	0.616		956			10.7	0.051	0.054	< 0.00020	< 0.00010		< 0.60	< 0.30
9/9/2022	310168	EV_MC2A			< 0.010	< 0.010	3.43		499		0.165	0.159		112			10.8	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30

		Parameter	Selenosulfate, SeSO3	SeMe – selenomethionine CH3SeCH2CH2CH(NH2)CO2H	Silver	Silver	Sodium	Sodium	Specific conductivity, temperature corrected value (25 C)	Specific conductivity, temperature corrected value (25 C)	Strontium	Strontium	Strontium	Sulphate (As SO4)	Sulphide (as S)	Sulphide (as S)	Temperature, Field	Thallium	Thallium	Tin	Tin	Tin	Titanium	Titanium
		Fraction	D	D	D	T	T	T	N	N	D	T	T	D	D	T	N	D	T	D	T	T	D	T
		Unit	ug/l	ug/l	ug/l	ug/l	mg/l	ppm	us/cm	uS/cm at 25 C	mg/l	mg/l	ppm	mg/l	mg/l	mg/l	deg c	ug/l	ug/l	mg/l	mg/l	ppm	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
9/9/2022	E321812	F2_BPO							1879								9							
9/10/2022	E300091	EV_MC2																						
9/10/2022	0200097	EV_EC1																						
9/10/2022	E321791	F2_NWPI							1886					827		< 0.0015	5.9							
9/10/2022	E321812	F2_BPO							1927					867		< 0.0015	8.9							
9/10/2022	E321812	F2_BPO							1914								10.2							
9/11/2022	E300091	EV_MC2							658								7.5							
9/11/2022	0200097	EV_EC1							1782								4.9							
9/11/2022	E321791	F2_NWPI							1930					828		< 0.0015	6.1							
9/11/2022	E321812	F2_BPO							1985					873		< 0.0015	9.1							
9/11/2022	E321812	F2_BPO							1975								10							
9/12/2022	E300091	EV_MC2	< 0.010	< 0.010	< 0.010	< 0.010	4.98		655		0.174	0.210		162		< 0.0015	8.2	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
9/12/2022	310168	EV_MC2A	< 0.010	< 0.010	< 0.010	< 0.010	4.01		546		0.176	0.176		116		< 0.0015	8	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
9/12/2022	0200203	EV_MC3	< 0.010	< 0.010	< 0.010	< 0.010	4.18		415.1		0.169	0.179		65.3		< 0.0015	8	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
9/12/2022	200393	EV_ER1			< 0.010	< 0.010	2.86		474.1		0.198	0.228		81.2		< 0.0015	8.5	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
9/12/2022	E321812	F2_BPO							1973								9							
9/12/2022	E321812	F2_BPO	< 0.010	< 0.010	< 0.010	< 0.010	11.9		1972		0.461	0.524		860		< 0.0015	9	0.105	0.111	< 0.00010	< 0.00010		< 0.30	< 0.30
9/12/2022	E321812	F2_BPO							1972								9.00							
9/12/2022	E321791	F2_NWPI	< 0.010	< 0.010	< 0.010	< 0.010	11.4		1900		1.10	1.12		823		< 0.0015	5.9	0.085	0.083	< 0.00010	< 0.00010		< 0.30	0.34
9/12/2022	0200097	EV_EC1	< 0.010	< 0.010	< 0.010	< 0.010	3.53		1780		0.198	0.215		717		< 0.0015	5.6	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
9/12/2022	0200097	EV_EC1							1780								5.6							
9/12/2022	E321814	EV_ECOUT	< 0.010	< 0.010	< 0.010	< 0.010	3.53		1911		0.203	0.231		731		< 0.0015	5.7	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
9/12/2022	E321814	EV_ECOUT							1911								5.7							
9/12/2022	E321812	F2_BPO							1950								9							
9/13/2022	E300091	EV_MC2							650								9.2							
9/13/2022	0200097	EV_EC1							1788								5.8							
9/13/2022	E321812	F2_BPO			< 0.020	< 0.010	10.4		1973		0.438	0.494		867		< 0.0015	9.2	0.102	0.109	< 0.00020	< 0.00010		< 0.60	0.43
9/13/2022	E206231	EV_GT1	< 0.010	< 0.010	< 0.020	< 0.020	9.65		2029		0.601	0.622		952		< 0.0015	10.5	0.046	0.048	< 0.00020	< 0.00020		< 0.60	< 0.60
9/13/2022	E206231	EV_GT1							2029								10.5							
9/13/2022	E102685	EV_BC1	< 0.010	< 0.010	< 0.020	< 0.020	10.0		1868		0.712	0.764		879		< 0.0015	13.7	0.039	0.045	< 0.00020	< 0.00020		< 0.60	< 0.60
9/13/2022	E102685	EV_BC1							1869								13.7							
9/13/2022	E300091	EV_MC2			< 0.010	< 0.010	4.72		647		0.214	0.205		158			9.3	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
9/13/2022	E321791	F2_NWPI			< 0.020				1940		1.02			833		< 0.0015	9.3	0.082		< 0.00020			< 0.60	
9/13/2022	E321812	F2_BPO							1948								9.6							
9/14/2022	E300091	EV_MC2							657								8.8							
9/14/2022	0200097	EV_EC1							1781								5.5							
9/14/2022	E321791	F2_NWPI							1934					832		< 0.0015	6.2							
9/14/2022	E321812	F2_BPO							1766					869		< 0.0015	9.6							
9/14/2022	E321812	F2_BPO																						
9/14/2022	E321812	F2_BPO							1934								9.4							
9/15/2022	E300091	EV_MC2							644								9.6							
9/15/2022	0200097	EV_EC1							1782								5.93							
9/15/2022	E321791	F2_NWPI			< 0.020				1934		1.00			825		< 0.0015	6.1	0.077		< 0.00020			< 0.60	
9/15/2022	E321812	F2_BPO			< 0.020				1982		0.469			868		< 0.0015	9.4	0.106		0.00035			< 0.60	
9/15/2022	0200097	EV_EC1							1757								6.1							
9/15/2022	310168	EV_MC2A							518								11.3							
9/15/2022	0200203	EV_MC3							392.2								11.3							
9/15/2022	E206231	EV_GT1							2021								10.7							

		Parameter	Selenosulfate, SeSO3	SeMe – selenomethionine CH3SeCH2CH2CH(NH2)CO2H	Silver	Silver	Sodium	Sodium	Specific conductivity, temperature corrected value (25 C)	Specific conductivity, temperature corrected value (25 C)	Strontium	Strontium	Strontium	Sulphate (As SO4)	Sulphide (as S)	Sulphide (as S)	Temperature, Field	Thallium	Thallium	Tin	Tin	Tin	Titanium	Titanium
		Fraction	D	D	D	T	T	T	N	N	D	T	T	D	D	T	N	D	T	D	T	T	D	T
		Unit	ug/l	ug/l	ug/l	ug/l	mg/l	ppm	us/cm	uS/cm at 25 C	mg/l	mg/l	ppm	mg/l	mg/l	mg/l	deg c	ug/l	ug/l	mg/l	mg/l	ppm	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
9/15/2022	E102685	EV_BC1							1872								15.4							
9/15/2022	E300091	EV_MC2							623								12.2							
9/15/2022	E321812	F2_BPO							1913								10.1							
9/16/2022	E300091	EV_MC2							652								8.6							
9/16/2022	0200097	EV_EC1							1783								5.4							
9/16/2022	E321791	F2_NWPI							1933					834		< 0.0015	6							
9/16/2022	E321812	F2_BPO							1978					880		< 0.0015	9.6							
9/16/2022	E321812	F2_BPO																						
9/16/2022	E321812	F2_BPO							1913								10.3							
9/17/2022	E300091	EV_MC2							657								8.6							
9/17/2022	0200097	EV_EC1							1785								5.6							
9/17/2022	E321791	F2_NWPI							1932					819		< 0.0015	6.2							
9/17/2022	E321812	F2_BPO							1978					858		< 0.0015	9.5							
9/17/2022	E321812	F2_BPO							1892								9.8							
9/18/2022	E300091	EV_MC2							648								7.1							
9/18/2022	0200097	EV_EC1							1745								4.8							
9/18/2022	E321791	F2_NWPI							1891					833		< 0.0015	6.3							
9/18/2022	E321812	F2_BPO							1152					857		< 0.0015	8.9							
9/18/2022	E321812	F2_BPO							1919								9.4							
9/19/2022	E300091	EV_MC2							653								7.8							
9/19/2022	0200097	EV_EC1							1745								5.4							
9/19/2022	E321791	F2_NWPI	< 0.010	< 0.010	< 0.020	< 0.020	9.51		1895		1.02	1.06		800		< 0.0015	6.1	0.082	0.088	< 0.00020	< 0.00020		< 0.60	< 0.60
9/19/2022	E321812	F2_BPO	< 0.010	< 0.010	< 0.020	< 0.020	10.1		1916		0.479	0.506		838		< 0.0015	9.1	0.115	0.109	< 0.00020	< 0.00020		< 0.60	< 0.60
9/19/2022	E321812	F2_BPO																						
9/19/2022	E321812	F2_BPO							1903								9.8							
9/20/2022	E300091	EV_MC2							658								7							
9/20/2022	0200097	EV_EC1							1745								5							
9/20/2022	E321812	F2_BPO			< 0.020				1953		0.487			857		< 0.0015	8.5	0.104		< 0.00020			< 0.60	
9/20/2022	E321791	F2_NWPI			< 0.020				1891		1.01			820		< 0.0015	6.5	0.078		< 0.00020			< 0.60	
9/20/2022	E321812	F2_BPO							1904								9							
9/21/2022	E300091	EV_MC2							661								5.6							
9/21/2022	0200097	EV_EC1							1601								4.4							
9/21/2022	E321812	F2_BPO							1947					854		< 0.0015	8.3							
9/21/2022	E321812	F2_BPO																						
9/21/2022	E321791	F2_NWPI							1891					810		< 0.0015	6.3							
9/21/2022	E321812	F2_BPO							1908								8.3							
9/22/2022	E300091	EV_MC2							664								7.3							
9/22/2022	0200097	EV_EC1							1744								5.4							
9/22/2022	E321791	F2_NWPI			< 0.020				1893		1.02			819		< 0.0015	6.3	0.088		< 0.00020			< 0.60	
9/22/2022	E321812	F2_BPO			< 0.020				1954		0.472			868		< 0.0015	8.3	0.107		< 0.00020			< 0.60	
9/23/2022	E300091	EV_MC2							557								6.6							
9/23/2022	0200097	EV_EC1							1749								5							
9/23/2022	E321791	F2_NWPI							1892					840		< 0.0015	6.2							
9/23/2022	E321812	F2_BPO							1950					886		< 0.0015	7.9							
9/23/2022	E321812	F2_BPO							1905								8							
9/24/2022	E300091	EV_MC2							654								7.4							
9/24/2022	0200097	EV_EC1							1750								5.5							
9/24/2022	E321791	F2_NWPI							1890					841		< 0.0015	6.2							

		Parameter	Selenosulfate, SeSO3	SeMe – selenomethionine CH3SeCH2CH2CH(NH2)CO2H	Silver	Silver	Sodium	Sodium	Specific conductivity, temperature corrected value (25 C)	Specific conductivity, temperature corrected value (25 C)	Strontium	Strontium	Strontium	Sulphate (As SO4)	Sulphide (as S)	Sulphide (as S)	Temperature, Field	Thallium	Thallium	Tin	Tin	Tin	Titanium	Titanium
		Fraction	D	D	D	T	T	T	N	N	D	T	T	D	D	T	N	D	T	D	T	T	D	T
		Unit	ug/l	ug/l	ug/l	ug/l	mg/l	ppm	us/cm	uS/cm at 25 C	mg/l	mg/l	ppm	mg/l	mg/l	mg/l	deg c	ug/l	ug/l	mg/l	mg/l	ppm	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
9/24/2022	E321812	F2_BPO							1949					888		< 0.0015	7.5							
9/24/2022	E321812	F2_BPO							1907								8.4							
9/25/2022	E300091	EV_MC2							689								6.9							
9/25/2022	0200097	EV_EC1							1833								4.9							
9/25/2022	E321791	F2_NWPI							1980					839		< 0.0015	6.2							
9/25/2022	E321812	F2_BPO							2008					889		< 0.0015	8.1							
9/25/2022	E321812	F2_BPO							2017								8.9							
9/26/2022	200393	EV_ER1			< 0.010	< 0.010	3.23		509		0.222	0.240		91.0		< 0.0015	7.8	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
9/26/2022	310168	EV_MC2A	< 0.010	< 0.010	< 0.010	< 0.010	4.07		570		0.159	0.190		122		< 0.0015	7	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
9/26/2022	E321812	F2_BPO	< 0.010	< 0.010	< 0.020	< 0.010	10.3		1994		0.462	0.473		868		< 0.0015	8.5	0.112	0.110	< 0.00020	< 0.00010		< 0.60	< 0.30
9/26/2022	E300091	EV_MC2	< 0.010	< 0.010	< 0.010	< 0.010	4.69		703		0.198	0.204		172		< 0.0015	7.2	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
9/26/2022	0200203	EV_MC3	< 0.010	< 0.010	< 0.010	< 0.010	4.18		408.7		0.179	0.175		61.7		< 0.0015	6.7	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
9/26/2022	E321791	F2_NWPI	< 0.010	< 0.010	< 0.020	< 0.010	9.47		1907		0.992	1.04		829		< 0.0015	6.5	0.087	0.089	< 0.00020	< 0.00010		< 0.60	< 0.30
9/26/2022	0200097	EV_EC1	< 0.010	< 0.010	< 0.010	< 0.010	3.31		1833		0.205	0.207		748		< 0.0015	5.1	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
9/26/2022	E321814	EV_ECOUT	< 0.010	< 0.010	< 0.010	< 0.010	3.41		1968		0.216	0.232		742		< 0.0015	5.8	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
9/26/2022	E321812	F2_BPO							1968								9.1							
9/27/2022	E300091	EV_MC2							725								7.5							
9/27/2022	0200097	EV_EC1							1831								5.2							
9/27/2022	E321812	F2_BPO			< 0.010				2001		0.493			861		< 0.0015	9	0.111		< 0.00010			< 0.30	
9/27/2022	E206231	EV_GT1	< 0.010	< 0.010	< 0.010	< 0.010	9.09		2083		0.623	0.673		925		< 0.0015	8.9	0.048	0.055	< 0.00010	< 0.00010		< 0.30	< 0.30
9/27/2022	E102685	EV_BC1	< 0.010	< 0.010	< 0.010	< 0.010	10.6		2012		1.21	1.26		859		< 0.0015	11.6	0.046	0.049	< 0.00010	< 0.00010		< 0.30	< 0.30
9/27/2022	E321791	F2_NWPI			< 0.010				1993		1.04			812		< 0.0015	6.8	0.084		< 0.00010			< 0.30	
9/27/2022	E321812	F2_BPO							2051								8.62							
9/28/2022	E300091	EV_MC2							723								7.4							
9/28/2022	0200097	EV_EC1							1837								5.2							
9/28/2022	E321791	F2_NWPI							1974					832		< 0.0015	9.1							
9/28/2022	E321812	F2_BPO							2042					877		< 0.0015	9.2							
9/28/2022	E321812	F2_BPO															10.11							
9/29/2022	E300091	EV_MC2							725								9.3							
9/29/2022	E321791	F2_NWPI			< 0.020				1975		0.994			832		< 0.0015	6.5	0.081		< 0.00020			< 0.60	
9/29/2022	E321812	F2_BPO			< 0.020				2041		0.445			877		< 0.0015	9.5	0.102		< 0.00020			< 0.60	
9/29/2022	0200097	EV_EC1							1839								6.3							
9/29/2022	E321812	F2_BPO							1822								9.358							
9/30/2022	E300091	EV_MC2							645								9.2							
9/30/2022	0200097	EV_EC1							1857								5.9							
9/30/2022	E321812	F2_BPO							2036					893		< 0.0015	10.3							
9/30/2022	E321812	F2_BPO							1960								9.6							
9/30/2022	E321791	F2_NWPI							1975					842		< 0.0015	6.5							
10/1/2022	E300091	EV_MC2							645								8.2							
10/1/2022	0200097	EV_EC1							1847								5.7							
10/1/2022	E321812	F2_BPO							2036					852		< 0.0015	9.1							
10/1/2022	E321791	F2_NWPI							1971					801		< 0.0015	6.7							
10/1/2022	E321812	F2_BPO							1966								9.7							
10/2/2022	E300091	EV_MC2							669								7.3							
10/2/2022	0200097	EV_EC1							1637								5							
10/2/2022	E321791	F2_NWPI							1894					805		< 0.0015	6.4							
10/2/2022	E321812	F2_BPO							1920					850		< 0.0015	9.4							
10/2/2022	E321812	F2_BPO							1991								9.3							

		Parameter	Selenosulfate, SeSO3	SeMe – selenomethionine CH3SeCH2CH2CH(NH2)CO2H	Silver	Silver	Sodium	Sodium	Specific conductivity, temperature corrected value (25 C)	Specific conductivity, temperature corrected value (25 C)	Strontium	Strontium	Strontium	Sulphate (As SO4)	Sulphide (as S)	Sulphide (as S)	Temperature, Field	Thallium	Thallium	Tin	Tin	Tin	Titanium	Titanium
		Fraction	D	D	D	T	T	T	N	N	D	T	T	D	D	T	N	D	T	D	T	T	D	T
		Unit	ug/l	ug/l	ug/l	ug/l	mg/l	ppm	us/cm	uS/cm at 25 C	mg/l	mg/l	ppm	mg/l	mg/l	mg/l	deg c	ug/l	ug/l	mg/l	mg/l	ppm	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
10/3/2022	E300091	EV_MC2	< 0.010	< 0.010	< 0.010	< 0.010	4.46		672		0.224	0.199		162		< 0.0015	7	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
10/3/2022	200393	EV_ER1			< 0.010	< 0.010	3.04		488.6		0.262	0.226		91.1		< 0.0015	7.2	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
10/3/2022	0200203	EV_MC3	< 0.010	< 0.010	< 0.010	< 0.010	3.97		408.1		0.180	0.182		65.3		< 0.0015	6.3	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
10/3/2022	310168	EV_MC2A	< 0.010	< 0.010	< 0.010	< 0.010	3.89		578		0.205	0.177		134		< 0.0015	6.3	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
10/3/2022	E321812	F2_BPO	< 0.010	< 0.010	< 0.020	< 0.020	12.0		1985		0.472	0.515		880		< 0.0015	9.1	0.114	0.126	< 0.00020	< 0.00020		< 0.60	< 0.60
10/3/2022	E321791	F2_NWPI	< 0.010	< 0.010	< 0.020	< 0.020	10.4		1912		0.929	1.01		837		< 0.0015	6.3	0.082	0.088	< 0.00020	< 0.00020		< 0.60	< 0.60
10/3/2022	0200097	EV_EC1	< 0.010	< 0.010	< 0.010	< 0.010	3.40		1771		0.207	0.219		750		< 0.0015	5	< 0.010	0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
10/3/2022	E321814	EV_ECOUT	< 0.010	< 0.010	< 0.010	< 0.010	3.31		1894		0.239	0.231		763		< 0.0015	5.9	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
10/3/2022	E321812	F2_BPO							1946								9.3							
10/4/2022	E300091	EV_MC2							697								7.1							
10/4/2022	E321791	F2_NWPI							1936					812		< 0.0015	6.3							
10/4/2022	0200097	EV_EC1							1771								5.1							
10/4/2022	E321812	F2_BPO							1978					853		< 0.0015	9.2							
10/4/2022	E206231	EV_GT1	< 0.010	< 0.010	< 0.010	< 0.010	9.42		2034		0.612	0.669		980		< 0.0015	8.9	0.051	0.059	< 0.00010	< 0.00010		< 0.30	0.66
10/4/2022	E321814	EV_ECOUT			< 0.010	< 0.010	3.12		1934		0.214	0.210		733			5.2	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
10/4/2022	E102685	EV_BC1	< 0.010	< 0.010	< 0.010	< 0.010	10.6		2017		1.08	1.08		927		< 0.0015	11	0.048	0.051	< 0.00010	< 0.00010		< 0.30	< 0.30
10/4/2022	E321811	F2_ECIN	< 0.010	< 0.010	< 0.010	< 0.010	10.5		1930		0.488	0.540		856		< 0.0015	15.2	0.372	0.423	< 0.00010	< 0.00010		< 0.30	< 0.30
10/5/2022	E321791	F2_NWPI			< 0.020				1897		0.950			811		< 0.0015	6.2	0.080		< 0.00020			< 0.60	
10/5/2022	E321811	F2_ECIN			< 0.020				1898		0.198			738		< 0.0015	7.2	< 0.020		< 0.00020			< 0.60	
10/5/2022	E321812	F2_BPO			< 0.020				1923		0.452			864		< 0.0015	9.3	0.102		< 0.00020			< 0.60	
10/5/2022	0200097	EV_EC1			< 0.010	< 0.010	5.56		1824		0.246	0.288		763			6.8	0.015	0.015	< 0.00010	< 0.00010		< 0.30	< 0.30
10/6/2022	E321791	F2_NWPI							1893					810		< 0.0015	6.4							
10/6/2022	E321812	F2_BPO							1952					859	0.0018	< 0.0015	8.8							
10/6/2022	E102685	EV_BC1																						
10/6/2022	0200097	EV_EC1							1782								5.4							
10/6/2022	E300091	EV_MC2							705								9.3							
10/6/2022	0200203	EV_MC3			< 0.010	< 0.010	3.74		701		0.174	0.189		61.9			9	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
10/6/2022	E321811	F2_ECIN							1893					732		< 0.0015	13.6							
10/6/2022	200393	EV_ER1			< 0.010	< 0.010	3.04		507		0.228	0.264		94.0			9.1	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
10/6/2022	E206231	EV_GT1			< 0.010	< 0.010	9.88		2073		0.660	0.699		965			9.3	0.050	0.051	< 0.00010	< 0.00010		< 0.30	< 0.30
10/6/2022	E102685	EV_BC1			< 0.010	< 0.010	11.2		2027		0.998	1.05		901			12.1	0.046	0.045	< 0.00010	< 0.00010		< 0.30	< 0.30
10/6/2022	E300091	EV_MC2			< 0.010	< 0.010	4.40		707		0.203	0.221		179			9.6	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
10/6/2022	E321812	F2_BPO							1853								8.93							
10/7/2022	E321791	F2_NWPI			< 0.010				1894		1.05			836		< 0.0015	6.5	0.082		< 0.00010			< 0.30	
10/7/2022	E321811	F2_ECIN			< 0.010				1902		0.223			748		< 0.0015	6.7	< 0.010		< 0.00010			< 0.30	
10/7/2022	E321812	F2_BPO			< 0.010				1997		0.506			874	< 0.0015	< 0.0015	8.8	0.107		< 0.00010			< 0.30	
10/7/2022	E321812	F2_BPO							1959								8.7							
10/8/2022	E321791	F2_NWPI							1894					830		< 0.0015	6.4							
10/8/2022	E321811	F2_ECIN							1900					757		< 0.0015	6.6							
10/8/2022	E321812	F2_BPO							1961					868	0.0024	< 0.0015	8.5							
10/8/2022	E321812	F2_BPO							1882								8.6							
10/9/2022	E321791	F2_NWPI							1891					830		< 0.0015	6.4							
10/9/2022	E321811	F2_ECIN							1906					768		< 0.0015	6.5							
10/9/2022	E321812	F2_BPO							1967					881	< 0.0015	< 0.0015	8.4							
10/9/2022	E321814	EV_ECOUT	< 0.010	< 0.010	< 0.010	< 0.010	3.66		2019		0.231	0.215		763		< 0.0015	7	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
10/9/2022	E321812	F2_BPO							1876								9							
10/10/2022	E321811	F2_ECIN	< 0.010	< 0.010	< 0.010	< 0.020	3.02		1957		0.222	0.227		766		< 0.0015	6.7	< 0.010	< 0.020	< 0.00010	< 0.00020		< 0.30	< 0.60
10/10/2022	E321791	F2_NWPI	< 0.010	< 0.010	< 0.010	< 0.020	10.5		1944		1.02	1.03		832		< 0.0015	6.7	0.080	0.092	< 0.00010	< 0.00020		< 0.30	< 0.60

		Parameter	Selenosulfate, SeSO3	SeMe – selenomethionine CH3SeCH2CH2CH(NH2)CO2H	Silver	Silver	Sodium	Sodium	Specific conductivity, temperature corrected value (25 C)	Specific conductivity, temperature corrected value (25 C)	Strontium	Strontium	Strontium	Sulphate (As SO4)	Sulphide (as S)	Sulphide (as S)	Temperature, Field	Thallium	Thallium	Tin	Tin	Tin	Titanium	Titanium
		Fraction	D	D	D	T	T	T	N	N	D	T	T	D	D	T	N	D	T	D	T	T	D	T
		Unit	ug/l	ug/l	ug/l	ug/l	mg/l	ppm	us/cm	uS/cm at 25 C	mg/l	mg/l	ppm	mg/l	mg/l	mg/l	deg c	ug/l	ug/l	mg/l	mg/l	ppm	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
10/10/2022	E321812	F2_BPO	< 0.010	< 0.010	< 0.010	< 0.020	11.2		2025		0.508	0.482		889	< 0.0015	< 0.0015	8.2	0.108	0.115	< 0.00010	< 0.00020		< 0.30	< 0.60
10/10/2022	E321812	F2_BPO							1798								8.9							
10/11/2022	E321811	F2_ECIN							1957					761		< 0.0015	6.7							
10/11/2022	E321791	F2_NWPI							1948					837		< 0.0015	6.5							
10/11/2022	E321812	F2_BPO							1885					896	< 0.0015	< 0.0015	8							
10/11/2022	E300091	EV_MC2			< 0.010	< 0.010	4.66		668		0.208	0.194		172			6.8	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
10/11/2022	E321812	F2_BPO							1904								8.6							
10/12/2022	E321811	F2_ECIN			< 0.020				1962		0.234			761		< 0.0015	6.6	< 0.020		< 0.00020			< 0.60	
10/12/2022	E321791	F2_NWPI			< 0.020				1946		0.977			828		< 0.0015	6.5	0.096		< 0.00020			< 0.60	
10/12/2022	E321812	F2_BPO			< 0.020				2025		0.496			872	< 0.0015	< 0.0015	7.5	0.112		< 0.00020			< 0.60	
10/12/2022	E300091	EV_MC2				< 0.010	3.81		575			0.187		150			7.8		< 0.010		< 0.00010			< 0.30
10/12/2022	E321812	F2_BPO							1942								8.4							
10/13/2022	E321811	F2_ECIN							1961					748		< 0.0015	6.6							
10/13/2022	E321791	F2_NWPI							1939					813		< 0.0015	6.7							
10/13/2022	E321812	F2_BPO							2017					872	< 0.0015	< 0.0015	7.6							
10/13/2022	E321812	F2_BPO							1933								8.2							
10/14/2022	E300091	EV_MC2				< 0.010	4.70		695			0.217		164			5		< 0.010		< 0.00010			< 0.30
10/14/2022	E321811	F2_ECIN			< 0.020				1963		0.220			742		< 0.0015	6.7	< 0.020		< 0.00020			< 0.60	
10/14/2022	E321791	F2_NWPI			< 0.020				1943		0.880			804		< 0.0015	6.7	0.075		< 0.00020			< 0.60	
10/14/2022	E321812	F2_BPO			< 0.020				2014		0.461			864	< 0.0015	< 0.0015	7.6	0.113		< 0.00020			< 0.60	
10/14/2022	E321812	F2_BPO							1929								8.2							
10/15/2022	E321811	F2_ECIN							1966					749		< 0.0015	6.4							
10/15/2022	E321791	F2_NWPI							1945					814		< 0.0015	6.5							
10/15/2022	E321812	F2_BPO							2005					867	< 0.0015	< 0.0015	7.5							
10/15/2022	E321812	F2_BPO							1902								8.2							
10/16/2022	E321791	F2_NWPI							1978					809		< 0.0015	6.8							
10/16/2022	E321811	F2_ECIN							1997					761		< 0.0015	6.7							
10/16/2022	E321812	F2_BPO							1918					868	< 0.0015	< 0.0015	7.7							
10/16/2022	E321812	F2_BPO							1953								8.5							
10/17/2022	200393	EV_ER1			< 0.020	< 0.010	3.25		519		0.215	0.224		93.4		< 0.0015	5.1	< 0.020	< 0.010	< 0.00020	< 0.00010		< 0.60	< 0.30
10/17/2022	E300091	EV_MC2	< 0.010	< 0.010	< 0.020	< 0.010	4.83		681		0.189	0.200		167		< 0.0015	4.3	< 0.020	< 0.010	< 0.00020	< 0.00010		< 0.60	< 0.30
10/17/2022	310168	EV_MC2A	< 0.010	< 0.010	< 0.020	< 0.010	3.89		610		0.171	0.175		132		< 0.0015	4.1	< 0.020	< 0.010	< 0.00020	< 0.00010		< 0.60	< 0.30
10/17/2022	0200203	EV_MC3	< 0.010	< 0.010	< 0.020	< 0.010	3.70		423.6		0.171	0.170		62.8		< 0.0015	3.9	< 0.020	< 0.010	< 0.00020	< 0.00010		< 0.60	< 0.30
10/17/2022	E321812	F2_BPO	< 0.010	< 0.010	< 0.020	< 0.020	12.8		1949		0.531	0.574		869	< 0.0038	< 0.0015	7.7	0.122	0.127	< 0.00020	< 0.00020		< 0.60	< 0.60
10/17/2022	E321791	F2_NWPI	< 0.010	< 0.010	< 0.020	< 0.020	11.2		1868		1.04	1.13		809		< 0.0015	6.6	0.094	0.092	< 0.00020	< 0.00020		< 0.60	< 0.60
10/17/2022	E321811	F2_ECIN	< 0.010	< 0.010	< 0.020	< 0.020	3.24		1881		0.229	0.236		752		< 0.0015	6.4	< 0.020	< 0.020	< 0.00020	< 0.00020		< 0.60	< 0.60
10/17/2022	0200097	EV_EC1	< 0.010	< 0.010	< 0.020	< 0.010	6.64		1932		0.289	0.324		795		< 0.0015	5.5	0.023	0.028	< 0.00020	< 0.00010		< 0.60	< 0.30
10/17/2022	E321814	EV_ECOUT	< 0.010	< 0.010	< 0.020	< 0.010	5.67		2012		0.277	0.296		783		< 0.0015	6.5	0.035	0.036	< 0.00020	< 0.00010		< 0.60	< 0.30
10/17/2022	E321812	F2_BPO							1645								8.41							
10/18/2022	E321791	F2_NWPI							1895					810		< 0.0015	6.8							
10/18/2022	E321811	F2_ECIN							1899					750		< 0.0015	6.5							
10/18/2022	E206231	EV_GT1	< 0.010	< 0.010	< 0.020	< 0.020	8.66		2178		0.746	0.865		989		< 0.0015	6.2	0.034	0.048	< 0.00020	< 0.00020		< 0.60	< 0.60
10/18/2022	E321812	F2_BPO							1923					858	< 0.0015	< 0.0015	7.7							
10/18/2022	E102685	EV_BC1	< 0.010	< 0.010	< 0.020	< 0.020	11.3		2019		0.869	1.00		909		< 0.0015	6.7	0.035	0.046	< 0.00020	< 0.00020		< 0.60	< 0.60
10/18/2022	E300091	EV_MC2			< 0.010	< 0.010	3.97		674		0.220	0.195		157			5.3	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
10/18/2022	E321812	F2_BPO							1916								8.4							
10/19/2022	E300091	EV_MC2				< 0.010	4.64		684			0.196		158			4		0.013		< 0.00010			< 0.30
10/19/2022	E321811	F2_ECIN			< 0.010				1986		0.215			756		< 0.0015	6.4	< 0.010		< 0.00010			< 0.30	

		Parameter	Selenosulfate, SeSO3	SeMe – selenomethionine CH3SeCH2CH2CH(NH2)CO2H	Silver	Silver	Sodium	Sodium	Specific conductivity, temperature corrected value (25 C)	Specific conductivity, temperature corrected value (25 C)	Strontium	Strontium	Strontium	Sulphate (As SO4)	Sulphide (as S)	Sulphide (as S)	Temperature, Field	Thallium	Thallium	Tin	Tin	Tin	Titanium	Titanium
		Fraction	D	D	D	T	T	T	N	N	D	T	T	D	D	T	N	D	T	D	T	T	D	T
		Unit	ug/l	ug/l	ug/l	ug/l	mg/l	ppm	us/cm	uS/cm at 25 C	mg/l	mg/l	ppm	mg/l	mg/l	mg/l	deg c	ug/l	ug/l	mg/l	mg/l	ppm	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
10/19/2022	E321812	F2_BPO			< 0.010				2042		0.515			853	< 0.0015	< 0.0015	7.7	0.115		< 0.00010			< 0.30	
10/19/2022	E321812	F2_BPO							1915								8.1							
10/20/2022	E321811	F2_ECIN							2009					748		< 0.0015	6.4							
10/20/2022	E321812	F2_BPO							2037					848	< 0.0015	< 0.0015	7.7							
10/20/2022	E321812	F2_BPO							2037								7.7							
10/20/2022	E321812	F2_BPO							1915								7.7							
10/20/2022	E321812	F2_BPO							1915								7.7							
10/21/2022	E300091	EV_MC2				< 0.020	4.88		675			0.198		153			6.5		< 0.020		< 0.00020			< 0.60
10/21/2022	E321811	F2_ECIN			< 0.020				2012		0.220			751		< 0.0015	6.5	< 0.020		< 0.00020			< 0.60	
10/21/2022	E321812	F2_BPO			< 0.020				2031		0.489			849	< 0.0015	< 0.0015	7	0.111		< 0.00020			< 0.60	
10/21/2022	E321812	F2_BPO							1916								6.8							
10/22/2022	E321811	F2_ECIN							2010					798		< 0.0015	6.5							
10/22/2022	E321812	F2_BPO							2017					864	< 0.0015	< 0.0015	6							
10/22/2022	E321812	F2_BPO							1881								6							
10/23/2022	E321811	F2_ECIN							1922					777		< 0.0015	6.2							
10/23/2022	E321812	F2_BPO							1920					869	< 0.0015	< 0.0015	5.2							
10/23/2022	E321812	F2_BPO							1889								5.4							
10/24/2022	E300091	EV_MC2				< 0.010	4.62		635			0.197		151			3.8		< 0.010		< 0.00010			< 0.30
10/24/2022	0200097	EV_EC1	< 0.010	< 0.010					1838								5.1							
10/24/2022	E321811	F2_ECIN	< 0.010	< 0.010	< 0.020	< 0.020	3.26		1923		0.216	0.225		776		< 0.0015	6.1	< 0.020	< 0.020	< 0.00020	< 0.00020		< 0.60	< 0.60
10/24/2022	E321812	F2_BPO	< 0.010	< 0.010	< 0.020	< 0.020	12.6		1923		0.479	0.534		866	< 0.0030	< 0.0015	5.2	0.106	0.128	< 0.00020	< 0.00020		< 0.60	< 0.60
10/24/2022	E321814	EV_ECOUT	< 0.010	< 0.010					1825								5.4							
10/24/2022	E321812	F2_BPO							1930								5							
10/25/2022	E321811	F2_ECIN							1925					783		< 0.0015	6.2							
10/25/2022	E321812	F2_BPO							1935					872	< 0.0015	< 0.0015	4.7							
10/25/2022	E300091	EV_MC2			< 0.010	< 0.010	4.53		639		0.189	0.190		142			3.9	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
10/25/2022	E321812	F2_BPO							1883								5.1							
10/25/2022	E321812	F2_BPO							1883								5.1							
10/26/2022	E300091	EV_MC2				< 0.010	3.88		655			0.171		143			4.1		< 0.010		< 0.00010			< 0.30
10/26/2022	E321812	F2_BPO			< 0.010				1931		0.496			840	< 0.0015	< 0.0015	4.6	0.108		< 0.00010			< 0.30	
10/26/2022	E321811	F2_ECIN			< 0.010				1925		0.213			752		< 0.0015	6.3	< 0.010		< 0.00010			< 0.30	
10/26/2022	E321812	F2_BPO							1887								5							
10/27/2022	E321811	F2_ECIN							1921					743		< 0.0015	6.1							
10/27/2022	E321812	F2_BPO							1940					835	0.0015	< 0.0015	4.1							
10/27/2022	E321812	F2_BPO							1880								4.1							
10/28/2022	E300091	EV_MC2				< 0.010	4.73		633			0.205		142			4.6		< 0.010		< 0.00010			< 0.30
10/28/2022	E321811	F2_ECIN			< 0.020				1926		0.187			753		< 0.0015	6.3	< 0.020		< 0.00020			< 0.60	
10/28/2022	E321812	F2_BPO			< 0.020				1937		0.454			837	< 0.0015	< 0.0015	3.5	0.103		< 0.00020			< 0.60	
10/28/2022	E321812	F2_BPO							1928								3.5							
10/29/2022	E321811	F2_ECIN							1926					760		< 0.0015	6.2							
10/29/2022	E321812	F2_BPO							1940					852	< 0.0015	< 0.0015	4.1							
10/29/2022	E321812	F2_BPO							1898								4.6							
10/30/2022	E321811	F2_ECIN							1973					765		< 0.0015	6.5							
10/30/2022	E321812	F2_BPO							1998					851	< 0.0015	< 0.0015	4.4							
10/30/2022	E321812	F2_BPO							1992								4.6							
10/31/2022	0200203	EV_MC3	< 0.010	< 0.010	< 0.010	< 0.010	3.39		393.2		0.141	0.165		64.2		< 0.0015	5.1	< 0.010	< 0.010	0.00010	< 0.00010		< 0.30	1.19
10/31/2022	310168	EV_MC2A	< 0.010	< 0.010	< 0.010	< 0.010	3.50		530		0.166	0.174		114		< 0.0015	5.2	< 0.010	< 0.010	0.00017	< 0.00010		< 0.30	0.86
10/31/2022	200393	EV_ER1			< 0.010	< 0.010	2.88		497.1		0.214	0.217		92.5		< 0.0015	5.6	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	0.42

		Parameter	Selenosulfate, SeSO3	SeMe – selenomethionine CH3SeCH2CH2CH(NH2)CO2H	Silver	Silver	Sodium	Sodium	Specific conductivity, temperature corrected value (25 C)	Specific conductivity, temperature corrected value (25 C)	Strontium	Strontium	Strontium	Sulphate (As SO4)	Sulphide (as S)	Sulphide (as S)	Temperature, Field	Thallium	Thallium	Tin	Tin	Tin	Titanium	Titanium
		Fraction	D	D	D	T	T	T	N	N	D	T	T	D	D	T	N	D	T	D	T	T	D	T
		Unit	ug/l	ug/l	ug/l	ug/l	mg/l	ppm	us/cm	uS/cm at 25 C	mg/l	mg/l	ppm	mg/l	mg/l	mg/l	deg c	ug/l	ug/l	mg/l	mg/l	ppm	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
10/31/2022	E321812	F2_BPO	< 0.010	< 0.010	< 0.020	< 0.020	13.2		1958		0.474	0.508		859	< 0.0015	< 0.0015	4.6	0.109	0.134	0.00026	< 0.00020		< 0.60	< 0.60
10/31/2022	E300091	EV_MC2	< 0.010	< 0.010	< 0.010	< 0.010	3.72		596		0.184	0.178		133		< 0.0015	5.3	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	0.42
10/31/2022	E321811	F2_ECIN	< 0.010	< 0.010	< 0.020	< 0.020	3.08		1945		0.207	0.223		772		< 0.0015	6.4	< 0.020	< 0.020	< 0.00020	< 0.00020		< 0.60	< 0.60
10/31/2022	0200097	EV_EC1	< 0.010	< 0.010	< 0.010	< 0.020	6.63		1967		0.316	0.322		788		< 0.0015	5.6	0.029	0.035	< 0.00010	< 0.00020		< 0.30	< 0.60
10/31/2022	E321791	F2_NWPI	< 0.010	< 0.010	0.158	< 0.020	10.4		1902		0.935	0.960		824		< 0.0015	6.7	0.094	0.089	< 0.00020	< 0.00020		< 0.60	< 0.60
10/31/2022	E321814	EV_ECOUT	< 0.010	< 0.010	< 0.010	< 0.020	5.02		1978		0.275	0.314		792		< 0.0015	5.6	0.027	0.031	0.00091	0.00028		< 0.30	< 0.60
10/31/2022	E321812	F2_BPO							1973								4.8							
11/1/2022	E321811	F2_ECIN							1966					759		< 0.0015	6.1							
11/1/2022	E321791	F2_NWPI							1929					819		< 0.0015	6.5							
11/1/2022	E102685	EV_BC1	< 0.010	< 0.010	< 0.020	< 0.010	10.5		1977		0.870	0.914		939		< 0.0015	5	0.034	0.034	< 0.00020	< 0.00010		< 0.60	< 0.30
11/1/2022	E321812	F2_BPO							1980					841	< 0.0015	< 0.0015	4.8							
11/1/2022	E206231	EV_GT1	< 0.010	< 0.010	< 0.020	< 0.010	5.25		2121		0.880	0.770		1050		< 0.0015	4.6	0.040	0.032	< 0.00020	< 0.00010		< 0.60	1.37
11/1/2022	E300091	EV_MC2			< 0.010	< 0.010	3.95		503		0.160	0.157		101			4.7	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	2.99
11/2/2022	E321811	F2_ECIN			< 0.010				1980		0.220			765		< 0.0015	5.8	< 0.010		< 0.00010			< 0.30	
11/2/2022	E321791	F2_NWPI			< 0.010				1941		0.983			814		< 0.0015	6.5	0.087		< 0.00010			< 0.30	
11/2/2022	E321812	F2_BPO			< 0.010				1939		0.497			823	< 0.0015	< 0.0015	4.1	0.116		< 0.00010			< 0.30	
11/2/2022	E321812	F2_BPO							1926								4.1							
11/3/2022	E321811	F2_ECIN							1986					756		< 0.0015	7.1							
11/3/2022	E321791	F2_NWPI							1931					826		< 0.0015	6.9							
11/3/2022	E321812	F2_BPO							1980					824	< 0.0015	< 0.0015	3.9							
11/3/2022	E321812	F2_BPO							1556								3.42							
11/4/2022	E321811	F2_ECIN			< 0.020				1964		0.220			759		< 0.0015	6.2	< 0.020		< 0.00020			< 0.60	
11/4/2022	E321791	F2_NWPI			< 0.020				1923		0.980			812		< 0.0015	6.8	0.093		< 0.00020			< 0.60	
11/4/2022	E321812	F2_BPO			< 0.020				1703		0.494			834	< 0.0015	< 0.0015	3.1	0.117		< 0.00020			< 0.60	
11/4/2022	E321812	F2_BPO							1620								3.37							
11/5/2022	E321791	F2_NWPI							1946					831		< 0.0015	6.5							
11/5/2022	E321811	F2_ECIN							1956					748		< 0.0015	6.1							
11/5/2022	E321812	F2_BPO							444.6					853	< 0.0015	< 0.0015	4.2							
11/5/2022	E321812	F2_BPO							1621								4.74							
11/6/2022	E321811	F2_ECIN							1999					761		< 0.0015	6.1							
11/6/2022	E321791	F2_NWPI							1956					814		< 0.0015	6.5							
11/6/2022	E321812	F2_BPO							1934					846	< 0.0015	< 0.0015	4.1							
11/6/2022	E321812	F2_BPO							1823								4.16							
11/7/2022	E321811	F2_ECIN	< 0.010	< 0.010	< 0.010	< 0.010	3.28		1833		0.215	0.218		781		< 0.0015	5.3	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
11/7/2022	E321791	F2_NWPI	< 0.010	< 0.010	< 0.010	< 0.010	10.8		1948		0.987	0.960		833		< 0.0015	6.3	0.089	0.084	< 0.00010	< 0.00010		< 0.30	< 0.30
11/7/2022	0200097	EV_EC1	< 0.010	< 0.010					1907								1.8							
11/7/2022	E321814	EV_ECOUT	< 0.010	< 0.010					1967								4.2							
11/7/2022	E321812	F2_BPO	< 0.010	< 0.010	< 0.010	< 0.010	13.6		1783		0.469	0.536		863	< 0.0015	< 0.0015	1.91	0.114	0.117	< 0.00010	< 0.00010		< 0.30	< 0.30
11/7/2022	E321812	F2_BPO							1627								2.093							
11/8/2022	E321791	F2_NWPI							1954					814		< 0.0015	6.5							
11/8/2022	E321812	F2_BPO							1992					858	< 0.0015	< 0.0015	3.4							
11/8/2022	E300091	EV_MC2			< 0.010	< 0.010	4.49		711		0.192	0.205		159			0.5	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
11/8/2022	0200203	EV_MC3			< 0.010	< 0.010	3.79		356.9		0.156	0.179		64.5			0	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	0.78
11/8/2022	E321812	F2_BPO							1824								2.92							
11/8/2022	E321811	F2_ECIN							1953					764		< 0.0015	5.7							
11/9/2022	E321811	F2_ECIN			< 0.010				1985		0.221			765		< 0.0015	5.4	< 0.010		< 0.00010			< 0.30	
11/9/2022	E321791	F2_NWPI			< 0.010				1933		0.972			812		< 0.0015	6.5	0.089		< 0.00010			< 0.30	
11/9/2022	E321812	F2_BPO			< 0.010	< 0.020	13.2		2001		0.504	0.501		852	< 0.0015	< 0.0015	3.3	0.120	0.115	< 0.00010	< 0.00020		< 0.30	< 0.60

		Parameter	Selenosulfate, SeSO3	SeMe – selenomethionine CH3SeCH2CH2CH(NH2)CO2H	Silver	Silver	Sodium	Sodium	Specific conductivity, temperature corrected value (25 C)	Specific conductivity, temperature corrected value (25 C)	Strontium	Strontium	Strontium	Sulphate (As SO4)	Sulphide (as S)	Sulphide (as S)	Temperature, Field	Thallium	Thallium	Tin	Tin	Tin	Titanium	Titanium
		Fraction	D	D	D	T	T	T	N	N	D	T	T	D	D	T	N	D	T	D	T	T	D	T
		Unit	ug/l	ug/l	ug/l	ug/l	mg/l	ppm	us/cm	uS/cm at 25 C	mg/l	mg/l	ppm	mg/l	mg/l	mg/l	deg c	ug/l	ug/l	mg/l	mg/l	ppm	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
11/9/2022	E321812	F2_BPO							2024								3.6							
11/10/2022	E321791	F2_NWPI							1942					809		< 0.0015	6.5							
11/10/2022	E321811	F2_ECIN							1997					762		< 0.0015	5.3							
11/10/2022	E321812	F2_BPO							1999					840	< 0.0015	< 0.0015	4.2							
11/10/2022	E321812	F2_BPO							1817								4.294							
11/11/2022	E321791	F2_NWPI			< 0.010				1933		1.01			818		< 0.0015	6.3	0.087		< 0.00010			< 0.30	
11/11/2022	E321811	F2_ECIN			< 0.010				1999		0.215			766		< 0.0015	5.6	< 0.010		< 0.00010			< 0.30	
11/11/2022	E321812	F2_BPO			< 0.010				2003		0.505			860	< 0.0015	< 0.0015	5.1	0.120		< 0.00010			< 0.30	
11/11/2022	E321812	F2_BPO							2027								5.2							
11/12/2022	E321811	F2_ECIN							2003					761		< 0.0015	5.4							
11/12/2022	E321791	F2_NWPI							1940					807		< 0.0015	6.3							
11/12/2022	E321812	F2_BPO							2007					850	< 0.0015	< 0.0015	5.1							
11/12/2022	E321812	F2_BPO							2035								5.3							
11/13/2022	E321811	F2_ECIN							2002					768		< 0.0015	7.8							
11/13/2022	E321812	F2_BPO							2030					849	< 0.0015	< 0.0015	5.3							
11/13/2022	E321791	F2_NWPI							1912					809		< 0.0015	6.1							
11/13/2022	E321812	F2_BPO							1908								5.2							
11/14/2022	200393	EV_ER1			< 0.010	< 0.010	3.36		556		0.229	0.234		101		< 0.0015	0.3	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	0.33
11/14/2022	0200203	EV_MC3	< 0.010	< 0.010	< 0.010	< 0.010	3.81		439.7		0.168	0.176		65.0		< 0.0015	0.1	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
11/14/2022	310168	EV_MC2A	< 0.010	< 0.010	< 0.010	< 0.010	3.98		601		0.176	0.188		127		< 0.0015	0	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
11/14/2022	E300091	EV_MC2	< 0.010	< 0.010	< 0.010	< 0.010	4.72		721		0.207	0.214		175		0.0023	0.5	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
11/14/2022	E321812	F2_BPO	< 0.010	< 0.010	< 0.010	< 0.010	14.2		2032		0.519	0.508		866	< 0.0015	< 0.0015	5	0.120	0.121	< 0.00010	< 0.00010		< 0.30	< 0.30
11/14/2022	E321811	F2_ECIN	< 0.010	< 0.010	< 0.010	< 0.010	3.23		1977		0.224	0.219		768		< 0.0015	5.6	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
11/14/2022	E321791	F2_NWPI	< 0.010	< 0.010	< 0.010	< 0.010	9.90		1921		0.990	0.951		805		< 0.0015	6.4	0.086	0.087	< 0.00010	< 0.00010		< 0.30	< 0.30
11/14/2022	0200097	EV_EC1	< 0.010	< 0.010	< 0.010	< 0.010	7.20		1926		0.328	0.309		814		< 0.0015	2.8	0.036	0.030	< 0.00010	< 0.00010		< 0.30	< 0.30
11/14/2022	E300091	EV_MC2			< 0.010	< 0.010	5.02		712		0.212	0.206		181			0.4	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
11/14/2022	E321814	EV_ECOUT	< 0.010	< 0.010	< 0.010	< 0.010	5.25		1976		0.282	0.288		796		< 0.0015	5.2	0.032	0.033	< 0.00010	< 0.00010		< 0.30	< 0.30
11/14/2022	200393	EV_ER1			< 0.010	< 0.010	3.43		533		0.231	0.224		102			0.6	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
11/14/2022	E102685	EV_BC1			< 0.010	< 0.010	11.4		2293		1.01	1.02		1060			1	0.040	0.041	< 0.00010	< 0.00010		< 0.30	< 0.30
11/14/2022	E206231	EV_GT1			< 0.010	< 0.010	11.4		2108		0.579	0.586		965			2.4	0.040	0.040	< 0.00010	< 0.00010		< 0.30	< 0.30
11/14/2022	E321812	F2_BPO							2028								5.2							
11/15/2022	E206231	EV_GT1	< 0.010	< 0.010	< 0.010	< 0.020	11.0		2102		0.588	0.614		968		< 0.0015	2.7	0.044	0.047	< 0.00010	< 0.00020		< 0.30	< 0.60
11/15/2022	E321812	F2_BPO							1521					850	< 0.0015	< 0.0015	4.9							
11/15/2022	E321811	F2_ECIN							1983					768		< 0.0015	5.4							
11/15/2022	E321791	F2_NWPI							1918					813		< 0.0015	5.9							
11/15/2022	E102685	EV_BC1	< 0.010	< 0.010	< 0.010	< 0.020	10.3		2261		1.01	0.971		1060		< 0.0015	1	0.044	0.044	< 0.00010	< 0.00020		< 0.30	< 0.60
11/15/2022	0200097	EV_EC1			< 0.010	< 0.010	7.52		1910		0.315	0.322		813			3.1	0.033	0.036	< 0.00010	< 0.00010		< 0.30	< 0.30
11/15/2022	E321814	EV_ECOUT			< 0.010	< 0.020	3.79		1976		0.229	0.224		780			4.9	0.017	< 0.020	< 0.00010	< 0.00020		< 0.30	< 0.60
11/15/2022	E321812	F2_BPO							2002								5							
11/16/2022	E321811	F2_ECIN			< 0.010				2013		0.209			777		< 0.0015	5.2	< 0.010		< 0.00010			< 0.30	
11/16/2022	E321791	F2_NWPI			< 0.010				1936		0.964			818		< 0.0015	5.9	0.086		< 0.00010			< 0.30	
11/16/2022	E321812	F2_BPO			< 0.010				1996		0.438			852	< 0.0015	< 0.0015	5	0.087		< 0.00010			< 0.30	
11/16/2022	E321812	F2_BPO							1982								5.5							
11/17/2022	E321811	F2_ECIN							1979					799		< 0.0015	5.2							
11/17/2022	E321791	F2_NWPI							1914					811		< 0.0015	5.8							
11/17/2022	E321812	F2_BPO							1990					826	< 0.0015	< 0.0015	4.6							
11/17/2022	E321812	F2_BPO							1976								5							
11/18/2022	E321811	F2_ECIN			< 0.010				1980		0.218			758		< 0.0015	5.2	< 0.010		< 0.00010			< 0.30	

		Parameter	Selenosulfate, SeSO3	SeMe – selenomethionine CH3SeCH2CH2CH(NH2)CO2H	Silver	Silver	Sodium	Sodium	Specific conductivity, temperature corrected value (25 C)	Specific conductivity, temperature corrected value (25 C)	Strontium	Strontium	Strontium	Sulphate (As SO4)	Sulphide (as S)	Sulphide (as S)	Temperature, Field	Thallium	Thallium	Tin	Tin	Tin	Titanium	Titanium
		Fraction	D	D	D	T	T	T	N	N	D	T	T	D	D	T	N	D	T	D	T	T	D	T
		Unit	ug/l	ug/l	ug/l	ug/l	mg/l	ppm	us/cm	uS/cm at 25 C	mg/l	mg/l	ppm	mg/l	mg/l	mg/l	deg c	ug/l	ug/l	mg/l	mg/l	ppm	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
11/18/2022	E321791	F2_NWPI			< 0.010				1912		0.944			805		< 0.0015	5.5	0.084		< 0.00010			< 0.30	
11/18/2022	E321812	F2_BPO			< 0.010				1988		0.516			821	< 0.0015	< 0.0015	4.5	0.100		< 0.00010			< 0.30	
11/18/2022	E321812	F2_BPO							2003								4.2							
11/19/2022	E321811	F2_ECIN							1975					771		< 0.0015	5.23							
11/19/2022	E321791	F2_NWPI							1902					820		< 0.0015	5.8							
11/19/2022	E321812	F2_BPO							2015					853	< 0.0015	< 0.0015	3.7							
11/19/2022	E321812	F2_BPO							2072								4.2							
11/20/2022	E321811	F2_ECIN							1980					774		< 0.0015	5.2							
11/20/2022	E321791	F2_NWPI							1910					824		< 0.0015	5.5							
11/20/2022	E321812	F2_BPO							2016					866	< 0.0015	0.0015	4							
11/20/2022	E321812	F2_BPO							2051								4.6							
11/21/2022	0200097	EV_EC1	< 0.010	< 0.010					1930					793			2.1							
11/21/2022	E321814	EV_ECOUT	< 0.010	< 0.010					1822					771			4.6							
11/21/2022	E321811	F2_ECIN	< 0.010	< 0.010	< 0.010	< 0.010	3.24		1966		0.225	0.224		719		< 0.0015	5.3	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
11/21/2022	E321791	F2_NWPI	< 0.010	< 0.010	< 0.010	< 0.010	10.3		1721		0.973	0.988		806		< 0.0015	5.4	0.082	0.078	< 0.00010	< 0.00010		< 0.30	< 0.30
11/21/2022	E321812	F2_BPO							2050								4.7							
11/21/2022	E321812	F2_BPO	< 0.010	< 0.010	< 0.010	< 0.010	13.4		2010		0.491	0.518		855	< 0.0015	< 0.0015	4.6	0.109	0.114	< 0.00010	< 0.00010		< 0.30	< 0.30
11/21/2022	E321812	F2_BPO							2022								5.1							
11/22/2022	E321811	F2_ECIN							1968					776		< 0.0015	5.8							
11/22/2022	E321791	F2_NWPI							1906					830		< 0.0015	5.7							
11/22/2022	E321812	F2_BPO							2008					866	< 0.0015	< 0.0015	5.2							
11/22/2022	E321812	F2_BPO							2042								5.3							
11/23/2022	E321811	F2_ECIN			< 0.020				1973		0.224			774		< 0.0015	5.8	< 0.020		< 0.00020			< 0.60	
11/23/2022	E321791	F2_NWPI			< 0.020				1907		0.971			814		< 0.0015	5.7	0.082		< 0.00020			< 0.60	
11/23/2022	E321812	F2_BPO			< 0.020				2003		0.492			854	< 0.0015	< 0.0015	5.3	0.110		< 0.00020			< 0.60	
11/23/2022	E321812	F2_BPO							1986								6.1							
11/24/2022	E321791	F2_NWPI							1910					818		< 0.0015	5.7							
11/24/2022	E321811	F2_ECIN							1971					774		< 0.0015	6.1							
11/24/2022	E321812	F2_BPO							2003					866	< 0.0015	< 0.0015	5.2							
11/24/2022	E321812	F2_BPO							1752								5.6							
11/25/2022	E321811	F2_ECIN			< 0.020				1973		0.230			770		< 0.0015	5.6	< 0.020		< 0.00020			< 0.60	
11/25/2022	E321791	F2_NWPI			< 0.020				1907		0.986			812		< 0.0015	5.8	0.075		< 0.00020			< 0.60	
11/25/2022	E321812	F2_BPO			< 0.020				2004		0.434			853	< 0.0015	< 0.0015	5.2	0.089		< 0.00020			< 0.60	
11/25/2022	E321812	F2_BPO							1989								5							
11/26/2022	E321811	F2_ECIN							2023					807		< 0.0015	5.9							
11/26/2022	E321791	F2_NWPI							1963					848		< 0.0015	5.6							
11/26/2022	E321812	F2_BPO							2037					853	< 0.0015	< 0.0015	4.9							
11/26/2022	E321812	F2_BPO							2005								5.6							
11/27/2022	E321811	F2_ECIN							1971					773		< 0.0015	6.4							
11/27/2022	E321791	F2_NWPI							1909					856		< 0.0015	6							
11/27/2022	E321812	F2_BPO							1996					867	< 0.0015	< 0.0015	4							
11/27/2022	E321812	F2_BPO							1857								4.416							
11/28/2022	200393	EV_ER1			< 0.010	< 0.010	3.21		536		0.226	0.207		99.7		< 0.0015	0	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
11/28/2022	0200203	EV_MC3	< 0.010	< 0.010	< 0.010	< 0.010	3.29		387.8		0.159	0.152		52.2		< 0.0015	0	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
11/28/2022	E321812	F2_BPO	< 0.010	< 0.010	< 0.010	< 0.010	12.0		1969		0.495	0.463		918	< 0.0015	< 0.0015	4	0.100	0.118	< 0.00010	< 0.00010		< 0.30	< 0.30
11/28/2022	310168	EV_MC2A	< 0.010	< 0.010	< 0.010	< 0.010	3.87		543		0.177	0.164		121		< 0.0015	0	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
11/28/2022	E300091	EV_MC2	< 0.010	< 0.010	< 0.010	< 0.010	4.99		549		0.210	0.197		171		0.0022	0.2	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
11/28/2022	E321811	F2_ECIN	< 0.010	< 0.010	< 0.010	< 0.010	3.08		1934		0.222	0.214		802		< 0.0015	5.4	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30

		Parameter	Selenosulfate, SeSO3	SeMe – selenomethionine CH3SeCH2CH2CH(NH2)CO2H	Silver	Silver	Sodium	Sodium	Specific conductivity, temperature corrected value (25 C)	Specific conductivity, temperature corrected value (25 C)	Strontium	Strontium	Strontium	Sulphate (As SO4)	Sulphide (as S)	Sulphide (as S)	Temperature, Field	Thallium	Thallium	Tin	Tin	Tin	Titanium	Titanium
		Fraction	D	D	D	T	T	T	N	N	D	T	T	D	D	T	N	D	T	D	T	T	D	T
		Unit	ug/l	ug/l	ug/l	ug/l	mg/l	ppm	us/cm	uS/cm at 25 C	mg/l	mg/l	ppm	mg/l	mg/l	mg/l	deg c	ug/l	ug/l	mg/l	mg/l	ppm	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
11/28/2022	E321791	F2_NWPI	< 0.010	< 0.010	< 0.010	< 0.010	10.5		1873		0.969	1.01		828		< 0.0015	5.4	0.080	0.098	< 0.00010	< 0.00010		< 0.30	< 0.30
11/28/2022	0200097	EV_EC1	< 0.010	< 0.010	< 0.020	< 0.020	7.24		1896		0.321	0.303		808		< 0.0015	2.2	0.035	0.036	< 0.00020	< 0.00020		< 0.60	< 0.60
11/28/2022	E321814	EV_ECOUT	< 0.010	< 0.010	< 0.020	< 0.020	4.64		1962		0.270	0.258		783		< 0.0015	4.8	0.023	0.029	< 0.00020	< 0.00020		< 0.60	< 0.60
11/28/2022	E321812	F2_BPO							1991								4							
11/29/2022	E206231	EV_GT1	< 0.010	< 0.010	< 0.010	< 0.020	11.0		2039		0.646	0.586		949		< 0.0015	1.8	0.047	0.046	< 0.00010	< 0.00020		< 0.30	< 0.60
11/29/2022	E321791	F2_NWPI							1906					827		< 0.0015	5.2							
11/29/2022	E321811	F2_ECIN							1986					784		< 0.0015	5.1							
11/29/2022	E321812	F2_BPO							1965					859	< 0.0015	< 0.0015	3.3							
11/29/2022	E102685	EV_BC1	< 0.010	< 0.010	< 0.010	< 0.020	11.6		2052		0.708	0.631		948		< 0.0015	1.1	0.041	0.038	< 0.00010	< 0.00020		< 0.30	< 0.60
11/29/2022	E321812	F2_BPO							1944								3.5							
11/30/2022	E321811	F2_ECIN			< 0.010				1976		0.222			791		< 0.0015	5.4	< 0.010		< 0.00010			< 0.30	
11/30/2022	E321791	F2_NWPI			< 0.010				1906		0.983			824		< 0.0015	5.3	0.094		< 0.00010			< 0.30	
11/30/2022	E321812	F2_BPO			< 0.010				2000		0.499			869	< 0.0015	< 0.0015	4.2	0.109		< 0.00010			< 0.30	
11/30/2022	E321812	F2_BPO							1981								4.3							
12/1/2022	E321811	F2_ECIN							1874					771		< 0.0015	5.4							
12/1/2022	E321791	F2_NWPI							1943					811		< 0.0015	5.2							
12/1/2022	E321812	F2_BPO							1945					870	< 0.0015	< 0.0015	4.2							
12/1/2022	E321812	F2_BPO							1976								3.9							
12/2/2022	E321811	F2_ECIN			< 0.010				1984		0.233			778		< 0.0015	5	< 0.010		0.00011			< 0.30	
12/2/2022	E321791	F2_NWPI			< 0.010				1910		1.05			818		< 0.0015	5.4	0.086		< 0.00010			< 0.30	
12/2/2022	E321812	F2_BPO			< 0.010				1976		0.508			855	< 0.0015	< 0.0015	4.1	0.118		< 0.00010			< 0.30	
12/2/2022	E321812	F2_BPO							1934								4.4							
12/3/2022	E321791	F2_NWPI							1913					847		< 0.0015	5.3							
12/3/2022	E321811	F2_ECIN							1971					804		< 0.0015	5.6							
12/3/2022	E321812	F2_BPO							1992					890	< 0.0015	< 0.0015	3.9							
12/3/2022	E321812	F2_BPO							1984								4.1							
12/4/2022	E321811	F2_ECIN							2006					799		< 0.0015	5.5							
12/4/2022	E321791	F2_NWPI							1934					844		< 0.0015	5.5							
12/4/2022	E321812	F2_BPO							1953					879	< 0.0015	< 0.0015	4.3							
12/4/2022	E321812	F2_BPO							1979								4.9							
12/5/2022	0200097	EV_EC1	< 0.010	< 0.010					1938					826			2.6							
12/5/2022	E321812	F2_BPO	< 0.010	< 0.010	< 0.010	< 0.010	12.9		1978		0.492	0.501		863	< 0.0015	< 0.0015	4.7	0.111	0.111	< 0.00010	< 0.00010		< 0.30	< 0.30
12/5/2022	E321811	F2_ECIN	< 0.010	< 0.010	< 0.010	< 0.010	3.35		1973		0.221	0.225		786		< 0.0015	5.6	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
12/5/2022	E321791	F2_NWPI	< 0.010	< 0.010	< 0.010	< 0.010	10.8		1969		0.937	0.977		826		< 0.0015	5.7	0.084	0.084	< 0.00010	< 0.00010		< 0.30	< 0.30
12/5/2022	E321814	EV_ECOUT	< 0.010	< 0.010					1968					789			4.8							
12/5/2022	E321812	F2_BPO							2012								4.5							
12/5/2022	E321812	F2_BPO							1750								4.57							
12/6/2022	E321811	F2_ECIN							1960					776		< 0.0015	5.5							
12/6/2022	E321791	F2_NWPI							1893					791		< 0.0015	5.3							
12/6/2022	E321812	F2_BPO							1968					859	< 0.0015	< 0.0015	3.9							
12/6/2022	E321814	EV_ECOUT			< 0.010	< 0.010	6.35		1990		0.312	0.319		807			4.3	0.045	0.040	< 0.00010	< 0.00010		< 0.30	< 0.30
12/6/2022	0200203	EV_MC3			< 0.010	< 0.010	3.46		421.9		0.167	0.166		60.7			0.8	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
12/6/2022	E206231	EV_GT1			< 0.010	< 0.010	10.8		2033		0.587	0.593		898			1.8	0.048	0.043	< 0.00010	< 0.00010		< 0.30	< 0.30
12/6/2022	E300091	EV_MC2	< 0.010	< 0.010	< 0.010	< 0.010	4.61		705		0.202	0.202		172			0.1	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
12/6/2022	E321812	F2_BPO							1970								4.1							
12/6/2022	E102685	EV_BC1			< 0.010	< 0.010	12.2		2055		0.635	0.650		961			0	0.041	0.036	< 0.00010	< 0.00010		< 0.30	< 0.30
12/7/2022	E321811	F2_ECIN			< 0.010				1957		0.234			778		< 0.0015	5.5	< 0.010		< 0.00010			< 0.30	
12/7/2022	E321791	F2_NWPI			< 0.010				1892		1.04			822		< 0.0015	5.2	0.078		< 0.00010			< 0.30	

		Parameter	Selenosulfate, SeSO3	SeMe – selenomethionine CH3SeCH2CH2CH(NH2)CO2H	Silver	Silver	Sodium	Sodium	Specific conductivity, temperature corrected value (25 C)	Specific conductivity, temperature corrected value (25 C)	Strontium	Strontium	Strontium	Sulphate (As SO4)	Sulphide (as S)	Sulphide (as S)	Temperature, Field	Thallium	Thallium	Tin	Tin	Tin	Titanium	Titanium
		Fraction	D	D	D	T	T	T	N	N	D	T	T	D	D	T	N	D	T	D	T	T	D	T
		Unit	ug/l	ug/l	ug/l	ug/l	mg/l	ppm	us/cm	uS/cm at 25 C	mg/l	mg/l	ppm	mg/l	mg/l	mg/l	deg c	ug/l	ug/l	mg/l	mg/l	ppm	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
12/7/2022	E321812	F2_BPO			< 0.010				1795		0.507			731	< 0.0015	< 0.0015	4	0.103		< 0.00010			< 0.30	
12/7/2022	200393	EV_ER1	< 0.010	< 0.010	< 0.010	< 0.010	4.08		565		0.240	0.229		107			1.7	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
12/7/2022	E321812	F2_BPO							1759								4.2							
12/8/2022	E321811	F2_ECIN							1959					777		< 0.0015	5.7							
12/8/2022	E321791	F2_NWPI							1894					820		< 0.0015	5.4							
12/8/2022	E321812	F2_BPO							1953					848	0.0016	< 0.0015	4.3							
12/8/2022	0200097	EV_EC1			< 0.010	< 0.010	7.67		1911		0.344	0.319		822			3.5	0.036	0.040	< 0.00010	< 0.00010		< 0.30	< 0.30
12/8/2022	E321812	F2_BPO							1951								4.6							
12/9/2022	E321811	F2_ECIN			< 0.020				1796		0.183			790		< 0.0015	5.6	< 0.020		< 0.00020			< 0.60	
12/9/2022	E321791	F2_NWPI			< 0.020				1727		0.792			825		< 0.0015	5.3	< 0.020		< 0.00020			< 0.60	
12/9/2022	E321812	F2_BPO			< 0.020				1763		0.371			871	< 0.0015	< 0.0015	5.1	< 0.020		< 0.00020			< 0.60	
12/9/2022	E321812	F2_BPO							1945								5.2							
12/10/2022	E321811	F2_ECIN							1810					769		< 0.0015	5.6							
12/10/2022	E321791	F2_NWPI							1743					810		< 0.0015	5.5							
12/10/2022	E321812	F2_BPO							1788					851	< 0.0015	< 0.0015	4.6							
12/10/2022	E321812	F2_BPO							1971								5.1							
12/11/2022	E321811	F2_ECIN							1953					774		< 0.0015	5.7							
12/11/2022	E321791	F2_NWPI							1882					804		< 0.0015	5.3							
12/11/2022	E321812	F2_BPO							1906					843	< 0.0015	< 0.0015	5.4							
12/11/2022	E321812	F2_BPO							1692								5.62							
12/12/2022	E321811	F2_ECIN	< 0.010	< 0.010	< 0.010	< 0.020	3.09		1945		0.229	0.174		784		< 0.0015	5.8	< 0.010	< 0.020	< 0.00010	< 0.00020		< 0.30	< 0.60
12/12/2022	E321791	F2_NWPI	< 0.010	< 0.010	< 0.010	< 0.020	9.59		1871		0.922	0.726		821		< 0.0015	5.5	0.085	0.083	0.00014	< 0.00020		< 0.30	< 0.60
12/12/2022	200393	EV_ER1			< 0.010	< 0.010	3.88		531		0.220	0.212		105		< 0.0015	0.7	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
12/12/2022	E321812	F2_BPO	< 0.010	< 0.010	< 0.010	< 0.020	11.7		1929		0.492	0.374		714	< 0.0015	< 0.0015	5.5	0.100	0.100	< 0.00010	0.00037		< 0.30	< 0.60
12/12/2022	E300091	EV_MC2	< 0.010	< 0.010	< 0.010	< 0.010	5.04		692		0.204	0.214		172		< 0.0015	0.3	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
12/12/2022	0200203	EV_MC3	< 0.010	< 0.010	< 0.010	< 0.010	3.84		401.4		0.167	0.158		61.8		< 0.0015	0	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
12/12/2022	0200097	EV_EC1	< 0.010	< 0.010	< 0.010	< 0.010	7.88		1781		0.338	0.332		816		< 0.0015	3.2	0.036	0.046	< 0.00010	< 0.00010		< 0.30	< 0.30
12/12/2022	E321814	EV_ECOUT	< 0.010	< 0.010	< 0.010	< 0.020	5.27		1930		0.284	0.263		802		< 0.0015	5.2	0.026	0.032	< 0.00010	< 0.00020		< 0.30	< 0.60
12/12/2022	E321812	F2_BPO							1889								6.3							
12/13/2022	E321811	F2_ECIN							1917					795		< 0.0015	5.1							
12/13/2022	E321791	F2_NWPI							1847					859		< 0.0015	5.4							
12/13/2022	E206231	EV_GT1	< 0.010	< 0.010	< 0.010	< 0.020	9.64		1989		0.659	0.642		891		< 0.0015	2.4	0.053	0.049	0.00017	< 0.00020		< 0.30	< 0.60
12/13/2022	E102685	EV_BC1	< 0.010	< 0.010	< 0.010	< 0.020	10.6		1980		0.681	0.641		880		< 0.0015	0.8	0.045	0.041	< 0.00010	< 0.00020		< 0.30	1.41
12/13/2022	E321812	F2_BPO							1866					888	< 0.0015	< 0.0015	5.2							
12/13/2022	E321812	F2_BPO							1946								5.2							
12/14/2022	E321791	F2_NWPI			< 0.020				1878		0.928			811		< 0.0015	5.4	0.090		< 0.00020			< 0.60	
12/14/2022	E321811	F2_ECIN			< 0.020				1951		0.218			817		< 0.0015	5.6	< 0.020		< 0.00020			< 0.60	
12/14/2022	E321812	F2_BPO			< 0.020				1898		0.459			850	< 0.0015	< 0.0015	5.1	0.114		< 0.00020			< 0.60	
12/14/2022	E321812	F2_BPO							516								5.5							
12/14/2022	E321812	F2_BPO							1866								5.6							
12/15/2022	E321811	F2_ECIN							1916					787		< 0.0015	5.6							
12/15/2022	E321791	F2_NWPI							1847					845		< 0.0015	5.5							
12/15/2022	E321812	F2_BPO							1896					869	< 0.0015	< 0.0015	4.8							
12/15/2022	E321812	F2_BPO							1358								5.161							
12/16/2022	E321791	F2_NWPI			< 0.020				1873		0.903			806		< 0.0015	5.4	0.090		< 0.00020			< 0.60	
12/16/2022	E321811	F2_ECIN			< 0.020				1921		0.216			770		< 0.0015	5.7	< 0.020		< 0.00020			< 0.60	
12/16/2022	E321812	F2_BPO			< 0.020				1995		0.468			830	< 0.0015	< 0.0015	4.7	0.117		< 0.00020			< 0.60	
12/16/2022	E321812	F2_BPO							1878								5.3							

		Parameter	Selenosulfate, SeSO3	SeMe – selenomethionine CH3SeCH2CH2CH(NH2)CO2H	Silver	Silver	Sodium	Sodium	Specific conductivity, temperature corrected value (25 C)	Specific conductivity, temperature corrected value (25 C)	Strontium	Strontium	Strontium	Sulphate (As SO4)	Sulphide (as S)	Sulphide (as S)	Temperature, Field	Thallium	Thallium	Tin	Tin	Tin	Titanium	Titanium
		Fraction	D	D	D	T	T	T	N	N	D	T	T	D	D	T	N	D	T	D	T	T	D	T
		Unit	ug/l	ug/l	ug/l	ug/l	mg/l	ppm	us/cm	uS/cm at 25 C	mg/l	mg/l	ppm	mg/l	mg/l	mg/l	deg c	ug/l	ug/l	mg/l	mg/l	ppm	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
12/17/2022	E321811	F2_ECIN							1921					765		< 0.0015	5.5							
12/17/2022	E321791	F2_NWPI							1851					814		< 0.0015	5.2							
12/17/2022	E321812	F2_BPO							1890					836	< 0.0015	< 0.0015	4.4							
12/17/2022	E321812	F2_BPO							1881								4.3							
12/18/2022	E321811	F2_ECIN							2017					775		< 0.0015	5.2							
12/18/2022	E321791	F2_NWPI							1941					813		< 0.0015	5.2							
12/18/2022	E321812	F2_BPO							1965					831	< 0.0015	< 0.0015	2.4							
12/18/2022	E321812	F2_BPO							1940								3.5							
12/19/2022	0200097	EV_EC1	< 0.010	< 0.010					1975					808			0.5							
12/19/2022	E321814	EV_ECOUT	< 0.010	< 0.010					2024					833			3.6							
12/19/2022	E321811	F2_ECIN	< 0.010	< 0.010	< 0.010	< 0.010	3.42		2021		0.235	0.203		764		< 0.0015	5.1	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
12/19/2022	E321812	F2_BPO	< 0.010	< 0.010	< 0.010	< 0.010	11.2		2019		0.515	0.434		853	< 0.0015	< 0.0015	2.9	0.118	0.107	< 0.00010	< 0.00010		< 0.30	< 0.30
12/19/2022	E321791	F2_NWPI	< 0.010	< 0.010	< 0.010	< 0.010	10.6		1952		1.03	0.897		816		< 0.0015	5.2	0.107	0.084	< 0.00010	< 0.00010		< 0.30	< 0.30
12/19/2022	E321812	F2_BPO							1948								3.2							
12/20/2022	E321811	F2_ECIN							2039					792		< 0.0015	4.7							
12/20/2022	E321791	F2_NWPI							1753					824		< 0.0015	4.9							
12/20/2022	E321812	F2_BPO							2012					858	< 0.0015	< 0.0015	3.7							
12/20/2022	E321812	F2_BPO							2001								3.8							
12/21/2022	E321811	F2_ECIN			< 0.020				2001		0.218			788		< 0.0015	4.8	< 0.020		< 0.00020			< 0.60	
12/21/2022	E321812	F2_BPO			< 0.020				1957		0.474			840	< 0.0015	< 0.0015	3.7	0.100		< 0.00020			< 0.60	
12/21/2022	E321812	F2_BPO							1949								3.7							
12/21/2022	E321791	F2_NWPI			< 0.020				1908		0.955			823		< 0.0015	5.5	0.094		< 0.00020			< 0.60	
12/22/2022	E321791	F2_NWPI							1937					801		< 0.0015	4.9							
12/22/2022	E321812	F2_BPO							1968					828	< 0.0015	0.0016	3.4							
12/22/2022	E321811	F2_ECIN							1965					769		< 0.0015	4.5							
12/22/2022	E321812	F2_BPO							2029								3.4							
12/23/2022	E321791	F2_NWPI			< 0.010				1914		0.991			810		< 0.0015	5	0.085		< 0.00010			< 0.30	
12/23/2022	E321811	F2_ECIN			< 0.010				1991		0.236			760		< 0.0015	4.8	< 0.010		< 0.00010			< 0.30	
12/23/2022	E321812	F2_BPO			< 0.010				1943		0.451			808	< 0.0015	< 0.0015	3.7	0.109		< 0.00010			< 0.30	
12/23/2022	E321812	F2_BPO							1944								3.8							
12/24/2022	E321811	F2_ECIN							2049					759		< 0.0015	5.3							
12/24/2022	E321791	F2_NWPI							1973					805		< 0.0015	5							
12/24/2022	E321812	F2_BPO							2028					809	< 0.0015	< 0.0015	4.3							
12/24/2022	E321812	F2_BPO							2021								4.8							
12/25/2022	E321811	F2_ECIN							1989					805		< 0.0015	5.6							
12/25/2022	E321791	F2_NWPI							1917					835		< 0.0015	5.1							
12/25/2022	E321812	F2_BPO							2013					882	< 0.0015	< 0.0015	4.8							
12/25/2022	E321812	F2_BPO							1954								5.2							
12/26/2022	E321811	F2_ECIN			< 0.010				2012		0.230			805		< 0.0015	5.6	< 0.010		< 0.00010			< 0.30	
12/26/2022	E321791	F2_NWPI			< 0.010				1938		0.974			836		< 0.0015	5.2	0.091		< 0.00010			< 0.30	
12/26/2022	E321812	F2_BPO			< 0.010				1963		0.488			867	< 0.0015	< 0.0015	5.6	0.098		< 0.00010			< 0.30	
12/26/2022	E321812	F2_BPO							2000								5.5							
12/27/2022	200393	EV_ER1			< 0.010	< 0.010	3.93		579		0.219	0.211		103		< 0.0015	0.1	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
12/27/2022	0200203	EV_MC3	< 0.010	< 0.010	< 0.010	< 0.010	4.03		410.6		0.167	0.156		65.3		< 0.0015	0	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
12/27/2022	E321812	F2_BPO	< 0.010	< 0.010	< 0.010	< 0.010	11.3		2096		0.493	0.443		854	< 0.0015	< 0.0015	5.6	0.112	0.109	< 0.00010	< 0.00010		< 0.30	< 0.30
12/27/2022	E300091	EV_MC2	< 0.010	< 0.010	< 0.010	< 0.010	6.16		636		0.196	0.191		158		0.0016	0.3	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
12/27/2022	E321811	F2_ECIN	< 0.010	< 0.010	< 0.010	< 0.010	3.36		2020		0.226	0.213		798		< 0.0015	5.7	< 0.010	< 0.010	< 0.00010	< 0.00010		< 0.30	< 0.30
12/27/2022	E321791	F2_NWPI	< 0.010	< 0.010	< 0.010	< 0.010	10.3		1953		0.991	0.902		833		< 0.0015	5.5	0.098	0.082	< 0.00010	< 0.00010		< 0.30	< 0.30

		Parameter	Selenosulfate, SeSO3	SeMe – selenomethionine CH3SeCH2CH2CH(NH2)CO2H	Silver	Silver	Sodium	Sodium	Specific conductivity, temperature corrected value (25 C)	Specific conductivity, temperature corrected value (25 C)	Strontium	Strontium	Strontium	Sulphate (As SO4)	Sulphide (as S)	Sulphide (as S)	Temperature, Field	Thallium	Thallium	Tin	Tin	Tin	Titanium	Titanium
		Fraction	D	D	D	T	T	T	N	N	D	T	T	D	D	T	N	D	T	D	T	T	D	T
		Unit	ug/l	ug/l	ug/l	ug/l	mg/l	ppm	us/cm	uS/cm at 25 C	mg/l	mg/l	ppm	mg/l	mg/l	mg/l	deg c	ug/l	ug/l	mg/l	mg/l	ppm	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
12/27/2022	0200097	EV_EC1	< 0.010	< 0.010	< 0.020	< 0.020	6.90		1896		0.334	0.325		798		< 0.0015	3.8	0.045	0.036	< 0.00020	< 0.00020		< 0.60	< 0.60
12/27/2022	E321814	EV_ECOUT	< 0.010	< 0.010	< 0.020	< 0.020	5.42		1938		0.327	0.287		820		< 0.0015	5.7	0.035	0.030	< 0.00020	< 0.00020		< 0.60	< 0.60
12/27/2022	E321812	F2_BPO							1978								5.7							
12/28/2022	E206231	EV_GT1			< 0.010	< 0.010	10.3		1956		0.548	0.506		878		< 0.0015	3.5	0.046	0.042	< 0.00010	< 0.00010		< 0.30	0.32
12/28/2022	E321811	F2_ECIN							2033					793		< 0.0015	5.9							
12/28/2022	E321791	F2_NWPI							1963					824		< 0.0015	5.3							
12/28/2022	E102685	EV_BC1			< 0.010	< 0.010	10.3		1897		0.577	0.509		853		< 0.0015	1.1	0.041	0.041	< 0.00010	< 0.00010		< 0.30	0.44
12/28/2022	E321812	F2_BPO							1995					849	< 0.0015	< 0.0015	5.3							
12/28/2022	E321812	F2_BPO							1926								5.4							
12/29/2022	E321811	F2_ECIN							2030					788		< 0.0015	5.8							
12/29/2022	E321791	F2_NWPI							1884					819		< 0.0015	5.3							
12/29/2022	E321812	F2_BPO							2005					836	< 0.0015	< 0.0015	5.3							
12/29/2022	E321812	F2_BPO							1943								5.2							
12/30/2022	E321791	F2_NWPI			< 0.010				1960		0.919			803		< 0.0015	5.5	0.083		< 0.00010			< 0.30	
12/30/2022	E321811	F2_ECIN			< 0.010				2031		0.221			779		< 0.0015	6.3	< 0.010		< 0.00010			< 0.30	
12/30/2022	E321812	F2_BPO			< 0.010				1981		0.466			821	< 0.0015	< 0.0015	5.2	0.100		< 0.00010			< 0.30	
12/30/2022	E321812	F2_BPO							1997								5.4							
12/31/2022	E321811	F2_ECIN							2021					791		< 0.0015	5.8							
12/31/2022	E321791	F2_NWPI							1944					810		< 0.0015	5.3							
12/31/2022	E321812	F2_BPO							1966					846	< 0.0015	< 0.0015	5.1							
12/31/2022	E321812	F2_BPO							1813								5.4							

		Parameter	Total Dissolved Solids (Residue, Filterable)	Total Kjeldahl Nitrogen	Total Suspended Solids, Lab	TURBIDITY, FIELD	Turbidity, Lab	Unknown selenium species	Uranium	Uranium	Vanadium	Vanadium	Zinc	Zinc
		Fraction	N	N	N	N	N	D	D	T	D	T	D	T
		Unit	mg/l	mg/l	mg/l	ntu	ntu	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
1/1/2022	E321811	F2_ECIN	1580		< 1.0	0.53	< 0.10							
1/1/2022	E321791	F2_NWPI	1430		1.2	4.42	2.17							
1/1/2022	E321812	F2_BPO	1620		2.4	2.99	2.14							
1/1/2022	E321812	F2_BPO												
1/2/2022	E321812	F2_BPO												
1/2/2022	E321811	F2_ECIN	1760		1.5	0.18	< 0.10							
1/2/2022	E321791	F2_NWPI	1570		1.5	4.14	2.38							
1/2/2022	E321812	F2_BPO	1680		2.1	2.76	2.26							
1/2/2022	E321812	F2_BPO				3.43								
1/3/2022	E321811	F2_ECIN	1740		< 1.0	0.18	< 0.10		8.40		< 1.00		4.0	
1/3/2022	E321791	F2_NWPI	1510		1.8	4.22	2.16		9.81		< 0.50		49.5	
1/3/2022	E206231	EV_GT1	1530	0.258	4.2	6.2	4.04	< 0.010	6.13	6.23	< 1.00	< 1.00	8.9	8.9
1/3/2022	E321812	F2_BPO	1640		1.3	2.83	2.28		12.0		< 0.50		21.8	
1/3/2022	E321812	F2_BPO												
1/3/2022	E102685	EV_BC1	1900	< 0.050	2.4	1.48	0.80	< 0.010	7.97	7.86	< 1.00	< 1.00	11.8	13.4
1/3/2022	E321812	F2_BPO				2.9								
1/4/2022	E321812	F2_BPO												
1/4/2022	E321812	F2_BPO				3.17								
1/4/2022	E321812	F2_BPO	1710	0.338	< 1.0	2.83	2.52	< 0.010	12.0	12.1	< 1.00	< 1.00	27.8	23.7
1/4/2022	E321811	F2_ECIN	1780	0.366	< 1.0	0.22	< 0.10	< 0.010	8.47	8.73	< 0.50	< 0.50	3.5	< 3.0
1/4/2022	E321791	F2_NWPI	1480	0.595	1.5	3.76	2.57	< 0.010	9.73	10.4	< 0.50	< 0.50	58.6	56.8
1/4/2022	E321812	F2_BPO				2.79								
1/5/2022	E321812	F2_BPO	1720		1.8	2.98	2.34							
1/5/2022	E321812	F2_BPO												
1/5/2022	E321811	F2_ECIN	1790		2.8	0.44	< 0.10							
1/5/2022	E321791	F2_NWPI	1550		3.0	4.49	< 0.10							
1/5/2022	0200097	EV_EC1	1570	0.244	< 1.0	0.74	0.22	< 0.010	10.6	11.2	< 0.50	< 1.00	3.1	< 6.0
1/5/2022	E321812	F2_BPO												
1/5/2022	0200203	EV_MC3	230	0.117	6.1	1.83	1.92	< 0.010	0.738	0.734	< 0.50	< 0.50	54.9	5.5
1/6/2022	E321811	F2_ECIN	1730		1.4	0.27	< 0.10	< 0.010	8.21		< 0.50		2.2	
1/6/2022	E321791	F2_NWPI	1520		2.6	4.56	2.50		10.7		< 0.50		49.7	
1/6/2022	E321812	F2_BPO	1640		2.8	2.93	2.08	< 0.010	11.5		< 1.00		21.4	
1/6/2022	E321814	EV_ECOUT	1690	0.271	1.6	1.9	1.57	< 0.010	11.6	11.7	< 0.50	< 0.50	16.9	17.6
1/6/2022	310168	EV_MC2A	330	0.123	1.8	1.9	0.38	< 0.010	1.21	1.20	< 0.50	< 0.50	1.1	< 3.0
1/6/2022	E300091	EV_MC2	348	0.065	< 1.0	0.73	0.40	< 0.010	1.24	1.24	< 0.50	< 0.50	1.5	< 3.0
1/6/2022	E321812	F2_BPO												
1/6/2022	200393	EV_ER1	324	0.151	3.3	1.3	1.49		1.24	1.27	< 0.50	< 0.50	1.7	3.9
1/7/2022	E321811	F2_ECIN	1770		< 1.0	0.23	< 0.10							
1/7/2022	E321791	F2_NWPI	1650		1.8	4.44	2.06							
1/7/2022	E321812	F2_BPO	1680		1.0	2.84	2.16							
1/7/2022	E321812	F2_BPO				2.84								
1/7/2022	E321812	F2_BPO												
1/8/2022	E321811	F2_ECIN	1660		< 1.0	0.36	< 0.10							
1/8/2022	E321791	F2_NWPI	1520		2.4	4.64	1.63							
1/8/2022	E321812	F2_BPO	1700		< 1.0	2.8	2.12							
1/8/2022	E321812	F2_BPO												
1/8/2022	E321812	F2_BPO												
1/9/2022	E321811	F2_ECIN	1750		1.8	0.59	< 0.10							

		Parameter	Total Dissolved Solids (Residue, Filterable)	Total Kjeldahl Nitrogen	Total Suspended Solids, Lab	TURBIDITY, FIELD	Turbidity, Lab	Unknown selenium species	Uranium	Uranium	Vanadium	Vanadium	Zinc	Zinc
		Fraction	N	N	N	N	N	D	D	T	D	T	D	T
		Unit	mg/l	mg/l	mg/l	ntu	ntu	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
1/9/2022	E321791	F2_NWPI	1600		1.7	3.92	1.92							
1/9/2022	E321812	F2_BPO	1650		1.2	3.55	2.15							
1/9/2022	E321812	F2_BPO												
1/9/2022	E321812	F2_BPO												
1/10/2022	E321811	F2_ECIN	1770	0.240	2.8	0.11	< 0.10	< 0.010	8.80	8.85	< 1.00	< 0.50	4.4	< 3.0
1/10/2022	E321791	F2_NWPI	1560	< 0.050	3.0	3.87	1.93	< 0.010	10.4	10.3	< 0.50	< 0.50	51.5	54.4
1/10/2022	E321814	EV_ECOUT						< 0.010						
1/10/2022	E321812	F2_BPO												
1/10/2022	E321812	F2_BPO	1660	0.367	2.3	2.67	2.02	< 0.010	12.6	13.3	< 1.00	< 0.50	25.0	28.5
1/10/2022	E321812	F2_BPO												
1/11/2022	E321811	F2_ECIN	1680		< 1.0	0.6	< 0.10		8.81		< 0.50		3.0	
1/11/2022	E321791	F2_NWPI	1560		< 1.0	3.89	1.94		10.9		< 0.50		53.7	
1/11/2022	0200097	EV_EC1						< 0.010						
1/11/2022	E321812	F2_BPO												
1/11/2022	E321812	F2_BPO	1660		1.2	2.6	2.02		11.9		< 0.50		25.4	
1/11/2022	E321812	F2_BPO												
1/12/2022	E321811	F2_ECIN	1620		< 1.0	0.2	< 0.10							
1/12/2022	E321791	F2_NWPI	1510		< 1.0	4.46	1.83							
1/12/2022	E321812	F2_BPO												
1/12/2022	E321812	F2_BPO	1660		< 1.0	3.22	1.82							
1/12/2022	E321812	F2_BPO												
1/13/2022	E321811	F2_ECIN	1670		< 1.0	0.16	< 0.10	< 0.010	8.64		< 0.50		20.0	
1/13/2022	E321791	F2_NWPI	1540		1.2	4.02	2.24		9.91		< 0.50		55.8	
1/13/2022	E321814	EV_ECOUT				1.57		< 0.010						
1/13/2022	E321812	F2_BPO	1530		1.5	2.25	1.84	< 0.010	11.9		< 0.50		23.0	
1/13/2022	E321814	EV_ECOUT	1580	0.468	< 1.0	1.2	0.65		10.4	10.5	< 0.50	< 0.50	10.3	9.1
1/13/2022	E321812	F2_BPO												
1/13/2022	0200097	EV_EC1				0.18		< 0.010						
1/14/2022	E321811	F2_ECIN	1780		1.9	0.12	< 0.10							
1/14/2022	E321791	F2_NWPI	1560		3.6	4.7	2.58							
1/14/2022	E321812	F2_BPO				2.44								
1/14/2022	E321812	F2_BPO	1640		2.1	2.27	1.78							
1/14/2022	E321812	F2_BPO												
1/15/2022	E321811	F2_ECIN	1680		1.3	0.57	< 0.10							
1/15/2022	E321791	F2_NWPI	1590		1.3	3.99	1.85							
1/15/2022	E321812	F2_BPO	1690		1.1	2.45	1.82							
1/15/2022	E321812	F2_BPO												
1/16/2022	E321811	F2_ECIN	1760		2.0	0.42	< 0.10							
1/16/2022	E321791	F2_NWPI	1580		3.4	3.89	2.02							
1/16/2022	E321812	F2_BPO	1670		3.5	2.16	1.81							
1/16/2022	E321812	F2_BPO												
1/17/2022	E321812	F2_BPO	1730	0.312	2.0	2.71	1.83	< 0.010	12.1	12.7	< 1.00	< 0.50	22.6	24.9
1/17/2022	E321811	F2_ECIN	1750	0.271	2.0	0.35	0.12	< 0.010	8.64	9.12	< 0.50	< 0.50	3.1	10.9
1/17/2022	E321791	F2_NWPI	1580	0.419	< 1.0	4.13	2.07	< 0.010	9.98	10.1	< 1.00	< 0.50	53.8	51.1
1/17/2022	0200097	EV_EC1	1670	0.373	2.3	0.09	< 0.10		11.8	11.7	< 0.50	< 0.50	< 1.0	< 3.0
1/17/2022	E321812	F2_BPO												
1/17/2022	0200097	EV_EC1	1650	0.356	1.0	0.55	< 0.10	< 0.010	11.8	11.1	< 0.50	< 0.50	1.6	< 3.0
1/17/2022	0200203	EV_MC3	262	0.108	< 1.0	1.75	0.60	< 0.010	0.767	0.816	< 0.50	< 0.50	2.1	< 3.0

		Parameter	Total Dissolved Solids (Residue, Filterable)	Total Kjeldahl Nitrogen	Total Suspended Solids, Lab	TURBIDITY, FIELD	Turbidity, Lab	Unknown selenium species	Uranium	Uranium	Vanadium	Vanadium	Zinc	Zinc
		Fraction	N	N	N	N	N	D	D	T	D	T	D	T
		Unit	mg/l	mg/l	mg/l	ntu	ntu	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
1/17/2022	310168	EV_MC2A	306	0.143	< 1.0	1.13	0.53	< 0.010	1.42	1.37	< 0.50	< 0.50	1.2	< 3.0
1/17/2022	0200203	EV_MC3	290	< 0.050	1.4	0.93	0.70		0.793	0.812	< 0.50	< 0.50	1.0	< 3.0
1/17/2022	E321814	EV_ECOUT	1730	< 0.050	1.6	1.18	0.53	< 0.010	9.93	10.3	< 0.50	< 0.50	11.8	12.0
1/17/2022	200393	EV_ER1	330	0.333	1.4	1.44	0.34		1.30	1.36	< 0.50	< 0.50	1.0	< 3.0
1/17/2022	E300091	EV_MC2	332	0.277	7.6	3.97	1.72	< 0.010	1.36	1.37	< 0.50	< 0.50	< 1.0	< 3.0
1/17/2022	E206231	EV_GT1	1660	0.496	2.0	2.55	2.96		6.43	6.62	< 1.00	< 1.00	7.9	8.3
1/17/2022	E321812	F2_BPO												
1/18/2022	E321812	F2_BPO	1650		< 1.0	2.29	1.85		13.2		< 1.00		22.4	
1/18/2022	E321811	F2_ECIN	1770		1.1	0.16	< 0.10		8.58		< 1.00		2.9	
1/18/2022	E321791	F2_NWPI	1550		2.7	5.14	2.67		9.78		< 1.00		52.1	
1/18/2022	E206231	EV_GT1	1610	0.633	3.9	4.36	3.10	< 0.010	6.82	6.97	< 0.50	< 1.00	8.3	9.4
1/18/2022	E102685	EV_BC1	1770	0.565	4.5	1.67	0.74	< 0.010	8.48	8.66	< 1.00	< 1.00	17.1	12.3
1/18/2022	200393	EV_ER1	316	0.283	1.7	2.91	0.93		1.40	1.39	< 0.50	< 0.50	< 1.0	< 3.0
1/18/2022	E102685	EV_BC1	2170	< 0.050	4.1	1.05	0.88		8.37	8.70	< 1.00	< 1.00	10.6	11.4
1/18/2022	E300091	EV_MC2	402	0.291	1.5	1.25	0.51		1.43	1.50	< 0.50	< 0.50	< 1.0	< 3.0
1/18/2022	E321812	F2_BPO												
1/19/2022	E321811	F2_ECIN	1670		2.2	0.22	0.17							
1/19/2022	E321791	F2_NWPI	1570		2.4	3.32	2.00							
1/19/2022	E321812	F2_BPO												
1/19/2022	E321812	F2_BPO	1720		1.8	2.35	1.86							
1/19/2022	E321812	F2_BPO												
1/20/2022	E321811	F2_ECIN	1720		< 1.0	0.7	< 0.10	< 0.010	8.12		< 0.50		2.1	
1/20/2022	E321791	F2_NWPI	1550		1.9	4.09	1.91		9.15		< 0.50		51.5	
1/20/2022	E321814	EV_ECOUT				1.38		< 0.010						
1/20/2022	E321812	F2_BPO	1650		1.5	2.85	2.17	< 0.010	11.3		< 0.50		21.6	
1/20/2022	E321812	F2_BPO				2.7								
1/20/2022	0200097	EV_EC1				0.29		< 0.010						
1/20/2022	E321812	F2_BPO												
1/21/2022	E321811	F2_ECIN	1710		1.1	0.63	< 0.10							
1/21/2022	E321811	F2_ECIN												
1/21/2022	E321791	F2_NWPI	1600		2.1	3.28	1.69							
1/21/2022	E321812	F2_BPO	1640		1.8	3.31	1.84							
1/21/2022	E321812	F2_BPO												
1/21/2022	E321812	F2_BPO												
1/21/2022	E321812	F2_BPO												
1/22/2022	E321811	F2_ECIN	1620		< 1.0	0.44	< 0.10							
1/22/2022	E321791	F2_NWPI	1560		2.0	3.03	1.61							
1/22/2022	E321812	F2_BPO	1690		2.3	3.04	1.77							
1/22/2022	E321812	F2_BPO												
1/22/2022	E321812	F2_BPO												
1/23/2022	E321811	F2_ECIN	1670		1.8	0.43	< 0.10							
1/23/2022	E321791	F2_NWPI	1530		1.4	2.92	1.60							
1/23/2022	E321812	F2_BPO												
1/23/2022	E321812	F2_BPO	1720		2.2	2.44	1.77							
1/23/2022	E321812	F2_BPO												
1/24/2022	E321811	F2_ECIN	1710	0.410	1.2	0.3	< 0.10	< 0.010	7.91	8.82	< 0.50	< 0.50	5.8	5.1
1/24/2022	E321791	F2_NWPI	1520	0.207	3.1	3.43	1.71	< 0.010	9.01	10.8	< 0.50	< 0.50	58.7	59.6
1/24/2022	E321814	EV_ECOUT						< 0.010						

		Parameter	Total Dissolved Solids (Residue, Filterable)	Total Kjeldahl Nitrogen	Total Suspended Solids, Lab	TURBIDITY, FIELD	Turbidity, Lab	Unknown selenium species	Uranium	Uranium	Vanadium	Vanadium	Zinc	Zinc
		Fraction	N	N	N	N	N	D	D	T	D	T	D	T
		Unit	mg/l	mg/l	mg/l	ntu	ntu	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
1/24/2022	E321812	F2_BPO	1720	0.196	2.8	2.66	1.80	< 0.010	12.4	12.6	< 0.50	< 1.00	23.4	26.0
1/24/2022	0200097	EV_EC1						< 0.010						
1/24/2022	E321812	F2_BPO												
1/25/2022	E321811	F2_ECIN	1610		1.0	0.19	< 0.10		8.71		< 0.50		2.2	
1/25/2022	E321791	F2_NWPI	1450		< 1.0	3.01	1.66		9.98		< 0.50		49.0	
1/25/2022	E321812	F2_BPO	1640		< 1.0	4.11	1.90		12.0		< 0.50		20.7	
1/25/2022	E321812	F2_BPO												
1/26/2022	E321811	F2_ECIN	1710		< 1.0	0.2	< 0.10							
1/26/2022	E321791	F2_NWPI	1480		1.7	2.54	1.48							
1/26/2022	E321812	F2_BPO	1660		2.2	2.2	1.64							
1/26/2022	E321812	F2_BPO												
1/26/2022	E321812	F2_BPO												
1/27/2022	E321811	F2_ECIN	1660		2.0	0.18	< 0.10	< 0.010	7.68		< 0.50		2.7	
1/27/2022	E321791	F2_NWPI	1570		2.2	2.8	1.46		9.78		< 0.50		52.5	
1/27/2022	E321814	EV_ECOUT				1.24		< 0.010						
1/27/2022	E321812	F2_BPO	1690		2.9	2.61	1.64	< 0.010	11.7		< 0.50		21.5	
1/27/2022	E321812	F2_BPO				2.02								
1/27/2022	0200097	EV_EC1				0.46		< 0.010						
1/27/2022	E321812	F2_BPO												
1/28/2022	E321811	F2_ECIN	1510		< 1.0	0.2	< 0.10							
1/28/2022	E321791	F2_NWPI	1580		< 1.0	2.51	1.31							
1/28/2022	E321812	F2_BPO												
1/28/2022	E321812	F2_BPO	1650		1.2	2.12	1.77							
1/28/2022	E321812	F2_BPO												
1/29/2022	E321811	F2_ECIN	1650		< 1.0	0.16	< 0.10							
1/29/2022	E321791	F2_NWPI	1480		< 1.0	2.66	1.45							
1/29/2022	E321812	F2_BPO	1600		1.6	2.21	1.82							
1/29/2022	E321812	F2_BPO				2.09								
1/29/2022	E321812	F2_BPO												
1/30/2022	E321811	F2_ECIN	1760		1.3	0.71	< 0.10							
1/30/2022	E321791	F2_NWPI	1810		2.0	2.85	1.32							
1/30/2022	E321812	F2_BPO	1670		2.1	2.26	1.84							
1/30/2022	E321812	F2_BPO												
1/30/2022	E321812	F2_BPO												
1/31/2022	E300091	EV_MC2	398	0.149	< 1.0	1.77	0.99	< 0.010	1.26	1.39	< 0.50	< 0.50	< 1.0	< 3.0
1/31/2022	E321812	F2_BPO	1670	0.322	1.6	2.68	1.96	< 0.010	11.4	11.7	< 0.50	< 1.00	20.6	21.9
1/31/2022	E321812	F2_BPO												
1/31/2022	0200097	EV_EC1	1560	0.326	1.2	0.46	< 0.10	< 0.010	11.2	11.0	< 0.50	< 1.00	< 1.0	< 6.0
1/31/2022	0200203	EV_MC3	228	0.056	< 1.0	0.63	0.27	< 0.010	0.781	0.812	< 0.50	< 0.50	< 1.0	< 3.0
1/31/2022	310168	EV_MC2A	370	0.082	2.5	1.01	0.25	< 0.010	1.27	1.36	< 0.50	< 0.50	< 1.0	< 3.0
1/31/2022	E321811	F2_ECIN	1730	< 0.050	< 1.0	0.11	< 0.10	< 0.010	8.35	8.51	< 0.50	< 0.50	2.6	< 3.0
1/31/2022	E321791	F2_NWPI	1620	< 0.050	1.4	2.49	1.45	< 0.010	10.6	10.1	< 0.50	< 0.50	48.7	51.7
1/31/2022	E321814	EV_ECOUT	1630	0.296	< 1.0	1	0.70	< 0.010	10.3	10.0	< 0.50	< 1.00	9.4	10.9
1/31/2022	200393	EV_ER1	338	0.268	< 1.0	0.87	0.26		1.27	1.34	< 0.50	< 0.50	< 1.0	< 3.0
1/31/2022	E321812	F2_BPO												
2/1/2022	E321812	F2_BPO												
2/1/2022	E206231	EV_GT1	1750	0.546	< 1.0	3.41	2.14	< 0.010	6.34	6.52	< 1.00	< 1.00	10.0	7.2
2/1/2022	E321812	F2_BPO	1650		1.6	2.32	1.83		11.4		< 0.50		20.9	

		Parameter	Total Dissolved Solids (Residue, Filterable)	Total Kjeldahl Nitrogen	Total Suspended Solids, Lab	TURBIDITY, FIELD	Turbidity, Lab	Unknown selenium species	Uranium	Uranium	Vanadium	Vanadium	Zinc	Zinc
		Fraction	N	N	N	N	N	D	D	T	D	T	D	T
		Unit	mg/l	mg/l	mg/l	ntu	ntu	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2/1/2022	E102685	EV_BC1	2060	0.562	1.7	1.29	0.96	< 0.010	8.28	8.36	< 1.00	< 1.00	12.4	12.4
2/1/2022	E300091	EV_MC2	312	0.142	< 1.0	-0.23	0.23		1.57	1.49	< 0.50	< 0.50	1.3	< 3.0
2/1/2022	E321811	F2_ECIN	1660		< 1.0	0.98	0.24		8.20		< 0.50		2.4	
2/1/2022	E321791	F2_NWPI	1550		1.6	2.94	1.32		9.69		< 0.50		47.2	
2/1/2022	E321812	F2_BPO												
2/2/2022	E321791	F2_NWPI	1540		1.5	3.07	1.32							
2/2/2022	E321812	F2_BPO												
2/2/2022	E321812	F2_BPO	1670		2.9	2.72	1.85							
2/2/2022	E321812	F2_BPO												
2/2/2022	E321811	F2_ECIN	1700		2.2	0.35	< 0.10							
2/3/2022	E321811	F2_ECIN	1640		2.6	0.2	< 0.10	< 0.010	9.81		< 0.50		3.1	
2/3/2022	E321791	F2_NWPI	1390		2.6	2.81	1.34		11.0		< 0.50		51.8	
2/3/2022	E321812	F2_BPO	1650		2.8	2.52	1.79	< 0.010	11.1		< 0.50		22.0	
2/3/2022	E321812	F2_BPO												
2/3/2022	E321814	EV_ECOUT				1.2		< 0.010						
2/3/2022	0200097	EV_EC1				0.51								
2/3/2022	0200097	EV_EC1						< 0.010						
2/3/2022	E321812	F2_BPO												
2/4/2022	E321811	F2_ECIN	1550		< 1.0	0.42	< 0.10							
2/4/2022	E321791	F2_NWPI	1440		1.6	2.52	1.51							
2/4/2022	E321812	F2_BPO	1600		2.6	2.27	2.04							
2/4/2022	E321812	F2_BPO				2.59								
2/4/2022	E321812	F2_BPO												
2/5/2022	E321811	F2_ECIN	1680		2.3	0.37	< 0.10							
2/5/2022	E321791	F2_NWPI	1600		3.2	2.21	1.69							
2/5/2022	E321812	F2_BPO	1630		2.4	2.61	1.94							
2/5/2022	E321812	F2_BPO				2.08								
2/5/2022	E321812	F2_BPO												
2/6/2022	E321811	F2_ECIN	1650		1.3	0.14	< 0.10							
2/6/2022	E321791	F2_NWPI	1540		2.5	2.69	1.38							
2/6/2022	E321812	F2_BPO	1600		2.3	2.31	1.76							
2/6/2022	E321812	F2_BPO				2.38								
2/6/2022	E321812	F2_BPO												
2/7/2022	E321811	F2_ECIN	1680	< 0.050	2.0	0.13	< 0.10	< 0.010	8.25	8.76	< 0.50	0.66	1.8	< 3.0
2/7/2022	E321791	F2_NWPI	1570	0.104	2.5	2.54	1.21	< 0.010	10.2	10.6	< 0.50	< 0.50	54.4	57.9
2/7/2022	E321812	F2_BPO	1700	1.89	3.2	2.58	1.64	< 0.010	12.0	12.8	< 1.00	< 1.00	24.8	26.2
2/7/2022	E321812	F2_BPO												
2/7/2022	E321812	F2_BPO												
2/8/2022	E321811	F2_ECIN	1660		3.1	0.32	< 0.10		8.79		< 0.50		1.8	
2/8/2022	E321791	F2_NWPI	1420		2.1	2.72	1.27		10.5		< 0.50		51.2	
2/8/2022	E321814	EV_ECOUT	1650	0.368	3.2	0.87	1.45		11.4	12.6	< 0.50	< 0.50	19.4	21.2
2/8/2022	E321812	F2_BPO												
2/8/2022	E321812	F2_BPO	1760		3.1	2.43	1.74		12.6		< 0.50		25.1	
2/8/2022	0200203	EV_MC3	268	0.132	< 1.0	0.35	0.39		0.743	0.814	< 0.50	< 0.50	< 1.0	< 3.0
2/8/2022	200393	EV_ER1	337	0.278	< 1.0	3.58	0.16	< 0.010	1.40	1.47	< 0.50	< 0.50	< 1.0	< 3.0
2/8/2022	E206231	EV_GT1	1620	< 0.050	1.2	1.38	1.32		6.95	7.60	< 0.50	< 1.00	6.4	6.5
2/8/2022	E102685	EV_BC1	1840	< 0.050	1.4	0.79	0.73		10.1	11.3	< 1.00	< 1.00	5.0	6.5
2/8/2022	E300091	EV_MC2	378	0.202	1.1	0.4	0.34	< 0.010	1.56	1.51	< 0.50	< 0.50	1.6	< 3.0

		Parameter	Total Dissolved Solids (Residue, Filterable)	Total Kjeldahl Nitrogen	Total Suspended Solids, Lab	TURBIDITY, FIELD	Turbidity, Lab	Unknown selenium species	Uranium	Uranium	Vanadium	Vanadium	Zinc	Zinc
		Fraction	N	N	N	N	N	D	D	T	D	T	D	T
		Unit	mg/l	mg/l	mg/l	ntu	ntu	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2/8/2022	E321812	F2_BPO												
2/9/2022	E321811	F2_ECIN	1600		1.2	0.21	< 0.10							
2/9/2022	E321791	F2_NWPI	1660		2.4	2.55	1.35							
2/9/2022	E321812	F2_BPO	1770		1.3	2.18	1.64							
2/9/2022	E321812	F2_BPO				2.83								
2/9/2022	E321812	F2_BPO												
2/10/2022	E321811	F2_ECIN	1770		1.9	0.22	< 0.10		8.61		< 0.50		2.9	
2/10/2022	E321791	F2_NWPI	1680		2.3	2.64	1.32		10.7		< 1.00		57.6	
2/10/2022	E321812	F2_BPO	1770		3.2	2.83	1.78		14.0		< 1.00		28.1	
2/10/2022	E321812	F2_BPO												
2/10/2022	E321812	F2_BPO												
2/11/2022	E321811	F2_ECIN	1640		1.4	0.2	< 0.10							
2/11/2022	E321791	F2_NWPI	1480		1.5	3.25	1.51							
2/11/2022	E321812	F2_BPO	1680		1.6	2.74	1.69							
2/11/2022	E321812	F2_BPO												
2/11/2022	E321812	F2_BPO												
2/12/2022	E321811	F2_ECIN	1720		2.5	0.16	< 0.10							
2/12/2022	E321791	F2_NWPI	1580		3.8	3.98	1.78							
2/12/2022	E321812	F2_BPO	1830		3.7	2.01	1.70							
2/12/2022	E321812	F2_BPO												
2/12/2022	E321812	F2_BPO												
2/13/2022	E321811	F2_ECIN	1800		1.4	0.59	< 0.10							
2/13/2022	E321791	F2_NWPI	1550		2.6	2.94	1.86							
2/13/2022	E321812	F2_BPO	1760		2.5	2.35	1.77							
2/13/2022	E321812	F2_BPO												
2/13/2022	E321812	F2_BPO												
2/14/2022	E321812	F2_BPO	1660	0.326	1.4	2.58	1.84	< 0.010	13.6	14.0	< 0.50	< 0.50	25.5	27.0
2/14/2022	E321811	F2_ECIN	1690	< 0.050	< 1.0	0.36	< 0.10	< 0.010	8.92	9.64	< 0.50	< 0.50	2.8	< 3.0
2/14/2022	E321791	F2_NWPI	1610	0.541	1.9	3.78	1.82	< 0.010	11.1	11.7	< 0.50	< 1.00	61.5	65.3
2/14/2022	E321812	F2_BPO												
2/14/2022	0200097	EV_EC1	1680	0.334	1.5	0.17	< 0.10	< 0.010	11.0	13.5	< 0.50	< 1.00	1.6	< 6.0
2/14/2022	0200203	EV_MC3	255	< 0.050	1.4	1.87	0.58	< 0.010	0.702	0.871	< 0.50	< 0.50	5.1	3.0
2/14/2022	310168	EV_MC2A	341	0.064	< 1.0	0.68	0.33	< 0.010	1.36	1.58	< 0.50	< 0.50	< 1.0	< 3.0
2/14/2022	200393	EV_ER1	342	0.215	< 1.0	1.27	0.30		1.34	1.49	< 0.50	< 0.50	< 1.0	< 3.0
2/14/2022	E321814	EV_ECOUT	1690	0.442	< 1.0	0.95	0.65	< 0.010	9.66	10.9	< 0.50	< 1.00	10.4	28.7
2/14/2022	E300091	EV_MC2	391	0.181	< 1.0	0.97	0.34	< 0.010	1.56	1.78	< 0.50	< 0.50	< 1.0	< 3.0
2/14/2022	E321812	F2_BPO												
2/15/2022	E321811	F2_ECIN	1510		2.3	0.11	< 0.10		9.38		< 0.50		2.0	
2/15/2022	E321791	F2_NWPI	1480		2.6	2.9	1.60		10.9		< 0.50		52.2	
2/15/2022	E321812	F2_BPO	1700		3.3	2.65	1.90		13.1		< 0.50		24.3	
2/15/2022	E321812	F2_BPO												
2/15/2022	E102685	EV_BC1	1310	0.233	2.4	1.46	0.61	< 0.010	11.4	11.2	< 1.00	< 1.00	129	< 6.0
2/15/2022	E206231	EV_GT1	1660	0.476	2.9	3.66	1.84	< 0.010	10.5	10.0	< 1.00	< 1.00	6.5	10.5
2/15/2022	E300091	EV_MC2	416	0.331	1.1	3.29	0.42		1.63	1.63	< 0.50	< 0.50	< 1.0	6.1
2/15/2022	E321812	F2_BPO												
2/16/2022	E321811	F2_ECIN	1530		2.1	0.21	< 0.10							
2/16/2022	E321791	F2_NWPI	1410		1.4	3.2	1.63							
2/16/2022	E321812	F2_BPO	1560		1.1	3.19	1.65							

		Parameter	Total Dissolved Solids (Residue, Filterable)	Total Kjeldahl Nitrogen	Total Suspended Solids, Lab	TURBIDITY, FIELD	Turbidity, Lab	Unknown selenium species	Uranium	Uranium	Vanadium	Vanadium	Zinc	Zinc
		Fraction	N	N	N	N	N	D	D	T	D	T	D	T
		Unit	mg/l	mg/l	mg/l	ntu	ntu	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2/16/2022	E321812	F2_BPO												
2/16/2022	0200097	EV_EC1	1780	0.340	2.2	0.19	< 0.10		10.3	11.5	< 0.50	< 0.50	4.2	< 3.0
2/16/2022	E321812	F2_BPO												
2/17/2022	E321811	F2_ECIN	1600		< 1.0	0.37	< 0.10		7.65		< 0.50		3.3	
2/17/2022	E321791	F2_NWPI	1390		2.1	2.76	1.53		9.68		< 0.50		58.0	
2/17/2022	E321812	F2_BPO	1560		2.6	2.35	1.88		12.6		< 0.50		30.5	
2/17/2022	E321812	F2_BPO												
2/17/2022	E321812	F2_BPO												
2/18/2022	E321811	F2_ECIN	1650		< 1.0	1.08	< 0.10							
2/18/2022	E321791	F2_NWPI	1640		1.6	3.26	1.91							
2/18/2022	E321812	F2_BPO	1790		1.2	3.21	1.86							
2/18/2022	E321812	F2_BPO												
2/18/2022	E321812	F2_BPO												
2/19/2022	E321811	F2_ECIN	1640		1.9	0.32	< 0.10							
2/19/2022	E321791	F2_NWPI	1540		2.8	3.36	1.97							
2/19/2022	E321812	F2_BPO	1600		< 1.0	2.35	1.90							
2/19/2022	E321812	F2_BPO				2.29								
2/19/2022	E321812	F2_BPO												
2/20/2022	E321811	F2_ECIN	1670		< 1.0	0.27	< 0.10							
2/20/2022	E321791	F2_NWPI	1560		2.1	3.38	1.81							
2/20/2022	E321812	F2_BPO	1740		< 1.0	2.31	1.84							
2/20/2022	E321812	F2_BPO				2.2								
2/20/2022	E321812	F2_BPO												
2/21/2022	E321811	F2_ECIN	1630	0.409	< 1.0	0.11	< 0.10	< 0.010	7.97	8.55	< 0.50	< 1.00	2.2	6.5
2/21/2022	E321791	F2_NWPI	1600	< 0.050	1.6	2.62	1.62	< 0.010	9.33	9.70	< 0.50	< 0.50	58.0	59.6
2/21/2022	E321812	F2_BPO	1750	0.251	< 1.0	2.18	1.92	< 0.010	12.3	13.7	< 0.50	< 0.50	25.2	27.2
2/21/2022	E321812	F2_BPO												
2/21/2022	E321812	F2_BPO												
2/22/2022	E321811	F2_ECIN	1800		< 1.0	0.11	< 0.10		9.21		< 0.50		3.4	
2/22/2022	E321791	F2_NWPI	1580		2.4	2.65	1.52		10.8		< 0.50		61.4	
2/22/2022	E321812	F2_BPO												
2/22/2022	E321812	F2_BPO	1690		2.2	2.72	1.90		14.1		< 0.50		27.7	
2/22/2022	E300091	EV_MC2	526	0.267	2.4	0.54	0.25		2.32	2.31	< 0.50	< 0.50	3.5	< 3.0
2/22/2022	E321812	F2_BPO												
2/22/2022	E321812	F2_BPO												
2/23/2022	E321811	F2_ECIN	1820		1.8	0.31	< 0.10							
2/23/2022	E321791	F2_NWPI	1710		2.1	2.59	1.54							
2/23/2022	E321812	F2_BPO	1800		2.1	2.86	2.00							
2/23/2022	E321812	F2_BPO				2.36								
2/23/2022	E321812	F2_BPO												
2/24/2022	E321811	F2_ECIN	1530		< 1.0	0.08	< 0.10		8.92		< 0.50		3.0	
2/24/2022	E321791	F2_NWPI	1540		2.7	2.35	1.44		9.82		< 0.50		56.8	
2/24/2022	E321812	F2_BPO												
2/24/2022	E321812	F2_BPO	1670		3.2	2.44	1.97		13.7		< 0.50		24.6	
2/24/2022	E321812	F2_BPO												
2/25/2022	E321811	F2_ECIN	1650		2.0	0.13	< 0.10							
2/25/2022	E321791	F2_NWPI	1540		1.6	2.25	1.33							
2/25/2022	E321812	F2_BPO	1680		2.6	2.6	2.12							

		Parameter	Total Dissolved Solids (Residue, Filterable)	Total Kjeldahl Nitrogen	Total Suspended Solids, Lab	TURBIDITY, FIELD	Turbidity, Lab	Unknown selenium species	Uranium	Uranium	Vanadium	Vanadium	Zinc	Zinc
		Fraction	N	N	N	N	N	D	D	T	D	T	D	T
		Unit	mg/l	mg/l	mg/l	ntu	ntu	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2/25/2022	E321812	F2_BPO												
2/25/2022	E321812	F2_BPO												
2/26/2022	E321811	F2_ECIN	1710		1.2	0.13	< 0.10							
2/26/2022	E321791	F2_NWPI	1430		< 1.0	2.33	1.38							
2/26/2022	E321812	F2_BPO	1540		< 1.0	2.6	2.20							
2/26/2022	E321812	F2_BPO												
2/27/2022	E321811	F2_ECIN	1670		2.3	0.46	< 0.10							
2/27/2022	E321791	F2_NWPI	1530		1.5	2.39	1.40							
2/27/2022	E321812	F2_BPO												
2/27/2022	E321812	F2_BPO	1550		< 1.0	3.79	2.35							
2/27/2022	E321812	F2_BPO												
2/28/2022	E321812	F2_BPO	1720	0.326	< 1.0	2.6	2.37	< 0.010	11.2	12.6	< 0.50	< 0.50	26.9	28.1
2/28/2022	E321811	F2_ECIN	1690	< 0.050	1.5	0.29	< 0.10	< 0.010	8.99	8.88	< 0.50	< 0.50	2.3	< 3.0
2/28/2022	E321791	F2_NWPI	1580	0.147	2.2	2.5	1.40	< 0.010	10.1	10.4	< 0.50	< 0.50	63.0	61.9
2/28/2022	E321812	F2_BPO												
2/28/2022	0200097	EV_EC1	1700	0.300	3.0	0.59	< 0.10	< 0.010	10.7	11.5	< 1.00	< 0.50	< 2.0	< 3.0
2/28/2022	200393	EV_ER1	336	0.234	1.3	1.29	0.48		1.43	1.44	< 0.50	0.77	< 1.0	< 3.0
2/28/2022	E321812	F2_BPO												
2/28/2022	E321814	EV_ECOUT	1630	0.302	2.6	1.64	1.40	< 0.010	10.9	11.1	< 0.50	< 1.00	18.8	18.5
3/1/2022	0200203	EV_MC3	251	0.061	< 1.0	0.98	0.26	< 0.010	0.767	0.789	< 0.50	< 0.50	6.3	< 3.0
3/1/2022	E321812	F2_BPO	1700		1.4	3.37	2.45		11.7		< 0.50		24.7	
3/1/2022	E321811	F2_ECIN	1700		< 1.0	0.81	0.11		8.48		< 0.50		3.1	
3/1/2022	E321791	F2_NWPI	1610		1.2	2.42	1.27		9.88		< 0.50		59.7	
3/1/2022	E300091	EV_MC2	380	0.121	2.6	2.3	2.98		1.56	1.64	< 0.50	< 0.50	< 1.0	< 3.0
3/1/2022	E321812	F2_BPO												
3/1/2022	310168	EV_MC2A	350	0.127	1.7	0.78	0.88	< 0.010	1.44	1.49	< 0.50	0.78	1.9	< 3.0
3/1/2022	E102685	EV_BC1	1800	0.475	16.6	18.4	12.0	< 0.010	10.8	10.8	< 1.00	< 1.00	4.4	6.4
3/1/2022	E206231	EV_GT1	1660	0.345	3.2	4.69	1.97	< 0.010	7.37	7.66	< 0.50	< 1.00	5.6	9.5
3/1/2022	E300091	EV_MC2	391	0.257	2.4	1.17	0.45	< 0.010	1.53	1.60	< 0.50	0.81	4.9	< 3.0
3/1/2022	E321812	F2_BPO												
3/2/2022	E321811	F2_ECIN	1710	0.451	1.1	0.25	< 0.10	< 0.010	8.51	8.53	< 0.50	< 0.50	5.8	3.3
3/2/2022	E321791	F2_NWPI	1650	0.532	2.7	3.31	1.38	< 0.010	10.2	10.0	< 0.50	< 0.50	61.8	58.8
3/2/2022	E321812	F2_BPO	1670	0.276	2.1	3.38	2.57	< 0.010	11.2	11.9	< 0.50	< 0.50	22.0	25.0
3/2/2022	E321812	F2_BPO												
3/2/2022	E321812	F2_BPO												
3/3/2022	E321811	F2_ECIN	1580		< 1.0	0.84	< 0.10		8.63		< 0.50		14.2	
3/3/2022	E321791	F2_NWPI	1590		2.7	2.99	1.29		10.1		< 0.50		108	
3/3/2022	E321812	F2_BPO	1590		2.9	3.14	2.49		11.9		< 0.50		31.8	
3/3/2022	E321812	F2_BPO												
3/3/2022	E321812	F2_BPO												
3/4/2022	E321811	F2_ECIN	1670		< 1.0	0.19	< 0.10							
3/4/2022	E321812	F2_BPO	1670		< 1.0	3.1	2.50							
3/4/2022	E321812	F2_BPO												
3/4/2022	E321791	F2_NWPI	1500		< 1.0	2.94	1.54							
3/4/2022	E321812	F2_BPO												
3/5/2022	E321811	F2_ECIN	1670		< 1.0	0.11	< 0.10							
3/5/2022	E321791	F2_NWPI	1560		1.2	2.79	1.26							
3/5/2022	E321812	F2_BPO	1700		1.8	3.24	2.48							

		Parameter	Total Dissolved Solids (Residue, Filterable)	Total Kjeldahl Nitrogen	Total Suspended Solids, Lab	TURBIDITY, FIELD	Turbidity, Lab	Unknown selenium species	Uranium	Uranium	Vanadium	Vanadium	Zinc	Zinc
		Fraction	N	N	N	N	N	D	D	T	D	T	D	T
		Unit	mg/l	mg/l	mg/l	ntu	ntu	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
3/5/2022	E321812	F2_BPO												
3/6/2022	E321811	F2_ECIN	1620		1.2	0.17	< 0.10							
3/6/2022	E321791	F2_NWPI	1590		1.6	2.23	1.48							
3/6/2022	E321812	F2_BPO	1630		1.5	3.06	2.67							
3/6/2022	E321812	F2_BPO												
3/6/2022	E321812	F2_BPO												
3/7/2022	E321814	EV_ECOUT	1580	0.405	5.5	0.56	2.72		11.2	10.8	< 0.50	< 0.50	16.2	17.0
3/7/2022	E321812	F2_BPO	1700	0.303	1.2	3.26	2.48		11.5	12.5	< 0.50	< 0.50	21.8	23.0
3/7/2022	E321811	F2_ECIN	1690	0.117	1.1	0.69	< 0.10	< 0.010	8.46	8.98	< 0.50	< 0.50	2.4	< 3.0
3/7/2022	E321791	F2_NWPI	1590	< 0.050	2.8	3.13	1.59	< 0.010	10.3	10.9	< 0.50	< 0.50	58.4	61.2
3/7/2022	E321812	F2_BPO												
3/8/2022	E321811	F2_ECIN	1650		1.3	0.38	< 0.10		8.83		< 0.50		3.3	
3/8/2022	E321791	F2_NWPI	1690		2.0	3.35	1.65		10.9		< 0.50		63.0	
3/8/2022	E300091	EV_MC2	402	0.341	1.2	2.78	0.48		1.35	1.54	< 0.50	< 0.50	< 1.0	< 3.0
3/8/2022	E321812	F2_BPO	1690		2.1	3.34	2.66		12.2		< 0.50		22.1	
3/8/2022	E321812	F2_BPO												
3/8/2022	E321812	F2_BPO												
3/9/2022	E321811	F2_ECIN	1740		< 1.0	0.6	2.10							
3/9/2022	E321791	F2_NWPI	1600		2.6	4.1	2.18							
3/9/2022	E321812	F2_BPO												
3/9/2022	E321812	F2_BPO	1660		1.9	3.66	2.50							
3/9/2022	E321812	F2_BPO												
3/10/2022	E321791	F2_NWPI	1570		1.2	4.08	1.77		9.43		< 0.50		66.3	
3/10/2022	E321812	F2_BPO	1700		2.4	3.49	2.50	< 0.010	10.5		< 0.50		22.5	
3/10/2022	E321812	F2_BPO												
3/10/2022	E321811	F2_ECIN	1720		1.6	0.21	< 0.10		8.28		< 0.50		9.0	
3/10/2022	E321812	F2_BPO												
3/11/2022	E321811	F2_ECIN	1710		< 1.0	0.69	< 0.10							
3/11/2022	E321791	F2_NWPI	1560		1.9	3.82	1.66							
3/11/2022	E321812	F2_BPO	1600		< 1.0	3.11 3.05	2.35							
3/11/2022	E321812	F2_BPO												
3/12/2022	E321811	F2_ECIN	1740		< 1.0	0.23	< 0.10							
3/12/2022	E321791	F2_NWPI	1620		< 1.0	4.11	1.50							
3/12/2022	E321812	F2_BPO												
3/12/2022	E321812	F2_BPO	1690		< 1.0	3.18	2.25							
3/12/2022	E321812	F2_BPO												
3/13/2022	E321811	F2_ECIN	1660		< 1.0	0.88	< 0.10							
3/13/2022	E321791	F2_NWPI	1500		< 1.0	3.9	1.61							
3/13/2022	E321812	F2_BPO	1640		< 1.0	3.93	2.31							
3/13/2022	E321812	F2_BPO												
3/14/2022	E321812	F2_BPO	1630	0.323	2.0	4.06	2.26	< 0.010	12.1	12.8	< 0.50	< 1.00	24.5	23.5
3/14/2022	E321812	F2_BPO												
3/14/2022	0200097	EV_EC1	1680	0.399	1.6	3	0.14	< 0.010	11.1	12.2	< 0.50	< 0.50	2.4	< 3.0
3/14/2022	0200203	EV_MC3	290	0.066	2.4	2.18	0.98	< 0.010	0.733	0.787	< 0.50	< 0.50	1.3	< 3.0
3/14/2022	E321811	F2_ECIN	1650	< 0.050	< 1.0	0.89	< 0.10	< 0.010	8.59	10.6	< 0.50	< 0.50	3.1	4.4
3/14/2022	310168	EV_MC2A	357	0.112	1.3	0.88	0.41	< 0.010	1.37	1.52	< 0.50	< 0.50	< 1.0	< 3.0
3/14/2022	E321791	F2_NWPI	1570	< 0.050	2.0	3.83	1.49	< 0.010	10.3	11.5	< 0.50	< 0.50	59.1	61.5

		Parameter	Total Dissolved Solids (Residue, Filterable)	Total Kjeldahl Nitrogen	Total Suspended Solids, Lab	TURBIDITY, FIELD	Turbidity, Lab	Unknown selenium species	Uranium	Uranium	Vanadium	Vanadium	Zinc	Zinc
		Fraction	N	N	N	N	N	D	D	T	D	T	D	T
		Unit	mg/l	mg/l	mg/l	ntu	ntu	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
3/14/2022	200393	EV_ER1	379	0.285	2.2	1.07	0.41		1.41	1.60	< 0.50	< 0.50	< 1.0	< 3.0
3/14/2022	E300091	EV_MC2	436	0.556	2.0	1.88	0.55	< 0.010	1.53	1.70	< 0.50	< 0.50	1.6	< 3.0
3/14/2022	E321814	EV_ECOUT	1680	0.376	2.4	2.45	0.86	< 0.010	10.8	11.4	< 0.50	< 0.50	15.4	17.4
3/14/2022	E321812	F2_BPO												
3/15/2022	E321812	F2_BPO	1630		1.5	3.55	2.22		11.4	11.8	< 0.50	< 0.50	21.9	21.0
3/15/2022	E321812	F2_BPO												
3/15/2022	E321811	F2_ECIN	1670		2.0	0.62	< 0.10		8.44	8.11	< 0.50	< 0.50	2.0	< 3.0
3/15/2022	E321791	F2_NWPI	1740		3.0	4.45	1.70		10.3	10.5	< 0.50	< 0.50	61.9	54.4
3/15/2022	E300091	EV_MC2	385	0.342	1.4	1.28	0.77		1.50	1.45	< 0.50	< 0.50	< 1.0	< 3.0
3/15/2022	E102685	EV_BC1	1650	0.505	14.5	13.4	8.43	< 0.010	10.6	11.6	< 1.00	< 1.00	3.3	11.6
3/15/2022	E206231	EV_GT1	1540	0.540	11.9	15.7	10.8	< 0.010	8.46	10.4	< 0.50	0.82	4.6	7.2
3/15/2022	E321812	F2_BPO												
3/16/2022	E321811	F2_ECIN	1690		3.5	0.62	< 0.10							
3/16/2022	E321791	F2_NWPI	1600		1.7	3.32	1.88							
3/16/2022	E321812	F2_BPO												
3/16/2022	0200203	EV_MC3	241	< 0.050	2.2	2.79	1.33		0.749	0.738	< 0.50	< 0.50	3.3	< 3.0
3/16/2022	E321812	F2_BPO	1700		1.9	4.66	2.24							
3/16/2022	E206231	EV_GT1	1500	0.514	14.8	17.09	18.5		7.85	8.27	< 0.50	1.19	3.7	6.9
3/16/2022	E102685	EV_BC1	1660	0.513	18.1	10.98	12.2		11.2	10.5	< 0.50	< 0.50	2.4	3.9
3/16/2022	E300091	EV_MC2	383	0.219	1.9	2.43	0.88		1.50	1.54	< 0.50	< 0.50	< 1.0	< 3.0
3/16/2022	E321812	F2_BPO												
3/17/2022	E321811	F2_ECIN	1720		1.5	0.21	< 0.10		8.24		< 0.50		8.2	
3/17/2022	E321791	F2_NWPI	1620		2.7	3.4	2.16		9.92		< 0.50		62.5	
3/17/2022	E321812	F2_BPO	1710		2.3	3.34	2.47		11.4		< 0.50		23.0	
3/17/2022	E321812	F2_BPO												
3/17/2022	200393	EV_ER1	336	0.242	2.1	2.52	0.48		1.44	1.45	< 0.50	< 0.50	< 1.0	< 3.0
3/17/2022	0200097	EV_EC1	1640	0.363	< 1.0	1.33	< 0.10		10.8	11.4	< 0.50	< 0.50	< 1.0	< 3.0
3/17/2022	E321812	F2_BPO												
3/18/2022	E321811	F2_ECIN	1800		2.1	0.76	< 0.10							
3/18/2022	E321791	F2_NWPI	1620		3.9	3.41	1.74							
3/18/2022	E321812	F2_BPO	1600		3.0	3.84	2.45							
3/18/2022	E321812	F2_BPO												
3/18/2022	E321812	F2_BPO												
3/19/2022	E321811	F2_ECIN	1700		1.4	1.26	< 0.10							
3/19/2022	E321791	F2_NWPI	1560		2.3	3.9	1.83							
3/19/2022	E321812	F2_BPO	1670		1.9	3.66	2.51							
3/19/2022	E321812	F2_BPO												
3/19/2022	E321812	F2_BPO												
3/20/2022	E321811	F2_ECIN	1430		1.3	0.39	< 0.10		7.63		< 0.50		4.2	
3/20/2022	E321791	F2_NWPI	1430		4.0	3.92	1.64		9.12		< 0.50		62.2	
3/20/2022	E321812	F2_BPO	1540		3.0	3.26	2.53		11.2		< 0.50		18.8	
3/20/2022	E321812	F2_BPO				4.07								
3/20/2022	E321812	F2_BPO												
3/21/2022	E321812	F2_BPO	1700	0.271	3.1	2.91	2.27		11.3	12.2	< 0.50	< 0.50	17.0	20.0
3/21/2022	E321811	F2_ECIN	1700	< 0.050	1.7	0.2	< 0.10	< 0.010	8.41	9.06	< 0.50	< 0.50	2.3	< 3.0
3/21/2022	E321791	F2_NWPI	1660	0.418	2.7	4.12	1.84	< 0.010	10.1	10.6	< 0.50	< 0.50	61.6	68.8
3/21/2022	0200097	EV_EC1	1650	0.176	1.9	3.08	< 0.10		11.2	10.6	< 0.50	< 0.50	1.7	< 3.0
3/21/2022	E321812	F2_BPO												

		Parameter	Total Dissolved Solids (Residue, Filterable)	Total Kjeldahl Nitrogen	Total Suspended Solids, Lab	TURBIDITY, FIELD	Turbidity, Lab	Unknown selenium species	Uranium	Uranium	Vanadium	Vanadium	Zinc	Zinc
		Fraction	N	N	N	N	N	D	D	T	D	T	D	T
		Unit	mg/l	mg/l	mg/l	ntu	ntu	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
3/21/2022	0200203	EV_MC3	235	0.058	4.0	4.79	2.08		0.796	0.729	< 0.50	< 0.50	1.1	< 3.0
3/21/2022	310168	EV_MC2A	316	0.073	4.8	2.52	1.74		1.51	1.50	< 0.50	< 0.50	1.0	136
3/21/2022	E321814	EV_ECOUT	1620	0.220	1.2	1.82	1.50		11.0	11.1	< 0.50	< 0.50	14.1	14.1
3/21/2022	200393	EV_ER1	323	0.207	1.9	2.22	0.93		1.52	1.52	< 0.50	< 0.50	< 1.0	< 3.0
3/21/2022	E300091	EV_MC2	343	0.121	2.6	2.8	0.97		1.62	1.59	< 0.50	< 0.50	1.2	< 3.0
3/21/2022	E321812	F2_BPO												
3/22/2022	E321812	F2_BPO	1540		3.0	4.42	2.53		11.2		< 0.50		18.8	
3/22/2022	E321811	F2_ECIN	1430		1.3	0.76	< 0.10		7.63		< 0.50		4.2	
3/22/2022	E321791	F2_NWPI	1430		4.0	3.41	1.64		9.12		< 0.50		62.2	
3/22/2022	0200097	EV_EC1			< 1.0	0.15	< 0.10							
3/22/2022	E321812	F2_BPO				3.74								
3/22/2022	E102685	EV_BC1	1580	< 0.050	2.9	1.81	0.94		10.4	10.2	< 0.50	< 0.50	2.2	< 3.0
3/22/2022	E206231	EV_GT1	1460	0.492	6.9	9.21	6.35		6.92	7.16	< 0.50	0.58	3.9	5.3
3/22/2022	0200203	EV_MC3	243	< 0.050	1.5	0.98	1.21		0.761	0.796	< 0.50	< 0.50	< 1.0	< 3.0
3/22/2022	E206231	EV_GT1			3.2	7.26	7.08							
3/22/2022	E102685	EV_BC1			1.7	1.41	1.02							
3/22/2022	E300091	EV_MC2	381	0.195	1.7	0.97	1.50		1.56	1.68	< 0.50	< 0.50	< 1.0	4.9
3/22/2022	200393	EV_ER1	328	0.189	1.7	0.92	1.03		1.41	1.57	< 0.50	< 0.50	< 1.0	< 3.0
3/22/2022	E321812	F2_BPO												
3/23/2022	E321811	F2_ECIN	1740		1.2	0.19	< 0.10							
3/23/2022	E321791	F2_NWPI	1640		2.1	3.11	1.73							
3/23/2022	E321812	F2_BPO	1680		3.3	3.33	2.53							
3/23/2022	E321812	F2_BPO												
3/23/2022	E321812	F2_BPO												
3/24/2022	E321812	F2_BPO												
3/24/2022	E321812	F2_BPO	1680		3.2	4.05	2.66		10.6		< 0.50		19.4	
3/24/2022	E321811	F2_ECIN	1740		1.9	1.23	0.27		8.02		< 0.50		4.4	
3/24/2022	E321791	F2_NWPI	1600		3.3	6.43	2.78		9.85		< 0.50		63.9	
3/24/2022	E321812	F2_BPO												
3/25/2022	E321811	F2_ECIN	1640		1.5	4.3	< 0.10							
3/25/2022	E321791	F2_NWPI	1590		4.4	0.2	2.22							
3/25/2022	E321812	F2_BPO	1670		2.7	3.59	2.72	< 0.010						
3/25/2022	E321812	F2_BPO												
3/26/2022	E321811	F2_ECIN	1670		< 1.0	0.4	< 0.10							
3/26/2022	E321791	F2_NWPI	1600		2.5	4.33	1.70							
3/26/2022	E321812	F2_BPO	1610		1.4	3.73	2.57							
3/26/2022	E321812	F2_BPO												
3/26/2022	E321812	F2_BPO												
3/28/2022	0200097	EV_EC1	1480		2.2		< 0.10							
3/28/2022	0200203	EV_MC3	237	0.112	8.7	10.8	6.79	< 0.010	0.684	0.713	< 0.50	0.96	2.9	< 3.0
3/28/2022	E321814	EV_ECOUT	1530	0.390	2.3	0.82	0.27	< 0.010	8.02	8.22	< 0.50	< 0.50	4.0	3.0
3/28/2022	E321812	F2_BPO												
3/28/2022	200393	EV_ER1	354	0.267	4.9	4.96	2.22		1.30	1.39	< 0.50	< 0.50	1.1	< 3.0
3/28/2022	E321812	F2_BPO	1680	0.392	1.3	3.31	2.68	< 0.010	10.5	11.4	< 0.50	< 0.50	16.6	19.4
3/28/2022	310168	EV_MC2A	301	0.130	6.3	7.72	4.32	< 0.010	1.02	1.10	< 0.50	0.70	< 1.0	< 3.0
3/28/2022	E300091	EV_MC2	335	0.146	5.4	7.83	4.19	< 0.010	1.15	1.19	< 0.50	0.56	2.6	5.0
3/28/2022	E300091	EV_MC2	333		6.0		3.71							
3/28/2022	E321791	F2_NWPI	1630		3.5	3.84	2.42							

		Parameter	Total Dissolved Solids (Residue, Filterable)	Total Kjeldahl Nitrogen	Total Suspended Solids, Lab	TURBIDITY, FIELD	Turbidity, Lab	Unknown selenium species	Uranium	Uranium	Vanadium	Vanadium	Zinc	Zinc
		Fraction	N	N	N	N	N	D	D	T	D	T	D	T
		Unit	mg/l	mg/l	mg/l	ntu	ntu	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
3/28/2022	E321811	F2_ECIN	1770		2.8	1.25	0.41							
3/28/2022	0200097	EV_EC1	1650	0.392	< 1.0	0.58	< 0.10	< 0.010	7.79	8.03	< 0.50	< 0.50	< 1.0	< 3.0
3/29/2022	E321812	F2_BPO				3.77								
3/29/2022	E102685	EV_BC1	1630	0.286	1.1	1.21	0.57	< 0.010	10.0	10.3	< 0.50	< 0.50	21.5	< 3.0
3/29/2022	E321812	F2_BPO	1620		1.8	3.98	2.63		10.4		< 0.50		16.8	
3/29/2022	E206231	EV_GT1	1140	0.465	16.8	82	55.9	< 0.010	4.84	5.17	< 0.50	2.60	6.4	14.2
3/29/2022	E206231	EV_GT1			22.3									
3/29/2022	0200203	EV_MC3	234	0.105	28.7	32.65	32.2		0.666	0.874	< 0.50	7.03	< 1.0	7.4
3/29/2022	E300091	EV_MC2	345	0.306	7.0	7.3	6.29		1.04	1.14	< 0.50	1.02	2.6	68.2
3/29/2022	E206231	EV_GT1			32.3	43.12	46.4							
3/29/2022	E321811	F2_ECIN	1740	0.332	1.6	1.56	0.43		8.31	9.19	< 0.50	0.54	4.0	< 3.0
3/29/2022	E321791	F2_NWPI	1630	0.566	2.2	5.02	1.76		9.65	9.66	< 0.50	< 0.50	63.3	60.4
3/29/2022	E102685	EV_BC1			2.2	1.65	0.52							
3/29/2022	200393	EV_ER1	344	0.365	6.6	4.49	4.27		1.33	1.44	< 0.50	0.73	< 1.0	< 3.0
3/29/2022	E321812	F2_BPO												
3/30/2022	E321812	F2_BPO	1620		1.2	3.96	2.84							
3/30/2022	E321811	F2_ECIN	1700		1.4	2.68	0.12							
3/30/2022	E321791	F2_NWPI	1640		2.9	4.6	2.42							
3/30/2022	E321812	F2_BPO												
3/30/2022	0200097	EV_EC1			< 1.0	0	< 0.10							
3/30/2022	E321812	F2_BPO												
3/31/2022	E321811	F2_ECIN	1540		< 1.0	1.45	0.12		8.23		< 0.50		6.8	
3/31/2022	E321791	F2_NWPI	1520		1.6	2.91	1.84		10.0		< 0.50		76.1	
3/31/2022	E321812	F2_BPO	1630		1.4	3.64	3.15		10.8		< 0.50		18.8	
3/31/2022	E321812	F2_BPO				3.64								
3/31/2022	E321812	F2_BPO												
4/1/2022	E321811	F2_ECIN	1660		2.0	0.21	0.12							
4/1/2022	E321791	F2_NWPI	1580		2.3	3.85	1.94							
4/1/2022	E321812	F2_BPO	1630		2.1	4.09	2.99							
4/1/2022	E321812	F2_BPO												
4/2/2022	E321811	F2_ECIN	1540		3.4	0.24	< 0.10							
4/2/2022	E321791	F2_NWPI	1580		4.3	3.35	1.72							
4/2/2022	E321812	F2_BPO	1660		2.0	3.47	2.71							
4/2/2022	E321812	F2_BPO				3.89								
4/2/2022	E321812	F2_BPO												
4/3/2022	E321811	F2_ECIN	1660		1.9	0.22	0.13							
4/3/2022	E321791	F2_NWPI	1580		5.5	3.43	2.12							
4/3/2022	E321812	F2_BPO	1640		2.9	3.9	2.84							
4/3/2022	E321812	F2_BPO				3.71								
4/3/2022	E321812	F2_BPO												
4/4/2022	E321812	F2_BPO	1620	0.226	1.1	3.34	3.03	< 0.010	13.0	12.2	< 0.50	< 0.50	21.6	21.8
4/4/2022	0200097	EV_EC1	1520	0.188	< 1.0	0.57	< 0.10		9.50	12.1	< 0.50	< 0.50	1.8	< 3.0
4/4/2022	E321812	F2_BPO												
4/4/2022	0200203	EV_MC3	210	0.089	7.0	9.6	5.88		0.682	0.843	< 0.50	0.73	5.4	3.6
4/4/2022	310168	EV_MC2A	264	0.110	4.1	5.39	3.60		1.08	1.20	< 0.50	0.52	8.7	< 3.0
4/4/2022	E321811	F2_ECIN	1540	< 0.050	1.7	0.6	< 0.10	< 0.010	8.03	8.04	< 0.50	< 0.50	2.5	< 3.0
4/4/2022	E321791	F2_NWPI	1580	0.483	2.5	3.61	2.46	< 0.010	11.5	11.7	< 0.50	< 0.50	65.8	69.0
4/4/2022	200393	EV_ER1	330	0.336	2.2	2.31	1.45		1.45	1.56	< 0.50	< 0.50	3.4	4.6

		Parameter	Total Dissolved Solids (Residue, Filterable)	Total Kjeldahl Nitrogen	Total Suspended Solids, Lab	TURBIDITY, FIELD	Turbidity, Lab	Unknown selenium species	Uranium	Uranium	Vanadium	Vanadium	Zinc	Zinc
		Fraction	N	N	N	N	N	D	D	T	D	T	D	T
		Unit	mg/l	mg/l	mg/l	ntu	ntu	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
4/4/2022	E321814	EV_ECOUT	1660	0.322	1.9	1.54	0.65		9.01	10.5	< 0.50	< 1.00	6.6	12.2
4/4/2022	E300091	EV_MC2	308	0.094	2.3	5.11	3.05		1.20	1.32	< 0.50	< 0.50	3.4	< 3.0
4/4/2022	E321812	F2_BPO												
4/5/2022	E321791	F2_NWPI	1640		2.7	5.03	2.35		10.4		< 0.50		65.0	
4/5/2022	E321811	F2_ECIN	1630		1.3	0.61	0.15		8.22		< 0.50		2.4	
4/5/2022	E206231	EV_GT1	1470	0.539	5.4	4.73	2.91		7.56	8.24	< 0.50	0.52	7.3	8.5
4/5/2022	E102685	EV_BC1	1630	0.460	1.8	1.34	0.70		10.0	10.5	< 1.00	< 0.50	2.5	< 3.0
4/5/2022	E321812	F2_BPO	1560		2.5	3.44	2.89		12.9		< 0.50		24.2	
4/5/2022	0200203	EV_MC3	228	0.066	3.8	2.63	2.57		0.662	0.714	< 0.50	0.75	< 1.0	3.1
4/5/2022	E321812	F2_BPO												
4/5/2022	E206231	EV_GT1			4.1	2.69	2.31							
4/5/2022	E102685	EV_BC1			2.0	0.39	0.63							
4/5/2022	E300091	EV_MC2	374	0.196	2.5	3.22	2.53		1.21	1.25	< 0.50	0.55	< 1.0	4.1
4/5/2022	200393	EV_ER1	337	0.269	3.0	1.35	1.24		1.41	1.46	< 0.50	< 0.50	< 1.0	< 3.0
4/5/2022	E321812	F2_BPO												
4/6/2022	E321811	F2_ECIN	1730		< 1.0	0.19	< 0.10							
4/6/2022	E321791	F2_NWPI	1640		2.5	3.31	1.78							
4/6/2022	E321812	F2_BPO	1660		2.0	3.8	2.80							
4/6/2022	E321812	F2_BPO				3.87								
4/6/2022	0200097	EV_EC1			2.7	0	< 0.10							
4/6/2022	E321812	F2_BPO												
4/7/2022	E321811	F2_ECIN	1580		< 1.0	0.62	< 0.10		8.47		< 0.50		8.7	
4/7/2022	E321791	F2_NWPI	1600		2.0	3.46	1.81		10.6		< 0.50		66.7	
4/7/2022	E321812	F2_BPO				3.27								
4/7/2022	E321812	F2_BPO	1600		1.8	3.35	2.57		11.8		< 0.50		19.9	
4/7/2022	E321812	F2_BPO												
4/8/2022	E321811	F2_ECIN	1640		1.6	0.62	< 0.10							
4/8/2022	E321791	F2_NWPI	1640		1.8	3.14	1.74							
4/8/2022	E321812	F2_BPO	1500		2.0	5.73	2.62							
4/8/2022	E321812	F2_BPO												
4/9/2022	E321811	F2_ECIN	1600		< 1.0	0.25	0.12							
4/9/2022	E321791	F2_NWPI	1600		2.5	3.36	2.17							
4/9/2022	E321812	F2_BPO	1640		1.4	3.52	3.02							
4/9/2022	E321812	F2_BPO												
4/10/2022	E300091	EV_MC2	330		3.4	1.89	1.77							
4/10/2022	0200097	EV_EC1	1570		2.5	0.4	< 0.10							
4/10/2022	E321791	F2_NWPI	1490		3.6	3.22	1.78							
4/10/2022	E321812	F2_BPO	1450		2.2	3.99	2.86							
4/10/2022	E321812	F2_BPO												
4/11/2022	E321791	F2_NWPI	1850	1.04	2.4	3.45	1.84	< 0.010	10.8	11.2	< 0.50	0.58	64.0	70.2
4/11/2022	E321812	F2_BPO	1610	0.204	< 1.0	3.45	2.30	< 0.010	12.4	12.2	< 0.50	< 0.50	16.8	18.6
4/11/2022	E321812	F2_BPO												
4/11/2022	E300091	EV_MC2	298	0.203	< 1.0	2.29	2.06	< 0.010	1.16	1.24	< 0.50	< 1.00	2.1	< 3.0
4/11/2022	E300091	EV_MC2	345		< 1.0		1.05							
4/11/2022	310168	EV_MC2A	253	0.136	2.5	3.57	1.74	0	1.04	1.04	< 0.50	< 1.00	1.4	< 3.0
4/11/2022	0200097	EV_EC1	1550	< 0.050	1.8	1.17	< 0.10	< 0.010	7.81	7.86	< 0.50	< 0.50	< 1.0	< 3.0
4/11/2022	0200097	EV_EC1	1490		1.2		< 0.10							
4/11/2022	0200203	EV_MC3	223	0.091	2.3	4.6	1.77	< 0.010	0.666	0.690	< 0.50	< 1.00	< 1.0	< 3.0

		Parameter	Total Dissolved Solids (Residue, Filterable)	Total Kjeldahl Nitrogen	Total Suspended Solids, Lab	TURBIDITY, FIELD	Turbidity, Lab	Unknown selenium species	Uranium	Uranium	Vanadium	Vanadium	Zinc	Zinc
		Fraction	N	N	N	N	N	D	D	T	D	T	D	T
		Unit	mg/l	mg/l	mg/l	ntu	ntu	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
4/11/2022	200393	EV_ER1	332	0.340	1.1	2.93	0.76		1.38	1.46	< 0.50	< 1.00	< 1.0	< 3.0
4/11/2022	E321814	EV_ECOUT	1640	0.084	1.9	0.18	0.15	< 0.010	8.35	8.83	< 0.50	< 0.50	2.8	4.7
4/11/2022	E321812	F2_BPO												
4/12/2022	0200097	EV_EC1	1650		< 1.0	0.4	< 0.10							
4/12/2022	E102685	EV_BC1	1680	0.451	2.5	0.82	0.89		10.2	11.6	< 0.50	< 0.50	1.0	< 3.0
4/12/2022	E206231	EV_GT1	1590	0.468	2.0	2.72	1.78	< 0.010	9.93	9.79	< 0.50	< 0.50	6.8	8.3
4/12/2022	E206231	EV_GT1	1600	0.361	2.6	3.09	1.70		9.86	11.9	< 0.50	< 1.00	6.3	7.1
4/12/2022	E321812	F2_BPO	1630		2.8	3.61	3.00		11.1		< 0.50		16.4	
4/12/2022	E321812	F2_BPO												
4/12/2022	E300091	EV_MC2	486		2.6	5.26	1.19							
4/12/2022	E102685	EV_BC1	1720	0.244	1.4	1.31	0.53	< 0.010	9.97	10.4	< 0.50	< 0.50	< 1.0	< 3.0
4/12/2022	E300091	EV_MC2	352	0.219	2.4	8.16	0.94		1.26	1.43	< 0.50	< 0.50	2.2	< 3.0
4/12/2022	E321812	F2_BPO												
4/12/2022	E321791	F2_NWPI	1590		2.2	4.32	1.92		10.6		< 0.50		70.3	
4/13/2022	E300091	EV_MC2	414		2.2	1.97	1.48							
4/13/2022	0200097	EV_EC1	1580		1.8	2.41	< 0.10							
4/13/2022	E321791	F2_NWPI	1530		1.3	3.37	1.80							
4/13/2022	E321812	F2_BPO	1580		1.8	3.62	2.99							
4/13/2022	E321812	F2_BPO												
4/13/2022	0200097	EV_EC1	1610	0.393	< 1.0	0.5	0.28		7.66	8.66	< 0.50	< 0.50	< 1.0	< 3.0
4/13/2022	E321812	F2_BPO												
4/13/2022	0200097	EV_EC1	1610	0.393	< 1.0	0.5	0.28		7.66	8.66	< 0.50	< 0.50	< 1.0	< 3.0
4/13/2022	0200203	EV_MC3	248	0.658	7.2	2.03	1.26		0.720	0.734	< 0.50	< 0.50	< 1.0	< 3.0
4/13/2022	200393	EV_ER1	369	0.368	1.8	0.62	0.91		1.51	1.55	< 0.50	< 0.50	< 1.0	< 3.0
4/13/2022	E321812	F2_BPO												
4/14/2022	E321791	F2_NWPI	1760		1.0	3.36	1.57		10.8		< 0.50		66.8	
4/14/2022	E300091	EV_MC2	299		29.6	4.21	3.88							
4/14/2022	0200097	EV_EC1	1490		1.4	0.92	< 0.10							
4/14/2022	E321812	F2_BPO	1770		2.6	4.37	3.07		10.8		< 0.50		12.8	
4/14/2022	E321812	F2_BPO												
4/14/2022	E321812	F2_BPO												
4/15/2022	E321791	F2_NWPI	1610		2.0	3.13	1.71							
4/15/2022	E300091	EV_MC2	323		3.1	1.89	1.26							
4/15/2022	0200097	EV_EC1	1570		4.0	0.21	< 0.10							
4/15/2022	E321812	F2_BPO	1670		2.7	4.88	3.27							
4/15/2022	E321812	F2_BPO												
4/15/2022	E321812	F2_BPO												
4/16/2022	0200097	EV_EC1	1600		2.6	0.53	< 0.10							
4/16/2022	E300091	EV_MC2	364		3.2	1.29	1.83							
4/16/2022	E321791	F2_NWPI	1660		2.2	3.08	1.43							
4/16/2022	E321812	F2_BPO	1700		2.0	3.91	3.21							
4/16/2022	E321812	F2_BPO				3.97								
4/16/2022	E321812	F2_BPO												
4/16/2022	E321812	F2_BPO												
4/17/2022	E300091	EV_MC2	384		3.6	1.74	2.25							
4/17/2022	E321791	F2_NWPI	1630		1.6	2.65	1.65							
4/17/2022	0200097	EV_EC1	1590		1.4	0.22	< 0.10							
4/17/2022	E321812	F2_BPO												
4/17/2022	E321812	F2_BPO	1640		1.6	4.89	3.17							
4/17/2022	E321812	F2_BPO												

		Parameter	Total Dissolved Solids (Residue, Filterable)	Total Kjeldahl Nitrogen	Total Suspended Solids, Lab	TURBIDITY, FIELD	Turbidity, Lab	Unknown selenium species	Uranium	Uranium	Vanadium	Vanadium	Zinc	Zinc
		Fraction	N	N	N	N	N	D	D	T	D	T	D	T
		Unit	mg/l	mg/l	mg/l	ntu	ntu	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
4/18/2022	E321812	F2_BPO	1700	0.263	1.6	4.34	3.46	< 0.010	9.94	10.5	< 0.50	< 0.50	10.5	11.8
4/18/2022	E321791	F2_NWPI	1680	0.606	3.8	3.48	1.61	< 0.010	10.7	10.7	< 0.50	< 0.50	66.1	70.8
4/18/2022	E300091	EV_MC2	350	0.399	2.8	1.61	1.05		1.56	1.40	< 0.50	< 0.50	1.9	< 3.0
4/18/2022	E300091	EV_MC2												
4/18/2022	0200097	EV_EC1	1550	< 0.050	1.4	0.28	< 0.10		8.10	8.27	< 0.50	< 0.50	< 1.0	< 3.0
4/18/2022	0200097	EV_EC1												
4/18/2022	0200203	EV_MC3	248	0.108	3.6	3.05	1.71		0.762	0.746	< 0.50	< 0.50	< 1.0	< 3.0
4/18/2022	E321814	EV_ECOUT	1640	< 0.050	2.6	0.86	0.26		8.66	8.30	< 0.50	< 0.50	2.1	< 3.0
4/18/2022	310168	EV_MC2A	300	0.379	3.0	2.47	1.03		1.25	1.21	< 0.50	< 0.50	< 1.0	< 3.0
4/18/2022	200393	EV_ER1	351	0.379	1.2	2.54	0.55		1.62	1.56	< 0.50	< 0.50	1.2	< 3.0
4/18/2022	E321812	F2_BPO												
4/19/2022	E300091	EV_MC2	357		3.6	4.82	3.35							
4/19/2022	0200097	EV_EC1	1520		< 1.0	0.28	< 0.10							
4/19/2022	E206231	EV_GT1	1660	0.539	2.7	4.01	2.25		10.1	10.0	< 0.50	< 1.00	6.5	8.3
4/19/2022	E102685	EV_BC1	1700	< 0.050	1.2	2.8	0.56		11.0	11.1	< 1.00	< 0.50	2.2	< 3.0
4/19/2022	E321812	F2_BPO	1600		1.3	4.66	3.55		10.2		< 0.50		10.2	
4/19/2022	E321812	F2_BPO												
4/19/2022	E321791	F2_NWPI	1600		1.5	2.98	1.25		11.4		< 0.50		68.4	
4/19/2022	E321814	EV_ECOUT	1670	0.131	1.3	2.6	0.11		8.11	9.19	< 0.50	< 0.50	1.7	< 3.0
4/19/2022	0200203	EV_MC3	238	0.076	2.9	3.1	2.92		0.701	0.793	< 0.50	0.54	< 1.0	< 3.0
4/19/2022	E206231	EV_GT1			2.8	2.35	1.83							
4/19/2022	E102685	EV_BC1			1.7	1.08	0.58							
4/19/2022	E300091	EV_MC2	375	0.172	2.7	2.24	1.95		1.31	1.51	< 0.50	< 0.50	< 1.0	< 3.0
4/19/2022	200393	EV_ER1	366	0.284	1.9	1.81	0.88		1.47	1.63	< 0.50	< 0.50	< 1.0	< 3.0
4/19/2022	E321812	F2_BPO												
4/20/2022	E300091	EV_MC2	393		3.5	1.23	1.15							
4/20/2022	0200097	EV_EC1	1580		1.5	0.97	< 0.10							
4/20/2022	E321791	F2_NWPI	1720		2.9	2.43	1.70							
4/20/2022	E321812	F2_BPO	1630		3.8	4.66	3.54							
4/20/2022	E321812	F2_BPO				5.84								
4/20/2022	0200097	EV_EC1			1.0	0.28	0.10							
4/21/2022	E300091	EV_MC2	372		2.8	1.32	1.23							
4/21/2022	0200097	EV_EC1	1580		< 1.0	0.14	< 0.10							
4/21/2022	E321812	F2_BPO												
4/21/2022	E321791	F2_NWPI	1580		1.8	2.97	1.67		11.9		< 0.50		67.2	
4/21/2022	E321812	F2_BPO	1600		4.4	4.55	3.75		11.3		< 0.50		14.4	
4/21/2022	E321812	F2_BPO												
4/22/2022	E300091	EV_MC2	358		2.8	1.62	1.36							
4/22/2022	0200097	EV_EC1	1580		< 1.0	0.11	< 0.10							
4/22/2022	E321791	F2_NWPI	1590		3.6	2.74	1.61							
4/22/2022	E321812	F2_BPO												
4/22/2022	E321812	F2_BPO	1640		2.8	4.84	3.75							
4/22/2022	E321812	F2_BPO												
4/23/2022	0200097	EV_EC1	1510		1.5	0.36	0.11							
4/23/2022	E300091	EV_MC2	342		2.4	1.59	1.53							
4/23/2022	E321791	F2_NWPI	1680		1.4	2.86	1.55							
4/23/2022	E321812	F2_BPO	1680		2.5	4.83	3.44							
4/23/2022	E321812	F2_BPO												

		Parameter	Total Dissolved Solids (Residue, Filterable)	Total Kjeldahl Nitrogen	Total Suspended Solids, Lab	TURBIDITY, FIELD	Turbidity, Lab	Unknown selenium species	Uranium	Uranium	Vanadium	Vanadium	Zinc	Zinc
		Fraction	N	N	N	N	N	D	D	T	D	T	D	T
		Unit	mg/l	mg/l	mg/l	ntu	ntu	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
4/24/2022	E300091	EV_MC2	416		3.0	1.28	1.51							
4/24/2022	0200097	EV_EC1	1530		< 1.4	0.58	< 0.10							
4/24/2022	E321791	F2_NWPI	1780		2.3	2.59	1.48							
4/24/2022	E321812	F2_BPO				4.41								
4/24/2022	E321812	F2_BPO	1700		1.6	4.49	3.66							
4/24/2022	E321812	F2_BPO												
4/25/2022	E300091	EV_MC2												
4/25/2022	E300091	EV_MC2	330	0.189	3.7	3.81	2.43	< 0.010	1.26	1.17	< 0.50	< 1.00	1.6	< 3.0
4/25/2022	200393	EV_ER1	372	0.163	3.1	2.49	1.24		1.59	1.44	< 0.50	< 1.00	1.0	< 3.0
4/25/2022	310168	EV_MC2A	300	0.330	3.4	3.58	2.39	< 0.010	1.09	1.06	< 0.50	< 1.00	1.7	< 3.0
4/25/2022	E321812	F2_BPO	1680	0.195	1.7	4.46	3.70	< 0.010	11.4	10.6	< 1.00	< 0.50	13.1	11.5
4/25/2022	0200203	EV_MC3	246	0.127	5.1	3.76	2.77	< 0.010	0.692	0.682	< 0.50	< 0.50	< 1.0	< 3.0
4/25/2022	E321812	F2_BPO												
4/25/2022	0200097	EV_EC1	1600	< 0.050	< 1.0	1.17	< 0.10	0.015	8.44	7.92	< 0.50	< 0.50	1.2	< 3.0
4/25/2022	0200097	EV_EC1												
4/25/2022	E321791	F2_NWPI	1670	2.07	1.5	3.66	1.30	< 0.010	11.2	10.5	< 1.00	< 0.50	72.0	64.0
4/25/2022	E321814	EV_ECOUT	1640	< 0.050	2.4	0.93	0.39	< 0.010	8.71	7.93	< 0.50	< 0.50	1.8	< 3.0
4/25/2022	E321812	F2_BPO												
4/26/2022	E321791	F2_NWPI	1650		< 1.0	3.34	1.41		11.1		< 0.50		65.0	
4/26/2022	E300091	EV_MC2	307		6.7	6.94	6.89							
4/26/2022	E300091	EV_MC2												
4/26/2022	E300091	EV_MC2												
4/26/2022	0200097	EV_EC1	1520		1.4	1.03	0.12							
4/26/2022	E206231	EV_GT1	1650	1.45	2.9	1.55	1.16	< 0.010	9.55	9.39	< 0.50	< 0.50	5.2	6.5
4/26/2022	E321812	F2_BPO	1710		6.6	4.58	3.61		12.0		< 0.50		15.3	
4/26/2022	E321812	F2_BPO												
4/26/2022	0200203	EV_MC3	210	0.209	15.9	8.99	9.68		0.648	0.660	< 0.50	1.10	< 1.0	< 3.0
4/26/2022	E206231	EV_GT1			2.0	1.31	0.93							
4/26/2022	E102685	EV_BC1	1660	< 0.050	1.3	0.88	0.42	< 0.010	10.7	11.0	< 0.50	< 0.50	2.0	< 3.0
4/26/2022	E102685	EV_BC1			8.2	0.75	2.62							
4/26/2022	E300091	EV_MC2	276	0.254	9.0	5.84	5.92		1.08	1.12	< 0.50	< 0.50	1.4	< 3.0
4/26/2022	200393	EV_ER1	336	0.175	6.1	3.65	2.84		1.42	1.55	< 0.50	0.85	< 1.0	4.7
4/26/2022	E321812	F2_BPO												
4/27/2022	E321791	F2_NWPI	1700		1.4	2.71	1.78							
4/27/2022	0200097	EV_EC1	1540		1.6	0.16	0.17							
4/27/2022	E300091	EV_MC2	284		10.4	6.66	7.94							
4/27/2022	E300091	EV_MC2												
4/27/2022	E300091	EV_MC2												
4/27/2022	E321812	F2_BPO	1720		3.2	4.75	4.27							
4/27/2022	E321812	F2_BPO												
4/27/2022	0200097	EV_EC1			3.1	0.32	0.26							
4/27/2022	E321812	F2_BPO												
4/28/2022	E300091	EV_MC2	291		7.8	3.29	4.79							
4/28/2022	0200097	EV_EC1	1560		3.4	0.32	0.13							
4/28/2022	E321791	F2_NWPI	1670		3.6	2.82	1.56		11.7		< 0.50		70.7	
4/28/2022	E321812	F2_BPO	1660		4.5	4.72	3.86		13.8		< 0.50		28.4	
4/28/2022	E321812	F2_BPO				4.98								
4/28/2022	E321812	F2_BPO												

		Parameter	Total Dissolved Solids (Residue, Filterable)	Total Kjeldahl Nitrogen	Total Suspended Solids, Lab	TURBIDITY, FIELD	Turbidity, Lab	Unknown selenium species	Uranium	Uranium	Vanadium	Vanadium	Zinc	Zinc
		Fraction	N	N	N	N	N	D	D	T	D	T	D	T
		Unit	mg/l	mg/l	mg/l	ntu	ntu	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
4/29/2022	E321791	F2_NWPI	1630		3.0	2.62	1.56							
4/29/2022	E300091	EV_MC2	319		13.6	2.88	4.84							
4/29/2022	0200097	EV_EC1	1540		1.9	0.3	0.12							
4/29/2022	E321812	F2_BPO	1690		2.9	4.67	3.48							
4/29/2022	E321812	F2_BPO												
4/29/2022	E321812	F2_BPO												
4/30/2022	E300091	EV_MC2	325		7.9	3.7	5.34							
4/30/2022	0200097	EV_EC1	1500		1.1	0.26	< 0.10							
4/30/2022	E321791	F2_NWPI	1620		2.7	2.71	1.55							
4/30/2022	E321812	F2_BPO	1720		2.7	5.01	3.90							
4/30/2022	E321812	F2_BPO				4.86								
4/30/2022	E321812	F2_BPO												
5/1/2022	E300091	EV_MC2	322		7.9	3.51	4.56							
5/1/2022	E300091	EV_MC2												
5/1/2022	E300091	EV_MC2												
5/1/2022	0200097	EV_EC1	1520		< 1.0	0.38	< 0.10							
5/1/2022	E321791	F2_NWPI	1670		2.6	2.33	1.82							
5/1/2022	E321812	F2_BPO	1650		3.9	5.67	4.39							
5/1/2022	E321812	F2_BPO												
5/1/2022	E321812	F2_BPO												
5/1/2022	E321812	F2_BPO												
5/1/2022	E321812	F2_BPO												
5/2/2022	0200097	EV_EC1	1500	0.060	1.7	0.38	0.17		7.95	8.32	< 0.50	< 0.50	< 1.0	< 3.0
5/2/2022	0200097	EV_EC1												
5/2/2022	310168	EV_MC2A	264	0.536	7.3	7.33	5.82		0.813	0.853	< 0.50	1.11	< 1.0	< 3.0
5/2/2022	0200203	EV_MC3	236	0.116	8.3	9.54	6.11		0.606	0.604	< 0.50	1.46	< 1.0	< 3.0
5/2/2022	200393	EV_ER1	358	0.304	5.5	5.1	2.80		1.34	1.35	< 0.50	0.80	1.3	< 3.0
5/2/2022	E321812	F2_BPO	1810	0.200	4.1	5.03	4.67	< 0.010	13.1	14.5	< 0.50	< 0.50	23.3	22.7
5/2/2022	E300091	EV_MC2	306	0.209	7.1	7.02	6.48		0.937	0.951	< 0.50	1.07	< 1.0	< 3.0
5/2/2022	E300091	EV_MC2												
5/2/2022	E321814	EV_ECOUT	1030	< 0.050	1.6	1.65	2.48		8.34	8.67	< 0.50	0.63	1.8	< 3.0
5/2/2022	E321812	F2_BPO												
5/2/2022	E321791	F2_NWPI	1710	1.75	1.8	3.22	1.68	< 0.010	11.2	12.1	< 0.50	< 0.50	70.4	68.0
5/2/2022	E321812	F2_BPO												
5/3/2022	E300091	EV_MC2	304		28.2	13.9	12.8							
5/3/2022	0200097	EV_EC1	1540		13.1	0.26	0.57							
5/3/2022	E206231	EV_GT1	1630	< 0.050	4.6	2.39	1.08		10.1	10.4	< 0.50	< 0.50	5.6	5.7
5/3/2022	E321812	F2_BPO	1670		4.2	5.26	4.47		12.4		< 0.50		21.3	
5/3/2022	E321812	F2_BPO				5.28								
5/3/2022	0200203	EV_MC3	186	0.265	28.8	15.53	8.46		0.511	0.595	< 0.50	2.04	< 1.0	3.4
5/3/2022	E102685	EV_BC1	1610	< 0.050	5.0	5.61	0.20		10.2	10.3	< 0.50	< 0.50	2.1	< 3.0
5/3/2022	E102685	EV_BC1	1650	< 0.050	4.9	0.39	0.43		10.2	10.6	< 0.50	< 0.50	< 1.0	< 3.0
5/3/2022	E321791	F2_NWPI	1640		8.4	6.34	2.76		10.3		< 0.50		66.1	
5/3/2022	E206231	EV_GT1	1650	1.80	3.1	0.68	1.36		9.98	10.5	< 0.50	< 0.50	4.7	5.2
5/3/2022	E300091	EV_MC2	266	0.270	20.6	12.05	9.21		0.787	0.871	< 0.50	1.53	< 1.0	< 3.0
5/3/2022	E321814	EV_ECOUT	1670	< 0.050	3.6	0.58	0.12		7.94	8.42	< 0.50	< 0.50	1.5	< 3.0
5/3/2022	200393	EV_ER1	317	0.432	13.2	6.13	6.86		1.20	1.30	< 0.50	0.81	< 1.0	< 3.0
5/3/2022	E321812	F2_BPO												
5/4/2022	0200097	EV_EC1								13		213		30000
5/4/2022	E300091	EV_MC2	210		71.5	21.4	30.2							

		Parameter	Total Dissolved Solids (Residue, Filterable)	Total Kjeldahl Nitrogen	Total Suspended Solids, Lab	TURBIDITY, FIELD	Turbidity, Lab	Unknown selenium species	Uranium	Uranium	Vanadium	Vanadium	Zinc	Zinc
		Fraction	N	N	N	N	N	D	D	T	D	T	D	T
		Unit	mg/l	mg/l	mg/l	ntu	ntu	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
5/4/2022	0200097	EV_EC1	1470		2.8	0.14	< 0.10							
5/4/2022	E321812	F2_BPO	1890		3.2	5.73	4.02							
5/4/2022	E321812	F2_BPO												
5/4/2022	E321791	F2_NWPI	1820		2.8	4.9	1.83							
5/4/2022	0200097	EV_EC1	1570	0.413	4.2	0.92	< 0.10		7.43	8.10	< 0.50	< 0.50	< 1.0	< 3.0
5/4/2022	E321812	F2_BPO												
5/4/2022	0200203	EV_MC3	183	0.284	29.6	22.36	17.7		0.448	0.542	< 0.50	3.95	< 1.0	5.7
5/4/2022	E321814	EV_ECOUT	1640	0.433	1.4	0.49	< 0.10		8.09	8.50	< 0.50	< 0.50	1.7	< 3.0
5/5/2022	0200097	EV_EC1								< 1		< 38		15000
5/5/2022	E300091	EV_MC2	275		67.6	22.3	36.6							
5/5/2022	0200097	EV_EC1	1510		1.8	0.38	< 0.10							
5/5/2022	E321812	F2_BPO				5.49								
5/5/2022	E321812	F2_BPO	1740	0.209	3.2	5.49	4.10		13.0	13.5	< 0.50	< 0.50	22.5	25.6
5/5/2022	0200097	EV_EC1	1470	< 0.050	1.5	0.42	< 0.10		7.47	7.94	< 0.50	< 0.50	< 1.0	< 3.0
5/5/2022	0200203	EV_MC3	203	0.298	87.8	37.29	33.4		0.413	0.513	< 0.50	4.36	< 1.0	8.7
5/5/2022	E321814	EV_ECOUT	1520	0.380	3.2	3.18	< 0.10		7.92	8.55	< 0.50	< 0.50	1.7	< 3.0
5/5/2022	E321812	F2_BPO												
5/6/2022	0200097	EV_EC1	1540		< 1.0	0.89	0.43							
5/6/2022	0200097	EV_EC1	1440	< 0.050	< 1.0	0.33	< 0.10		7.47	8.10	< 0.50	< 0.50	< 1.0	< 3.0
5/6/2022	E321812	F2_BPO	1720		< 1.0	5.6	4.48							
5/6/2022	0200203	EV_MC3	144	0.232	193	113.12	109		0.357	0.551	< 0.50	2.34	1.3	8.3
5/6/2022	E300091	EV_MC2	179		238	192	141							
5/6/2022	E321814	EV_ECOUT	1590	< 0.050	3.2	0.28	< 0.10		8.01	8.96	< 0.50	< 0.50	1.8	< 3.0
5/6/2022	E321812	F2_BPO				4.71								
5/6/2022	E321791	F2_NWPI	1750		2.6	3.58	1.77		10.5		< 0.50		69.4	
5/7/2022	E321791	F2_NWPI	1610		3.1	3.16	2.17							
5/7/2022	0200097	EV_EC1	1620		3.0	0.13	0.10							
5/7/2022	0200097	EV_EC1	1490	< 0.050	3.7	1.69	< 0.10		7.13	7.49	< 0.50	< 0.50	< 1.0	< 3.0
5/7/2022	0200203	EV_MC3	157	0.341	41.7	47.18	43.5		0.314	0.416	< 0.50	4.29	< 1.0	9.2
5/7/2022	E300091	EV_MC2	244		71.7	32.3	39.3							
5/7/2022	E321812	F2_BPO	1700		2.1	5.62	4.60							
5/7/2022	E321812	F2_BPO												
5/7/2022	E321814	EV_ECOUT	1600	< 0.050	2.2	1.21	0.23		7.59	8.16	< 0.50	< 0.50	1.6	< 3.0
5/7/2022	E321812	F2_BPO												
5/8/2022	E321791	F2_NWPI	1610		3.1	0.15	2.51							
5/8/2022	0200097	EV_EC1	1620		3.7	0.74	0.13							
5/8/2022	0200097	EV_EC1	1570	< 0.050	4.5	0.51	0.49		7.32	7.54	< 0.50	< 0.50	< 1.0	< 3.0
5/8/2022	0200203	EV_MC3	174	0.197	41.9	21.08	16.6		0.350	0.409	< 0.50	2.71	< 1.0	6.3
5/8/2022	E300091	EV_MC2	249		33.0	18.8	21.7							
5/8/2022	E321812	F2_BPO	1640		7.5	6.58	4.51							
5/8/2022	E321812	F2_BPO												
5/8/2022	E321814	EV_ECOUT	1820	< 0.050	4.7	0.09	0.19		7.88	8.03	< 0.50	< 0.50	1.8	< 3.0
5/8/2022	E321812	F2_BPO												
5/9/2022	E300091	EV_MC2	253	0.146	22.9	18.3	7.92	< 0.010	0.635	0.627	< 0.50	1.30	1.0	4.2
5/9/2022	E321791	F2_NWPI	1650	< 0.050	2.5	9.03	2.04	< 0.010	11.4	11.6	< 0.50	< 0.50	66.0	67.1
5/9/2022	E321812	F2_BPO	1740	0.264	3.2	5.06	4.56	< 0.010	14.3	14.2	< 0.50	< 0.50	23.6	25.0
5/9/2022	310168	EV_MC2A	220	0.156	19.6		11.3		0.508	0.520	< 0.50	1.57	< 1.0	3.1
5/9/2022	E321812	F2_BPO												

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		Fraction	N	N	N	N	N	D	D	T	D	T	D	T
		Unit	mg/l	mg/l	mg/l	ntu	ntu	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
5/9/2022	0200097	EV_EC1	1570	< 0.050	2.7	0.69	0.11		7.17	7.56	< 0.50	< 0.50	< 1.0	< 3.0
5/9/2022	0200203	EV_MC3	226	0.135	25.8	7.84	10.4		0.380	0.423	< 0.50	2.61	< 1.0	4.1
5/9/2022	0200097	EV_EC1	1560	< 0.050	< 1.0	0.49	0.16	< 0.010	7.87	7.29	< 0.50	< 0.50	15.7	15.5
5/9/2022	200393	EV_ER1	262	0.290	22.3	13.2	10.4		0.994	0.950	< 0.50	1.12	4.3	< 3.0
5/9/2022	E321814	EV_ECOUT	1860	< 0.050	3.2	-1.79	0.36		7.64	7.93	< 0.50	< 0.50	2.5	< 3.0
5/9/2022	E321814	EV_ECOUT	1690	< 0.050	1.8	0.51	0.46	< 0.010	8.42	7.95	< 0.50	< 0.50	3.1	< 3.0
5/9/2022	E321812	F2_BPO												
5/10/2022	E300091	EV_MC2	288		12.3	10.6	8.56							
5/10/2022	0200097	EV_EC1	1390		2.5	0.19	0.27							
5/10/2022	0200097	EV_EC1												
5/10/2022	E321812	F2_BPO												
5/10/2022	E321791	F2_NWPI	1540		3.5	4.47	2.39		11.0		< 0.50		65.1	
5/10/2022	E321812	F2_BPO	1630		1.4	4.85	4.46		13.0		< 0.50		24.4	
5/10/2022	E206231	EV_GT1	1570	< 0.050	< 1.0	3.43	2.18	< 0.010	10.2	10.7	< 0.50	< 0.50	5.7	8.8
5/10/2022	E206231	EV_GT1												
5/10/2022	E321812	F2_BPO												
5/10/2022	0200097	EV_EC1	1600	0.287	1.4	2.52	0.18		7.15	7.37	< 0.50	< 0.50	< 1.0	< 3.0
5/10/2022	0200203	EV_MC3	225	0.175	26.4	9.62	13.4		0.408	0.475	< 0.50	2.39	< 1.0	4.0
5/10/2022	E102685	EV_BC1	1550	< 0.050	1.8	1.25	0.44	< 0.010	10.2	10.3	< 0.50	< 0.50	2.0	5.6
5/10/2022	E102685	EV_BC1												
5/10/2022	E321814	EV_ECOUT	1720	0.384	2.4	0.6	0.14		7.69	7.98	< 0.50	< 0.50	1.5	< 3.0
5/10/2022	E321814	EV_ECOUT												
5/10/2022	E321812	F2_BPO												
5/11/2022	E300091	EV_MC2				7.9								
5/11/2022	0200097	EV_EC1				2.35								
5/11/2022	E321812	F2_BPO				1.39								
5/11/2022	E321791	F2_NWPI	1660		2.8	5.45	3.15							
5/11/2022	E321812	F2_BPO	1720		4.8	5.59	4.24							
5/11/2022	310168	EV_MC2A				21.1		< 0.010						
5/11/2022	0200203	EV_MC3	198	0.169	20.1	22.5	9.35	< 0.010	0.427	0.416	0.81	1.60	1.8	3.3
5/11/2022	E300091	EV_MC2	274	0.261	9.1	5.94	3.17		0.660	0.695	< 0.50	0.99	< 1.0	< 3.0
5/11/2022	E102685	EV_BC1			2.2	0.9	0.41							
5/11/2022	E206231	EV_GT1			2.8	2.82	2.74							
5/11/2022	E321812	F2_BPO												
5/12/2022	E300091	EV_MC2				12.2								
5/12/2022	0200097	EV_EC1				0.54								
5/12/2022	E321791	F2_NWPI	1580		2.1	5.34	1.96		10.3		< 0.50		60.2	
5/12/2022	E321812	F2_BPO												
5/12/2022	E321812	F2_BPO	1640		1.6	5.07	3.76		12.9		< 0.50		25.6	
5/12/2022	200393	EV_ER1	263	0.309	8.6	4.68	2.24		1.05	1.16	< 0.50	0.50	< 1.0	< 3.0
5/12/2022	E321812	F2_BPO												
5/13/2022	E321791	F2_NWPI	1790		3.3	4.13	2.24							
5/13/2022	0200097	EV_EC1				0.6								
5/13/2022	E321812	F2_BPO	1900		2.7	4.23	3.88							
5/13/2022	E300091	EV_MC2				5.28								
5/13/2022	E321812	F2_BPO				4.45								
5/13/2022	E321812	F2_BPO												
5/14/2022	E321791	F2_NWPI	1540		4.5	4.78	2.14							

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		Fraction	N	N	N	N	N	D	D	T	D	T	D	T
		Unit	mg/l	mg/l	mg/l	ntu	ntu	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
5/14/2022	0200097	EV_EC1				0.79								
5/14/2022	E321812	F2_BPO	1810		2.9	5.07	3.90							
5/14/2022	E321812	F2_BPO												
5/14/2022	E300091	EV_MC2				3.94								
5/14/2022	E321812	F2_BPO												
5/15/2022	E300091	EV_MC2				4.82								
5/15/2022	0200097	EV_EC1				0.19								
5/15/2022	E321812	F2_BPO	1560		3.6	4.86	3.84							
5/15/2022	E321791	F2_NWPI	1580		1.9	4.32	1.74							
5/15/2022	E321812	F2_BPO												
5/15/2022	E321812	F2_BPO												
5/16/2022	E321791	F2_NWPI	1430		2.6	4.3	2.57	< 0.010	11.1	11.5	< 0.50	< 0.50	68.8	65.8
5/16/2022	E300091	EV_MC2	198	0.098	5.2	5.21	3.40		0.675	0.677	< 0.50	0.60	2.5	12.4
5/16/2022	E300091	EV_MC2												
5/16/2022	E321812	F2_BPO	1520	0.233	2.6	4.63	3.81	< 0.010	13.6	13.8	< 0.50	< 0.50	24.7	26.7
5/16/2022	E321812	F2_BPO				4.72								
5/16/2022	0200097	EV_EC1	1450	0.313	1.4	0.21	0.62		7.65	7.66	< 0.50	< 0.50	3.2	< 3.0
5/16/2022	0200097	EV_EC1												
5/16/2022	0200203	EV_MC3	166	0.139	8.6	8.37	5.63		0.459	0.484	< 0.50	0.97	< 1.0	< 3.0
5/16/2022	310168	EV_MC2A	177	0.082	6.1	5.51	4.14		0.639	0.623	< 0.50	0.64	2.5	< 3.0
5/16/2022	E321814	EV_ECOUT	1580	< 0.050	4.0	0.24	0.41		8.04	8.19	< 0.50	< 0.50	2.0	6.0
5/16/2022	200393	EV_ER1	254	0.462	1.4	4.39	2.73		1.05	1.04	< 0.50	< 0.50	< 1.0	< 3.0
5/17/2022	E300091	EV_MC2	193	0.144	38.4	18.21	12.1		0.519	0.560	< 0.50	1.18	2.8	4.1
5/17/2022	E321791	F2_NWPI	1680		1.7	3.72	1.92		10.8		< 0.50		69.0	
5/17/2022	0200097	EV_EC1				0.32								
5/17/2022	E206231	EV_GT1	1470	1.72	5.4	3.6	2.52		6.54	6.49	< 0.50	0.54	4.3	5.0
5/17/2022	E321812	F2_BPO	1730		< 1.0	4.87	3.99		13.4		< 0.50		46.1	
5/17/2022	E300091	EV_MC2				25.4								
5/17/2022	E102685	EV_BC1	1610	0.456	1.4	0.55	0.33		10.3	10.4	< 1.00	< 0.50	< 2.0	< 3.0
5/17/2022	200393	EV_ER1	252	0.259	19.1	8.6	10.4		0.908	0.948	< 0.50	1.15	2.9	3.0
5/17/2022	0200203	EV_MC3	168	0.116	26.8	12.14	12.5		0.379	0.430	< 0.50	1.82	1.6	4.5
5/17/2022	E206231	EV_GT1			5.0	1.7	2.07							
5/17/2022	E102685	EV_BC1			2.4	0.03	0.24							
5/18/2022	E321791	F2_NWPI	1610		2.3	4.73	2.02							
5/18/2022	0200097	EV_EC1				0.56								
5/18/2022	E321812	F2_BPO	1690		3.6	5.02	4.22							
5/18/2022	E321812	F2_BPO												
5/18/2022	E300091	EV_MC2				11.9								
5/18/2022	0200097	EV_EC1			1.2	0.37	0.41							
5/19/2022	E321791	F2_NWPI	1650		3.4	4.49	2.12		11.2		< 0.50		76.6	
5/19/2022	E300091	EV_MC2				8.2								
5/19/2022	E321812	F2_BPO				5.19								
5/19/2022	0200097	EV_EC1				1.23								
5/19/2022	E321812	F2_BPO	1760		< 1.0	5.19	3.97		12.8		< 0.50		37.3	
5/20/2022	E321791	F2_NWPI	1440		1.9	3.48	2.30							
5/20/2022	E321791	F2_NWPI	1440		1.9		2.30							
5/20/2022	E300091	EV_MC2				3.73								
5/20/2022	0200097	EV_EC1				0.73								

		Parameter	Total Dissolved Solids (Residue, Filterable)	Total Kjeldahl Nitrogen	Total Suspended Solids, Lab	TURBIDITY, FIELD	Turbidity, Lab	Unknown selenium species	Uranium	Uranium	Vanadium	Vanadium	Zinc	Zinc
		Fraction	N	N	N	N	N	D	D	T	D	T	D	T
		Unit	mg/l	mg/l	mg/l	ntu	ntu	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
5/20/2022	E321812	F2_BPO												
5/20/2022	E321812	F2_BPO	1410		2.0	5.25								
5/20/2022	E321812	F2_BPO	1410		1.6		4.37							
5/20/2022	E321812	F2_BPO												
5/21/2022	E321791	F2_NWPI	1560		< 1.0	3.75	2.40							
5/21/2022	E300091	EV_MC2				3.9								
5/21/2022	0200097	EV_EC1				0.53								
5/21/2022	E321812	F2_BPO												
5/21/2022	E321812	F2_BPO	1620		1.8	5.59	4.61							
5/21/2022	E321812	F2_BPO												
5/22/2022	E321791	F2_NWPI	1530		2.9	3.99	3.58							
5/22/2022	E300091	EV_MC2				6.99								
5/22/2022	0200097	EV_EC1				5.09								
5/22/2022	E321812	F2_BPO												
5/22/2022	E321812	F2_BPO	1630		1.4	4.91	4.20							
5/23/2022	E321791	F2_NWPI	1650		2.0	3.83	1.92	< 0.010	10.8	11.1	< 0.50	< 0.50	68.2	63.4
5/23/2022	E321812	F2_BPO	1620	0.252	2.0	4.61	3.96	< 0.010	13.8	13.1	< 0.50	< 0.50	28.7	23.9
5/23/2022	E321812	F2_BPO												
5/23/2022	E300091	EV_MC2	208	0.106	2.4	2.88	1.56	< 0.010	0.738	0.797	< 0.50	0.68	2.7	4.8
5/23/2022	310168	EV_MC2A	186	0.082	3.1	2.67	1.85	< 0.010	0.602	0.640	< 0.50	0.72	< 1.0	5.7
5/23/2022	0200203	EV_MC3	163	0.107	2.6	3.03	1.92	< 0.010	0.463	0.492	< 0.50	0.64	2.2	< 3.0
5/23/2022	E321812	F2_BPO												
5/23/2022	0200097	EV_EC1	1540	0.445	< 1.0	0.69	0.10	< 0.010	7.73	8.20	< 0.50	< 0.50	< 1.0	< 3.0
5/23/2022	0200097	EV_EC1												
5/23/2022	200393	EV_ER1	256	0.157	2.9	2.6	2.25		1.08	1.14	< 0.50	< 0.50	< 1.0	< 3.0
5/23/2022	E321814	EV_ECOUT	1610	0.408	1.7	0.28	0.16	< 0.010	8.22	8.45	< 0.50	< 0.50	2.3	< 3.0
5/23/2022	E321814	EV_ECOUT												
5/23/2022	E321812	F2_BPO												
5/24/2022	0200097	EV_EC1				0.37								
5/24/2022	E321791	F2_NWPI	1470		2.2	4.08	2.34		10.9		< 0.50		68.8	
5/24/2022	E300091	EV_MC2	210	0.079	4.6	5.36	2.56		0.675	0.709	< 0.50	1.03	2.2	< 3.0
5/24/2022	E102685	EV_BC1	1570	0.143	2.2	0.89	0.52	< 0.010	10.2	11.6	< 0.50	< 1.00	1.9	< 6.0
5/24/2022	E102685	EV_BC1												
5/24/2022	E300091	EV_MC2				4.24								
5/24/2022	E321812	F2_BPO	1510		3.0	4.92	4.27		12.6		< 0.50		24.3	
5/24/2022	E321812	F2_BPO												
5/24/2022	E206231	EV_GT1	1540	< 0.050	3.2	3.97	2.41	< 0.010	11.5	12.7	< 0.50	< 0.50	7.5	8.9
5/24/2022	E206231	EV_GT1												
5/24/2022	0200203	EV_MC3	158	0.146	4.9	3.77	2.57		0.415	0.442	< 0.50	1.16	1.2	< 3.0
5/24/2022	E206231	EV_GT1			1.1	3.38	1.75							
5/24/2022	E102685	EV_BC1			< 1.0	1.06	0.29							
5/24/2022	200393	EV_ER1	254	0.343	4.1	3.32	2.06		0.978	1.01	< 0.50	0.77	< 1.0	< 3.0
5/24/2022	E321812	F2_BPO												
5/25/2022	E321791	F2_NWPI	1610		4.4	3.39	2.04							
5/25/2022	E300091	EV_MC2				5.11								
5/25/2022	0200097	EV_EC1				0.28								
5/25/2022	E321812	F2_BPO				5.21								
5/25/2022	E321812	F2_BPO	1860		2.6	5.21	4.28							

		Parameter	Total Dissolved Solids (Residue, Filterable)	Total Kjeldahl Nitrogen	Total Suspended Solids, Lab	TURBIDITY, FIELD	Turbidity, Lab	Unknown selenium species	Uranium	Uranium	Vanadium	Vanadium	Zinc	Zinc
		Fraction	N	N	N	N	N	D	D	T	D	T	D	T
		Unit	mg/l	mg/l	mg/l	ntu	ntu	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
5/25/2022	0200097	EV_EC1			1.8	0.2	0.14							
5/25/2022	E321812	F2_BPO												
5/26/2022	E321791	F2_NWPI	1500		2.9	2.97	1.51		11.2		< 0.50		62.7	
5/26/2022	E300091	EV_MC2				3.98								
5/26/2022	0200097	EV_EC1				0.17								
5/26/2022	E321812	F2_BPO	1620		1.4	4.77	4.12		13.1		< 0.50		25.6	
5/26/2022	E321812	F2_BPO				5.12								
5/26/2022	E321812	F2_BPO												
5/27/2022	E321791	F2_NWPI	1530		4.1	3.03	1.88							
5/27/2022	E300091	EV_MC2				9.75								
5/27/2022	0200097	EV_EC1				0.12								
5/27/2022	E321812	F2_BPO	1600		2.9	5.16	4.10							
5/27/2022	E321812	F2_BPO												
5/27/2022	E321812	F2_BPO												
5/28/2022	E321791	F2_NWPI	1580		< 1.0	3.25	2.08							
5/28/2022	0200097	EV_EC1				0.25								
5/28/2022	E300091	EV_MC2				50.4								
5/28/2022	E321812	F2_BPO	1660		< 1.0	5.16	4.44							
5/28/2022	E321812	F2_BPO				5.01								
5/28/2022	E321812	F2_BPO												
5/29/2022	E321791	F2_NWPI	1570		1.7	3.52	1.98							
5/29/2022	0200097	EV_EC1				0.55								
5/29/2022	E300091	EV_MC2				23.3								
5/29/2022	E321812	F2_BPO	1690		3.6	5.16	4.69							
5/29/2022	E321812	F2_BPO												
5/29/2022	E321812	F2_BPO												
5/30/2022	E321791	F2_NWPI	1500		2.6	3.37	1.84	< 0.010	11.5	11.4	< 0.50	< 0.50	66.4	69.3
5/30/2022	E321814	EV_ECOUT	1380	0.355	2.6	0.35	0.12	< 0.010	8.36	8.40	< 1.00	< 0.50	2.7	< 3.0
5/30/2022	E321812	F2_BPO	1310	0.215	4.1	6.27	4.36	< 0.010	13.5	13.0	< 0.50	< 1.00	23.4	26.7
5/30/2022	E321812	F2_BPO				6.27								
5/30/2022	E300091	EV_MC2	172	0.095	19.0	12.7	12.1		0.519	0.545	< 0.50	1.55	1.0	3.5
5/30/2022	E300091	EV_MC2												
5/30/2022	200393	EV_ER1	192	0.133	38.4	13.9	21.5		0.815	0.866	< 0.50	1.40	1.3	3.8
5/30/2022	0200097	EV_EC1	1480	< 0.050	1.8	1.62	0.24		8.15	7.96	< 0.50	< 0.50	< 1.0	< 3.0
5/30/2022	0200097	EV_EC1												
5/30/2022	0200203	EV_MC3	138	0.076	19.8	12	13.4		0.359	0.393	< 0.50	1.44	< 1.0	< 3.0
5/30/2022	310168	EV_MC2A	133	0.103	18.6	11.7	10.2		0.463	0.470	< 0.50	1.28	< 1.0	< 3.0
5/30/2022	E321812	F2_BPO												
5/31/2022	E321791	F2_NWPI	1600		3.1	5.06	1.48		10.6		< 0.50		67.8	
5/31/2022	E300091	EV_MC2	181	0.220	17.6	9.59	8.20		0.506	0.563	< 0.50	1.67	< 1.0	3.4
5/31/2022	E102685	EV_BC1	1610	< 0.050	6.1	1.18	0.37		11.2	10.2	< 0.50	< 1.00	3.2	< 6.0
5/31/2022	E300091	EV_MC2				13.2								
5/31/2022	E321812	F2_BPO	1680		2.1	4.82	4.27		13.0		< 0.50		24.5	
5/31/2022	E321812	F2_BPO				5.33								
5/31/2022	E206231	EV_GT1	1590	0.255	1.1	3.47	1.62		12.3	12.0	< 0.50	< 0.50	6.6	8.0
5/31/2022	0200097	EV_EC1				0.36								
5/31/2022	0200097	EV_EC1			1.8	0.01	< 0.10							
5/31/2022	0200203	EV_MC3	138	0.192	15.1	9.31	6.46		0.336	0.384	< 0.50	2.00	< 1.0	3.8

		Parameter	Total Dissolved Solids (Residue, Filterable)	Total Kjeldahl Nitrogen	Total Suspended Solids, Lab	TURBIDITY, FIELD	Turbidity, Lab	Unknown selenium species	Uranium	Uranium	Vanadium	Vanadium	Zinc	Zinc
		Fraction	N	N	N	N	N	D	D	T	D	T	D	T
		Unit	mg/l	mg/l	mg/l	ntu	ntu	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
5/31/2022	E206231	EV_GT1			< 1.0	2.05	1.90							
5/31/2022	E102685	EV_BC1			3.4	0.25	0.34							
5/31/2022	200393	EV_ER1	187	0.233	25.8	11.83	6.28		0.743	0.860	< 0.50	1.59	3.6	4.0
5/31/2022	E321812	F2_BPO												
6/1/2022	E321791	F2_NWPI	1550		2.5	3.79	1.77							
6/1/2022	E300091	EV_MC2				10.2								
6/1/2022	E321812	F2_BPO	1620		2.9	5.18	3.97							
6/1/2022	0200097	EV_EC1				1.46								
6/1/2022	E321812	F2_BPO				5.18								
6/1/2022	E321812	F2_BPO												
6/2/2022	0200097	EV_EC1	1520	< 0.050	1.8	0.46	< 0.10	< 0.010	6.82	8.20	< 0.50	< 0.50	< 1.0	< 3.0
6/2/2022	E300091	EV_MC2				11.8								
6/2/2022	E321791	F2_NWPI	1550		2.2	3.93	1.42		10.9		< 0.50		62.5	
6/2/2022	E321812	F2_BPO												
6/2/2022	E321814	EV_ECOUT	1490	< 0.050	7.5	0.73	< 0.10	< 0.010	8.02	8.66	< 0.50	< 0.50	2.3	4.1
6/2/2022	E321812	F2_BPO	1550		1.1	4.98	3.90		12.6		< 0.50		24.9	
6/2/2022	E321812	F2_BPO												
6/3/2022	E321791	F2_NWPI	1510		< 1.0	3.71	1.68							
6/3/2022	E300091	EV_MC2				16.2								
6/3/2022	0200097	EV_EC1				1.07								
6/3/2022	E321812	F2_BPO												
6/3/2022	E321812	F2_BPO	1570		2.5	5.17	4.21							
6/3/2022	E321812	F2_BPO												
6/4/2022	E321791	F2_NWPI	1640		2.2	3.1	1.45							
6/4/2022	E300091	EV_MC2				9.02								
6/4/2022	0200097	EV_EC1				0.17								
6/4/2022	E321812	F2_BPO				5.21								
6/4/2022	E321812	F2_BPO	1680		2.2	5.18	4.04							
6/4/2022	E321812	F2_BPO												
6/5/2022	E321791	F2_NWPI	1500		1.6	2.76	1.76							
6/5/2022	E300091	EV_MC2				13.4								
6/5/2022	0200097	EV_EC1				0.2								
6/5/2022	E321812	F2_BPO	1600		3.0	5.31	4.21							
6/5/2022	E321812	F2_BPO				5.31								
6/5/2022	E321812	F2_BPO												
6/6/2022	E321791	F2_NWPI	1590		2.8	3.94	1.63	< 0.010	11.6	11.8	< 0.50	< 0.50	67.8	66.7
6/6/2022	E300091	EV_MC2	168	0.335	93.8	51.6	33.3	< 0.010	0.389	0.484	< 0.50	3.78	3.1	10.7
6/6/2022	E321812	F2_BPO	1780	0.218	1.2	5	4.20	< 0.010	11.9	13.2	< 1.00	< 0.50	31.2	26.7
6/6/2022	E321812	F2_BPO												
6/6/2022	E321812	F2_BPO				4.89								
6/6/2022	200393	EV_ER1	189	0.427	104	70.2	47.4		0.588	0.707	< 0.50	3.95	< 1.0	11.6
6/6/2022	0200203	EV_MC3	113	0.203	93.8	28.23	31.7		0.279	0.408	< 0.50	3.88	1.8	10.1
6/6/2022	310168	EV_MC2A	150	0.268	52.4	60.6	30.9	< 0.010	0.334	0.431	< 0.50	3.08	2.0	9.3
6/6/2022	0200203	EV_MC3	134	0.255	49.8	49.2	24.8	< 0.010	0.274	0.365	< 0.50	3.36	< 1.0	8.8
6/6/2022	0200097	EV_EC1	1490	1.45	2.4	1.35	< 0.10		7.08	7.25	< 0.50	< 0.50	< 1.0	< 3.0
6/6/2022	0200097	EV_EC1	1570	0.506	< 1.0	1.2	0.10	< 0.010	8.38	8.31	< 0.50	< 0.50	2.6	< 3.0
6/6/2022	0200097	EV_EC1												
6/6/2022	E206231	EV_GT1	1590	0.436	1.8	2.68	1.47		10.7	11.5	< 0.50	< 0.50	4.6	5.9

		Parameter	Total Dissolved Solids (Residue, Filterable)	Total Kjeldahl Nitrogen	Total Suspended Solids, Lab	TURBIDITY, FIELD	Turbidity, Lab	Unknown selenium species	Uranium	Uranium	Vanadium	Vanadium	Zinc	Zinc
		Fraction	N	N	N	N	N	D	D	T	D	T	D	T
		Unit	mg/l	mg/l	mg/l	ntu	ntu	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
6/6/2022	E102685	EV_BC1	1610	0.172	1.8	2.15	0.81		12.0	12.4	< 0.50	< 0.50	3.6	3.9
6/6/2022	E300091	EV_MC2	160	0.224	74.5	28.53	35.0	< 0.010	0.413	0.496	< 0.50	2.77	< 1.0	7.0
6/6/2022	E321814	EV_ECOUT	1600	< 0.050	< 1.0	1.5	< 0.10	< 0.010	7.99	8.31	< 0.50	< 0.50	1.9	< 3.0
6/6/2022	E321814	EV_ECOUT												
6/6/2022	200393	EV_ER1	180	0.426	200	44.8	43.1	< 0.010	0.595	0.790	< 0.50	5.02	1.0	12.6
6/6/2022	E321812	F2_BPO												
6/7/2022	E321791	F2_NWPI	1620		2.4	4.04	1.40		11.4		< 0.50		64.6	
6/7/2022	E300091	EV_MC2	152	0.276	89.4	34.13	34.8		0.440	0.565	< 0.50	4.60	< 1.0	12.4
6/7/2022	E321812	F2_BPO	1560		2.1	5.03	4.21		13.0		< 0.50		23.2	
6/7/2022	E321812	F2_BPO												
6/7/2022	E102685	EV_BC1	1640	0.435	2.3	2.47	1.08	< 0.010	12.4	12.0	< 0.50	< 0.50	3.8	3.8
6/7/2022	E102685	EV_BC1												
6/7/2022	E300091	EV_MC2				46.8								
6/7/2022	0200097	EV_EC1				0.62								
6/7/2022	E206231	EV_GT1	1530	0.464	5.5	3.92	1.46	< 0.010	11.0	10.6	< 0.50	< 0.50	4.8	6.2
6/7/2022	E206231	EV_GT1												
6/7/2022	E321812	F2_BPO												
6/8/2022	E321791	F2_NWPI	1560		5.4	2.57	1.78							
6/8/2022	E300091	EV_MC2				23.9								
6/8/2022	E321812	F2_BPO	1640		1.3	5.48	3.93							
6/8/2022	0200097	EV_EC1				0.18								
6/8/2022	E321812	F2_BPO				5.48								
6/8/2022	E321814	EV_ECOUT	1280	< 0.050	1.4	3.29	< 0.10		8.25	8.45	< 0.50	< 0.50	1.9	< 3.0
6/8/2022	E321812	F2_BPO												
6/9/2022	E321791	F2_NWPI	1600		5.2	3.27	1.21		10.5		< 0.50		63.1	
6/9/2022	0200097	EV_EC1				0.57								
6/9/2022	E300091	EV_MC2				30.9								
6/9/2022	E321812	F2_BPO	1720	0.313	3.6	5.12	3.78		12.2		< 0.50		23.6	
6/9/2022	E321812	F2_BPO												
6/9/2022	E321812	F2_BPO												
6/9/2022	0200203	EV_MC3	158	0.094	36.5	16.63	17.4		0.302	0.347	< 0.50	2.69	< 1.0	5.5
6/9/2022	0200097	EV_EC1	1540	< 0.050	3.1		0.10		8.39	7.35	< 0.50	< 0.50	1.2	< 3.0
6/9/2022	E321814	EV_ECOUT	1560	< 0.050	3.0	-0.42	< 0.10		8.25	7.91	< 0.50	< 0.50	2.0	< 3.0
6/10/2022	E321791	F2_NWPI	1500		1.0	3.39	1.72							
6/10/2022	E300091	EV_MC2				62.6								
6/10/2022	0200097	EV_EC1				0.58								
6/10/2022	E321812	F2_BPO				4.74								
6/10/2022	0200097	EV_EC1	1510	< 0.050	2.3	0.41	< 0.10		7.40	7.55	< 0.50	< 0.50	< 1.0	< 3.0
6/10/2022	E321812	F2_BPO	1620		< 1.0	4.93	4.04							
6/10/2022	E321812	F2_BPO												
6/11/2022	0200097	EV_EC1	1600	< 0.050	1.4	0.51	< 0.10		7.44	7.86	< 0.50	< 0.50	< 1.0	< 3.0
6/11/2022	0200097	EV_EC1												
6/11/2022	E300091	EV_MC2				125								
6/11/2022	E321791	F2_NWPI	1660		< 1.0	3.5	1.31							
6/11/2022	E321812	F2_BPO	1770		< 1.0	4.82	3.59							
6/11/2022	E321812	F2_BPO				4.71								
6/11/2022	E321812	F2_BPO												
6/12/2022	E321791	F2_NWPI	1600		< 1.0	3.67	1.58							

		Parameter	Total Dissolved Solids (Residue, Filterable)	Total Kjeldahl Nitrogen	Total Suspended Solids, Lab	TURBIDITY, FIELD	Turbidity, Lab	Unknown selenium species	Uranium	Uranium	Vanadium	Vanadium	Zinc	Zinc
		Fraction	N	N	N	N	N	D	D	T	D	T	D	T
		Unit	mg/l	mg/l	mg/l	ntu	ntu	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
6/12/2022	0200097	EV_EC1	1570	< 0.050	1.9	0.18	0.21		7.61	7.78	< 0.50	< 0.50	< 1.0	< 3.0
6/12/2022	0200097	EV_EC1												
6/12/2022	E300091	EV_MC2				120								
6/12/2022	E321812	F2_BPO												
6/12/2022	E321812	F2_BPO	1540		< 1.0	4.76	3.65							
6/12/2022	E321812	F2_BPO												
6/13/2022	E321791	F2_NWPI	1600	1.06	2.8	3.6	2.03	< 0.010	10.4	11.7	< 1.00	< 0.50	64.0	66.5
6/13/2022	E321814	EV_ECOUT	1540	0.101	2.4	1.05	0.38		8.32	8.23	< 0.50	< 0.50	2.3	< 3.0
6/13/2022	E300091	EV_MC2	147	0.289	92.9	77	33.8		0.370	0.508	< 0.50	2.35	< 1.0	190
6/13/2022	E321812	F2_BPO	1720	0.248	2.9	4.77	4.18	< 0.010	12.2	12.9	< 1.00	< 1.00	22.8	24.9
6/13/2022	E321812	F2_BPO												
6/13/2022	0200097	EV_EC1	1490	1.07	1.4	1.49	0.21		7.31	7.85	< 0.50	< 0.50	5.6	< 3.0
6/13/2022	0200203	EV_MC3	127	0.237	45.0	80.4	49.9		0.255	0.310	< 0.50	1.05	2.0	4.2
6/13/2022	310168	EV_MC2A	127	0.224	37.0	77.9	42.9		0.310	0.383	< 0.50	1.17	< 1.0	4.9
6/13/2022	0200203	EV_MC3	116	0.342	118	74.7	57.6		0.342	0.428	3.34	6.50	4.4	15.9
6/13/2022	200393	EV_ER1	173	0.277	70.9	96.8	35.9		0.569	0.614	< 0.50	1.90	< 1.0	6.0
6/13/2022	E206231	EV_GT1			2.4	2.6	2.01							
6/13/2022	E102685	EV_BC1			3.4	2.47	1.64							
6/13/2022	E300091	EV_MC2	145	0.253	86.6	57.1	58.4		0.388	0.524	< 0.50	5.79	< 1.0	15.0
6/13/2022	200393	EV_ER1	167	0.681	168	73.5	47.5		0.560	0.783	< 0.50	6.77	< 1.0	19.9
6/13/2022	E321812	F2_BPO												
6/14/2022	E206231	EV_GT1			22.4	52.3	46.0							
6/14/2022	0200097	EV_EC1	1310	< 0.050	2.6	0.55	0.24		6.84	6.60	< 0.50	< 0.50	< 1.0	< 3.0
6/14/2022	E102685	EV_BC1	1480	0.417	9.6	21.3	6.94		10.9	11.5	< 0.50	< 0.50	1.8	15.7
6/14/2022	E206231	EV_GT1	1370	0.666	30.4	97.9	46.1		8.60	9.34	< 0.50	2.16	7.7	16.4
6/14/2022	E206231	EV_GT1			20.4									
6/14/2022	E300091	EV_MC2				63.8								
6/14/2022	E321791	F2_NWPI	1570		4.7	11.9	7.18		11.5		< 0.50		56.8	
6/14/2022	E321812	F2_BPO	1630		2.6	4.74	4.60		11.9		< 1.00		24.9	
6/14/2022	E321812	F2_BPO				4.74								
6/14/2022	E300091	EV_MC2	164	0.173	64.3	151.89	35.2		0.404	0.460	< 0.50	3.36	< 1.0	9.0
6/14/2022	E206231	EV_GT1			15.2	28.77	30.9							
6/15/2022	0200097	EV_EC1	1470	< 0.050	2.2	0.48	< 0.10		6.91	7.50	< 0.50	< 0.50	< 1.0	< 3.0
6/15/2022	0200097	EV_EC1			2.4	1.21	0.13							
6/15/2022	E300091	EV_MC2				32.7								
6/15/2022	E321791	F2_NWPI	1570		3.1	7.06	4.04							
6/15/2022	E321812	F2_BPO	1700		1.4	4.49	3.92							
6/15/2022	E321812	F2_BPO				4.66								
6/15/2022	E321812	F2_BPO												
6/16/2022	0200097	EV_EC1	1550	< 0.050	< 1.0	0.49	< 0.10		7.34	7.74	< 0.50	< 0.50	< 1.0	7.2
6/16/2022	0200203	EV_MC3	137	0.148	12.9	26.3	16.2		0.294	0.380	< 0.50	2.22	< 1.0	4.4
6/16/2022	E300091	EV_MC2				25								
6/16/2022	E321812	F2_BPO												
6/16/2022	E321791	F2_NWPI	1660		3.3	7.08	3.45		10.4		< 0.50		57.0	
6/16/2022	E321814	EV_ECOUT	1700	< 0.250	1.5	0.89	0.26		7.84	8.93	< 0.50	< 0.50	1.8	< 3.0
6/16/2022	E321812	F2_BPO	1700		1.2	4.74	4.40		12.3		< 0.50		24.6	
6/16/2022	E321812	F2_BPO												
6/17/2022	E321791	F2_NWPI	1630		2.9	6.43	2.89							

		Parameter	Total Dissolved Solids (Residue, Filterable)	Total Kjeldahl Nitrogen	Total Suspended Solids, Lab	TURBIDITY, FIELD	Turbidity, Lab	Unknown selenium species	Uranium	Uranium	Vanadium	Vanadium	Zinc	Zinc
		Fraction	N	N	N	N	N	D	D	T	D	T	D	T
		Unit	mg/l	mg/l	mg/l	ntu	ntu	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
6/17/2022	E300091	EV_MC2				35.9								
6/17/2022	0200097	EV_EC1				0.7								
6/17/2022	E321812	F2_BPO												
6/17/2022	E321812	F2_BPO	1750		2.6	5.22	3.65							
6/17/2022	E321812	F2_BPO												
6/18/2022	E321791	F2_NWPI	1530		2.9	6.69	3.18							
6/18/2022	E300091	EV_MC2				142								
6/18/2022	0200097	EV_EC1				1.12								
6/18/2022	E321812	F2_BPO												
6/18/2022	E321812	F2_BPO	1550		1.6	4.83	3.63							
6/18/2022	E321812	F2_BPO												
6/19/2022	E321791	F2_NWPI	1490		2.2	5.07	3.15							
6/19/2022	E300091	EV_MC2				52.2								
6/19/2022	0200097	EV_EC1				0.44								
6/19/2022	E321812	F2_BPO												
6/19/2022	E321812	F2_BPO	1560		1.0	4.91	3.80							
6/19/2022	E321812	F2_BPO												
6/20/2022	E321791	F2_NWPI	1700	0.101	4.4	6.01	3.60	< 0.010	11.2	11.9	< 0.50	< 0.50	70.8	58.8
6/20/2022	E321812	F2_BPO	1750	0.263	4.8	4.96	3.55	< 0.010	13.3	12.8	< 0.50	< 0.50	24.1	24.6
6/20/2022	E321812	F2_BPO												
6/20/2022	200393	EV_ER1	116	0.060	24.0	149	19.0		0.284	0.319	< 0.50	2.10	1.7	4.8
6/20/2022	E321812	F2_BPO												
6/20/2022	E300091	EV_MC2	160	0.282	35.7	36.6	24.7	< 0.010	0.435	0.493	< 0.50	2.36	1.5	6.4
6/20/2022	310168	EV_MC2A	146	0.163	48.2	28.2	24.9	< 0.010	0.378	0.429	< 0.50	2.19	1.9	5.9
6/20/2022	0200203	EV_MC3	1700	< 0.050	< 1.0	22.2	0.23	< 0.010	8.41	8.69	< 0.50	< 0.50	1.9	< 3.0
6/20/2022	0200097	EV_EC1	1620	< 0.050	< 1.0	0.28	0.14	< 0.010	7.80	8.36	< 0.50	< 0.50	5.3	< 3.0
6/20/2022	E321814	EV_ECOUT	179	0.614	164	1.14	106	< 0.010	0.607	0.906	< 0.50	8.40	4.8	24.1
6/20/2022	E321814	EV_ECOUT												
6/20/2022	E321812	F2_BPO												
6/21/2022	E321791	F2_NWPI	1660		2.7	5.59	3.16		10.5		< 1.00		62.3	
6/21/2022	E321812	F2_BPO	1720		2.3	4.57	3.85		12.4		< 1.00		22.1	
6/21/2022	E321812	F2_BPO				4.81								
6/21/2022	E206231	EV_GT1	1590	0.500	2.7	3.99	2.48	< 0.010	9.84	10.2	< 0.50	< 0.50	7.3	9.0
6/21/2022	0200203	EV_MC3	134	0.120	25.8	14.13	11.3		0.275	0.403	< 0.50	2.72	< 1.0	5.8
6/21/2022	E300091	EV_MC2				29.5								
6/21/2022	E206231	EV_GT1			1.9	2.45	1.75							
6/21/2022	E102685	EV_BC1	1680	0.376	2.9	1.54	0.98	< 0.010	11.1	11.3	< 1.00	< 0.50	3.9	< 3.0
6/21/2022	E102685	EV_BC1			1.9	1.71	0.50							
6/21/2022	E300091	EV_MC2	167	0.187	24.0	14.59	14.1		0.426	0.564	< 0.50	1.69	< 1.0	4.8
6/21/2022	200393	EV_ER1	190	0.618	149	64.68	76.4		0.588	0.856	< 0.50	4.95	< 1.0	17.5
6/21/2022	E321812	F2_BPO												
6/22/2022	0200097	EV_EC1				0.57								
6/22/2022	E321791	F2_NWPI	1490		4.3	6.34	2.63							
6/22/2022	E300091	EV_MC2				23.1								
6/22/2022	E321812	F2_BPO	1600		2.3	46.3	3.46							
6/22/2022	E321812	F2_BPO												
6/22/2022	0200097	EV_EC1				6.47								

		Parameter	Total Dissolved Solids (Residue, Filterable)	Total Kjeldahl Nitrogen	Total Suspended Solids, Lab	TURBIDITY, FIELD	Turbidity, Lab	Unknown selenium species	Uranium	Uranium	Vanadium	Vanadium	Zinc	Zinc
		Fraction	N	N	N	N	N	D	D	T	D	T	D	T
		Unit	mg/l	mg/l	mg/l	ntu	ntu	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
6/22/2022	E321812	F2_BPO												
6/23/2022	E321791	F2_NWPI	1610		1.9	6.76	2.90		9.76		< 1.00		72.6	
6/23/2022	0200097	EV_EC1				0.6								
6/23/2022	E300091	EV_MC2				23.9								
6/23/2022	E321812	F2_BPO	1860		2.3	5.15	3.75		12.2		< 0.50		27.5	
6/23/2022	E321812	F2_BPO												
6/23/2022	0200097	EV_EC1			1.4	0.21	0.14							
6/23/2022	E321812	F2_BPO												
6/24/2022	E321791	F2_NWPI	1560		4.0	5.9	2.78							
6/24/2022	0200097	EV_EC1				0.39								
6/24/2022	E300091	EV_MC2				17.5								
6/24/2022	E321812	F2_BPO												
6/24/2022	E321812	F2_BPO	1840		1.6	5.63	3.84							
6/24/2022	E321812	F2_BPO												
6/25/2022	E321791	F2_NWPI	1740		2.0	5.37	3.07							
6/25/2022	0200097	EV_EC1				0.5								
6/25/2022	E300091	EV_MC2				8.55								
6/25/2022	E321812	F2_BPO	1720		1.7	5.01	4.13							
6/25/2022	E321812	F2_BPO												
6/25/2022	E321812	F2_BPO												
6/25/2022	E321812	F2_BPO												
6/26/2022	E321791	F2_NWPI	1630		3.0	6.01	2.96							
6/26/2022	0200097	EV_EC1				0.58								
6/26/2022	E300091	EV_MC2				7.14								
6/26/2022	E321812	F2_BPO	1670		2.0	4.91	4.19							
6/26/2022	E321812	F2_BPO												
6/26/2022	E321812	F2_BPO												
6/27/2022	E321791	F2_NWPI	1650	0.103	2.7	6.09	2.43	< 0.010	11.6	11.0	< 0.50	< 0.50	56.3	55.7
6/27/2022	E321814	EV_ECOUT	1640	< 0.050	3.1	1.45	0.58	< 0.010	7.75	8.00	< 0.50	< 0.50	< 1.0	< 3.0
6/27/2022	E321812	F2_BPO	1800	0.282	3.5	5.88	3.61	< 0.010	13.4	13.0	< 0.50	< 0.50	22.0	24.5
6/27/2022	E321812	F2_BPO												
6/27/2022	200393	EV_ER1	201	0.153	23.9	31.4	8.53		0.755	0.797	< 0.50	1.48	< 1.0	3.9
6/27/2022	310168	EV_MC2A	168	< 0.050	5.1	18.4	2.57		0.515	0.532	< 0.50	0.64	< 1.0	< 3.0
6/27/2022	0200203	EV_MC3	145	< 0.050	4.1	13.5	3.92		0.402	0.397	< 0.50	0.71	< 1.0	< 3.0
6/27/2022	0200097	EV_EC1	1560	0.086	< 1.0	2.26	< 0.10		7.40	7.59	< 0.50	< 0.50	< 1.0	< 3.0
6/27/2022	E300091	EV_MC2	218	0.113	6.9	7.67	4.53		0.642	0.664	< 0.50	0.68	< 1.0	< 3.0
6/27/2022	E321812	F2_BPO												
6/28/2022	E321791	F2_NWPI	1670		3.0	6.62	2.47		11.0		< 0.50		51.9	
6/28/2022	E300091	EV_MC2				7.73								
6/28/2022	0200097	EV_EC1				0.34								
6/28/2022	E321812	F2_BPO	1840		1.8	5.06	3.87		12.4		< 0.50		23.6	
6/28/2022	E321812	F2_BPO				5.06								
6/28/2022	E206231	EV_GT1	1600	0.357	< 1.0	2.85	1.58		10.9	11.4	< 0.50	< 0.50	6.9	8.4
6/28/2022	E102685	EV_BC1	1570	< 0.050	2.2	4.03	0.83		11.7	11.9	< 1.00	< 0.50	6.5	< 3.0
6/28/2022	0200203	EV_MC3	113	0.296	14.9	6.82	5.79		0.386	0.405	< 0.50	0.94	1.1	< 3.0
6/28/2022	E206231	EV_GT1			1.5	3.34	1.39							
6/28/2022	E102685	EV_BC1			1.7	2.91	0.52							
6/28/2022	E300091	EV_MC2	202	0.082	9.4	5.05	5.01		0.622	0.723	< 0.50	1.30	< 1.0	5.6
6/28/2022	200393	EV_ER1	188	0.323	50.9	25.74	26.6		0.766	0.844	< 0.50	2.18	< 1.0	5.5

		Parameter	Total Dissolved Solids (Residue, Filterable)	Total Kjeldahl Nitrogen	Total Suspended Solids, Lab	TURBIDITY, FIELD	Turbidity, Lab	Unknown selenium species	Uranium	Uranium	Vanadium	Vanadium	Zinc	Zinc
		Fraction	N	N	N	N	N	D	D	T	D	T	D	T
		Unit	mg/l	mg/l	mg/l	ntu	ntu	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
6/28/2022	E321812	F2_BPO												
6/29/2022	E321791	F2_NWPI	1660		4.4	6.53	2.53							
6/29/2022	E300091	EV_MC2				10.7								
6/29/2022	0200097	EV_EC1				1.61								
6/29/2022	E321812	F2_BPO	1670		1.6	5.03	3.89							
6/29/2022	E321812	F2_BPO				5.23								
6/29/2022	0200097	EV_EC1			1.4	0.07	< 0.10							
6/29/2022	E321812	F2_BPO												
6/30/2022	E321791	F2_NWPI	1600		1.9		2.79		10.2		< 0.50		54.3	
6/30/2022	E300091	EV_MC2				5.27								
6/30/2022	0200097	EV_EC1				0.98								
6/30/2022	E321812	F2_BPO	1630		2.0	6.03	3.07		12.0		< 0.50		26.5	
6/30/2022	E321812	F2_BPO				6.03								
6/30/2022	E321791	F2_NWPI				5.6								
6/30/2022	E321812	F2_BPO												
7/1/2022	E321812	F2_BPO	1840		1.9	4.54	2.94							
7/1/2022	E321791	F2_NWPI	1720		2.4	7.07	2.71							
7/1/2022	E300091	EV_MC2				10.6								
7/1/2022	0200097	EV_EC1				0.73								
7/2/2022	E300091	EV_MC2				4.73								
7/2/2022	0200097	EV_EC1				0.57								
7/2/2022	E321791	F2_NWPI	1650		3.7	5.97	2.82							
7/2/2022	E321812	F2_BPO	1810		1.6	3.88	2.96							
7/2/2022	E321812	F2_BPO				3.88								
7/2/2022	E321812	F2_BPO												
7/3/2022	0200097	EV_EC1				0.74								
7/3/2022	E300091	EV_MC2				5.94								
7/3/2022	E321791	F2_NWPI	1690		2.8	5.27	2.64							
7/3/2022	E321812	F2_BPO				4.44								
7/3/2022	E321812	F2_BPO	1290		2.4	4.1	3.10							
7/3/2022	E321812	F2_BPO												
7/4/2022	E321791	F2_NWPI	1580	1.62	4.4	6.09	3.65	< 0.010	10.7	10.8	< 0.50	< 0.50	51.7	55.6
7/4/2022	E321812	F2_BPO	1540	0.269	1.5	4.55	3.92	< 0.010	12.8	12.3	< 0.50	< 0.50	22.8	25.4
7/4/2022	E321812	F2_BPO												
7/4/2022	200393	EV_ER1	186	0.153	26.4	20.8	17.2		0.806	0.842	< 0.50	0.81	1.0	< 3.0
7/4/2022	E321812	F2_BPO				4.55								
7/4/2022	310168	EV_MC2A	160	0.084	3.9	6.19	2.71	< 0.010	0.592	0.613	< 0.50	< 0.50	< 1.0	< 3.0
7/4/2022	0200203	EV_MC3	161	0.060	7.2	5.57	3.95	< 0.010	0.457	0.466	< 0.50	0.62	31.4	< 3.0
7/4/2022	0200097	EV_EC1	1410	0.104	1.1	0.54	< 0.10	< 0.010	8.67	8.09	< 0.50	< 0.50	< 1.0	< 3.0
7/4/2022	0200097	EV_EC1												
7/4/2022	E300091	EV_MC2	175	0.072	5.8	3.28	2.56	< 0.010	0.712	0.737	< 0.50	< 0.50	17.9	< 3.0
7/4/2022	E321814	EV_ECOUT	1380	1.28	2.2	1.09	0.40	< 0.010	8.82	8.27	< 0.50	< 0.50	1.8	< 3.0
7/4/2022	E321814	EV_ECOUT												
7/4/2022	E321812	F2_BPO												
7/5/2022	E300091	EV_MC2				13.6								
7/5/2022	E321791	F2_NWPI	1740		2.2	4.61	3.15		10.4		< 0.50		53.7	
7/5/2022	0200097	EV_EC1				0.62								
7/5/2022	E321812	F2_BPO	1740		1.6	4.11	3.03		12.3		< 0.50		27.4	

		Parameter	Total Dissolved Solids (Residue, Filterable)	Total Kjeldahl Nitrogen	Total Suspended Solids, Lab	TURBIDITY, FIELD	Turbidity, Lab	Unknown selenium species	Uranium	Uranium	Vanadium	Vanadium	Zinc	Zinc
		Fraction	N	N	N	N	N	D	D	T	D	T	D	T
		Unit	mg/l	mg/l	mg/l	ntu	ntu	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
7/5/2022	E321812	F2_BPO				3.57								
7/5/2022	E206231	EV_GT1	1730	< 0.050	5.1	6.94	5.05	< 0.010	11.1	12.0	< 0.50	< 0.50	15.3	9.3
7/5/2022	E206231	EV_GT1												
7/5/2022	E102685	EV_BC1	1600	< 0.050	4.1	3.53	1.92	< 0.010	10.9	11.2	< 0.50	< 0.50	4.6	3.3
7/5/2022	E102685	EV_BC1												
7/5/2022	E321814	EV_ECOUT	1570	< 0.050	< 1.0	0.52	0.12		8.19	8.12	< 0.50	< 0.50	1.8	< 3.0
7/5/2022	0200203	EV_MC3	166	0.094	7.0	5.15	3.51		0.421	0.458	< 0.50	0.61	< 1.0	< 3.0
7/5/2022	E206231	EV_GT1	1710	< 0.050	13.4	3.99	5.20		10.9	11.0	< 0.50	< 0.50	6.7	8.8
7/5/2022	E300091	EV_MC2	220	0.206	5.8	3.03	3.00		0.667	0.701	< 0.50	0.52	< 1.0	< 3.0
7/5/2022	E321812	F2_BPO												
7/5/2022	E102685	EV_BC1	1640	0.960	2.4	1.61	1.88		11.2	11.4	< 0.50	< 0.50	1.3	< 3.0
7/6/2022	0200097	EV_EC1				0.61								
7/6/2022	E321812	F2_BPO	1680		2.2	3.5	2.89							
7/6/2022	E300091	EV_MC2				3.66								
7/6/2022	E321812	F2_BPO				3.5								
7/6/2022	E321791	F2_NWPI	1670		2.8	5.5	3.21							
7/6/2022	200393	EV_ER1	225	0.238	46.1	18.26	20.9		0.745	0.873	< 0.50	1.92	< 1.0	4.5
7/6/2022	0200097	EV_EC1	1560	0.140	1.2	2.96	< 0.10		7.48	7.70	< 0.50	< 0.50	< 1.0	< 3.0
7/6/2022	E321812	F2_BPO												
7/7/2022	E300091	EV_MC2				2.09								
7/7/2022	0200097	EV_EC1				0.24								
7/7/2022	E321791	F2_NWPI	1610		3.1	5.47	3.07		10.5		< 0.50		53.1	
7/7/2022	E321812	F2_BPO	1640		2.3	3.82	3.04		12.3		< 0.50		24.2	
7/7/2022	E321812	F2_BPO				4.25								
7/7/2022	E321812	F2_BPO												
7/8/2022	E300091	EV_MC2				4.1								
7/8/2022	0200097	EV_EC1				1.02								
7/8/2022	E321791	F2_NWPI	1440		3.1	5.49	3.44							
7/8/2022	E321812	F2_BPO	1550		2.3	3.11	3.13							
7/8/2022	E321812	F2_BPO												
7/8/2022	E321812	F2_BPO												
7/9/2022	0200097	EV_EC1				3.59								
7/9/2022	E300091	EV_MC2				2.24								
7/9/2022	E321812	F2_BPO	1710		2.1	3.96	2.94							
7/9/2022	E321791	F2_NWPI	1630		3.8	6.61	2.95							
7/9/2022	E321812	F2_BPO												
7/9/2022	E321812	F2_BPO				4.18								
7/10/2022	0200097	EV_EC1				0.33								
7/10/2022	E300091	EV_MC2				3.19								
7/10/2022	E321791	F2_NWPI	1530		4.7	5.39	2.55							
7/10/2022	E321812	F2_BPO	1710		2.2	6.42	3.10							
7/10/2022	E321812	F2_BPO												
7/10/2022	E321812	F2_BPO												
7/11/2022	200393	EV_ER1	154	0.366	24.7	2.9	11.2		0.841	0.876	< 0.50	0.95	7.5	6.0
7/11/2022	E321791	F2_NWPI	1590	0.739	4.8	5.67	3.48	< 0.010	10.4	10.6	< 0.50	< 0.50	52.3	56.0
7/11/2022	E321812	F2_BPO	1720	0.359	2.3	4.38	3.23	< 0.010	12.7	12.3	< 0.50	< 0.50	23.9	23.9
7/11/2022	E321812	F2_BPO				4.38								
7/11/2022	0200097	EV_EC1	1370	0.430	2.1	0.63	< 0.10		7.59	7.60	< 0.50	< 0.50	2.7	< 3.0

		Parameter	Total Dissolved Solids (Residue, Filterable)	Total Kjeldahl Nitrogen	Total Suspended Solids, Lab	TURBIDITY, FIELD	Turbidity, Lab	Unknown selenium species	Uranium	Uranium	Vanadium	Vanadium	Zinc	Zinc
		Fraction	N	N	N	N	N	D	D	T	D	T	D	T
		Unit	mg/l	mg/l	mg/l	ntu	ntu	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
7/11/2022	0200203	EV_MC3	147	0.088	3.0	2.24	2.01		0.508	0.495	< 0.50	< 0.50	3.4	4.5
7/11/2022	E321814	EV_ECOUT	1450	< 0.050	< 1.0	0.62	0.11		8.02	7.70	< 0.50	< 0.50	2.4	< 3.0
7/11/2022	310168	EV_MC2A	174	0.106	4.4	2.33	2.34		0.711	0.690	< 0.50	< 0.50	12.7	38.3
7/11/2022	E300091	EV_MC2	228	0.191	2.9	4.01	1.31		0.868	0.842	< 0.50	< 0.50	2.8	3.7
7/11/2022	E321812	F2_BPO												
7/12/2022	E321791	F2_NWPI	1690		4.7	10.6	3.38		11.1		< 0.50		61.8	
7/12/2022	0200097	EV_EC1				0.31								
7/12/2022	E206231	EV_GT1	1730	0.360	3.0	3.12	2.02		11.3	11.1	< 0.50	< 1.00	5.8	7.1
7/12/2022	E300091	EV_MC2				2.49								
7/12/2022	E321812	F2_BPO	1790		3.1	4.05	3.48		11.6		< 0.50		26.2	
7/12/2022	E321812	F2_BPO				3.81								
7/12/2022	E102685	EV_BC1	1680	0.164	3.1	0.76	0.45		10.6	10.4	< 0.50	< 0.50	7.1	5.6
7/12/2022	200393	EV_ER1	216	0.140	20.8	8.51	11.1		0.924	0.915	< 0.50	1.18	< 1.0	< 3.0
7/12/2022	0200203	EV_MC3	185	0.088	2.6	0.71	1.47		0.538	0.513	< 0.50	0.51	< 1.0	< 3.0
7/12/2022	E206231	EV_GT1			2.6	0.34	2.18							
7/12/2022	E102685	EV_BC1			1.9	1.26	0.38							
7/12/2022	E300091	EV_MC2	252	0.104	2.8	0.81	1.58		0.882	0.852	< 0.50	< 0.50	< 1.0	< 3.0
7/12/2022	E321812	F2_BPO												
7/13/2022	E321791	F2_NWPI	1600		3.3	4.95	2.84							
7/13/2022	E300091	EV_MC2				2.15								
7/13/2022	E321812	F2_BPO	1760		3.5	4.57	3.12							
7/13/2022	0200097	EV_EC1				0.41								
7/13/2022	E321812	F2_BPO												
7/13/2022	0200097	EV_EC1			< 1.0	1.31	< 0.10							
7/13/2022	E321812	F2_BPO												
7/14/2022	E321791	F2_NWPI	1650		3.5	5.93	2.91		10.8		< 2.50		60.9	
7/14/2022	E300091	EV_MC2				1.86								
7/14/2022	0200097	EV_EC1				0.38								
7/14/2022	E321812	F2_BPO	1740		3.3	3.81	2.58		13.2		< 2.50		25.3	
7/14/2022	E321812	F2_BPO				3.89								
7/14/2022	E321812	F2_BPO												
7/15/2022	E321791	F2_NWPI	1640		2.8	4.88	2.53							
7/15/2022	E300091	EV_MC2				1.64								
7/15/2022	0200097	EV_EC1				0.2								
7/15/2022	E321812	F2_BPO	1690		2.6	4.23	3.19							
7/15/2022	E321812	F2_BPO				4.23								
7/15/2022	E321812	F2_BPO												
7/16/2022	E321791	F2_NWPI	1700		4.6	4.82	2.61							
7/16/2022	E300091	EV_MC2				1.93								
7/16/2022	0200097	EV_EC1				0.39								
7/16/2022	E321812	F2_BPO				3.9								
7/16/2022	E321812	F2_BPO	1730		1.9	3.93	3.66							
7/16/2022	E321812	F2_BPO												
7/17/2022	E300091	EV_MC2				2.09								
7/17/2022	0200097	EV_EC1				0.18								
7/17/2022	E321791	F2_NWPI	1640		3.1	4.5	2.91							
7/17/2022	E321812	F2_BPO	1750		2.8	4.09	3.77							
7/17/2022	E321812	F2_BPO				4.11								

		Parameter	Total Dissolved Solids (Residue, Filterable)	Total Kjeldahl Nitrogen	Total Suspended Solids, Lab	TURBIDITY, FIELD	Turbidity, Lab	Unknown selenium species	Uranium	Uranium	Vanadium	Vanadium	Zinc	Zinc
		Fraction	N	N	N	N	N	D	D	T	D	T	D	T
		Unit	mg/l	mg/l	mg/l	ntu	ntu	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
7/17/2022	E321812	F2_BPO												
7/18/2022	200393	EV_ER1	241	0.221	6.6	8.64	2.33		0.929	0.987	< 0.50	0.51	< 1.0	< 3.0
7/18/2022	E321791	F2_NWPI	1570	0.786	6.8	5.79	2.80	< 0.010	10.3	10.5	< 1.00	< 0.50	54.4	52.8
7/18/2022	310168	EV_MC2A	259	0.266	2.7	2.33	0.65	< 0.010	0.823	0.848	< 0.50	< 0.50	5.2	11.3
7/18/2022	0200203	EV_MC3	216	0.100	3.1	2.3	0.54	< 0.010	0.605	0.628	< 0.50	< 0.50	< 1.0	< 3.0
7/18/2022	E321812	F2_BPO	1760	0.283	3.0	4.8	3.10	< 0.010	11.9	12.3	< 1.00	< 0.50	22.0	22.4
7/18/2022	E321812	F2_BPO												
7/18/2022	E321812	F2_BPO												
7/18/2022	0200097	EV_EC1	1460	< 0.050	1.5	0.68	< 0.10	< 0.010	7.89	7.86	< 0.50	< 0.50	1.0	< 3.0
7/18/2022	0200097	EV_EC1												
7/18/2022	E321814	EV_ECOUT	1560	< 0.050	3.5	0.28	0.23	< 0.010	7.94	7.94	< 1.00	< 0.50	3.6	< 3.0
7/18/2022	E321814	EV_ECOUT												
7/18/2022	E300091	EV_MC2	311	0.195	2.1	1.83	0.44	< 0.010	1.01	1.02	< 0.50	< 0.50	5.1	6.4
7/18/2022	E321812	F2_BPO												
7/19/2022	0200097	EV_EC1				0.53								
7/19/2022	E300091	EV_MC2				1.89								
7/19/2022	E321791	F2_NWPI	1560		2.6	4.76	2.78		10.2		< 0.50		52.4	
7/19/2022	E321812	F2_BPO	1700		2.6	3.71	3.21		12.1		< 0.50		26.1	
7/19/2022	E321812	F2_BPO				3.71								
7/19/2022	E206231	EV_GT1	1660	0.276	2.9	2.4	1.19	< 0.010	11.0	12.3	< 0.50	0.63	6.6	8.6
7/19/2022	E206231	EV_GT1												
7/19/2022	E102685	EV_BC1	1540	0.122	2.4	0.63	0.38	< 0.010	10.0	10.6	< 0.50	0.53	1.2	< 3.0
7/19/2022	E102685	EV_BC1												
7/19/2022	E321812	F2_BPO												
7/20/2022	E300091	EV_MC2				2.53								
7/20/2022	0200097	EV_EC1				0.41								
7/20/2022	E321812	F2_BPO	1660		1.8	4.02	3.11							
7/20/2022	E321812	F2_BPO												
7/20/2022	E321791	F2_NWPI	1660		3.1	4.87	2.89							
7/20/2022	E321812	F2_BPO												
7/21/2022	0200097	EV_EC1				0.55								
7/21/2022	E300091	EV_MC2				1.07								
7/21/2022	E321791	F2_NWPI	1640		4.0	4.88	2.47		11.4		< 2.50		62.9	
7/21/2022	E321812	F2_BPO				4.19								
7/21/2022	E321812	F2_BPO	1730	0.265	< 1.0	5.36	3.24		12.6		< 2.50	< 0.50	24.2	
7/21/2022	E321812	F2_BPO	1610	0.265	2.5		3.12		13.3	12.6	< 0.50	< 0.50	23.6	22.7
7/21/2022	E321812	F2_BPO	1670	0.283	3.6		3.34		13.2	13.6	< 0.50	< 0.50	23.2	27.1
7/21/2022	E321812	F2_BPO												
7/22/2022	0200097	EV_EC1				0.13								
7/22/2022	E300091	EV_MC2				0.6								
7/22/2022	E321791	F2_NWPI	1720		3.3	4.33	2.40							
7/22/2022	E321812	F2_BPO												
7/22/2022	E321812	F2_BPO	1870		2.6	5.42	3.29							
7/22/2022	E321812	F2_BPO												
7/23/2022	0200097	EV_EC1				0.44								
7/23/2022	E300091	EV_MC2				1.78								
7/23/2022	E321791	F2_NWPI	1630		3.2	4.64	2.89							
7/23/2022	E321812	F2_BPO												

		Parameter	Total Dissolved Solids (Residue, Filterable)	Total Kjeldahl Nitrogen	Total Suspended Solids, Lab	TURBIDITY, FIELD	Turbidity, Lab	Unknown selenium species	Uranium	Uranium	Vanadium	Vanadium	Zinc	Zinc
		Fraction	N	N	N	N	N	D	D	T	D	T	D	T
		Unit	mg/l	mg/l	mg/l	ntu	ntu	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
7/23/2022	E321812	F2_BPO	1730		4.4	4.24	3.46							
7/23/2022	E321812	F2_BPO												
7/24/2022	0200097	EV_EC1				0.4								
7/24/2022	E300091	EV_MC2				0.8								
7/24/2022	E321791	F2_NWPI	1640		5.0	4.4	2.26							
7/24/2022	E321812	F2_BPO	1750		2.1	4.86	3.48							
7/24/2022	E321812	F2_BPO				4.55								
7/24/2022	E321812	F2_BPO												
7/25/2022	0200097	EV_EC1				0.48								
7/25/2022	E300091	EV_MC2				1.5								
7/25/2022	E321791	F2_NWPI	1760	0.672	3.9	4.91	2.08	< 0.010	10.1	10.8	< 2.50	< 0.50	56.9	55.2
7/25/2022	E321812	F2_BPO	1870	0.303	2.0	4.06	3.34	< 0.010	12.5	12.9	< 2.50	< 0.50	27.1	26.3
7/25/2022	E321812	F2_BPO												
7/25/2022	E321812	F2_BPO												
7/26/2022	0200097	EV_EC1				1								
7/26/2022	E321812	F2_BPO	1650		2.0	4	2.96		11.0		< 1.00		24.8	
7/26/2022	E321812	F2_BPO				4								
7/26/2022	E300091	EV_MC2				4.24								
7/26/2022	E321791	F2_NWPI	1590		2.6	4.38	2.49		9.99		< 1.00		53.9	
7/26/2022	E321812	F2_BPO												
7/27/2022	0200097	EV_EC1				0.65								
7/27/2022	E300091	EV_MC2				1.01								
7/27/2022	E321791	F2_NWPI	1660		2.2	5.38	2.08							
7/27/2022	E321812	F2_BPO	1780		2.6	4.19	3.09							
7/27/2022	E321812	F2_BPO				4.19								
7/27/2022	E321812	F2_BPO												
7/28/2022	E321791	F2_NWPI	1620		3.1	3.54	2.06		14.6		< 0.50		54.5	
7/28/2022	0200097	EV_EC1				0.68								
7/28/2022	E300091	EV_MC2				0.96								
7/28/2022	E321812	F2_BPO												
7/28/2022	E321812	F2_BPO	1690		2.2	3.76	2.93		12.6		< 0.50		22.5	
7/28/2022	E321812	F2_BPO												
7/29/2022	0200097	EV_EC1				0.89								
7/29/2022	E300091	EV_MC2				1.01								
7/29/2022	E321791	F2_NWPI	1610		2.0	5.07	2.33							
7/29/2022	E321812	F2_BPO	1620		1.5	4.74	3.96							
7/29/2022	E321812	F2_BPO				4.52								
7/29/2022	E321812	F2_BPO												
7/30/2022	E300091	EV_MC2				1.57								
7/30/2022	0200097	EV_EC1				0.91								
7/30/2022	E321791	F2_NWPI	1530		2.1	3.79	1.90							
7/30/2022	E321812	F2_BPO	1610		2.3	3.8	3.14							
7/30/2022	E321812	F2_BPO				3.8								
7/30/2022	E321812	F2_BPO												
7/31/2022	0200097	EV_EC1				0.43								
7/31/2022	E300091	EV_MC2				0.63								
7/31/2022	E321791	F2_NWPI	1600		2.9	3.69	2.12							
7/31/2022	E321812	F2_BPO	1590		1.3	4.24	3.09							

		Parameter	Total Dissolved Solids (Residue, Filterable)	Total Kjeldahl Nitrogen	Total Suspended Solids, Lab	TURBIDITY, FIELD	Turbidity, Lab	Unknown selenium species	Uranium	Uranium	Vanadium	Vanadium	Zinc	Zinc
		Fraction	N	N	N	N	N	D	D	T	D	T	D	T
		Unit	mg/l	mg/l	mg/l	ntu	ntu	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
7/31/2022	E321812	F2_BPO				4.44								
7/31/2022	E321812	F2_BPO												
8/1/2022	200393	EV_ER1	249	0.125	6.0	4.71	1.91		0.876	1.10	< 0.50	< 0.50	< 1.0	4.8
8/1/2022	310168	EV_MC2A	269	0.150	1.1	1.63	0.29	< 0.010	0.816	1.09	< 0.50	< 0.50	< 1.0	< 3.0
8/1/2022	E321812	F2_BPO	1680	0.270	1.6	3.91	3.32	< 0.010	12.5	11.7	< 1.00	< 0.50	26.2	22.8
8/1/2022	E321812	F2_BPO												
8/1/2022	E321812	F2_BPO												
8/1/2022	0200203	EV_MC3	247	0.094	1.9	1.44	0.52	< 0.010	0.630	0.813	< 0.50	< 0.50	1.1	< 3.0
8/1/2022	E300091	EV_MC2	322	0.132	1.4	1.48	0.32	< 0.010	0.955	1.10	< 0.50	< 0.50	4.9	4.4
8/1/2022	E321791	F2_NWPI	1580	0.714	3.0	3.3	1.95	< 0.010	10.3	10.2	< 1.00	< 0.50	48.7	52.5
8/1/2022	0200097	EV_EC1	1410	0.420	< 1.0	0.84	< 0.10	< 0.010	7.00	7.82	< 1.00	< 0.50	< 2.0	< 3.0
8/1/2022	E321814	EV_ECOUT	1390	< 0.050	< 1.0	1.1	< 0.10	< 0.010	7.06	7.97	< 1.00	< 0.50	2.7	< 3.0
8/1/2022	E321814	EV_ECOUT												
8/1/2022	E321812	F2_BPO												
8/2/2022	E206231	EV_GT1				10.86		< 0.010						
8/2/2022	E102685	EV_BC1				0.76		< 0.010						
8/2/2022	E321791	F2_NWPI	1560		2.9	4.09	2.02		9.95		< 0.50		56.0	
8/2/2022	E321812	F2_BPO	1650		1.9	7.63	3.34		12.1		< 0.50		25.8	
8/2/2022	E321812	F2_BPO				4.92								
8/2/2022	0200097	EV_EC1												
8/2/2022	E321812	F2_BPO				4.92								
8/2/2022	0200097	EV_EC1												
8/2/2022	E300091	EV_MC2				1.05								
8/2/2022	E206231	EV_GT1	1530	0.792	2.7	4.85	2.37	< 0.010	7.67	8.39	< 1.00	< 0.50	3.3	7.8
8/2/2022	E206231	EV_GT1												
8/2/2022	E102685	EV_BC1	1490	0.408	1.2	0.73	0.32	< 0.010	9.58	10.0	< 1.00	< 0.50	2.3	< 3.0
8/2/2022	E102685	EV_BC1												
8/2/2022	E321812	F2_BPO												
8/3/2022	E300091	EV_MC2				1								
8/3/2022	0200097	EV_EC1				0.39								
8/3/2022	E321812	F2_BPO	1740		4.6	3.76	3.23							
8/3/2022	E321812	F2_BPO				3.76								
8/3/2022	E321791	F2_NWPI	1670		1.3	3.44	1.66							
8/4/2022	E300091	EV_MC2				0.7								
8/4/2022	E321791	F2_NWPI	1680		2.0	3.7	2.04		10.9		< 1.00		56.5	
8/4/2022	E321812	F2_BPO	1770		2.0	4.18	3.52		12.6		< 1.00		24.6	
8/4/2022	E321812	F2_BPO												
8/4/2022	0200097	EV_EC1				0.43								
8/4/2022	E321812	F2_BPO												
8/5/2022	0200097	EV_EC1				0.22								
8/5/2022	E300091	EV_MC2				0.71								
8/5/2022	E321791	F2_NWPI	1730		1.3	2.9	1.88							
8/5/2022	E321812	F2_BPO	1840		2.5	4.77	2.96							
8/5/2022	E321812	F2_BPO												
8/5/2022	E321812	F2_BPO												
8/6/2022	0200097	EV_EC1				0.64								
8/6/2022	E300091	EV_MC2				0.2								
8/6/2022	E321791	F2_NWPI	1680		4.1	3.52	2.19							
8/6/2022	E321812	F2_BPO	1870		1.7	4.15	3.03							
8/6/2022	E321812	F2_BPO				4.15								

		Parameter	Total Dissolved Solids (Residue, Filterable)	Total Kjeldahl Nitrogen	Total Suspended Solids, Lab	TURBIDITY, FIELD	Turbidity, Lab	Unknown selenium species	Uranium	Uranium	Vanadium	Vanadium	Zinc	Zinc
		Fraction	N	N	N	N	N	D	D	T	D	T	D	T
		Unit	mg/l	mg/l	mg/l	ntu	ntu	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
8/6/2022	E321812	F2_BPO												
8/7/2022	E300091	EV_MC2				0.82								
8/7/2022	0200097	EV_EC1				0.37								
8/7/2022	E321791	F2_NWPI	1660		2.9	3.33	1.73							
8/7/2022	E321812	F2_BPO	1710		< 1.0	4.27	3.20							
8/7/2022	E321812	F2_BPO				4.27								
8/7/2022	E321812	F2_BPO												
8/8/2022	E300091	EV_MC2				1.24								
8/8/2022	0200097	EV_EC1				0.48								
8/8/2022	E321791	F2_NWPI	1510	< 0.050	3.0	2.9	1.82	< 0.010	12.9	11.0	< 1.00	< 0.50	64.7	57.9
8/8/2022	E321812	F2_BPO	1610	0.249	2.6	3.8	3.25	< 0.010	12.1	12.4	< 1.00	< 0.50	30.8	38.0
8/8/2022	E321812	F2_BPO												
8/8/2022	E321812	F2_BPO												
8/9/2022	E321791	F2_NWPI	1760		2.0	2.96	1.93		11.0		< 1.00		57.8	
8/9/2022	E300091	EV_MC2				0.82								
8/9/2022	0200097	EV_EC1				0.72								
8/9/2022	E321814	EV_ECOUT	1660	0.609	1.0	0.75	< 0.10		8.42	8.28	0.57	< 0.50	1.8	< 3.0
8/9/2022	E321812	F2_BPO	1710		2.0	5.72	2.46		11.9		< 1.00		24.2	
8/9/2022	E321812	F2_BPO				5.72								
8/9/2022	0200097	EV_EC1	1480	< 0.050	2.0	0.26	< 0.10		7.39	7.72	< 0.50	< 0.50	< 1.0	< 3.0
8/9/2022	0200203	EV_MC3	258	0.133	1.7	0.04	0.31		0.702	0.768	< 0.50	< 0.50	< 1.0	< 3.0
8/9/2022	E321812	F2_BPO												
8/10/2022	E300091	EV_MC2				1.47								
8/10/2022	0200097	EV_EC1				0.46								
8/10/2022	E321812	F2_BPO				3.86								
8/10/2022	E321812	F2_BPO	1640		1.4	3.86	3.64							
8/10/2022	E321791	F2_NWPI	1620		2.4	3.73	1.49							
8/10/2022	E206231	EV_GT1	1700	0.491	4.3	6	1.84		12.3	11.0	< 0.50	< 1.00	6.2	6.5
8/10/2022	E102685	EV_BC1	1620	0.346	1.2	1.84	0.35		10.4	10.1	< 0.50	< 1.00	1.2	< 6.0
8/10/2022	200393	EV_ER1	286	0.134	5.0	1.98	1.65		1.26	1.19	< 0.50	0.65	< 1.0	< 3.0
8/10/2022	E300091	EV_MC2	444	0.277	11.2	1.06	0.25		1.56	1.41	< 0.50	0.54	1.2	< 3.0
8/10/2022	E321812	F2_BPO												
8/11/2022	E321791	F2_NWPI	1640		1.0	2.89	1.77		9.82		< 1.00		49.7	
8/11/2022	E300091	EV_MC2				1.27								
8/11/2022	0200097	EV_EC1				0.43								
8/11/2022	E321812	F2_BPO				4.55								
8/11/2022	E321812	F2_BPO	1690		3.4	4.42	2.11		11.1	10.8	< 1.00	< 0.50	22.3	21.8
8/11/2022	E206231	EV_GT1				8.95		< 0.010		584		14000		190000
8/11/2022	E206231	EV_GT1								106		1400		60000
8/11/2022	E206231	EV_GT1								1300		28000		152000
8/11/2022	E206231	EV_GT1								757		16000		143000
8/11/2022	E102685	EV_BC1								343		8000		70000
8/11/2022	E102685	EV_BC1								278		5900		109000
8/11/2022	E102685	EV_BC1								299		6900		117000
8/11/2022	E102685	EV_BC1				7.84		< 0.010						
8/11/2022	E321812	F2_BPO												
8/12/2022	E300091	EV_MC2				0.85								
8/12/2022	0200097	EV_EC1				0.31								

		Parameter	Total Dissolved Solids (Residue, Filterable)	Total Kjeldahl Nitrogen	Total Suspended Solids, Lab	TURBIDITY, FIELD	Turbidity, Lab	Unknown selenium species	Uranium	Uranium	Vanadium	Vanadium	Zinc	Zinc
		Fraction	N	N	N	N	N	D	D	T	D	T	D	T
		Unit	mg/l	mg/l	mg/l	ntu	ntu	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
8/12/2022	E321791	F2_NWPI	1600		3.2	3.3	1.86							
8/12/2022	E321812	F2_BPO	1780		< 1.0	3.99	3.36							
8/12/2022	E321812	F2_BPO				3.99								
8/12/2022	E321812	F2_BPO												
8/13/2022	E300091	EV_MC2				1.77								
8/13/2022	0200097	EV_EC1				1.22								
8/13/2022	E321791	F2_NWPI	1740		1.4	3.6	1.42							
8/13/2022	E321812	F2_BPO	1760		2.1	4.19	3.13							
8/13/2022	E321812	F2_BPO												
8/13/2022	E321812	F2_BPO												
8/14/2022	E300091	EV_MC2				1.27								
8/14/2022	0200097	EV_EC1				0.21								
8/14/2022	E321791	F2_NWPI	1730		2.4	3.17	1.58							
8/14/2022	E321812	F2_BPO	1810		4.0	4.16	3.31							
8/14/2022	E321812	F2_BPO				4.16								
8/14/2022	E321812	F2_BPO												
8/15/2022	E300091	EV_MC2	378	0.089	< 1.0	0.59	0.76	< 0.010	1.53	1.60	< 0.50	< 0.50	8.0	< 3.0
8/15/2022	200393	EV_ER1	235	0.261	1.6	2.51	1.56		1.14	1.21	< 0.50	< 0.50	1.8	< 3.0
8/15/2022	E321812	F2_BPO	1480	0.268	2.9	4.2	3.55	< 0.010	11.6	11.5	< 0.50	< 0.50	30.3	25.3
8/15/2022	E321812	F2_BPO												
8/15/2022	310168	EV_MC2A	288	0.082	< 1.0	0.52	0.30	< 0.010	1.24	1.24	< 0.50	< 0.50	2.6	< 3.0
8/15/2022	0200203	EV_MC3	222	< 0.050	< 1.0	0.72	0.38	< 0.010	0.752	0.752	< 0.50	< 0.50	37.6	7.1
8/15/2022	E321791	F2_NWPI	1510	0.584	< 1.0	2.75	1.58	< 0.010	10.4	10.6	< 0.50	< 0.50	54.9	55.5
8/15/2022	0200097	EV_EC1	1430	< 0.050	< 1.0	0.27	< 0.10	< 0.010	7.54	7.66	< 0.50	< 0.50	1.4	< 3.0
8/15/2022	0200097	EV_EC1												
8/15/2022	E321814	EV_ECOUT	1500	< 0.050	< 1.0	1.9	0.22	< 0.010	8.01	7.94	< 1.00	< 0.50	2.8	3.2
8/15/2022	E321814	EV_ECOUT												
8/15/2022	E321812	F2_BPO				3.62								
8/16/2022	E206231	EV_GT1	1640	0.465	4.4	2.48	1.08	< 0.010	11.4	10.7	< 0.50	< 0.50	5.8	6.0
8/16/2022	E206231	EV_GT1												
8/16/2022	E321812	F2_BPO	1670		2.1	3.7	2.98		12.1		< 0.50		59.8	
8/16/2022	E300091	EV_MC2				1.08								
8/16/2022	E321791	F2_NWPI	1570		2.3	3.27	1.26		11.3		< 0.50		57.7	
8/16/2022	E102685	EV_BC1	1510	0.342	1.4	0.57	0.24	< 0.010	9.73	9.70	< 0.50	< 0.50	2.4	< 3.0
8/16/2022	E102685	EV_BC1												
8/16/2022	E300091	EV_MC2	423	0.239	< 1.0	0.71	0.27		1.53	1.44	< 0.50	< 0.50	< 1.0	< 3.0
8/16/2022	0200097	EV_EC1				0.46								
8/16/2022	E321812	F2_BPO												
8/17/2022	E300091	EV_MC2				1.44								
8/17/2022	0200097	EV_EC1				0.52								
8/17/2022	E321791	F2_NWPI	1460		1.7	3.46	1.25							
8/17/2022	E321812	F2_BPO	1680		3.5	4.41	3.06							
8/17/2022	E321812	F2_BPO												
8/17/2022	E321812	F2_BPO				4.19								
8/18/2022	E300091	EV_MC2				2.96								
8/18/2022	0200097	EV_EC1				0.31								
8/18/2022	E321791	F2_NWPI	1400		1.4	2.26	1.41		10.2		< 1.00		64.4	
8/18/2022	E321812	F2_BPO				4.14								

		Parameter	Total Dissolved Solids (Residue, Filterable)	Total Kjeldahl Nitrogen	Total Suspended Solids, Lab	TURBIDITY, FIELD	Turbidity, Lab	Unknown selenium species	Uranium	Uranium	Vanadium	Vanadium	Zinc	Zinc
		Fraction	N	N	N	N	N	D	D	T	D	T	D	T
		Unit	mg/l	mg/l	mg/l	ntu	ntu	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
8/18/2022	E321812	F2_BPO	1520		< 1.0	4.14	3.41							
8/18/2022	E321812	F2_BPO												
8/19/2022	E300091	EV_MC2				1.22								
8/19/2022	0200097	EV_EC1				0.25								
8/19/2022	E321791	F2_NWPI	1480		2.5	2.4	1.38		10.5		< 0.50		65.2	
8/19/2022	E321812	F2_BPO	1520		1.2	3.95	3.35							
8/19/2022	E321812	F2_BPO				3.95								
8/19/2022	E321812	F2_BPO												
8/20/2022	0200097	EV_EC1				0.12								
8/20/2022	E321791	F2_NWPI	1550		3.2	2.34	1.28							
8/20/2022	E300091	EV_MC2				0.52								
8/20/2022	E321812	F2_BPO	1650		1.5	3.93	3.11							
8/20/2022	E321812	F2_BPO				4.29								
8/21/2022	E300091	EV_MC2				1.28								
8/21/2022	0200097	EV_EC1				0.57								
8/21/2022	E321791	F2_NWPI	1650		1.4	2.13	1.42							
8/21/2022	E321812	F2_BPO	1710		3.0	4.29	3.32							
8/21/2022	E321812	F2_BPO				4.06								
8/21/2022	E321812	F2_BPO												
8/22/2022	E300091	EV_MC2				0.45								
8/22/2022	E321812	F2_BPO												
8/22/2022	E300091	EV_MC2				0.45								
8/22/2022	0200097	EV_EC1				0.8								
8/22/2022	E321812	F2_BPO	1700	0.249	2.2	4.39	3.56	< 0.010	11.2	11.5	< 0.50	< 0.50	21.9	19.2
8/22/2022	E321791	F2_NWPI	1580	< 0.050	2.0	2.31	1.42	< 0.010	10.6	10.5	< 0.50	< 0.50	56.8	52.8
8/22/2022	E321812	F2_BPO												
8/23/2022	E300091	EV_MC2				1.21								
8/23/2022	0200097	EV_EC1				0.13								
8/23/2022	E321791	F2_NWPI	1540		1.7	2.27	1.69		9.96		< 1.00		64.1	
8/23/2022	E321812	F2_BPO	1570		3.4	1.52	3.60		11.6		< 1.00		26.0	
8/23/2022	E300091	EV_MC2	470	0.272	< 1.0	2.58	0.20		1.54	1.51	< 0.50	< 0.50	< 1.0	< 3.0
8/23/2022	E321812	F2_BPO												
8/24/2022	E300091	EV_MC2				0.85								
8/24/2022	0200097	EV_EC1				0.82								
8/24/2022	E321812	F2_BPO	1560		2.3	4.04	2.86							
8/24/2022	E321791	F2_NWPI	1490		< 1.0	3.63	1.31							
8/24/2022	E321812	F2_BPO												
8/25/2022	E321791	F2_NWPI	1470		1.8	2.24	1.54		11.7		< 0.50		60.5	
8/25/2022	0200097	EV_EC1				0.24								
8/25/2022	E300091	EV_MC2				0.7								
8/25/2022	E321812	F2_BPO	1610		1.3	4.21	2.99		12.2		< 0.50		22.4	
8/25/2022	E321812	F2_BPO				4.13								
8/25/2022	E321812	F2_BPO												
8/26/2022	E300091	EV_MC2				1.29								
8/26/2022	0200097	EV_EC1				0.42								
8/26/2022	E321812	F2_BPO	1570		3.1	5.08	3.40							
8/26/2022	E321791	F2_NWPI	1480		3.8	2.54	1.54							
8/26/2022	E321812	F2_BPO												
8/27/2022	E300091	EV_MC2				1								
8/27/2022	0200097	EV_EC1				0.72								

		Parameter	Total Dissolved Solids (Residue, Filterable)	Total Kjeldahl Nitrogen	Total Suspended Solids, Lab	TURBIDITY, FIELD	Turbidity, Lab	Unknown selenium species	Uranium	Uranium	Vanadium	Vanadium	Zinc	Zinc
		Fraction	N	N	N	N	N	D	D	T	D	T	D	T
		Unit	mg/l	mg/l	mg/l	ntu	ntu	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
8/27/2022	E321791	F2_NWPI	1540		2.4	3.39	1.17							
8/27/2022	E321812	F2_BPO	1530		3.4	4.82	2.97							
8/27/2022	E321812	F2_BPO												
8/28/2022	E300091	EV_MC2				1.08								
8/28/2022	0200097	EV_EC1				0.27								
8/28/2022	E321791	F2_NWPI	1530		2.5	2.01	1.23							
8/28/2022	E321812	F2_BPO	1530	0.284	2.6	4	2.96		11.2	11.3	< 1.00	< 1.00	20.9	19.0
8/28/2022	E321812	F2_BPO												
8/28/2022	E321812	F2_BPO	1640	0.284	1.1		3.07		11.2	11.3	< 1.00	< 1.00	20.9	19.0
8/29/2022	E300091	EV_MC2	388	0.311	< 1.0	1.85	0.23	< 0.010	1.26	1.36	< 0.50	< 0.50	< 1.0	< 3.0
8/29/2022	0200203	EV_MC3	261	0.055	1.1	1.51	0.28	< 0.010	0.664	0.686	< 0.50	< 0.50	< 1.0	< 3.0
8/29/2022	310168	EV_MC2A	320	0.211	< 1.0	0.75	0.25	< 0.010	1.04	1.13	< 0.50	< 0.50	< 1.0	< 3.0
8/29/2022	E321812	F2_BPO	1540	0.286	2.0	3.55	2.84	< 0.010	11.2	10.4	< 0.50	< 1.00	18.3	19.2
8/29/2022	200393	EV_ER1	283	0.332	2.6	3.55	1.59		1.03	1.12	< 0.50	0.54	< 1.0	< 3.0
8/29/2022	E321791	F2_NWPI	1520	0.920	4.3	2.2	1.69	< 0.010	10.9	10.1	< 0.50	< 1.00	64.6	59.6
8/29/2022	0200097	EV_EC1	1440	< 0.050	1.8	0.57	< 0.10	< 0.010	7.73	7.95	< 0.50	< 0.50	< 1.0	< 3.0
8/29/2022	0200097	EV_EC1												
8/29/2022	E321814	EV_ECOUT	1440	1.28	< 1.0	0.49	< 0.10	< 0.010	7.90	8.21	< 0.50	< 0.50	1.8	< 3.0
8/29/2022	E321814	EV_ECOUT												
8/29/2022	E321812	F2_BPO				3.43								
8/30/2022	E321791	F2_NWPI	1480		3.4	2.87	1.54		10.7		< 1.00		54.5	
8/30/2022	E321812	F2_BPO	1540		1.4	3.44	2.84		11.4		< 1.00		18.1	
8/30/2022	E300091	EV_MC2				0.29								
8/30/2022	0200097	EV_EC1				0.21								
8/30/2022	E300091	EV_MC2	388	0.201	< 1.0	2.23	0.23		1.58	1.49	< 0.50	< 0.50	< 1.0	< 3.0
8/30/2022	E206231	EV_GT1	1670	0.500	2.9	2.14	1.12	< 0.010	11.7	11.5	< 1.00	< 1.00	4.3	< 6.0
8/30/2022	E206231	EV_GT1												
8/30/2022	E102685	EV_BC1	1530	0.483	< 1.0	0.39	0.28	< 0.010	10.1	9.78	< 1.00	< 1.00	2.1	< 6.0
8/30/2022	E102685	EV_BC1												
8/30/2022	E321812	F2_BPO												
8/31/2022	E321791	F2_NWPI	1400		1.5	2.63	1.04							
8/31/2022	E300091	EV_MC2				0.92								
8/31/2022	E321812	F2_BPO				4.21								
8/31/2022	0200097	EV_EC1				0.85								
8/31/2022	E321812	F2_BPO				4.21								
8/31/2022	E321812	F2_BPO	1600		1.3	3.71	3.01							
8/31/2022	E321812	F2_BPO				4.44								
9/1/2022	E300091	EV_MC2				0.98								
9/1/2022	0200097	EV_EC1				0.63								
9/1/2022	E321791	F2_NWPI	1510		2.8	2.76	1.79		9.69		< 1.00		62.0	
9/1/2022	E321812	F2_BPO	1580		3.0	3.95	3.04		10.6		< 1.00		20.1	
9/1/2022	E321812	F2_BPO				3.95								
9/1/2022	E321812	F2_BPO												
9/2/2022	0200097	EV_EC1				0.38								
9/2/2022	E300091	EV_MC2				0.68								
9/2/2022	E321791	F2_NWPI	1490		2.8	2	1.20							
9/2/2022	E321812	F2_BPO	1520		2.5	3.76	3.04							
9/2/2022	E321812	F2_BPO				3.45								

		Parameter	Total Dissolved Solids (Residue, Filterable)	Total Kjeldahl Nitrogen	Total Suspended Solids, Lab	TURBIDITY, FIELD	Turbidity, Lab	Unknown selenium species	Uranium	Uranium	Vanadium	Vanadium	Zinc	Zinc
		Fraction	N	N	N	N	N	D	D	T	D	T	D	T
		Unit	mg/l	mg/l	mg/l	ntu	ntu	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
9/3/2022	E300091	EV_MC2												
9/3/2022	0200097	EV_EC1												
9/3/2022	E321791	F2_NWPI	1490		1.8	1.73	1.27							
9/3/2022	E321812	F2_BPO	1540		2.1	3.75	3.16							
9/3/2022	E321812	F2_BPO												
9/4/2022	E300091	EV_MC2				0.67								
9/4/2022	0200097	EV_EC1				0.54								
9/4/2022	E321791	F2_NWPI	1520		1.6	2.06	1.01							
9/4/2022	E321812	F2_BPO	1570		2.1	3.85	2.98							
9/4/2022	E321812	F2_BPO				3.85								
9/4/2022	E321812	F2_BPO												
9/5/2022	E300091	EV_MC2				1.61								
9/5/2022	0200097	EV_EC1				2.17								
9/5/2022	E321812	F2_BPO	1570	0.299	2.1	3.79	3.36	< 0.010	12.6	11.7	< 0.50	< 0.50	21.0	25.1
9/5/2022	E321812	F2_BPO				3.79								
9/5/2022	E321791	F2_NWPI	1540	2.25	3.8	3.49	1.29	< 0.010	11.8	10.2	< 0.50	< 0.50	58.7	61.6
9/5/2022	E321812	F2_BPO												
9/6/2022	E300091	EV_MC2				0.68								
9/6/2022	0200097	EV_EC1				2.05								
9/6/2022	E321812	F2_BPO	1560		1.5	3.91	3.34		11.6		< 1.00		22.0	
9/6/2022	E321791	F2_NWPI	1460		1.5	2.2	1.18		10.5		< 1.00		65.9	
9/6/2022	E300091	EV_MC2	415	0.173	1.2	2.3	0.29	< 0.010	1.48	1.65	< 0.50	0.56	< 1.0	< 3.0
9/6/2022	200393	EV_ER1	287	0.139	1.1	3.05	0.82	< 0.010	1.14	1.28	< 0.50	0.62	< 1.0	< 3.0
9/6/2022	E206231	EV_GT1	1760	0.594	2.7	5.86	1.44		11.6	11.7	< 0.50	0.58	4.7	5.5
9/6/2022	E102685	EV_BC1	1550	0.472	1.3	4.07	0.25		9.96	10.0	< 0.50	< 0.50	< 1.0	< 3.0
9/6/2022	E321812	F2_BPO												
9/7/2022	E300091	EV_MC2				1.75								
9/7/2022	0200097	EV_EC1				1.29								
9/7/2022	E321812	F2_BPO	1520		3.0	3.96	3.08							
9/7/2022	E321791	F2_NWPI	1480		2.9	3.04	1.08							
9/7/2022	E321812	F2_BPO												
9/8/2022	E300091	EV_MC2				0.85								
9/8/2022	0200097	EV_EC1				0.3								
9/8/2022	E321812	F2_BPO	1560		2.0	3.82	3.06		10.8		< 0.50		23.2	
9/8/2022	E321791	F2_NWPI	1450		1.6	2.37	1.01		9.54		< 0.50		65.5	
9/8/2022	E321814	EV_ECOUT	1520	0.082	1.0	2.43	< 0.10		7.48	8.38	< 0.50	< 0.50	1.3	< 3.0
9/8/2022	0200097	EV_EC1	1430	0.202	< 1.0	1.18	< 0.10		7.05	7.82	< 0.50	< 0.50	< 1.0	< 3.0
9/8/2022	0200203	EV_MC3	235	< 0.050	1.0	0.33	0.23		0.750	0.708	< 0.50	< 0.50	< 1.0	< 3.0
9/8/2022	E300091	EV_MC2	416	0.077	< 1.0	2.2	0.26		1.51	1.56	< 0.50	0.98	< 1.0	< 3.0
9/8/2022	E321812	F2_BPO												
9/9/2022	E300091	EV_MC2				1.1								
9/9/2022	0200097	EV_EC1				0.93								
9/9/2022	E321812	F2_BPO	1510		2.6	3.96	3.34							
9/9/2022	E321791	F2_NWPI	1440		1.1	1.56	0.83							
9/9/2022	E300091	EV_MC2	429	0.143	1.3		0.23		1.40	1.56	< 0.50	0.58	< 1.0	< 3.0
9/9/2022	E102685	EV_BC1	1500	0.388	6.6	0.7	0.24		10.3	9.46	< 0.50	< 0.50	< 1.0	< 3.0
9/9/2022	E206231	EV_GT1	1620	0.528	3.2	1.7	1.72		10.3	10.8	< 1.00	< 0.50	2.2	< 3.0
9/9/2022	310168	EV_MC2A	338	0.116	1.2	0.8	0.21		1.15	1.23	< 0.50	0.55	< 1.0	< 3.0

		Parameter	Total Dissolved Solids (Residue, Filterable)	Total Kjeldahl Nitrogen	Total Suspended Solids, Lab	TURBIDITY, FIELD	Turbidity, Lab	Unknown selenium species	Uranium	Uranium	Vanadium	Vanadium	Zinc	Zinc
		Fraction	N	N	N	N	N	D	D	T	D	T	D	T
		Unit	mg/l	mg/l	mg/l	ntu	ntu	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
9/9/2022	E321812	F2_BPO												
9/10/2022	E300091	EV_MC2												
9/10/2022	0200097	EV_EC1												
9/10/2022	E321791	F2_NWPI	1480		2.6	1.79	1.03							
9/10/2022	E321812	F2_BPO	1530		2.3		3.04							
9/10/2022	E321812	F2_BPO												
9/11/2022	E300091	EV_MC2				0.75								
9/11/2022	0200097	EV_EC1				0.36								
9/11/2022	E321791	F2_NWPI	1510		3.5	1.76	1.00							
9/11/2022	E321812	F2_BPO	1550		2.4	4.04	3.08							
9/11/2022	E321812	F2_BPO												
9/12/2022	E300091	EV_MC2	416	0.180	< 1.0	1.53	0.26	< 0.010	1.31	1.55	< 0.50	< 1.00	< 1.0	< 3.0
9/12/2022	310168	EV_MC2A	331	0.190	2.4	1.44	0.41	< 0.010	1.25	1.23	< 0.50	0.68	< 1.0	< 3.0
9/12/2022	0200203	EV_MC3	239	< 0.050	< 1.0	1.45	0.37	< 0.010	0.698	0.733	< 0.50	< 1.00	< 1.0	< 3.0
9/12/2022	200393	EV_ER1	269	0.194	< 1.0	1.24	0.58		1.07	1.22	< 0.50	< 1.00	< 1.0	< 3.0
9/12/2022	E321812	F2_BPO				3.59								
9/12/2022	E321812	F2_BPO	1520	0.237	2.3	3.59	3.47	< 0.010	10.1	12.1	< 0.50	< 1.00	29.2	22.0
9/12/2022	E321812	F2_BPO												
9/12/2022	E321791	F2_NWPI	1450	0.511	1.0	1.78	1.04	< 0.010	10.3	10.9	< 0.50	< 1.00	62.8	64.2
9/12/2022	0200097	EV_EC1	1400	0.379	< 1.0	1.29	< 0.10	< 0.010	6.54	7.03	< 0.50	< 1.00	1.4	< 3.0
9/12/2022	0200097	EV_EC1												
9/12/2022	E321814	EV_ECOUT	1510	0.347	1.3	0.72	0.11	< 0.010	6.76	7.89	< 0.50	< 1.00	1.5	< 3.0
9/12/2022	E321814	EV_ECOUT												
9/12/2022	E321812	F2_BPO												
9/13/2022	E300091	EV_MC2				1.37								
9/13/2022	0200097	EV_EC1				1.26								
9/13/2022	E321812	F2_BPO	1610		1.3	3.82	3.25		9.70	11.5	< 1.00	0.64	15.9	30.1
9/13/2022	E206231	EV_GT1	1560	0.605	3.2	2.92	1.44	< 0.010	10.5	12.0	< 1.00	< 1.00	3.4	< 6.0
9/13/2022	E206231	EV_GT1												
9/13/2022	E102685	EV_BC1	1540	0.435	1.1	0.77	0.24	< 0.010	8.32	10.0	< 1.00	< 1.00	< 2.0	< 6.0
9/13/2022	E102685	EV_BC1												
9/13/2022	E300091	EV_MC2	423	0.198	< 1.0	3.03	0.30		1.67	1.73	< 0.50	< 0.50	1.8	< 3.0
9/13/2022	E321791	F2_NWPI	1550		1.3	2.21	0.95		9.89		< 1.00		62.6	
9/13/2022	E321812	F2_BPO												
9/14/2022	E300091	EV_MC2				0.83								
9/14/2022	0200097	EV_EC1				0.63								
9/14/2022	E321791	F2_NWPI	1540		1.6	1.79	1.13							
9/14/2022	E321812	F2_BPO	1630		1.6	3.92	2.99							
9/14/2022	E321812	F2_BPO				3.92								
9/14/2022	E321812	F2_BPO												
9/15/2022	E300091	EV_MC2				1.6								
9/15/2022	0200097	EV_EC1				0.71								
9/15/2022	E321791	F2_NWPI	1420		2.4	1.79	0.80		9.77		< 1.00		58.4	
9/15/2022	E321812	F2_BPO	1470		1.6	3.96	3.21		10.4		< 1.00		24.7	
9/15/2022	0200097	EV_EC1				1.28								
9/15/2022	310168	EV_MC2A				0.7								
9/15/2022	0200203	EV_MC3				1.6								
9/15/2022	E206231	EV_GT1												

		Parameter	Total Dissolved Solids (Residue, Filterable)	Total Kjeldahl Nitrogen	Total Suspended Solids, Lab	TURBIDITY, FIELD	Turbidity, Lab	Unknown selenium species	Uranium	Uranium	Vanadium	Vanadium	Zinc	Zinc
		Fraction	N	N	N	N	N	D	D	T	D	T	D	T
		Unit	mg/l	mg/l	mg/l	ntu	ntu	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
9/15/2022	E102685	EV_BC1												
9/15/2022	E300091	EV_MC2				1.37								
9/15/2022	E321812	F2_BPO				3.76								
9/16/2022	E300091	EV_MC2				2.72								
9/16/2022	0200097	EV_EC1				0.62								
9/16/2022	E321791	F2_NWPI	1450		1.1	1.45	0.88							
9/16/2022	E321812	F2_BPO	1590		2.0	4.1	2.91							
9/16/2022	E321812	F2_BPO				4.1								
9/16/2022	E321812	F2_BPO												
9/17/2022	E300091	EV_MC2				0.96								
9/17/2022	0200097	EV_EC1				0.58								
9/17/2022	E321791	F2_NWPI	1550		1.5	2.01	0.82							
9/17/2022	E321812	F2_BPO	1530		1.3	3.84	2.72							
9/17/2022	E321812	F2_BPO												
9/18/2022	E300091	EV_MC2				0.87								
9/18/2022	0200097	EV_EC1				0.35								
9/18/2022	E321791	F2_NWPI	1480		< 1.0	1.61	0.82							
9/18/2022	E321812	F2_BPO	1590		2.3	4.2	3.22							
9/18/2022	E321812	F2_BPO				3.56								
9/19/2022	E300091	EV_MC2				0.7								
9/19/2022	0200097	EV_EC1				0.44								
9/19/2022	E321791	F2_NWPI	1580	2.70	2.9	1.75	1.18	0.026	10.3	10.2	< 1.00	< 1.00	65.8	67.1
9/19/2022	E321812	F2_BPO	1620	0.272	1.7	3.88	3.51	< 0.010	11.2	10.9	< 1.00	< 1.00	19.2	20.7
9/19/2022	E321812	F2_BPO				3.88								
9/19/2022	E321812	F2_BPO												
9/20/2022	E300091	EV_MC2				1.11								
9/20/2022	0200097	EV_EC1				0.61								
9/20/2022	E321812	F2_BPO	1530		1.2	4.01	3.79		10.5		< 1.00		23.3	
9/20/2022	E321791	F2_NWPI	1500		2.0	1.53	0.85		9.57		< 1.00		68.8	
9/20/2022	E321812	F2_BPO												
9/21/2022	E300091	EV_MC2				1.04								
9/21/2022	0200097	EV_EC1				0.34								
9/21/2022	E321812	F2_BPO	1620		2.2	3.86	3.08							
9/21/2022	E321812	F2_BPO				3.86								
9/21/2022	E321791	F2_NWPI	1440		1.3	1.57	0.84							
9/21/2022	E321812	F2_BPO												
9/22/2022	E300091	EV_MC2				1.4								
9/22/2022	0200097	EV_EC1				0.38								
9/22/2022	E321791	F2_NWPI	1400		< 1.0	1.58	1.13		10.1		< 1.00		71.8	
9/22/2022	E321812	F2_BPO	1420		2.2	2.1	3.70		11.0		< 1.00		25.2	
9/23/2022	E300091	EV_MC2				1								
9/23/2022	0200097	EV_EC1				0.88								
9/23/2022	E321791	F2_NWPI	1510		1.7	1.5	0.69							
9/23/2022	E321812	F2_BPO	1550		2.4	4.2	3.10							
9/23/2022	E321812	F2_BPO												
9/24/2022	E300091	EV_MC2				1.09								
9/24/2022	0200097	EV_EC1				0.48								
9/24/2022	E321791	F2_NWPI	1500		3.2	1.58	0.67							

		Parameter	Total Dissolved Solids (Residue, Filterable)	Total Kjeldahl Nitrogen	Total Suspended Solids, Lab	TURBIDITY, FIELD	Turbidity, Lab	Unknown selenium species	Uranium	Uranium	Vanadium	Vanadium	Zinc	Zinc
		Fraction	N	N	N	N	N	D	D	T	D	T	D	T
		Unit	mg/l	mg/l	mg/l	ntu	ntu	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
9/24/2022	E321812	F2_BPO	1540		3.0	4.24	3.04							
9/24/2022	E321812	F2_BPO												
9/25/2022	E300091	EV_MC2				1.77								
9/25/2022	0200097	EV_EC1				0.8								
9/25/2022	E321791	F2_NWPI	1330		2.4	2.03	0.65							
9/25/2022	E321812	F2_BPO	1600		1.4	4.15	2.94							
9/25/2022	E321812	F2_BPO												
9/26/2022	200393	EV_ER1	297	0.272	1.1	1.72	0.36		1.31	1.48	< 0.50	< 0.50	2.1	< 3.0
9/26/2022	310168	EV_MC2A	351	0.133	1.0	1.54	0.56	< 0.010	1.21	1.53	< 0.50	< 0.50	9.8	< 3.0
9/26/2022	E321812	F2_BPO	1880	0.257	5.9	3.74	4.45	< 0.010	11.7	10.9	< 1.00	< 0.50	24.5	22.3
9/26/2022	E300091	EV_MC2	435	0.265	< 1.0	1.43	0.39	< 0.010	1.66	1.80	< 0.50	< 0.50	9.2	< 3.0
9/26/2022	0200203	EV_MC3	249	0.052	< 1.0	2.05	0.16	< 0.010	0.738	0.760	< 0.50	< 0.50	< 1.0	40.1
9/26/2022	E321791	F2_NWPI	1500	1.71	3.6	1	2.02	< 0.010	10.3	10.4	< 1.00	< 0.50	66.0	64.3
9/26/2022	0200097	EV_EC1	1440	0.467	4.5	0.73	0.53	< 0.010	6.88	7.12	< 0.50	< 0.50	6.2	< 3.0
9/26/2022	E321814	EV_ECOUT	1480	0.119	8.6	1.41	1.63	< 0.010	7.25	8.16	< 0.50	< 0.50	4.8	3.3
9/26/2022	E321812	F2_BPO												
9/27/2022	E300091	EV_MC2				1.51								
9/27/2022	0200097	EV_EC1				1.22								
9/27/2022	E321812	F2_BPO	1540		2.1	3.69	2.85		13.0		< 0.50		23.1	
9/27/2022	E206231	EV_GT1	1630	0.438	2.7	2.55	1.18	< 0.010	11.8	12.7	< 0.50	< 0.50	7.2	7.0
9/27/2022	E102685	EV_BC1	1490	0.072	2.0	1.71	0.19	< 0.010	10.2	10.2	< 0.50	< 0.50	1.8	< 3.0
9/27/2022	E321791	F2_NWPI	1480		2.5	2.01	0.82		10.9		< 0.50		66.2	
9/27/2022	E321812	F2_BPO												
9/28/2022	E300091	EV_MC2				0.93								
9/28/2022	0200097	EV_EC1				1.11								
9/28/2022	E321791	F2_NWPI	1370		1.2	1.73	0.59							
9/28/2022	E321812	F2_BPO	1450		1.4	5.6	2.91							
9/28/2022	E321812	F2_BPO												
9/29/2022	E300091	EV_MC2				0.95								
9/29/2022	E321791	F2_NWPI	1530		2.0	1.5	0.61		10.5		< 1.00		65.4	
9/29/2022	E321812	F2_BPO	1600		1.1	3.71	3.13		10.7		< 1.00		20.3	
9/29/2022	0200097	EV_EC1				0.37								
9/29/2022	E321812	F2_BPO												
9/30/2022	E300091	EV_MC2				1.08								
9/30/2022	0200097	EV_EC1				0.33								
9/30/2022	E321812	F2_BPO	1530		5.6	3.65	3.22							
9/30/2022	E321812	F2_BPO												
9/30/2022	E321791	F2_NWPI	1470		< 1.0	1.44	0.67							
10/1/2022	E300091	EV_MC2				1.12								
10/1/2022	0200097	EV_EC1				0.91								
10/1/2022	E321812	F2_BPO	1600		3.8	3.52	2.70							
10/1/2022	E321791	F2_NWPI	1460		1.9	1.51	0.63							
10/1/2022	E321812	F2_BPO												
10/2/2022	E300091	EV_MC2				1.21								
10/2/2022	0200097	EV_EC1				0.53								
10/2/2022	E321791	F2_NWPI	1510		1.5	1.96	0.90							
10/2/2022	E321812	F2_BPO	1580		3.7	0.61	2.83							
10/2/2022	E321812	F2_BPO												

		Parameter	Total Dissolved Solids (Residue, Filterable)	Total Kjeldahl Nitrogen	Total Suspended Solids, Lab	TURBIDITY, FIELD	Turbidity, Lab	Unknown selenium species	Uranium	Uranium	Vanadium	Vanadium	Zinc	Zinc
		Fraction	N	N	N	N	N	D	D	T	D	T	D	T
		Unit	mg/l	mg/l	mg/l	ntu	ntu	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
10/3/2022	E300091	EV_MC2	433	0.333	< 1.0	0.93	0.17	< 0.010	1.79	1.72	< 0.50	< 0.50	< 1.0	< 3.0
10/3/2022	200393	EV_ER1	324	0.270	< 1.0	1.66	0.42		1.52	1.41	< 0.50	< 0.50	< 1.0	3.7
10/3/2022	0200203	EV_MC3	270	0.055	< 1.0	2.68	0.15	< 0.010	0.727	0.800	< 0.50	< 0.50	< 1.0	< 3.0
10/3/2022	310168	EV_MC2A	386	0.161	< 1.0	3.12	0.21	< 0.010	1.69	1.52	< 0.50	< 0.50	< 1.0	< 3.0
10/3/2022	E321812	F2_BPO	1440	0.284	< 1.0	3.57	2.54	< 0.010	10.3	11.7	< 1.00	< 1.00	21.5	22.6
10/3/2022	E321791	F2_NWPI	1570	1.90	< 1.0	1.06	0.50	< 0.010	9.38	10.7	< 1.00	< 1.00	64.3	65.8
10/3/2022	0200097	EV_EC1	1500	0.445	1.0	0.38	0.20	< 0.010	6.89	7.49	< 0.50	< 0.50	8.9	6.5
10/3/2022	E321814	EV_ECOUT	1480	1.16	< 1.0	0.5	0.18	< 0.010	8.11	8.01	< 0.50	< 0.50	1.6	< 3.0
10/3/2022	E321812	F2_BPO												
10/4/2022	E300091	EV_MC2				0.65								
10/4/2022	E321791	F2_NWPI	1450		2.4	0.97	0.52							
10/4/2022	0200097	EV_EC1				0.81								
10/4/2022	E321812	F2_BPO	1460		3.6	3.56	2.85							
10/4/2022	E206231	EV_GT1	1530	0.838	5.3	4.73	2.57	< 0.010	10.9	12.4	< 0.50	< 0.50	5.1	7.0
10/4/2022	E321814	EV_ECOUT	1260	1.62	< 1.0	3.41	< 0.10		7.14	7.01	< 0.50	< 0.50	1.8	6.3
10/4/2022	E102685	EV_BC1	1530	0.886	2.0	1.02	0.65	< 0.010	10.4	10.6	< 0.50	< 0.50	2.4	< 3.0
10/4/2022	E321811	F2_ECIN	1350		3.6	6.96	5.00	< 0.010	10.8	12.7	< 0.50	< 0.50	22.3	68.8
10/5/2022	E321791	F2_NWPI	1500	< 0.250	1.4	1.21	0.61		9.34		< 1.00		63.5	
10/5/2022	E321811	F2_ECIN	1470	1.88	< 1.0	0.46	0.38		6.84		< 1.00		2.8	
10/5/2022	E321812	F2_BPO	1500	0.259	1.7	3.6	3.07		10.0		< 1.00		19.2	
10/5/2022	0200097	EV_EC1	1410	1.06	1.8	1.23	0.12		7.78	8.52	< 0.50	< 0.50	< 1.0	< 3.0
10/6/2022	E321791	F2_NWPI	1390		2.5	1.16	0.66							
10/6/2022	E321812	F2_BPO	1460		1.9	3.72	3.25							
10/6/2022	E102685	EV_BC1												
10/6/2022	0200097	EV_EC1				0.77								
10/6/2022	E300091	EV_MC2				1.34								
10/6/2022	0200203	EV_MC3	198	< 0.050	1.2	2.77	0.17		0.696	0.788	< 0.50	< 0.50	< 1.0	< 3.0
10/6/2022	E321811	F2_ECIN	1450		2.2	0.59	2.75							
10/6/2022	200393	EV_ER1	272	0.292	< 1.0	2.12	0.37		1.33	1.50	< 0.50	< 0.50	< 1.0	< 3.0
10/6/2022	E206231	EV_GT1	1680	0.468	1.1	6.27	2.00		10.7	11.4	< 0.50	< 0.50	6.3	8.0
10/6/2022	E102685	EV_BC1	1540	< 0.050	< 1.0	3.58	0.39		10.2	10.7	< 0.50	< 0.50	1.5	< 3.0
10/6/2022	E300091	EV_MC2	452	0.200	< 1.0	3.4	0.26		1.78	1.98	< 0.50	< 0.50	< 1.0	< 3.0
10/6/2022	E321812	F2_BPO												
10/7/2022	E321791	F2_NWPI	1410	0.562	1.8	1.25	0.86		9.80		< 0.50		69.5	
10/7/2022	E321811	F2_ECIN	1410	0.108	1.0	0.77	0.37		7.14		< 0.50		4.6	
10/7/2022	E321812	F2_BPO	1500	0.228	1.1	3.63	3.08		10.7		< 0.50		21.5	
10/7/2022	E321812	F2_BPO												
10/8/2022	E321791	F2_NWPI	1450		1.8	0.98	0.52							
10/8/2022	E321811	F2_ECIN	1490		1.2	0.68	< 0.10							
10/8/2022	E321812	F2_BPO	1520		3.0	3.51	2.89							
10/8/2022	E321812	F2_BPO												
10/9/2022	E321791	F2_NWPI	1470		1.8	0.92	0.52							
10/9/2022	E321811	F2_ECIN	1480		3.1	0.28	1.37							
10/9/2022	E321812	F2_BPO	1590		3.0	3.7	2.87							
10/9/2022	E321814	EV_ECOUT	1520	0.068	1.6	1.06	0.14	< 0.010	7.19	7.43	< 0.50	< 0.50	2.5	17.6
10/9/2022	E321812	F2_BPO												
10/10/2022	E321811	F2_ECIN	1460	< 0.500	1.4	0.36	2.07	< 0.010	7.20	7.87	< 0.50	< 1.00	3.7	< 6.0
10/10/2022	E321791	F2_NWPI	1560	0.513	2.6	0.93	0.79	< 0.010	9.90	11.3	< 0.50	< 1.00	92.6	96.9

		Parameter	Total Dissolved Solids (Residue, Filterable)	Total Kjeldahl Nitrogen	Total Suspended Solids, Lab	TURBIDITY, FIELD	Turbidity, Lab	Unknown selenium species	Uranium	Uranium	Vanadium	Vanadium	Zinc	Zinc
		Fraction	N	N	N	N	N	D	D	T	D	T	D	T
		Unit	mg/l	mg/l	mg/l	ntu	ntu	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
10/10/2022	E321812	F2_BPO	1630	0.323	3.5	3.32	3.32	< 0.010	11.0	11.8	< 0.50	< 1.00	25.9	27.1
10/10/2022	E321812	F2_BPO												
10/11/2022	E321811	F2_ECIN	1470		2.4	0.33	0.37							
10/11/2022	E321791	F2_NWPI	1340		1.6	1	0.57							
10/11/2022	E321812	F2_BPO	1520		1.8	5.42	2.87							
10/11/2022	E300091	EV_MC2	428	0.307	1.4	1.07	0.23		1.74	1.69	< 0.50	< 0.50	< 1.0	< 3.0
10/11/2022	E321812	F2_BPO												
10/12/2022	E321811	F2_ECIN	1390	1.31	2.2	0.28	0.26		7.93		< 1.00		3.2	
10/12/2022	E321791	F2_NWPI	1370	1.28	1.4	0.91	0.50		9.94		< 1.00		65.2	
10/12/2022	E321812	F2_BPO	1520	0.298	3.2	2.98	2.75		11.0		< 1.00		21.6	
10/12/2022	E300091	EV_MC2				0.43				1.70		< 0.50		< 3.0
10/12/2022	E321812	F2_BPO												
10/13/2022	E321811	F2_ECIN	1460		1.9	0.44	0.11							
10/13/2022	E321791	F2_NWPI	1440		< 1.0	0.87	0.47							
10/13/2022	E321812	F2_BPO	1550		2.3	3.2	2.51							
10/13/2022	E321812	F2_BPO												
10/14/2022	E300091	EV_MC2				1.21				1.92		< 0.50		< 3.0
10/14/2022	E321811	F2_ECIN	1460	0.432	1.7	0.22	0.51		7.91		< 1.00		5.0	
10/14/2022	E321791	F2_NWPI	1410	1.27	1.3	0.84	0.50		9.51		< 1.00		66.9	
10/14/2022	E321812	F2_BPO	1500	0.325	1.3	3.06	2.83		11.2		< 1.00		28.8	
10/14/2022	E321812	F2_BPO												
10/15/2022	E321811	F2_ECIN	1510		3.2	0.51	0.55							
10/15/2022	E321791	F2_NWPI	1280		2.3	0.86	0.50							
10/15/2022	E321812	F2_BPO	1630		2.4	3.18	2.87							
10/15/2022	E321812	F2_BPO												
10/16/2022	E321791	F2_NWPI	1460		1.8	0.95	0.45							
10/16/2022	E321811	F2_ECIN	1410		2.7	0.66	0.53							
10/16/2022	E321812	F2_BPO	1520		1.1	3.92	3.15							
10/16/2022	E321812	F2_BPO												
10/17/2022	200393	EV_ER1	316	0.258	< 1.0	0.87	0.22		1.31	1.36	< 1.00	< 0.50	< 2.0	< 3.0
10/17/2022	E300091	EV_MC2	445	0.282	< 1.0	0.76	0.20	< 0.010	1.60	1.63	< 1.00	< 0.50	< 2.0	< 3.0
10/17/2022	310168	EV_MC2A	391	0.134	< 1.0	0.62	0.20	< 0.010	1.52	1.54	< 1.00	< 0.50	< 2.0	< 3.0
10/17/2022	0200203	EV_MC3	252	0.116	< 1.0	0.58	0.15	< 0.010	0.733	0.713	< 1.00	< 0.50	< 2.0	3.3
10/17/2022	E321812	F2_BPO	1550	0.279	1.9	4.22	2.71	< 0.010	11.8	13.0	< 1.00	< 1.00	24.0	23.0
10/17/2022	E321791	F2_NWPI	1490	1.43	2.7	1.03	0.66	< 0.010	10.9	12.0	< 1.00	< 1.00	82.2	75.0
10/17/2022	E321811	F2_ECIN	1510	0.223	2.4	1.11	0.27	< 0.010	7.76	8.21	< 1.00	< 1.00	3.5	< 6.0
10/17/2022	0200097	EV_EC1	1520	0.277	< 3.0	0.61	0.12	< 0.010	8.54	9.45	< 1.00	< 0.50	< 2.0	< 3.0
10/17/2022	E321814	EV_ECOUT	1490	1.30	< 1.0	0.89	0.61	< 0.010	8.20	8.45	< 1.00	< 0.50	7.8	6.9
10/17/2022	E321812	F2_BPO												
10/18/2022	E321791	F2_NWPI	1500		1.8	0.66	0.39							
10/18/2022	E321811	F2_ECIN	1500		< 1.0	0.37	0.11							
10/18/2022	E206231	EV_GT1	1730	2.11	2.0	3.18	1.66	< 0.010	9.43	10.3	< 1.00	< 1.00	3.0	< 6.0
10/18/2022	E321812	F2_BPO	1570		3.7	3.44	2.86							
10/18/2022	E102685	EV_BC1	1600	0.627	1.7	0.49	0.12	< 0.010	9.60	10.7	< 1.00	< 1.00	< 2.0	< 6.0
10/18/2022	E300091	EV_MC2	410	0.079	< 1.0	0.17	0.22		1.70	1.69	< 0.50	< 0.50	< 1.0	< 3.0
10/18/2022	E321812	F2_BPO												
10/19/2022	E300091	EV_MC2				0.75				1.66		< 0.50		< 3.0
10/19/2022	E321811	F2_ECIN		0.524		0.1			7.49		< 0.50		3.6	

		Parameter	Total Dissolved Solids (Residue, Filterable)	Total Kjeldahl Nitrogen	Total Suspended Solids, Lab	TURBIDITY, FIELD	Turbidity, Lab	Unknown selenium species	Uranium	Uranium	Vanadium	Vanadium	Zinc	Zinc
		Fraction	N	N	N	N	N	D	D	T	D	T	D	T
		Unit	mg/l	mg/l	mg/l	ntu	ntu	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
10/19/2022	E321812	F2_BPO		0.306		3.91			11.2		< 0.50		22.2	
10/19/2022	E321812	F2_BPO												
10/20/2022	E321811	F2_ECIN	1420		1.5	0.5	0.16							
10/20/2022	E321812	F2_BPO	1450		< 1.0	3.6	3.08							
10/20/2022	E321812	F2_BPO				3.6								
10/20/2022	E321812	F2_BPO												
10/20/2022	E321812	F2_BPO												
10/21/2022	E300091	EV_MC2				3.42				1.80		< 1.00		< 6.0
10/21/2022	E321811	F2_ECIN	1460	< 0.050	1.2	0.96	0.31		7.51		< 1.00		2.5	
10/21/2022	E321812	F2_BPO	1500	0.288	1.3	3.68	3.03		10.7		< 1.00		24.5	
10/21/2022	E321812	F2_BPO												
10/22/2022	E321811	F2_ECIN	1460		< 1.0	0.29	< 0.10							
10/22/2022	E321812	F2_BPO	1460		1.9	4.45	2.89							
10/22/2022	E321812	F2_BPO												
10/23/2022	E321811	F2_ECIN	1390		< 1.0	0.29	< 0.10							
10/23/2022	E321812	F2_BPO	1410		< 1.0	3.76	3.01							
10/23/2022	E321812	F2_BPO												
10/24/2022	E300091	EV_MC2				1.24				1.53		< 0.50		< 3.0
10/24/2022	0200097	EV_EC1				0.63		< 0.010						
10/24/2022	E321811	F2_ECIN	1510	0.365	< 1.0	0.23	< 0.10	< 0.010	7.21	7.68	< 1.00	< 1.00	3.8	< 6.0
10/24/2022	E321812	F2_BPO	1530	0.257	1.9	3.24	3.53	< 0.010	10.3	11.4	< 1.00	< 1.00	23.3	20.2
10/24/2022	E321814	EV_ECOUT				0.44		< 0.010						
10/24/2022	E321812	F2_BPO												
10/25/2022	E321811	F2_ECIN	1630		< 1.0	0.14	0.30							
10/25/2022	E321812	F2_BPO	1670		1.6	3.65	2.56							
10/25/2022	E300091	EV_MC2	371	0.136	1.9	0.08	0.25		1.51	1.55	< 0.50	< 0.50	< 1.0	< 3.0
10/25/2022	E321812	F2_BPO												
10/25/2022	E321812	F2_BPO												
10/26/2022	E300091	EV_MC2				1.47				1.37		< 0.50		< 3.0
10/26/2022	E321812	F2_BPO	1550	0.296	1.5	4.21	2.74		10.3		< 0.50		24.2	
10/26/2022	E321811	F2_ECIN	1530	1.04	1.6	0.42	< 0.10		6.92		< 0.50		11.8	
10/26/2022	E321812	F2_BPO												
10/27/2022	E321811	F2_ECIN	1520		1.2	0.33	0.22							
10/27/2022	E321812	F2_BPO	1540		2.2	3.55	2.52							
10/27/2022	E321812	F2_BPO												
10/28/2022	E300091	EV_MC2				2.56				1.70		< 0.50		< 3.0
10/28/2022	E321811	F2_ECIN	1520	0.211	< 1.0	0.91	0.11		6.66		< 1.00		7.1	
10/28/2022	E321812	F2_BPO	1540	0.324	1.1	1.09	2.99		10.4		< 1.00		19.6	
10/28/2022	E321812	F2_BPO												
10/29/2022	E321811	F2_ECIN	1680		1.2	0.6	< 0.10							
10/29/2022	E321812	F2_BPO	1670		1.4	3.76	2.72							
10/29/2022	E321812	F2_BPO												
10/30/2022	E321811	F2_ECIN	1670		2.4	0.32	< 0.10							
10/30/2022	E321812	F2_BPO	1710		1.4	3.79	2.91							
10/30/2022	E321812	F2_BPO												
10/31/2022	0200203	EV_MC3	300	0.114	3.2	2.42	2.14	< 0.010	0.653	0.718	< 0.50	0.50	68.2	< 3.0
10/31/2022	310168	EV_MC2A	413	0.228	2.9	2.02	1.32	< 0.010	1.45	1.46	< 0.50	< 0.50	3.2	< 3.0
10/31/2022	200393	EV_ER1	380	0.203	< 1.0	1.56	1.02		1.42	1.41	< 0.50	< 0.50	4.4	5.2

		Parameter	Total Dissolved Solids (Residue, Filterable)	Total Kjeldahl Nitrogen	Total Suspended Solids, Lab	TURBIDITY, FIELD	Turbidity, Lab	Unknown selenium species	Uranium	Uranium	Vanadium	Vanadium	Zinc	Zinc
		Fraction	N	N	N	N	N	D	D	T	D	T	D	T
		Unit	mg/l	mg/l	mg/l	ntu	ntu	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
10/31/2022	E321812	F2_BPO	1730	0.338	2.1	4.1	2.93	< 0.010	10.9	11.9	< 1.00	< 1.00	28.4	23.8
10/31/2022	E300091	EV_MC2	436	0.234	2.0	2.84	1.62	< 0.010	1.54	1.46	< 0.50	< 0.50	62.4	3.3
10/31/2022	E321811	F2_ECIN	1670	0.782	2.7	0.2	0.16	< 0.010	7.20	7.94	< 1.00	< 1.00	4.8	14.4
10/31/2022	0200097	EV_EC1	1630	1.03	1.5	0.4	< 0.10	< 0.010	9.56	9.76	< 0.50	< 1.00	8.4	8.6
10/31/2022	E321791	F2_NWPI	1700	1.03	2.5	0.71	0.49	< 0.010	9.70	10.1	< 1.00	< 1.00	66.4	76.4
10/31/2022	E321814	EV_ECOUT	1740	0.730	2.4	1.17	0.40	< 0.010	8.96	10.1	< 0.50	< 1.00	10.6	5.6
10/31/2022	E321812	F2_BPO												
11/1/2022	E321811	F2_ECIN	1490		1.0	0.34	0.13							
11/1/2022	E321791	F2_NWPI	1520		3.1	1.63	0.95							
11/1/2022	E102685	EV_BC1	1700	0.153	1.1	0.56	0.30	< 0.010	10.3	10.1	< 1.00	< 0.50	4.1	11.1
11/1/2022	E321812	F2_BPO	1530		2.8	3.81	2.68							
11/1/2022	E206231	EV_GT1	1730	0.297	10.9	9	5.34	< 0.010	9.08	7.50	< 1.00	< 0.50	4.7	4.5
11/1/2022	E300091	EV_MC2	252	0.205	6.6	5.07	5.49		1.00	1.12	< 0.50	0.94	2.0	< 3.0
11/2/2022	E321811	F2_ECIN	1520	1.07	< 1.0	0.58	0.14		7.27		< 0.50		3.3	
11/2/2022	E321791	F2_NWPI	1510	1.59	1.4	1.65	0.57		9.87		< 0.50		71.7	
11/2/2022	E321812	F2_BPO	1520	0.313	1.9	3.82	2.45		11.0		< 0.50		21.1	
11/2/2022	E321812	F2_BPO												
11/3/2022	E321811	F2_ECIN	1580		< 1.0	1.16	< 0.10							
11/3/2022	E321791	F2_NWPI	1540		< 1.0	0.99	0.49							
11/3/2022	E321812	F2_BPO	1750		1.1	4	2.51							
11/3/2022	E321812	F2_BPO												
11/4/2022	E321811	F2_ECIN	1670	0.161	1.2	0.57	0.51		7.64		< 1.00		7.4	
11/4/2022	E321791	F2_NWPI	1640	1.34	1.4	1.02	0.91		10.4		< 1.00		74.3	
11/4/2022	E321812	F2_BPO	1690	0.261	1.8	4.37	3.14		11.2		< 1.00		25.2	
11/4/2022	E321812	F2_BPO												
11/5/2022	E321791	F2_NWPI	1510		1.6	1.17	0.80							
11/5/2022	E321811	F2_ECIN	1530		2.0	0.85	0.36							
11/5/2022	E321812	F2_BPO	1530		3.2	3.95	3.18							
11/5/2022	E321812	F2_BPO												
11/6/2022	E321811	F2_ECIN	1750		2.7	0.53	0.16							
11/6/2022	E321791	F2_NWPI	1400		2.8	0.99	0.49							
11/6/2022	E321812	F2_BPO	1780		1.8	3.88	2.85							
11/6/2022	E321812	F2_BPO												
11/7/2022	E321811	F2_ECIN	1710	2.57	< 1.0	0.28	0.24	< 0.010	7.85	7.98	< 0.50	< 0.50	2.1	4.4
11/7/2022	E321791	F2_NWPI	1580	1.68	1.5	1.13	0.47	< 0.010	11.2	10.6	< 0.50	< 0.50	65.5	68.4
11/7/2022	0200097	EV_EC1				0.42		< 0.010						
11/7/2022	E321814	EV_ECOUT				1.51		< 0.010						
11/7/2022	E321812	F2_BPO	1630	0.317	3.1	4.88	3.85	< 0.010	11.7	12.4	< 0.50	< 0.50	22.2	30.5
11/7/2022	E321812	F2_BPO												
11/8/2022	E321791	F2_NWPI	1220		< 1.0	1	0.58							
11/8/2022	E321812	F2_BPO	1340		2.6	4.98	4.10							
11/8/2022	E300091	EV_MC2	428	0.141	< 1.0	0.21	0.55		1.71	1.76	< 0.50	< 0.50	< 1.0	< 3.0
11/8/2022	0200203	EV_MC3	259	0.225	28.0	0.54	4.82		0.682	0.711	< 0.50	< 0.50	7.1	8.2
11/8/2022	E321812	F2_BPO												
11/8/2022	E321811	F2_ECIN	1400		1.4	0.87	0.27							
11/9/2022	E321811	F2_ECIN	1540	1.44	1.1	0.3	0.10		7.58		< 0.50		4.7	
11/9/2022	E321791	F2_NWPI	1520	0.999	1.1	0.76	0.60		10.2		< 0.50		73.9	
11/9/2022	E321812	F2_BPO	1590	0.277	1.3	4.35	2.56		11.5	11.8	< 0.50	< 1.00	22.6	27.3

		Parameter	Total Dissolved Solids (Residue, Filterable)	Total Kjeldahl Nitrogen	Total Suspended Solids, Lab	TURBIDITY, FIELD	Turbidity, Lab	Unknown selenium species	Uranium	Uranium	Vanadium	Vanadium	Zinc	Zinc
		Fraction	N	N	N	N	N	D	D	T	D	T	D	T
		Unit	mg/l	mg/l	mg/l	ntu	ntu	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
11/9/2022	E321812	F2_BPO												
11/10/2022	E321791	F2_NWPI	1520		1.1	0.72	0.37							
11/10/2022	E321811	F2_ECIN	1420		2.6	0.3	< 0.10							
11/10/2022	E321812	F2_BPO	1450		1.8	3.27	2.82							
11/10/2022	E321812	F2_BPO												
11/11/2022	E321791	F2_NWPI	1530	2.83	< 1.0	0.76	0.44		10.6		< 0.50		65.7	
11/11/2022	E321811	F2_ECIN	1570	2.18	< 1.0	0.19	< 0.10		7.98		< 0.50		4.1	
11/11/2022	E321812	F2_BPO	1600	0.183	1.3	0.36	2.72		12.6		< 0.50		24.5	
11/11/2022	E321812	F2_BPO												
11/12/2022	E321811	F2_ECIN	1540		3.2	0.84	0.10							
11/12/2022	E321791	F2_NWPI	1500		3.7	1.6	0.52							
11/12/2022	E321812	F2_BPO	1570		3.8	4.18	3.02							
11/12/2022	E321812	F2_BPO												
11/13/2022	E321811	F2_ECIN	1540		< 1.0	0.27	0.36							
11/13/2022	E321812	F2_BPO	1630		4.7	4.37	3.01							
11/13/2022	E321791	F2_NWPI	1480		< 1.0	0.83	0.52							
11/13/2022	E321812	F2_BPO												
11/14/2022	200393	EV_ER1	341	0.276	< 1.0	0.92	0.17		1.43	1.46	< 0.50	< 0.50	< 1.0	< 3.0
11/14/2022	0200203	EV_MC3	240	< 0.050	< 1.0	1.28	< 0.10	< 0.010	0.728	0.786	< 0.50	< 0.50	< 1.0	6.2
11/14/2022	310168	EV_MC2A	352	0.138	< 1.0	1.32	0.14	< 0.010	1.44	1.55	< 0.50	< 0.50	< 1.0	< 3.0
11/14/2022	E300091	EV_MC2	447	0.199	< 1.0	0.43	0.12	< 0.010	1.79	1.91	< 0.50	< 0.50	3.1	3.9
11/14/2022	E321812	F2_BPO	1610	0.263	1.7	3.81	3.19	< 0.010	11.4	12.0	< 0.50	< 0.50	31.1	25.9
11/14/2022	E321811	F2_ECIN	1570	1.16	< 1.0	0.35	0.21	< 0.010	6.97	7.39	< 0.50	< 0.50	3.7	< 3.0
11/14/2022	E321791	F2_NWPI	1480	1.26	2.8	1.13	0.58	< 0.010	9.20	9.88	< 0.50	< 0.50	59.3	59.8
11/14/2022	0200097	EV_EC1	1570	0.071	< 1.0	0.25	< 0.10	< 0.010	9.50	8.88	< 0.50	< 0.50	7.1	< 3.0
11/14/2022	E300091	EV_MC2	489	0.104	< 1.0	0.2	0.16		1.86	1.82	< 0.50	< 0.50	< 1.0	< 3.0
11/14/2022	E321814	EV_ECOUT	1660	0.916	< 1.0	2.07	0.71	< 0.010	8.59	8.77	< 0.50	< 0.50	7.2	6.3
11/14/2022	200393	EV_ER1	327	0.267	< 1.0	0.43	0.22		1.44	1.40	< 0.50	< 0.50	< 1.0	< 3.0
11/14/2022	E102685	EV_BC1	1940	0.543	1.5	1.32	0.46		10.9	10.7	< 0.50	< 0.50	2.5	< 3.0
11/14/2022	E206231	EV_GT1	1820	0.507	1.5	2.95	0.91		11.2	11.4	< 0.50	< 0.50	6.0	6.7
11/14/2022	E321812	F2_BPO												
11/15/2022	E206231	EV_GT1	1660	0.925	2.1	1.22	0.62	< 0.010	12.6	12.2	< 0.50	< 1.00	13.1	< 6.0
11/15/2022	E321812	F2_BPO	1730		1.5	3.78	3.27							
11/15/2022	E321811	F2_ECIN	1550		1.1	0.18	< 0.10							
11/15/2022	E321791	F2_NWPI	1510		1.5	1.06	0.45							
11/15/2022	E102685	EV_BC1	1820	< 0.500	< 1.0	0.87	0.43	< 0.010	12.0	11.6	< 0.50	< 1.00	3.7	< 6.0
11/15/2022	0200097	EV_EC1	1490	1.86	1.1	0.24	0.20		9.62	10.3	< 0.50	< 0.50	< 1.0	< 3.0
11/15/2022	E321814	EV_ECOUT	1620	0.890	< 1.0	1.21	0.29		8.18	8.01	< 0.50	< 1.00	2.5	< 6.0
11/15/2022	E321812	F2_BPO												
11/16/2022	E321811	F2_ECIN	1680	1.15	< 1.0	0.25	0.10		7.11		< 0.50		2.4	
11/16/2022	E321791	F2_NWPI	1630	1.66	2.1	1.3	0.54		9.96		< 0.50		59.9	
11/16/2022	E321812	F2_BPO	1660	0.332	2.0	4.79	3.78		9.60		< 0.50		27.6	
11/16/2022	E321812	F2_BPO												
11/17/2022	E321811	F2_ECIN	1610		1.3	0.25	0.14							
11/17/2022	E321791	F2_NWPI	1490		1.2	1.2	0.58							
11/17/2022	E321812	F2_BPO	1500		2.0	4.91	4.17							
11/17/2022	E321812	F2_BPO												
11/18/2022	E321811	F2_ECIN	1580	5.33	1.1	0.57	0.22		7.65		< 0.50		1.9	

		Parameter	Total Dissolved Solids (Residue, Filterable)	Total Kjeldahl Nitrogen	Total Suspended Solids, Lab	TURBIDITY, FIELD	Turbidity, Lab	Unknown selenium species	Uranium	Uranium	Vanadium	Vanadium	Zinc	Zinc
		Fraction	N	N	N	N	N	D	D	T	D	T	D	T
		Unit	mg/l	mg/l	mg/l	ntu	ntu	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
11/18/2022	E321791	F2_NWPI	1600	1.72	< 1.0	0.78	0.57		10.4		< 0.50		56.8	
11/18/2022	E321812	F2_BPO	1610	0.239	< 1.0	4.52	3.88		11.3		< 0.50		19.6	
11/18/2022	E321812	F2_BPO												
11/19/2022	E321811	F2_ECIN	1510		1.8	0.58	0.18							
11/19/2022	E321791	F2_NWPI	1560		2.3	0.82	0.53							
11/19/2022	E321812	F2_BPO	1780		2.1	3.82	3.25							
11/19/2022	E321812	F2_BPO												
11/20/2022	E321811	F2_ECIN	1630		1.2	0.93	0.17							
11/20/2022	E321791	F2_NWPI	1740		2.7	0.82	0.60							
11/20/2022	E321812	F2_BPO	1660		< 1.0	4.31	3.67							
11/20/2022	E321812	F2_BPO												
11/21/2022	0200097	EV_EC1				0.26		< 0.010						
11/21/2022	E321814	EV_ECOUT				0.55		< 0.010						
11/21/2022	E321811	F2_ECIN	1510	1.24	2.7	0.27	0.35	< 0.010	7.45	7.56	< 0.50	< 0.50	2.1	< 3.0
11/21/2022	E321791	F2_NWPI	1500	1.71	1.4	0.86	0.56	< 0.010	10.8	9.88	< 0.50	< 0.50	58.5	55.4
11/21/2022	E321812	F2_BPO				3.72								
11/21/2022	E321812	F2_BPO	1600	0.289	1.0	4.52	3.65	< 0.010	12.7	11.8	< 0.50	< 0.50	25.4	23.7
11/21/2022	E321812	F2_BPO												
11/22/2022	E321811	F2_ECIN	1470		3.6	2.17	0.32							
11/22/2022	E321791	F2_NWPI	1450		2.4	0.91	0.50							
11/22/2022	E321812	F2_BPO	1580		1.8	4.19	3.47							
11/22/2022	E321812	F2_BPO												
11/23/2022	E321811	F2_ECIN	1460	0.746	2.2	0.19	0.37		7.56		< 1.00		6.2	
11/23/2022	E321791	F2_NWPI	1450	0.975	1.6	1.01	0.69		9.84		< 1.00		63.4	
11/23/2022	E321812	F2_BPO	1630	0.278	1.8	4.6	3.64		11.6		< 1.00		25.5	
11/23/2022	E321812	F2_BPO												
11/24/2022	E321791	F2_NWPI	1560		1.6	1.18	0.64							
11/24/2022	E321811	F2_ECIN	1510		< 1.0	0.64	0.50							
11/24/2022	E321812	F2_BPO	1590		1.2	4.49	3.52							
11/24/2022	E321812	F2_BPO												
11/25/2022	E321811	F2_ECIN	1720	1.29	2.2	0.42	0.21		7.85		< 1.00		8.1	
11/25/2022	E321791	F2_NWPI	1620	< 0.500	1.7	1.07	0.49		10.0		< 1.00		56.8	
11/25/2022	E321812	F2_BPO	1750	0.315	2.6	4.47	3.75		10.1		< 1.00		23.7	
11/25/2022	E321812	F2_BPO												
11/26/2022	E321811	F2_ECIN	1710		2.2	0.85	0.17							
11/26/2022	E321791	F2_NWPI	1530		2.2	1.3	0.51							
11/26/2022	E321812	F2_BPO	1740		2.6	4.87	3.08							
11/26/2022	E321812	F2_BPO												
11/27/2022	E321811	F2_ECIN	1790		1.7	0.38	< 0.10							
11/27/2022	E321791	F2_NWPI	1740		2.4	0.97	0.48							
11/27/2022	E321812	F2_BPO	1900		3.7	6.91	3.48							
11/27/2022	E321812	F2_BPO												
11/28/2022	200393	EV_ER1	333	0.302	< 1.0	1.07	0.26		1.31	1.40	< 0.50	< 0.50	1.0	< 3.0
11/28/2022	0200203	EV_MC3	215	0.061	< 1.0	0.77	0.20	< 0.010	0.666	0.744	< 0.50	< 0.50	1.5	3.7
11/28/2022	E321812	F2_BPO	1490	0.303	2.3	5.2	3.07	< 0.010	12.3	12.0	< 0.50	< 0.50	25.2	23.1
11/28/2022	310168	EV_MC2A	351	0.369	< 1.0	0.5	0.18	< 0.010	1.42	1.56	< 0.50	< 0.50	< 1.0	< 3.0
11/28/2022	E300091	EV_MC2	442	0.171	< 1.0	0.57	0.21	< 0.010	1.75	1.90	< 0.50	< 0.50	1.3	< 3.0
11/28/2022	E321811	F2_ECIN	1470	1.56	< 1.0	0.57	< 0.10	< 0.010	7.10	8.13	< 0.50	0.51	7.9	< 3.0

		Parameter	Total Dissolved Solids (Residue, Filterable)	Total Kjeldahl Nitrogen	Total Suspended Solids, Lab	TURBIDITY, FIELD	Turbidity, Lab	Unknown selenium species	Uranium	Uranium	Vanadium	Vanadium	Zinc	Zinc
		Fraction	N	N	N	N	N	D	D	T	D	T	D	T
		Unit	mg/l	mg/l	mg/l	ntu	ntu	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
11/28/2022	E321791	F2_NWPI	1340	0.993	1.4	1.7	0.47	< 0.010	9.25	11.3	< 0.50	< 0.50	62.9	61.0
11/28/2022	0200097	EV_EC1	1650	2.14	1.3	0.25	< 0.10	< 0.010	8.98	9.72	< 1.00	< 1.00	< 2.0	< 6.0
11/28/2022	E321814	EV_ECOUT	1590	1.88	1.0	0.78	0.66	< 0.010	7.92	8.61	< 1.00	< 1.00	6.7	6.1
11/28/2022	E321812	F2_BPO												
11/29/2022	E206231	EV_GT1	1690	0.440	1.9	1.1	0.66	< 0.010	12.3	12.1	< 0.50	< 1.00	5.1	< 6.0
11/29/2022	E321791	F2_NWPI	1560		< 1.0	1.68	0.45							
11/29/2022	E321811	F2_ECIN	1620		< 1.0	1.1	0.13							
11/29/2022	E321812	F2_BPO	1580		3.1	1.72	3.36							
11/29/2022	E102685	EV_BC1	1730	0.628	5.8	3.57	1.45	< 0.010	12.4	12.4	< 0.50	< 1.00	3.2	< 6.0
11/29/2022	E321812	F2_BPO												
11/30/2022	E321811	F2_ECIN	1500	1.09	< 1.0	0.37	0.11		7.56		< 0.50		3.9	
11/30/2022	E321791	F2_NWPI	1480	< 0.500	1.0	0.88	0.62		10.2		< 0.50		60.9	
11/30/2022	E321812	F2_BPO	1600	0.325	1.9	4.28	3.75		11.7		< 0.50		25.2	
11/30/2022	E321812	F2_BPO												
12/1/2022	E321811	F2_ECIN	1620		< 1.0	0.12	0.20							
12/1/2022	E321791	F2_NWPI	1510		< 1.0	1.37	0.45							
12/1/2022	E321812	F2_BPO	1560		3.2	4.71	3.94							
12/1/2022	E321812	F2_BPO												
12/2/2022	E321811	F2_ECIN	1560	1.32	3.0	0.21	0.21		8.58		< 0.50		4.4	
12/2/2022	E321791	F2_NWPI	1490	1.96	1.4	0.93	0.53		11.4		< 0.50		55.9	
12/2/2022	E321812	F2_BPO	1600	0.440	2.2	3.82	3.65		13.5		< 0.50		23.3	
12/2/2022	E321812	F2_BPO												
12/3/2022	E321791	F2_NWPI	1550		2.2	0.71	0.42							
12/3/2022	E321811	F2_ECIN	1610		1.3	0.18	< 0.10							
12/3/2022	E321812	F2_BPO	1670		3.1	4.4	3.48							
12/3/2022	E321812	F2_BPO												
12/4/2022	E321811	F2_ECIN	1580		< 1.0	0.62	0.21							
12/4/2022	E321791	F2_NWPI	1480		2.6	0.66	0.44							
12/4/2022	E321812	F2_BPO	1620		2.0	3.93	3.77							
12/4/2022	E321812	F2_BPO												
12/5/2022	0200097	EV_EC1				0.84		< 0.010						
12/5/2022	E321812	F2_BPO	1800	0.315	2.3	4.33	3.95	< 0.010	12.2	12.6	< 0.50	< 0.50	25.0	37.0
12/5/2022	E321811	F2_ECIN	1790	< 0.500	1.3	0.29	0.30	< 0.010	7.77	8.20	< 0.50	< 0.50	2.4	< 3.0
12/5/2022	E321791	F2_NWPI	1620	1.94	2.2	0.86	0.43	< 0.010	10.2	10.8	< 0.50	< 0.50	57.3	60.2
12/5/2022	E321814	EV_ECOUT				4.8		0.039						
12/5/2022	E321812	F2_BPO												
12/5/2022	E321812	F2_BPO												
12/6/2022	E321811	F2_ECIN	1700		< 1.0	0.63	0.11							
12/6/2022	E321791	F2_NWPI	1540		< 1.0	0.93	0.31							
12/6/2022	E321812	F2_BPO	1580		< 1.0	4.72	2.92							
12/6/2022	E321814	EV_ECOUT	1510	0.602	< 1.0	3.14	1.12		10.2	9.54	< 0.50	< 0.50	9.8	9.7
12/6/2022	0200203	EV_MC3	237	0.064	< 1.0	2.99	0.38		0.843	0.750	< 0.50	< 0.50	< 1.0	< 3.0
12/6/2022	E206231	EV_GT1	1630	0.086	1.8	2.78	0.60		12.4	11.7	< 0.50	< 0.50	7.0	6.6
12/6/2022	E300091	EV_MC2	439	0.101	< 1.0	2.19	0.16	< 0.010	2.09	1.98	< 0.50	< 0.50	< 1.0	< 3.0
12/6/2022	E321812	F2_BPO												
12/6/2022	E102685	EV_BC1	1640	< 0.050	2.4	2.59	0.46		12.8	12.1	< 0.50	< 0.50	3.8	3.2
12/7/2022	E321811	F2_ECIN	1440	0.938	3.3	0.63	0.12		7.65		< 0.50		8.0	
12/7/2022	E321791	F2_NWPI	1390	< 0.500	2.6	1.09	0.48		11.1		< 0.50		59.5	

		Parameter	Total Dissolved Solids (Residue, Filterable)	Total Kjeldahl Nitrogen	Total Suspended Solids, Lab	TURBIDITY, FIELD	Turbidity, Lab	Unknown selenium species	Uranium	Uranium	Vanadium	Vanadium	Zinc	Zinc
		Fraction	N	N	N	N	N	D	D	T	D	T	D	T
		Unit	mg/l	mg/l	mg/l	ntu	ntu	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
12/7/2022	E321812	F2_BPO	1420	0.285	2.9	4.29	3.48		12.4		< 0.50		23.4	
12/7/2022	200393	EV_ER1	320	0.094	1.6	3.64	0.40	< 0.010	1.56	1.55	< 0.50	< 0.50	< 1.0	< 3.0
12/7/2022	E321812	F2_BPO												
12/8/2022	E321811	F2_ECIN	1630		< 1.0	0.17	< 0.10							
12/8/2022	E321791	F2_NWPI	1650		2.3	0.72	0.55							
12/8/2022	E321812	F2_BPO	1740		2.0	4.64	4.01							
12/8/2022	0200097	EV_EC1	1490	0.210	2.6	2.59	0.16		10.1	9.67	< 0.50	< 0.50	< 1.0	< 3.0
12/8/2022	E321812	F2_BPO												
12/9/2022	E321811	F2_ECIN	1420	0.720	2.0	1.46	0.26		6.63		< 1.00		3.1	
12/9/2022	E321791	F2_NWPI	1550	0.696	1.0	1.1	0.55		9.00		< 1.00		66.5	
12/9/2022	E321812	F2_BPO	1520	0.337	< 1.0	4.09	4.03		9.66		< 1.00		23.8	
12/9/2022	E321812	F2_BPO				6.2								
12/10/2022	E321811	F2_ECIN	1660		2.3	0.66	0.12							
12/10/2022	E321791	F2_NWPI	1640		1.5	0.98	0.44							
12/10/2022	E321812	F2_BPO	1720		2.6	4.79	3.18							
12/10/2022	E321812	F2_BPO												
12/11/2022	E321811	F2_ECIN	1530		2.3	0.51	0.16							
12/11/2022	E321791	F2_NWPI	1600		1.7	0.79	0.43							
12/11/2022	E321812	F2_BPO	1680		1.5	5.12	3.87							
12/11/2022	E321812	F2_BPO				3.45								
12/12/2022	E321811	F2_ECIN	1650	1.52	< 1.0	0.44	< 0.10	< 0.010	9.07	8.26	< 0.50	< 1.00	2.9	< 6.0
12/12/2022	E321791	F2_NWPI	1420	1.29	< 1.0	0.97	0.48	< 0.010	11.1	10.6	< 0.50	< 1.00	63.3	66.4
12/12/2022	200393	EV_ER1	330	0.235	< 1.0	3.08	0.40		1.58	1.59	< 0.50	< 0.50	1.3	34.0
12/12/2022	E321812	F2_BPO	1550	0.337	1.7	4.67	3.81	< 0.010	12.0	12.2	< 0.50	< 1.00	23.2	25.6
12/12/2022	E300091	EV_MC2	446	0.203	< 1.0	3.92	0.17	< 0.010	2.13	2.09	< 0.50	< 0.50	1.3	< 3.0
12/12/2022	0200203	EV_MC3	230	< 0.050	< 1.0	3.21	0.22	< 0.010	0.898	0.815	< 0.50	< 0.50	1.0	< 3.0
12/12/2022	0200097	EV_EC1	1600	0.394	< 1.0	2.84	< 0.10	< 0.010	10.2	10.2	< 0.50	< 0.50	1.6	3.0
12/12/2022	E321814	EV_ECOUT	1690	1.35	2.6	1.99	0.68	< 0.010	9.11	9.85	< 0.50	< 1.00	6.2	7.8
12/12/2022	E321812	F2_BPO												
12/13/2022	E321811	F2_ECIN	1590		< 1.0	0.25	< 0.10							
12/13/2022	E321791	F2_NWPI	1630		< 1.0	0.73	0.49							
12/13/2022	E206231	EV_GT1	1580	0.928	< 1.0	1.38	0.59	< 0.010	13.1	12.0	< 0.50	< 1.00	78.4	7.5
12/13/2022	E102685	EV_BC1	1500	0.751	< 1.0	0.68	0.60	< 0.010	13.6	12.4	< 0.50	< 1.00	6.3	< 6.0
12/13/2022	E321812	F2_BPO	1600		< 1.0	4.36	3.84							
12/13/2022	E321812	F2_BPO												
12/14/2022	E321791	F2_NWPI	1460	1.61	< 1.0	0.59	0.46		10.8		< 1.00		54.8	
12/14/2022	E321811	F2_ECIN	1500	1.22	< 1.0	0.19	0.15		7.85		< 1.00		3.2	
12/14/2022	E321812	F2_BPO	1680	0.311	1.5	4.31	3.60		12.0		< 1.00		19.0	
12/14/2022	E321812	F2_BPO												
12/14/2022	E321812	F2_BPO												
12/15/2022	E321811	F2_ECIN	1600		< 1.0	1.5	< 0.10							
12/15/2022	E321791	F2_NWPI	1480		< 1.0	0.87	0.47							
12/15/2022	E321812	F2_BPO	1580		< 1.0	4.17	3.69							
12/15/2022	E321812	F2_BPO												
12/16/2022	E321791	F2_NWPI	1670	1.43	< 1.0	0.94	0.44		11.2		< 1.00		57.0	
12/16/2022	E321811	F2_ECIN	1610	1.28	< 1.0	1.7	0.29		8.44		< 1.00		2.4	
12/16/2022	E321812	F2_BPO	1620	0.299	1.1	4.08	3.88		12.3		< 1.00		21.6	
12/16/2022	E321812	F2_BPO												

		Parameter	Total Dissolved Solids (Residue, Filterable)	Total Kjeldahl Nitrogen	Total Suspended Solids, Lab	TURBIDITY, FIELD	Turbidity, Lab	Unknown selenium species	Uranium	Uranium	Vanadium	Vanadium	Zinc	Zinc
		Fraction	N	N	N	N	N	D	D	T	D	T	D	T
		Unit	mg/l	mg/l	mg/l	ntu	ntu	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
12/17/2022	E321811	F2_ECIN	1620		< 1.0	0.26	< 0.10							
12/17/2022	E321791	F2_NWPI	1700		< 1.0	1.13	0.44							
12/17/2022	E321812	F2_BPO	1710		< 1.0	4.66	3.34							
12/17/2022	E321812	F2_BPO												
12/18/2022	E321811	F2_ECIN	1540		< 1.0	0.53	< 0.10							
12/18/2022	E321791	F2_NWPI	1430		1.1	0.8	0.43							
12/18/2022	E321812	F2_BPO	1490		1.7	4.86	4.17							
12/18/2022	E321812	F2_BPO												
12/19/2022	0200097	EV_EC1				2.24		< 0.010						
12/19/2022	E321814	EV_ECOUT				1.11		< 0.010						
12/19/2022	E321811	F2_ECIN	1610	1.27	< 1.0	0.27	0.22	< 0.010	8.82	7.62	< 0.50	< 0.50	2.2	< 3.0
12/19/2022	E321812	F2_BPO	1560	0.292	1.8	14.55	4.06	0.012	13.0	11.4	< 0.50	< 0.50	21.2	23.0
12/19/2022	E321791	F2_NWPI	1540	1.71	1.1	0.97	0.46	< 0.010	12.5	10.1	< 0.50	< 0.50	59.2	58.1
12/19/2022	E321812	F2_BPO												
12/20/2022	E321811	F2_ECIN	1590		< 1.0	0.92	< 0.10							
12/20/2022	E321791	F2_NWPI	1490		2.0	0.95	0.42							
12/20/2022	E321812	F2_BPO	1350		3.4	4.64	3.92							
12/20/2022	E321812	F2_BPO												
12/21/2022	E321811	F2_ECIN	1440	0.955	2.4	0.31	< 0.10		7.55		< 1.00		2.1	
12/21/2022	E321812	F2_BPO	1660	0.279	2.6	5.06	4.38		11.2		< 1.00		23.3	
12/21/2022	E321812	F2_BPO												
12/21/2022	E321791	F2_NWPI	1360	1.50	1.8	0.75	0.47		10.2		< 1.00		61.1	
12/22/2022	E321791	F2_NWPI	1500		< 1.0	1.3	0.45							
12/22/2022	E321812	F2_BPO	1520		< 1.0	5.49	4.01							
12/22/2022	E321811	F2_ECIN	1520		2.2	0.91	0.96							
12/22/2022	E321812	F2_BPO												
12/23/2022	E321791	F2_NWPI	1530	0.766	1.4	1.46	0.42		11.4		< 0.50		61.7	
12/23/2022	E321811	F2_ECIN	1590	1.44	1.6	0.82	0.13		9.23		< 0.50		2.1	
12/23/2022	E321812	F2_BPO	1550	0.406	2.3	4.58	3.40		12.4		< 0.50		22.8	
12/23/2022	E321812	F2_BPO												
12/24/2022	E321811	F2_ECIN	1660		1.1	0.3	0.52							
12/24/2022	E321791	F2_NWPI	1550		< 1.0	0.88	0.50							
12/24/2022	E321812	F2_BPO	1510		2.5	4.03	4.42							
12/24/2022	E321812	F2_BPO												
12/25/2022	E321811	F2_ECIN	1650		2.8	1.18	0.20							
12/25/2022	E321791	F2_NWPI	1560		< 1.0	1.18	0.43							
12/25/2022	E321812	F2_BPO	1610		3.5	4.34	3.72							
12/25/2022	E321812	F2_BPO												
12/26/2022	E321811	F2_ECIN	1640	0.746	2.2	1.2	< 0.10		8.22		< 0.50		2.6	
12/26/2022	E321791	F2_NWPI	1510	1.04	1.4	0.76	0.30		10.9		< 0.50		61.1	
12/26/2022	E321812	F2_BPO	1610	0.320	1.6	4.48	3.79		12.0		< 0.50		22.3	
12/26/2022	E321812	F2_BPO												
12/27/2022	200393	EV_ER1	333	0.090	2.9	1.87	1.28		1.48	1.41	< 0.50	< 0.50	1.6	< 3.0
12/27/2022	0200203	EV_MC3	252	< 0.050	2.2	0.89	0.28	< 0.010	0.743	0.699	< 0.50	< 0.50	16.2	8.3
12/27/2022	E321812	F2_BPO	1550	0.270	3.5	5.11	3.84	< 0.010	12.0	11.3	< 0.50	< 0.50	20.2	21.8
12/27/2022	E300091	EV_MC2	431	0.274	1.6	2.02	0.39	< 0.010	1.83	1.81	< 0.50	< 0.50	79.3	43.8
12/27/2022	E321811	F2_ECIN	1630	1.58	1.2	0.22	0.13	< 0.010	8.01	7.45	< 0.50	< 0.50	2.0	< 3.0
12/27/2022	E321791	F2_NWPI	1630	1.47	1.8	0.79	0.36	< 0.010	10.0	9.75	< 0.50	< 0.50	44.5	54.7

		Parameter	Total Dissolved Solids (Residue, Filterable)	Total Kjeldahl Nitrogen	Total Suspended Solids, Lab	TURBIDITY, FIELD	Turbidity, Lab	Unknown selenium species	Uranium	Uranium	Vanadium	Vanadium	Zinc	Zinc
		Fraction	N	N	N	N	N	D	D	T	D	T	D	T
		Unit	mg/l	mg/l	mg/l	ntu	ntu	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Date	EMS Number	Location	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
12/27/2022	0200097	EV_EC1	1610	< 0.050	1.7	0.29	0.14	< 0.010	10.0	9.51	< 1.00	< 1.00	< 2.0	< 6.0
12/27/2022	E321814	EV_ECOUT	1630	1.10	2.2	1.19	0.87	< 0.010	9.86	8.84	< 1.00	< 1.00	9.0	10.2
12/27/2022	E321812	F2_BPO												
12/28/2022	E206231	EV_GT1	1640	< 0.500	3.0	1.69	1.26		11.1	10.2	< 0.50	< 0.50	7.7	7.6
12/28/2022	E321811	F2_ECIN	1560		2.1	0.51	< 0.10							
12/28/2022	E321791	F2_NWPI	1540		1.2	0.93	0.35							
12/28/2022	E102685	EV_BC1	1630	0.338	6.2	8.75	6.70		10.9	10.1	< 0.50	0.52	5.6	5.7
12/28/2022	E321812	F2_BPO	1500		3.9	5.78	3.46							
12/28/2022	E321812	F2_BPO												
12/29/2022	E321811	F2_ECIN	1600		< 1.0	0.46	0.24							
12/29/2022	E321791	F2_NWPI	1570		2.8	0.73	0.42							
12/29/2022	E321812	F2_BPO	1590		1.6	4.44	3.45							
12/29/2022	E321812	F2_BPO												
12/30/2022	E321791	F2_NWPI	1540	0.935	< 1.0	0.66	0.37		10.4		< 0.50		61.3	
12/30/2022	E321811	F2_ECIN	1570	< 0.500	2.3	0.49	0.12		7.61		< 0.50		3.8	
12/30/2022	E321812	F2_BPO	1540	0.292	4.0	4.31	3.95		11.4		< 0.50		42.0	
12/30/2022	E321812	F2_BPO												
12/31/2022	E321811	F2_ECIN	1600		1.5	0.55	0.34							
12/31/2022	E321791	F2_NWPI	1590		< 1.0	0.82	0.51							
12/31/2022	E321812	F2_BPO	1640		2.8	4.35	4.47							
12/31/2022	E321812	F2_BPO												

		48-h Static acute lethality test using Daphnia ma	96-Hr 100% Conc. Acute lethality test for R. Trout	Alkalinity, Total (As CaCO3)	Aluminum	Aluminum	Antimony	Antimony	Arsenic	Arsenic	Barium	Barium	Beryllium	Beryllium	Beryllium	Beryllium	BIOCHEMICAL OXYGEN DEMAND, FIVE DAY	Bismuth	Bismuth	Boron	Boron	BROMATE
Parameter																						
Fraction		N	N	N	D	T	D	T	D	T	D	T	D	D	T	T	N	D	T	D	T	N
Unit		%	%	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	mg/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-01-01	FS_BPO																					
2022-01-01	FS_BPO																					
2022-01-01	FS_BPO																< 2.0					
2022-01-01	FS_INF-S																					
2022-01-01	FS_BPO																					
2022-01-01	FS_BPO																					
2022-01-01	FS_BPO																					
2022-01-01	FS_BPO																					
2022-01-01	FS_INF-S																					
2022-01-02	FS_BPO																< 2.0					
2022-01-02	FS_INF-S																					
2022-01-02	FS_BPO																					
2022-01-02	FS_BPO																					
2022-01-02	FS_BPO																					
2022-01-02	FS_INF-S																					
2022-01-03	FS_BPO			442													2.3					10.0
2022-01-03	FS_INF-S			429																		
2022-01-03	FS_BPO																					
2022-01-03	FS_BPO	0	0																			
2022-01-03	FS_INF-S																					
2022-01-04	FS_BPO				< 0.0060	0.0070	0.37	0.34	< 0.20	< 0.20	0.0175	0.0179	< 0.040		< 0.040		< 2.0	< 0.000100	< 0.000100	0.045	0.045	
2022-01-04	FS_INF-S																					
2022-01-04	FS_BPO																					
2022-01-04	FS_INF-S																					
2022-01-05	FS_BPO																< 2.0					
2022-01-05	FS_INF-S																					
2022-01-05	FS_BPO																					
2022-01-05	FS_INF-S																					
2022-01-06	FR_SCOUTDS																					
2022-01-06	FS_BPO																< 2.0					
2022-01-06	FS_INF-S																					
2022-01-06	FS_BPO																					
2022-01-06	FR_FRABCH																					
2022-01-06	FR_SCOUTDS			245	0.0019	0.0038	0.29	0.30	< 0.10	0.12	0.0913	0.0834		< 0.020		< 0.020	< 2.0	< 0.000050	< 0.000050	0.013	0.014	1.19
2022-01-06	FR_FRABCH			258	< 0.0010	0.0116	< 0.10	0.11	< 0.10	0.12	0.102	0.104		< 0.020		< 0.020		< 0.000050	< 0.000050	0.012	0.014	
2022-01-06	FR_SCOUTDS																					
2022-01-06	FS_INF-S																					
2022-01-07	FS_BPO																< 2.0					
2022-01-07	FS_INF-S																					
2022-01-07	FS_BPO																					
2022-01-07	FS_INF-S																					
2022-01-08	FS_BPO																< 2.0					
2022-01-08	FS_INF-S																					
2022-01-08	FS_BPO																					
2022-01-08	FS_INF-S																					
2022-01-09	FS_BPO																< 2.0					
2022-01-09	FS_INF-S																					
2022-01-09	FS_BPO																					
2022-01-09	FS_INF-S																					
2022-01-10	FS_BPO			449													< 2.0					10.8
2022-01-10	FS_INF-S			447																		< 0.30
2022-01-10	FS_BPO																					
2022-01-10	FS_INF-S	3	0																			
2022-01-10	FS_BPO	0	0																			
2022-01-10	FS_INF-S																					
2022-01-11	FS_BPO																< 2.0					
2022-01-11	FS_INF-S																					
2022-01-11	FS_BPO																					
2022-01-11	FS_INF-S																					
2022-01-12	FS_BPO																< 2.0					
2022-01-12	FS_INF-S																					
2022-01-12	FS_BPO																					
2022-01-12	FS_INF-S																					
2022-01-13	FR_SCOUTDS																					
2022-01-13	FS_BPO																< 2.0					
2022-01-13	FS_INF-S				< 0.0060	0.0092	0.78	0.71	0.21	0.21	0.0270	0.0276	< 0.040		< 0.040			< 0.000100	< 0.000100	< 0.020	< 0.020	
2022-01-13	FS_BPO																					
2022-01-13	FR_SCOUTDS			239	< 0.0010	0.0054	0.26	0.29	0.10	0.12	0.0840	0.0927		< 0.020		< 0.020	< 2.0	< 0.000050	< 0.000050	0.011	0.011	< 0.60
2022-01-13	FS_INF-S																					
2022-01-14	FS_BPO																< 2.0					

		48-h Static acute lethality test using Daphnia ma	96-Hr 100% Conc. Acute lethality test for R. Trout	Alkalinity, Total (As CaCO3)	Aluminum	Aluminum	Antimony	Antimony	Arsenic	Arsenic	Barium	Barium	Beryllium	Beryllium	Beryllium	Beryllium	BIOCHEMICAL OXYGEN DEMAND, FIVE DAY	Bismuth	Bismuth	Boron	Boron	BROMATE
Parameter		N	N	N	D	T	D	T	D	T	D	T	D	D	T	T	N	D	T	D	T	N
Fraction		%	%	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	mg/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l
Unit		Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
Date	Location Code																					
2022-01-14	FS_INF-S																					
2022-01-14	FS_BPO																					
2022-01-14	FS_INF-S																					
2022-01-15	FS_BPO																< 2.0					
2022-01-15	FS_INF-S																					
2022-01-15	FS_BPO																					
2022-01-15	FS_INF-S																					
2022-01-16	FS_BPO																< 2.0					
2022-01-16	FS_INF-S																					
2022-01-16	FS_BPO																					
2022-01-16	FS_INF-S																					
2022-01-17	FS_BPO			454													< 2.0					10.2
2022-01-17	FS_INF-S	0	0	440																		
2022-01-17	FS_BPO																					
2022-01-17	FS_BPO	0	0																			
2022-01-17	FS_BPO																					
2022-01-17	FR_FRABCH			269	0.0017	0.0072	< 0.10	0.11	< 0.10	0.11	0.0929	0.102		< 0.020		< 0.020		< 0.000050	< 0.000050	0.013	0.013	
2022-01-17	FS_BPO																					
2022-01-17	FS_INF-S																					
2022-01-18	FS_BPO				0.0062	< 0.0060	2.33	0.54	0.23	< 0.20	0.0162	0.0179	< 0.040		< 0.040		< 2.0	< 0.000100	< 0.000100	< 0.020	< 0.020	
2022-01-18	FS_INF-S				< 0.0150	0.0088	0.70	0.75	< 0.50	0.29	0.0278	0.0288	< 0.100		< 0.040			< 0.000250	< 0.000100	< 0.050	< 0.020	
2022-01-18	FS_BPO																					
2022-01-18	FS_INF-S																					
2022-01-19	FS_BPO																< 2.0					
2022-01-19	FS_INF-S																					
2022-01-19	FS_BPO																					
2022-01-19	FS_INF-S																					
2022-01-20	FR_SCOUTDS																					
2022-01-20	FS_BPO																< 2.0					
2022-01-20	FS_INF-S																					
2022-01-20	FS_BPO																					
2022-01-20	FR_SCOUTDS			263	0.0011	0.0034	2.52	0.39	0.12	0.11	0.0836	0.0781		< 0.020		< 0.020	< 2.0	< 0.000050	< 0.000050	0.011	0.012	0.83
2022-01-20	FS_BPO																					
2022-01-20	FS_BPO																					
2022-01-21	FS_BPO																					
2022-01-21	FS_INF-S																					
2022-01-21	FS_BPO																< 2.0					
2022-01-21	FS_INF-S																					
2022-01-21	FS_BPO																					
2022-01-21	FS_BPO																					
2022-01-21	FS_BPO																					
2022-01-21	FS_INF-S																					
2022-01-21	FS_INF-S																					
2022-01-22	FS_BPO																< 2.0					
2022-01-22	FS_INF-S																					
2022-01-22	FS_BPO																					
2022-01-22	FS_BPO																					
2022-01-22	FS_BPO																					
2022-01-22	FS_INF-S																					
2022-01-23	FS_BPO																< 2.0					
2022-01-23	FS_INF-S																					
2022-01-23	FS_BPO																					
2022-01-23	FS_INF-S																					
2022-01-24	FS_BPO			366													< 2.0					14.8
2022-01-24	FS_INF-S	0	0	359																		< 0.30
2022-01-24	FS_BPO																					
2022-01-24	FS_BPO	0	0																			
2022-01-24	FS_BPO																					
2022-01-24	FS_INF-S																					
2022-01-24	FS_INF-S																					
2022-01-25	FS_BPO																< 2.0					
2022-01-25	FS_INF-S				< 0.0060	0.0274	0.80	0.78	0.26	< 0.50	0.0267	0.0282	< 0.040		< 0.100			< 0.000100	< 0.000250	< 0.020	< 0.050	
2022-01-25	FS_BPO																					
2022-01-25	FS_INF-S																					
2022-01-26	FS_BPO																< 2.0					
2022-01-26	FS_INF-S																					
2022-01-26	FS_BPO																					
2022-01-26	FS_INF-S																					
2022-01-27	FR_SCOUTDS																					
2022-01-27	FS_BPO																< 2.0					
2022-01-27	FS_INF-S																					
2022-01-27	FS_BPO																					
2022-01-27	FR_FRABCH																					
2022-01-27	FR_SCOUTDS			262	< 0.0010	0.0044	0.28	0.29	< 0.10	0.11	0.0887	0.0878		< 0.020		< 0.020	< 2.0		< 0.000050		0.012	0.99

	Parameter	48-h Static acute lethality test using Daphnia ma	96-Hr 100% Conc. Acute lethality test for R. Trout	Alkalinity, Total (As CaCO3)	Aluminum	Aluminum	Antimony	Antimony	Arsenic	Arsenic	Barium	Barium	Beryllium	Beryllium	Beryllium	Beryllium	BIOCHEMICAL OXYGEN DEMAND, FIVE DAY	Bismuth	Bismuth	Boron	Boron	BROMATE
	Fraction	N	N	N	D	T	D	T	D	T	D	T	D	D	T	T	N	D	T	D	T	N
	Unit	%	%	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	mg/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-01-27	FR_FRABCH			260	< 0.0010	< 0.0030	< 0.10	0.12	< 0.10	< 0.10	0.103	0.0982		< 0.020		< 0.020		< 0.000050	< 0.000050	0.011	0.012	
2022-01-27	FS_BPO																					
2022-01-27	FS_INF-S																					
2022-01-28	FS_BPO																< 2.0					
2022-01-28	FS_INF-S																					
2022-01-28	FS_BPO																					
2022-01-29	FS_BPO																< 2.0					
2022-01-29	FS_INF-S																					
2022-01-29	FS_BPO																					
2022-01-30	FS_BPO																< 2.0					
2022-01-30	FS_INF-S																					
2022-01-30	FS_BPO																					
2022-01-31	FS_BPO			464													< 2.0					10.5
2022-01-31	FS_INF-S	3	0	464																		
2022-01-31	FS_BPO																					
2022-01-31	FS_BPO	0	0																			
2022-02-01	FS_BPO																< 2.0					
2022-02-01	FS_INF-S																					
2022-02-01	FS_BPO																					
2022-02-01	FR_FRABCH			277	< 0.0010	0.0040	< 0.10	< 0.10	< 0.10	< 0.10	0.109	0.106		< 0.020		< 0.020		< 0.000050	< 0.000050	0.013	0.012	
2022-02-02	FS_BPO																< 2.0					
2022-02-02	FS_INF-S																					
2022-02-02	FS_BPO																					
2022-02-03	FR_SCOUTDS																					
2022-02-03	FS_BPO																< 2.0					
2022-02-03	FS_INF-S																					
2022-02-03	FS_BPO																					
2022-02-03	FR_SCOUTDS			262	0.0024	0.0038	0.28	0.29	< 0.10	0.12	0.0830	0.0850		< 0.020		< 0.020	< 2.0	< 0.000050	< 0.000050	0.012	0.012	1.40
2022-02-04	FS_BPO																< 2.0					
2022-02-04	FS_INF-S																					
2022-02-04	FS_BPO																					
2022-02-05	FS_BPO																< 2.0					
2022-02-05	FS_INF-S																					
2022-02-05	FS_BPO																					
2022-02-05	FS_BPO																					
2022-02-06	FS_BPO																< 2.0					
2022-02-06	FS_INF-S																					
2022-02-06	FS_BPO																					
2022-02-06	FS_BPO																					
2022-02-06	FS_INF-S																					
2022-02-07	FS_BPO			448													7.6					10.4
2022-02-07	FS_INF-S	10	0	448																		< 0.30
2022-02-07	FS_BPO																					
2022-02-07	FS_BPO	0	0																			
2022-02-08	FR_SCOUTDS																					
2022-02-08	FS_BPO				< 0.0060	< 0.0060	< 0.20	< 0.20	< 0.20	< 0.20	0.0154	0.0160	< 0.040		< 0.040		3.2	< 0.000100	< 0.000100	< 0.020	< 0.020	
2022-02-08	FS_INF-S				< 0.0060	< 0.0060	0.76	0.77	0.23	0.29	0.0269	0.0279	< 0.040		< 0.040			< 0.000100	< 0.000100	< 0.020	< 0.020	
2022-02-08	FS_BPO																					
2022-02-09	FS_BPO																< 2.0					
2022-02-09	FS_INF-S																					
2022-02-09	FS_BPO																					
2022-02-09	FR_FRABCH																					
2022-02-10	FR_SCOUTDS																					
2022-02-10	FS_BPO																< 2.0					
2022-02-10	FS_INF-S				< 0.0060	< 0.0060	0.80	0.76	0.24	0.22	0.0266	0.0270	< 0.040		< 0.040			< 0.000100	< 0.000100	< 0.020	< 0.020	
2022-02-10	FS_BPO																					
2022-02-10	FR_SCOUTDS			238	< 0.0010	0.0124	0.26	0.28	< 0.10	0.11	0.0789	0.0880		< 0.020		< 0.020	< 2.0	< 0.000050	< 0.000050	0.012	0.011	0.98
2022-02-11	FS_BPO																< 2.0					
2022-02-11	FS_INF-S																					
2022-02-11	FS_BPO																					
2022-02-12	FS_BPO																					
2022-02-12	FS_INF-S																					
2022-02-12	FS_BPO																					
2022-02-13	FS_BPO																					
2022-02-13	FS_INF-S																					
2022-02-13	FS_BPO																					
2022-02-14	FS_BPO			448													< 2.0					11.5
2022-02-14	FS_INF-S	7	0	446																		< 0.30

Parameter		48-h Static acute lethality test using Daphnia ma	96-Hr 100% Conc. Acute lethality test for R. Trout	Alkalinity, Total (As CaCO3)	Aluminum	Aluminum	Antimony	Antimony	Arsenic	Arsenic	Barium	Barium	Beryllium	Beryllium	Beryllium	Beryllium	BIOCHEMICAL OXYGEN DEMAND, FIVE DAY	Bismuth	Bismuth	Boron	Boron	BROMATE
Fraction		N	N	N	D	T	D	T	D	T	D	T	D	D	T	T	N	D	T	D	T	N
Unit		%	%	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	mg/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-02-14	FS_BPO																					
2022-02-14	FS_BPO	0	0																			
2022-02-14	FS_INF-S																					
2022-02-15	FS_BPO					< 0.0150		< 0.50		< 0.50		0.0168			< 0.100		< 2.0		< 0.000250		< 0.050	
2022-02-15	FS_INF-S				< 0.0060	< 0.0150	0.76	0.82	0.23	< 0.50	0.0282	0.0291	< 0.040		< 0.100			< 0.000100	< 0.000250	< 0.020	< 0.050	
2022-02-15	FS_BPO																					
2022-02-15	FR_FRABCH																					
2022-02-15	FS_BPO																					
2022-02-16	FS_BPO																					
2022-02-16	FS_INF-S																					
2022-02-16	FS_BPO																< 2.0					
2022-02-16	FS_INF-S																					
2022-02-16	FS_BPO																					
2022-02-16	FR_FRABCH			251	< 0.0010	< 0.0030	< 0.10	< 0.10	< 0.10	< 0.10	0.103	0.101		< 0.020		< 0.020		< 0.000050	< 0.000050	0.012	0.012	
2022-02-16	FS_BPO																					
2022-02-16	FS_INF-S																					
2022-02-17	FR_SCOUTDS																					
2022-02-17	FS_BPO																< 2.0					
2022-02-17	FS_INF-S																					
2022-02-17	FS_BPO																					
2022-02-17	FR_SCOUTDS			235	< 0.0030	0.0046	0.27	0.29	0.11	0.14	0.0834	0.0897	< 0.020		< 0.020		< 2.0	< 0.000050	< 0.000050	0.012	0.014	0.94
2022-02-18	FS_BPO																< 2.0					
2022-02-18	FS_INF-S																					
2022-02-18	FS_BPO																					
2022-02-19	FS_BPO																					
2022-02-19	FS_INF-S																					
2022-02-19	FS_BPO																					
2022-02-20	FS_BPO																					
2022-02-20	FS_INF-S																					
2022-02-20	FS_BPO																					
2022-02-20	FS_INF-S																					
2022-02-20	FS_BPO																					
2022-02-21	FS_BPO			462													< 2.0					11.9
2022-02-21	FS_INF-S	0	0	411																		< 0.30
2022-02-21	FS_BPO																					
2022-02-21	FS_BPO	0	0																			
2022-02-21	FS_BPO																					
2022-02-22	FS_BPO																					
2022-02-22	FS_BPO																< 2.0					
2022-02-22	FS_INF-S				< 0.0060	0.0075	0.70	0.73	0.26	0.23	0.0259	0.0296	< 0.040		< 0.040			< 0.000100	< 0.000100	< 0.020	< 0.020	
2022-02-22	FS_BPO																					
2022-02-22	FR_FRABCH																					
2022-02-22	FS_BPO																					
2022-02-22	FS_BPO																					
2022-02-22	FS_INF-S																					
2022-02-23	FS_BPO																					
2022-02-23	FS_BPO																< 2.0					
2022-02-23	FS_INF-S																					
2022-02-23	FS_BPO																					
2022-02-24	FR_SCOUTDS																					
2022-02-24	FS_BPO																< 2.0					
2022-02-24	FS_INF-S																					
2022-02-24	FS_BPO																					
2022-02-24	FR_SCOUTDS			249	< 0.0030	0.0045	0.24	0.23	0.10	0.11	0.0851	0.0841	< 0.020		< 0.020		< 2.0	< 0.000050	< 0.000050	0.013	0.012	1.70
2022-02-25	FS_BPO																< 2.0					
2022-02-25	FS_INF-S																					
2022-02-25	FS_BPO																					
2022-02-25	FR_SCOUTDS																					
2022-02-25	FS_INF-K																					
2022-02-25	FS_INF-K																					
2022-02-25	FS_INF-K																					
2022-02-26	FS_BPO																					
2022-02-26	FS_INF-K																					
2022-02-26	FS_INF-S																					
2022-02-26	FS_BPO																					
2022-02-27	FS_BPO																					
2022-02-27	FS_INF-K					< 0.0060		0.56		< 0.20		0.0266			< 0.040				< 0.000100		0.030	
2022-02-27	FS_INF-S																					
2022-02-27	FS_BPO																					
2022-02-28	FS_BPO			515													< 2.0					10.3 10.3
2022-02-28	FS_INF-K			475	< 0.0050		0.51		< 0.50		0.0244		< 0.100					< 0.000250		< 0.050		< 0.30 < 0.30

		48-h Static acute lethality test using Daphnia ma	96-Hr 100% Conc. Acute lethality test for R. Trout	Alkalinity, Total (As CaCO3)	Aluminum	Aluminum	Antimony	Antimony	Arsenic	Arsenic	Barium	Barium	Beryllium	Beryllium	Beryllium	Beryllium	BIOCHEMICAL OXYGEN DEMAND, FIVE DAY	Bismuth	Bismuth	Boron	Boron	BROMATE
Parameter		N	N	N	D	T	D	T	D	T	D	T	D	D	T	T	N	D	T	D	T	N
Fraction		%	%	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	mg/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l
Unit																						
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-02-28	FS_INF-S			460																		< 0.30
																						< 0.30
2022-02-28	FS_BPO																					
2022-02-28	FS_BPO	0	0																			
2022-03-01	FS_BPO				< 0.0060	< 0.0060	0.32	0.30	< 0.20	< 0.20	0.0140	0.0142	< 0.040		< 0.040		< 2.0	< 0.000100	< 0.000100	< 0.020	< 0.020	
2022-03-01	FS_INF-K				< 0.0060	< 0.0060	0.64	0.59	< 0.20	< 0.20	0.0243	0.0250	< 0.040		< 0.040			< 0.000100	< 0.000100	0.032	0.034	
2022-03-01	FS_INF-S				< 0.0060	0.0062	0.93	0.80	< 0.20	0.22	0.0261	0.0258	< 0.040		< 0.040			< 0.000100	< 0.000100	< 0.020	< 0.020	
2022-03-01	FS_BPO																					
2022-03-01	FR_FRABCH			258	< 0.0010	0.0114	< 0.10	< 0.10	< 0.10	< 0.10	0.102	0.128		< 0.020		< 0.020	< 2.0	< 0.000050	< 0.000050	0.010	0.013	
2022-03-02	FS_BPO																< 2.0					
2022-03-02	FS_INF-K																					
2022-03-02	FS_INF-S																					
2022-03-02	FS_BPO																					
2022-03-02	FR_FRABCH																					
2022-03-03	FR_SCOUTDS																					
2022-03-03	FS_BPO																< 2.0					
2022-03-03	FS_INF-K																					
2022-03-03	FS_INF-S																					
2022-03-03	FS_BPO																					
2022-03-03	FR_SCOUTDS			250	< 0.0030	0.0058	0.27	0.26	< 0.10	0.10	0.0858	0.0936	< 0.020		< 0.020		< 2.0	< 0.000050	< 0.000050	0.012	0.012	1.17
2022-03-04	FS_BPO																< 2.0					
2022-03-04	FS_INF-K																					
2022-03-04	FS_INF-S																					
2022-03-04	FS_BPO																					
2022-03-04	FS_BPO																					
2022-03-05	FS_BPO																					
2022-03-05	FS_INF-K																					
2022-03-05	FS_INF-S																					
2022-03-05	FS_BPO																					
2022-03-06	FS_BPO																					
2022-03-06	FS_INF-K																					
2022-03-06	FS_INF-S																					
2022-03-06	FS_BPO																					
2022-03-07	FS_BPO			536													< 2.0					9.78
2022-03-07	FS_INF-K			458																		< 0.30
2022-03-07	FS_INF-S			419																		< 0.30
2022-03-07	FS_BPO																					
2022-03-07	FS_BPO	0	0																			
2022-03-08	FS_BPO					< 0.0060		0.35		< 0.20		0.0133			< 0.040		< 2.0		< 0.000100		< 0.020	
2022-03-08	FS_INF-K				< 0.0060	< 0.0060	0.48	0.54	< 0.20	< 0.20	0.0238	0.0237	< 0.040		< 0.040			< 0.000100	< 0.000100	0.031	0.030	
2022-03-08	FS_INF-S				< 0.0060	< 0.0060	0.69	0.80	0.22	0.22	0.0263	0.0256	< 0.040		< 0.040			< 0.000100	< 0.000100	< 0.020	< 0.020	
2022-03-08	FS_BPO																					
2022-03-08	FS_INF-S																					
2022-03-08	FS_BPO																					
2022-03-08	FR_FRABCH			254	0.0018	0.0062	< 0.10	0.11	< 0.10	< 0.10	0.108	0.105		< 0.020		< 0.020		< 0.000050	< 0.000050	0.010	0.012	
2022-03-08	FS_BPO																					
2022-03-08	FS_BPO																					
2022-03-09	FS_BPO																					
2022-03-09	FS_BPO																< 2.0					
2022-03-09	FS_INF-K																					
2022-03-09	FS_INF-S																					
2022-03-09	FS_BPO																					
2022-03-10	FR_SCOUTDS																					
2022-03-10	FS_BPO																< 2.0					
2022-03-10	FS_INF-K																					
2022-03-10	FS_INF-S																					
2022-03-10	FS_BPO																					
2022-03-10	FR_SCOUTDS			267	< 0.0030	0.0085	0.27	0.32	0.10	< 0.10	0.0846	0.0930	< 0.020		< 0.020		< 2.0	< 0.000050	< 0.000050	0.013	0.014	0.83
2022-03-11	FS_BPO																2.0					
2022-03-11	FS_INF-K																					
2022-03-11	FS_INF-S																					
2022-03-11	FS_BPO																					
2022-03-12	FS_BPO																					
2022-03-12	FS_INF-K																					
2022-03-12	FS_INF-S																					
2022-03-12	FS_BPO																					
2022-03-13	FS_BPO																					
2022-03-13	FS_INF-K																					
2022-03-13	FS_INF-S																					
2022-03-13	FS_BPO																					

		48-h Static acute lethality test using Daphnia ma	96-Hr 100% Conc. Acute lethality test for R. Trout	Alkalinity, Total (As CaCO3)	Aluminum	Aluminum	Antimony	Antimony	Arsenic	Arsenic	Barium	Barium	Beryllium	Beryllium	Beryllium	Beryllium	BIOCHEMICAL OXYGEN DEMAND, FIVE DAY	Bismuth	Bismuth	Boron	Boron	BROMATE
Parameter		N	N	N	D	T	D	T	D	T	D	T	D	D	T	T	N	D	T	D	T	N
Fraction		%	%	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	mg/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l
Unit		Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
Date	Location Code																					
2022-03-14	FS_BPO			569													2.0					10.7
2022-03-14	FS_INF-K			476																		
2022-03-14	FS_INF-S			443																		
2022-03-14	FS_BPO																					
2022-03-14	FS_BPO	0	0																			
2022-03-15	FS_BPO					< 0.0060		0.30		< 0.20		0.0129			< 0.040		< 2.0		< 0.000100		< 0.020	
2022-03-15	FS_INF-K				< 0.0060	< 0.0060	0.56	0.51	< 0.20	< 0.20	0.0246	0.0247	< 0.040		< 0.040			< 0.000100	< 0.000100	0.030	0.031	
2022-03-15	FS_INF-S				< 0.0060	0.0339	0.80	0.80	0.29	0.26	0.0295	0.0286	< 0.040		< 0.040			< 0.000100	< 0.000100	< 0.020	< 0.020	
2022-03-15	FS_BPO																					
2022-03-15	FR_FRABCH			262	0.0021	0.0048	< 0.10	0.10	< 0.10	< 0.10	0.100	0.114		< 0.020		< 0.020		< 0.000050	< 0.000050	< 0.010	0.012	
2022-03-16	FS_BPO																< 2.0					
2022-03-16	FS_INF-K																					
2022-03-16	FS_INF-S																					
2022-03-16	FS_BPO																					
2022-03-17	FR_SCOUTDS																					
2022-03-17	FS_BPO																< 2.0					
2022-03-17	FS_INF-K																					
2022-03-17	FS_INF-S																					
2022-03-17	FS_BPO																					
2022-03-17	FR_SCOUTDS			273	< 0.0030	0.0423	0.33	0.32	0.16	0.22	0.0927	0.0948	< 0.020		< 0.020		< 2.0	< 0.000050	< 0.000050	0.012	0.013	< 0.30
2022-03-18	FS_BPO																< 2.0					
2022-03-18	FS_INF-K																					
2022-03-18	FS_INF-S																					
2022-03-18	FS_BPO																					
2022-03-19	FS_BPO																					
2022-03-19	FS_INF-K																					
2022-03-19	FS_INF-S																					
2022-03-19	FS_BPO																					
2022-03-20	FS_BPO																					
2022-03-20	FS_INF-K																					
2022-03-20	FS_INF-S																					
2022-03-20	FS_BPO																					
2022-03-21	FS_BPO			555													< 2.0					10.3
2022-03-21	FS_INF-K			447																		< 3.00
2022-03-21	FS_INF-S			394																		< 0.30
2022-03-21	FS_BPO																					
2022-03-21	FS_BPO	0	0																			
2022-03-22	FS_BPO				< 0.0060	< 0.0060	0.29	0.30	< 0.20	< 0.20	0.0139	0.0138	< 0.040		< 0.040		< 2.0	< 0.000100	< 0.000100	< 0.020	< 0.020	
2022-03-22	FS_INF-K				< 0.0060	< 0.0060	0.51	0.48	< 0.20	< 0.20	0.0240	0.0228	< 0.040		< 0.040			< 0.000100	< 0.000100	0.032	0.032	
2022-03-22	FS_INF-S				< 0.0060	0.0318	0.72	0.68	0.23	0.23	0.0269	0.0280	< 0.040		< 0.040			< 0.000100	< 0.000100	< 0.020	< 0.020	
2022-03-22	FS_BPO																					
2022-03-23	FS_BPO																< 2.0					
2022-03-23	FS_INF-K																					
2022-03-23	FS_INF-S																					
2022-03-23	FS_BPO																					
2022-03-23	FR_FRABCH			248	< 0.0010	0.0077	0.12	0.14	< 0.10	0.17	0.0993	0.103		< 0.020		< 0.020	< 2.0	< 0.000050	< 0.000050	0.010	0.010	
2022-03-23	FR_FRABCH																					
2022-03-24	FR_SCOUTDS																					
2022-03-24	FS_BPO																< 2.0					
2022-03-24	FS_INF-K																					
2022-03-24	FS_INF-S																					
2022-03-24	FS_BPO																					
2022-03-24	FR_SCOUTDS			230	0.0041	0.0264	0.42	0.43	0.13	0.18	0.0857	0.0917	< 0.020		< 0.020		< 2.0	< 0.000050	< 0.000050	0.012	0.014	< 0.48
2022-03-25	FS_BPO																< 2.0					
2022-03-25	FS_INF-K																					
2022-03-25	FS_INF-S																					
2022-03-25	FS_BPO																					
2022-03-26	FS_BPO																					
2022-03-26	FS_INF-K																					
2022-03-26	FS_INF-S																					
2022-03-26	FS_BPO																					
2022-03-27	FS_BPO																					
2022-03-27	FS_INF-K																					
2022-03-27	FS_INF-S																					
2022-03-27	FS_BPO																					
2022-03-28	FS_BPO			526													< 2.0					11.0
2022-03-28	FS_INF-K			470																		
2022-03-28	FS_INF-S			373																		
2022-03-28	FS_BPO																					

	Parameter	48-h Static acute lethality test using Daphnia ma	96-Hr 100% Conc. Acute lethality test for R. Trout	Alkalinity, Total (As CaCO3)	Aluminum	Aluminum	Antimony	Antimony	Arsenic	Arsenic	Barium	Barium	Beryllium	Beryllium	Beryllium	Beryllium	BIOCHEMICAL OXYGEN DEMAND, FIVE DAY	Bismuth	Bismuth	Boron	Boron	BROMATE
	Fraction	N	N	N	D	T	D	T	D	T	D	T	D	D	T	T	N	D	T	D	T	N
	Unit	%	%	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	mg/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-03-28	FS_BPO	0	0																			
2022-03-29	FS_BPO				< 0.0060	0.0071	0.29	0.28	< 0.20	< 0.20	0.0157	0.0157	< 0.040		< 0.040		< 2.0	< 0.000100	< 0.000100	< 0.020	< 0.020	
2022-03-29	FS_INF-K				< 0.0060	< 0.0060	0.50	0.53	< 0.20	< 0.20	0.0249	0.0222	< 0.040		< 0.040			< 0.000100	< 0.000100	0.030	0.030	
2022-03-29	FS_INF-S				< 0.0060	0.0990	0.62	0.61	0.24	0.30	0.0350	0.0346	< 0.040		< 0.040			< 0.000100	< 0.000100	< 0.020	< 0.020	
2022-03-29	FS_BPO																					
2022-03-30	FS_BPO																< 2.0					
2022-03-30	FS_INF-K																					
2022-03-30	FS_INF-S																					
2022-03-30	FR_FRABCH			240	0.0036	0.0515	0.26	0.28	0.12	0.14	0.102	0.109		< 0.020		< 0.020	< 2.0	< 0.000050	< 0.000050	0.012	0.013	
2022-03-30	FS_BPO																					
2022-03-30	FS_BPO																					
2022-03-31	FR_SCOUTDS																					
2022-03-31	FS_BPO																< 2.0					
2022-03-31	FS_INF-K																					
2022-03-31	FS_INF-S																					
2022-03-31	FS_BPO																					
2022-03-31	FR_SCOUTDS			215	0.0052	0.0694	0.75	0.74	0.18	0.22	0.0965	0.121	< 0.020		< 0.020		< 2.0	< 0.000050	< 0.000050	0.011	0.011	< 0.45
2022-04-01	FS_BPO																< 2.0					
2022-04-01	FS_INF-K																					
2022-04-01	FS_INF-S																					
2022-04-01	FS_BPO																					
2022-04-01	FR_FRABCH																					
2022-04-02	FS_BPO																					
2022-04-02	FS_INF-K																					
2022-04-02	FS_INF-S																					
2022-04-02	FS_BPO																					
2022-04-02	FS_INF-S																					
2022-04-03	FS_BPO																					
2022-04-03	FS_INF-K																					
2022-04-03	FS_INF-S																					
2022-04-03	FS_BPO																					
2022-04-04	FS_BPO			554													< 2.0					11.8
2022-04-04	FS_INF-K			470																		< 0.30
2022-04-04	FS_INF-S			418																		< 0.30
2022-04-04	FS_BPO																					
2022-04-04	FS_BPO	0	0																			
2022-04-05	FS_BPO				< 0.0060	0.0087	0.28	0.31	< 0.20	< 0.20	0.0157	0.0180	< 0.040		< 0.040		< 2.0	< 0.000100	< 0.000100	< 0.020	0.021	
2022-04-05	FS_INF-K				< 0.0060	< 0.0060	0.46	0.52	< 0.20	< 0.20	0.0222	0.0250	< 0.040		< 0.040			< 0.000100	< 0.000100	0.030	0.034	
2022-04-05	FS_INF-S				< 0.0060	0.0242	0.74	0.82	0.24	0.23	0.0315	0.0349	< 0.040		< 0.040			< 0.000100	< 0.000100	< 0.020	< 0.020	
2022-04-05	FS_BPO																					
2022-04-05	FR_FRABCH			258	0.0028	0.0247	0.26	0.29	< 0.10	0.15	0.102	0.101		< 0.020		< 0.020	< 2.0	< 0.000050	< 0.000050	< 0.010	0.012	
2022-04-06	FS_BPO																					
2022-04-06	FS_INF-K																					
2022-04-06	FS_INF-S																					
2022-04-06	FS_BPO																< 2.0					
2022-04-06	FS_INF-K																					
2022-04-06	FS_INF-S																					
2022-04-06	FS_BPO																					
2022-04-06	FR_FRABCH																					
2022-04-07	FS_BPO																< 2.0					
2022-04-07	FS_INF-K																					
2022-04-07	FS_INF-S																					
2022-04-07	FS_BPO																					
2022-04-07	FR_SCOUTDS			226	< 0.0030	0.0174	0.85	0.81	0.21	0.20	0.102	0.107	< 0.020		< 0.020		< 2.0	< 0.000050	< 0.000050	0.014	0.012	0.55
2022-04-08	FS_BPO																< 2.0					
2022-04-08	FS_INF-K																					
2022-04-08	FS_INF-S																					
2022-04-08	FS_BPO																					
2022-04-09	FS_BPO																					
2022-04-09	FS_INF-K																					
2022-04-09	FS_INF-S																					
2022-04-09	FS_BPO																					
2022-04-10	FS_BPO																					
2022-04-10	FS_INF-K																					
2022-04-10	FS_INF-S																					
2022-04-10	FS_BPO																					
2022-04-11	FS_BPO			570													< 2.0					9.82

		Parameter	48-h Static acute lethality test using Daphnia ma	96-Hr 100% Conc. Acute lethality test for R. Trout	Alkalinity, Total (As CaCO3)	Aluminum	Aluminum	Antimony	Antimony	Arsenic	Arsenic	Barium	Barium	Beryllium	Beryllium	Beryllium	Beryllium	BIOCHEMICAL OXYGEN DEMAND, FIVE DAY	Bismuth	Bismuth	Boron	Boron	BROMATE
		Fraction	N	N	N	D	T	D	T	D	T	D	T	D	D	T	T	N	D	T	D	T	N
		Unit	%	%	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	mg/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l
Date	Location Code		Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-04-11	FS_INF-K				476																		
2022-04-11	FS_INF-S				417																		
2022-04-11	FS_BPO																						
2022-04-11	FS_BPO		0	0																			
2022-04-12	FS_BPO					< 0.0060	< 0.0060	0.23	0.24	< 0.20	< 0.20	0.0137	0.0141	< 0.040		< 0.040		< 2.0	< 0.000100	< 0.000100	< 0.020	0.020	
2022-04-12	FS_INF-K					< 0.0060	< 0.0060	0.48	0.48	< 0.20	< 0.20	0.0210	0.0219	< 0.040		< 0.040			< 0.000100	< 0.000100	0.032	0.031	
2022-04-12	FS_INF-S					< 0.0060	0.0120	0.77	0.79	0.21	0.27	0.0296	0.0299	< 0.040		< 0.040			< 0.000100	< 0.000100	< 0.020	< 0.020	
2022-04-12	FS_BPO																						
2022-04-12	FR_FRABCH				249	0.0013	0.0253	0.31	0.32	< 0.10	0.12	0.0994	0.0965		< 0.020		< 0.020		< 0.000050	< 0.000050	0.012	0.014	
2022-04-13	FS_BPO																	< 2.0					
2022-04-13	FS_INF-K																						
2022-04-13	FS_INF-S																						
2022-04-13	FS_BPO																						
2022-04-14	FS_BPO																	< 2.0					
2022-04-14	FS_INF-K																						
2022-04-14	FS_INF-S																						
2022-04-14	FS_BPO																						
2022-04-14	FR_SCOUTDS				234	0.0037	0.0191	0.46	0.46	< 0.10	0.14	0.0873	0.0873	< 0.020		< 0.020		3.4	< 0.000050	< 0.000050	0.013	0.014	0.61
2022-04-15	FS_BPO																						
2022-04-15	FS_BPO																						
2022-04-15	FS_BPO																	< 2.0					
2022-04-15	FS_INF-K																						
2022-04-15	FS_INF-S																						
2022-04-15	FS_BPO																						
2022-04-15	FS_BPO																						
2022-04-15	FS_BPO																						
2022-04-16	FS_BPO																						
2022-04-16	FS_BPO																						
2022-04-16	FS_BPO																						
2022-04-16	FS_INF-K																						
2022-04-16	FS_INF-S																						
2022-04-16	FS_BPO																						
2022-04-16	FS_BPO																						
2022-04-17	FS_BPO																						
2022-04-17	FS_INF-K																						
2022-04-17	FS_INF-S																						
2022-04-17	FS_BPO																						
2022-04-18	FS_BPO				563													< 2.0					12.2
2022-04-18	FS_INF-K				445																		< 0.30
2022-04-18	FS_INF-S				409																		< 0.30
2022-04-18	FS_BPO																						
2022-04-18	FS_BPO		0	0																			
2022-04-19	FS_BPO					< 0.0060	< 0.0060	0.32	0.34	< 0.20	< 0.20	0.0130	0.0140	< 0.040		< 0.040		< 2.0	< 0.000100	< 0.000100	0.032	0.036	
2022-04-19	FS_INF-K					< 0.0060	< 0.0060	0.48	0.55	< 0.20	< 0.20	0.0216	0.0240	< 0.040		< 0.040			< 0.000100	< 0.000100	0.029	0.034	
2022-04-19	FS_INF-S					< 0.0060	0.0096	0.82	0.87	0.27	0.29	0.0269	0.0298	< 0.040		< 0.040			< 0.000100	< 0.000100	< 0.020	< 0.020	
2022-04-19	FS_BPO																						
2022-04-20	FS_BPO																						
2022-04-20	FR_FRABCH				253	0.0011	0.0079	0.17	0.17	< 0.10	0.11	0.0920	0.0962		< 0.020		< 0.020		< 0.000050	< 0.000050	0.012	0.012	
2022-04-21	FR_SCOUTDS																						
2022-04-21	FS_INF-K																						
2022-04-21	FR_SCOUTDS				220	0.0035	0.0135	0.43	0.46	0.26	0.17	0.0801	0.0816	< 0.020		< 0.020		< 2.0	< 0.000050	< 0.000050	0.013	0.011	< 0.30
2022-04-21	FS_INF-K																						
2022-04-22	FS_BPO																	< 2.0					
2022-04-22	FS_INF-S																						
2022-04-22	FR_SCOUTDS																						
2022-04-22	FS_BPO																						
2022-04-22	FR_FRABCH																						
2022-04-22	FR_FRABCH																						
2022-04-22	FS_BPO																						
2022-04-22	FS_INF-S																						
2022-04-22	FS_INF-S																						
2022-04-22	FS_BPO																						
2022-04-22	FS_BPO																						
2022-04-22	FS_INF-S																						
2022-04-22	FS_INF-S																						
2022-04-23	FS_BPO																						
2022-04-23	FS_INF-S																						
2022-04-23	FS_BPO																						
2022-04-23	FS_INF-S																						
2022-04-24	FS_BPO																						
2022-04-24	FS_INF-S																						
2022-04-24	FS_BPO																						

	Parameter	48-h Static acute lethality test using Daphnia ma	96-Hr 100% Conc. Acute lethality test for R. Trout	Alkalinity, Total (As CaCO3)	Aluminum	Aluminum	Antimony	Antimony	Arsenic	Arsenic	Barium	Barium	Beryllium	Beryllium	Beryllium	Beryllium	BIOCHEMICAL OXYGEN DEMAND, FIVE DAY	Bismuth	Bismuth	Boron	Boron	BROMATE
	Fraction	N	N	N	D	T	D	T	D	T	D	T	D	D	T	T	N	D	T	D	T	N
	Unit	%	%	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	mg/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-04-24	FS_INF-S																					
2022-04-25	FS_BPO			466													< 2.0					15.2
2022-04-25	FS_INF-S			362																		
2022-04-25	FS_BPO																					
2022-04-25	FS_BPO	0	0																			
2022-04-26	FS_BPO																2.4					
2022-04-26	FS_INF-S				< 0.0060	0.0086	0.74	0.78	0.35	0.27	0.0268	0.0270	< 0.040		< 0.040			< 0.000100	< 0.000100	< 0.020	< 0.020	
2022-04-26	FS_BPO																					
2022-04-27	FS_BPO																5.3					
2022-04-27	FS_INF-S																					
2022-04-27	FS_BPO																					
2022-04-28	FS_BPO																4.9					
2022-04-28	FS_INF-S																					
2022-04-28	FS_BPO																					
2022-04-28	FR_SCOUTDS			181	0.0083	0.0680	0.29	0.30	0.12	0.14	0.0647	0.0694	< 0.020		< 0.020		< 2.0	< 0.000050	< 0.000050	0.011	0.011	< 0.30
2022-04-28	FR_FRABCH																					
2022-04-29	FS_BPO																7.9					
2022-04-29	FS_INF-S																					
2022-04-29	FS_BPO																					
2022-04-30	FS_BPO																					
2022-04-30	FS_INF-S																					
2022-04-30	FS_BPO																					
2022-05-01	FS_BPO																					
2022-05-01	FS_INF-K																					
2022-05-01	FS_INF-S																					
2022-05-01	FS_BPO																					
2022-05-01	FS_INF-K																					
2022-05-01	FS_BPO																					
2022-05-01	FS_BPO																					
2022-05-02	FS_BPO			409													< 2.0					13.5
2022-05-02	FS_INF-S			410																		< 0.30
2022-05-02	FS_BPO	0	0																			
2022-05-02	FS_BPO																					
2022-05-02	FS_BPO																					
2022-05-02	FS_BPO																					
2022-05-02	FS_INF-S																					
2022-05-03	FS_BPO				< 0.0060	< 0.0060	0.29	0.28	< 0.20	< 0.20	0.0135	0.0139	< 0.040		< 0.040		< 2.0	< 0.000100	< 0.000100	0.020	0.020	
2022-05-03	FS_INF-S				< 0.0060	0.0112	0.84	0.80	0.20	0.22	0.0258	0.0262	< 0.040		< 0.040			< 0.000100	< 0.000100	< 0.020	< 0.020	
2022-05-03	FS_BPO																					
2022-05-04	FS_BPO																< 2.0					
2022-05-04	FS_INF-S																					
2022-05-04	FS_BPO																					
2022-05-05	FS_BPO																< 2.0					
2022-05-05	FS_INF-K																					
2022-05-05	FS_INF-S																					
2022-05-05	FS_BPO																					
2022-05-05	FR_SCOUTDS			159	0.0092	0.0582	0.24	0.24	0.20	0.13	0.0530	0.0543	< 0.020		< 0.020		< 2.0	< 0.000050	< 0.000050	< 0.010	0.010	< 0.30
2022-05-05	FR_FRABCH																					
2022-05-06	FS_BPO																2.3					
2022-05-06	FS_INF-K																					
2022-05-06	FS_INF-S																					
2022-05-06	FS_BPO																					
2022-05-07	FS_BPO																					
2022-05-07	FS_INF-K																					
2022-05-07	FS_INF-S																					
2022-05-07	FS_BPO																					
2022-05-07	FS_INF-S																					
2022-05-08	FS_BPO																					
2022-05-08	FS_INF-K																					
2022-05-08	FS_INF-S																					
2022-05-08	FS_BPO																					
2022-05-08	FS_INF-S																					
2022-05-08	FS_BPO																					
2022-05-09	FS_INF-S																					
2022-05-09	FS_INF-S																					
2022-05-09	FS_BPO			416													< 2.0					13.4
2022-05-09	FS_INF-K			409																		
2022-05-09	FS_INF-S			327																		
2022-05-09	FS_BPO																					
2022-05-09	FS_BPO	0	0																			
2022-05-10	FS_INF-S																					
2022-05-10	FS_INF-S																					

Parameter		48-h Static acute lethality test using Daphnia ma	96-Hr 100% Conc. Acute lethality test for R. Trout	Alkalinity, Total (As CaCO3)	Aluminum	Aluminum	Antimony	Antimony	Arsenic	Arsenic	Barium	Barium	Beryllium	Beryllium	Beryllium	Beryllium	BIOCHEMICAL OXYGEN DEMAND, FIVE DAY	Bismuth	Bismuth	Boron	Boron	BROMATE
Fraction		N	N	N	D	T	D	T	D	T	D	T	D	D	T	T	N	D	T	D	T	N
Unit		%	%	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	mg/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-05-10	FS_BPO				< 0.0060	< 0.0060	0.44	0.29	< 0.20	< 0.20	0.0145	0.0130	< 0.040		< 0.040		< 2.0	< 0.000100	< 0.000100	< 0.020	< 0.020	
2022-05-10	FS_INF-K				< 0.0060	< 0.0060	0.47	0.48	< 0.20	< 0.20	0.0216	0.0213	< 0.040		< 0.040			< 0.000100	< 0.000100	0.028	0.027	
2022-05-10	FS_INF-S				< 0.0060	0.0167	0.82	0.81	< 0.20	0.20	0.0262	0.0252	< 0.040		< 0.040			< 0.000100	< 0.000100	< 0.020	< 0.020	
2022-05-10	FS_BPO																					
2022-05-10	FR_FRABCH																					
2022-05-11	FS_BPO																< 2.0					
2022-05-11	FS_INF-K																					
2022-05-11	FS_INF-S																					
2022-05-11	FS_BPO																					
2022-05-12	FS_BPO																< 2.0					
2022-05-12	FS_INF-K																					
2022-05-12	FS_INF-S																					
2022-05-12	FS_BPO																					
2022-05-12	FR_SCOUTDS			188	0.0035	0.0221	0.29	0.27	0.16	0.11	0.0541	0.0544	< 0.020		< 0.020		< 2.0	< 0.000050	< 0.000050	0.011	0.010	< 0.54
2022-05-12	FS_INF-K																					
2022-05-12	FS_INF-S																					
2022-05-12	FS_INF-K																					
2022-05-12	FS_INF-S																					
2022-05-12	FS_INF-K																					
2022-05-12	FS_INF-S																					
2022-05-12	FS_INF-K																					
2022-05-12	FS_INF-S																					
2022-05-12	FS_INF-K																					
2022-05-12	FS_INF-S																					
2022-05-13	FS_INF-K																					
2022-05-13	FS_INF-S																					
2022-05-13	FS_INF-K																					
2022-05-13	FS_INF-S																					
2022-05-13	FS_BPO																< 2.0					
2022-05-13	FS_INF-K																					
2022-05-13	FS_INF-S																					
2022-05-13	FS_BPO																					
2022-05-13	FS_INF-K																					
2022-05-13	FS_INF-S																					
2022-05-13	FS_INF-K																					
2022-05-13	FS_INF-S																					
2022-05-13	FS_INF-K																					
2022-05-13	FS_INF-S																					
2022-05-13	FS_INF-K																					
2022-05-13	FS_INF-S																					
2022-05-14	FS_INF-K																					
2022-05-14	FS_INF-S																					
2022-05-14	FS_INF-K																					
2022-05-14	FS_INF-S																					
2022-05-14	FS_BPO																					
2022-05-14	FS_INF-K																					
2022-05-14	FS_INF-S																					
2022-05-14	FS_BPO																					
2022-05-14	FS_INF-K																					
2022-05-14	FS_INF-S																					
2022-05-14	FS_INF-K																					
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2022-05-14	FS_INF-S																					
2022-05-14	FS_INF-K																					
2022-05-14	FS_INF-S																					
2022-05-14	FS_INF-K																					
2022-05-14	FS_INF-S																					
2022-05-15	FS_INF-K																					
2022-05-15	FS_INF-S																					
2022-05-15	FS_INF-K																					
2022-05-15	FS_INF-S																					
2022-05-15	FS_BPO																					
2022-05-15	FS_INF-K																					
2022-05-15	FS_INF-S																					
2022-05-15	FS_BPO																					
2022-05-15	FS_INF-K																					
2022-05-15	FS_INF-S																					
2022-05-15	FS_INF-K																					
2022-05-15	FS_INF-S																					
2022-05-15	FS_INF-K																					
2022-05-15	FS_INF-S																					
2022-05-15	FS_INF-K																					
2022-05-15	FS_INF-S																					
2022-05-16	FS_INF-K																					
2022-05-16	FS_INF-S																					
2022-05-16	FS_INF-K																					
2022-05-16	FS_INF-S																					
2022-05-16	FS_BPO			436													< 2.0					13.0

Parameter		48-h Static acute lethality test using Daphnia ma	96-Hr 100% Conc. Acute lethality test for R. Trout	Alkalinity, Total (As CaCO3)	Aluminum	Aluminum	Antimony	Antimony	Arsenic	Arsenic	Barium	Barium	Beryllium	Beryllium	Beryllium	Beryllium	BIOCHEMICAL OXYGEN DEMAND, FIVE DAY	Bismuth	Bismuth	Boron	Boron	BROMATE
Fraction		N	N	N	D	T	D	T	D	T	D	T	D	D	T	T	N	D	T	D	T	N
Unit		%	%	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	mg/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-05-16	FS_INF-K			440																		< 0.30
2022-05-16	FS_INF-S			382																		< 0.30
2022-05-16	FS_BPO																					
2022-05-16	FS_BPO	0	0																			
2022-05-16	FS_INF-K																					
2022-05-16	FS_INF-S																					
2022-05-16	FS_INF-K																					
2022-05-16	FS_INF-S																					
2022-05-16	FS_INF-K																					
2022-05-16	FS_INF-S																					
2022-05-16	FS_INF-K																					
2022-05-16	FS_INF-S																					
2022-05-16	FS_INF-K																					
2022-05-16	FS_INF-S																					
2022-05-17	FS_INF-K																					
2022-05-17	FS_INF-S																					
2022-05-17	FS_INF-K																					
2022-05-17	FS_INF-S																					
2022-05-17	FS_BPO				< 0.0060	< 0.0060	0.34	0.34	< 0.20	< 0.20	0.0142	0.0138	< 0.040		< 0.040		< 2.0	< 0.000100	< 0.000100	< 0.020	< 0.020	
2022-05-17	FS_INF-K				0.0061	< 0.0060	0.50	0.45	< 0.20	< 0.20	0.0242	0.0212	< 0.040		< 0.040			< 0.000100	< 0.000100	0.030	0.026	
2022-05-17	FS_INF-S				0.0068	0.0075	0.90	0.82	< 0.20	< 0.20	0.0278	0.0258	< 0.040		< 0.040			< 0.000100	< 0.000100	< 0.020	< 0.020	
2022-05-17	FS_BPO																					
2022-05-17	FR_FRABCH			195	0.0020	0.0463	0.17	0.17	< 0.10	< 0.10	0.0650	0.0660		< 0.020		< 0.020	< 2.0	< 0.000050	< 0.000050	< 0.010	0.010	
2022-05-17	FS_INF-K																					
2022-05-17	FS_INF-S																					
2022-05-17	FS_INF-K																					
2022-05-17	FS_INF-S																					
2022-05-17	FS_INF-K																					
2022-05-17	FS_INF-S																					
2022-05-17	FS_INF-K																					
2022-05-17	FS_INF-S																					
2022-05-17	FS_INF-K																					
2022-05-17	FS_INF-S																					
2022-05-17	FS_INF-K																					
2022-05-17	FS_INF-S																					
2022-05-18	FS_INF-K																					
2022-05-18	FS_INF-S																					
2022-05-18	FS_INF-K																					
2022-05-18	FS_INF-S																					
2022-05-18	FS_BPO																< 2.0					
2022-05-18	FS_INF-K																					
2022-05-18	FS_INF-S																					
2022-05-18	FS_BPO																					
2022-05-18	FS_BPO																					
2022-05-18	FS_INF-K																					
2022-05-18	FS_INF-S																					
2022-05-18	FS_INF-K																					
2022-05-18	FS_INF-S																					
2022-05-18	FS_INF-K																					
2022-05-18	FS_INF-S																					
2022-05-19	FS_INF-K																					
2022-05-19	FS_INF-S																					
2022-05-19	FS_INF-K																					
2022-05-19	FS_INF-S																					
2022-05-19	FS_BPO																< 2.0					
2022-05-19	FS_INF-K																					
2022-05-19	FS_INF-S																					
2022-05-19	FS_BPO																					
2022-05-19	FR_SCOUTDS			181	0.0041	0.0234	0.24	0.24	0.13	0.18	0.0476	0.0507	< 0.020		< 0.020		< 2.0	< 0.000050	< 0.000050	< 0.010	< 0.010	< 0.30
2022-05-19	FS_INF-K																					
2022-05-19	FS_INF-S																					
2022-05-19	FS_INF-K																					
2022-05-19	FS_INF-S																					
2022-05-19	FS_INF-K																					
2022-05-19	FS_INF-S																					
2022-05-19	FS_INF-K																					
2022-05-19	FS_INF-S																					
2022-05-19	FS_INF-K																					
2022-05-19	FS_INF-S																					
2022-05-20	FS_INF-K																					
2022-05-20	FS_INF-S																					
2022-05-20	FS_INF-K																					
2022-05-20	FS_INF-S																					
2022-05-20	FS_BPO																< 2.0					
2022-05-20	FS_INF-K																					
2022-05-20	FS_INF-S																					
2022-05-20	FS_BPO																					
2022-05-20	FS_INF-K																					
2022-05-20	FS_INF-S																					
2022-05-20	FS_INF-K																					
2022-05-20	FS_INF-S																					
2022-05-20	FS_INF-K																					
2022-05-20	FS_INF-S																					

Parameter		48-h Static acute lethality test using Daphnia ma	96-Hr 100% Conc. Acute lethality test for R. Trout	Alkalinity, Total (As CaCO3)	Aluminum	Aluminum	Antimony	Antimony	Arsenic	Arsenic	Barium	Barium	Beryllium	Beryllium	Beryllium	Beryllium	BIOCHEMICAL OXYGEN DEMAND, FIVE DAY	Bismuth	Bismuth	Boron	Boron	BROMATE
Fraction		N	N	N	D	T	D	T	D	T	D	T	D	D	T	T	N	D	T	D	T	N
Unit		%	%	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	mg/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-05-20	FS_INF-K																					
2022-05-20	FS_INF-S																					
2022-05-21	FS_INF-K																					
2022-05-21	FS_INF-S																					
2022-05-21	FS_INF-K																					
2022-05-21	FS_INF-S																					
2022-05-21	FS_BPO																					
2022-05-21	FS_INF-K																					
2022-05-21	FS_INF-S																					
2022-05-21	FS_BPO																					
2022-05-21	FS_INF-K																					
2022-05-21	FS_INF-S																					
2022-05-21	FS_INF-K																					
2022-05-21	FS_INF-S																					
2022-05-21	FS_INF-K																					
2022-05-21	FS_INF-S																					
2022-05-21	FS_INF-K																					
2022-05-21	FS_INF-S																					
2022-05-22	FS_INF-K																					
2022-05-22	FS_INF-S																					
2022-05-22	FS_INF-K																					
2022-05-22	FS_INF-S																					
2022-05-22	FS_BPO																					
2022-05-22	FS_INF-K																					
2022-05-22	FS_INF-S																					
2022-05-22	FS_BPO																					
2022-05-22	FS_BPO																					
2022-05-22	FS_INF-K																					
2022-05-22	FS_INF-S																					
2022-05-22	FS_INF-K																					
2022-05-22	FS_INF-S																					
2022-05-22	FS_INF-K																					
2022-05-22	FS_INF-S																					
2022-05-23	FS_INF-K																					
2022-05-23	FS_INF-S																					
2022-05-23	FS_INF-K																					
2022-05-23	FS_INF-S																					
2022-05-23	FS_BPO			408													< 2.0					11.4
2022-05-23	FS_INF-K			418																		
2022-05-23	FS_INF-S			371																		
2022-05-23	FS_BPO																					
2022-05-23	FS_BPO	0	0																			
2022-05-23	FR_FRABCH																					
2022-05-23	FS_INF-K																					
2022-05-23	FS_INF-S																					
2022-05-23	FS_INF-K																					
2022-05-23	FS_INF-S																					
2022-05-23	FS_INF-K																					
2022-05-23	FS_INF-S																					
2022-05-23	FS_INF-K																					
2022-05-23	FS_INF-S																					
2022-05-23	FS_INF-K																					
2022-05-24	FS_INF-S																					
2022-05-24	FS_INF-K																					
2022-05-24	FS_INF-S																					
2022-05-24	FS_BPO				< 0.0060	< 0.0060	0.37	0.32	< 0.20	< 0.20	0.0140	0.0130	< 0.040		< 0.040		< 2.0	< 0.000100	< 0.000100	< 0.020	< 0.020	
2022-05-24	FS_INF-K				< 0.0060	< 0.0030	0.49	0.46	< 0.20	< 0.10	0.0197	0.0211	< 0.040		< 0.020			< 0.000100	< 0.000050	0.024	0.027	
2022-05-24	FS_INF-S				< 0.0060	0.0074	0.90	0.85	< 0.20	< 0.20	0.0254	0.0262	< 0.040		< 0.040			< 0.000100	< 0.000100	< 0.020	< 0.020	
2022-05-24	FS_BPO																					
2022-05-24	FR_FRABCH			210	0.0014	0.0110	0.17	0.18	< 0.10	< 0.10	0.0756	0.0680		< 0.020		< 0.020	< 2.0	< 0.000050	< 0.000050	0.010	0.011	
2022-05-24	FS_INF-K																					
2022-05-24	FS_INF-S																					
2022-05-24	FS_INF-K																					
2022-05-24	FS_INF-S																					
2022-05-24	FS_INF-K																					
2022-05-24	FS_INF-S																					
2022-05-24	FS_INF-K																					
2022-05-24	FS_INF-S																					
2022-05-24	FS_INF-K																					
2022-05-24	FS_INF-S																					
2022-05-25	FS_INF-K																					
2022-05-25	FS_INF-S																					
2022-05-25	FS_INF-K																					
2022-05-25	FS_INF-S																					
2022-05-25	FS_BPO																< 2.0					
2022-05-25	FS_INF-K																					
2022-05-25	FS_INF-S																					
2022-05-25	FS_BPO																					
2022-05-25	FS_INF-K																					
2022-05-25	FS_INF-S																					
2022-05-25	FS_INF-K																					

	Parameter	48-h Static acute lethality test using Daphnia ma	96-Hr 100% Conc. Acute lethality test for R. Trout	Alkalinity, Total (As CaCO3)	Aluminum	Aluminum	Antimony	Antimony	Arsenic	Arsenic	Barium	Barium	Beryllium	Beryllium	Beryllium	Beryllium	BIOCHEMICAL OXYGEN DEMAND, FIVE DAY	Bismuth	Bismuth	Boron	Boron	BROMATE
	Fraction	N	N	N	D	T	D	T	D	T	D	T	D	D	T	T	N	D	T	D	T	N
	Unit	%	%	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	mg/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-05-25	FS_INF-S																					
2022-05-25	FS_INF-K																					
2022-05-25	FS_INF-S																					
2022-05-25	FS_INF-K																					
2022-05-25	FS_INF-S																					
2022-05-25	FS_INF-K																					
2022-05-25	FS_INF-S																					
2022-05-26	FS_INF-K																					
2022-05-26	FS_INF-S																					
2022-05-26	FS_INF-K																					
2022-05-26	FS_INF-S																					
2022-05-26	FS_BPO																< 2.0					
2022-05-26	FS_INF-K																					
2022-05-26	FS_INF-S																					
2022-05-26	FS_BPO																					
2022-05-26	FR_SCOUTDS			164	0.0034	0.0344	0.19	0.19	0.11	0.19	0.0468	0.0465	< 0.020			< 0.020	< 2.0	< 0.000050	< 0.000050	< 0.010	< 0.010	< 0.30
2022-05-26	FS_INF-K																					
2022-05-26	FS_INF-S																					
2022-05-26	FS_INF-K																					
2022-05-26	FS_INF-S																					
2022-05-26	FS_INF-K																					
2022-05-26	FS_INF-S																					
2022-05-26	FS_INF-K																					
2022-05-26	FS_INF-S																					
2022-05-26	FS_INF-K																					
2022-05-26	FS_INF-S																					
2022-05-27	FS_INF-K																					
2022-05-27	FS_INF-S																					
2022-05-27	FS_INF-K																					
2022-05-27	FS_INF-S																					
2022-05-27	FS_BPO																< 2.0					
2022-05-27	FS_INF-K																					
2022-05-27	FS_INF-S																					
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2022-05-29	FS_INF-K																					
2022-05-29	FS_INF-S																					
2022-05-30	FS_INF-K																					
2022-05-30	FS_INF-S																					
2022-05-30	FS_BPO			446													< 2.0					8.59
2022-05-30	FS_INF-K			437																		< 0.30

Parameter		48-h Static acute lethality test using Daphnia ma	96-Hr 100% Conc. Acute lethality test for R. Trout	Alkalinity, Total (As CaCO3)	Aluminum	Aluminum	Antimony	Antimony	Arsenic	Arsenic	Barium	Barium	Beryllium	Beryllium	Beryllium	Beryllium	BIOCHEMICAL OXYGEN DEMAND, FIVE DAY	Bismuth	Bismuth	Boron	Boron	BROMATE
Fraction		N	N	N	D	T	D	T	D	T	D	T	D	D	T	T	N	D	T	D	T	N
Unit		%	%	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	mg/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-05-30	FS_INF-S			376																		< 0.30
2022-05-30	FS_BPO	0	0																			
2022-05-30	FS_INF-K																					
2022-05-30	FS_INF-S																					
2022-05-30	FS_INF-K																					
2022-05-30	FS_INF-S																					
2022-05-30	FS_INF-K																					
2022-05-30	FS_INF-S																					
2022-05-30	FS_INF-K																					
2022-05-30	FS_INF-S																					
2022-05-30	FS_INF-K																					
2022-05-30	FS_INF-S																					
2022-05-31	FS_INF-K																					
2022-05-31	FS_INF-S																					
2022-05-31	FS_INF-K																					
2022-05-31	FS_INF-S																					
2022-05-31	FS_BPO				< 0.0060	< 0.0060	0.32	0.32	< 0.20	< 0.20	0.0144	0.0138	< 0.040			< 0.040	< 2.0	< 0.000100	< 0.000100	< 0.020	< 0.020	
2022-05-31	FS_INF-K				< 0.0030	< 0.0060	0.47	0.47	0.12	< 0.20	0.0224	0.0210	< 0.020			< 0.040		< 0.000050	< 0.000100	0.026	0.026	
2022-05-31	FS_INF-S				< 0.0060	0.0094	0.84	0.82	< 0.20	0.24	0.0278	0.0259	< 0.040			< 0.040		< 0.000100	< 0.000100	< 0.020	< 0.020	
2022-05-31	FR_FRABCH			196	0.0020	0.0817	0.14	0.16	< 0.10	0.15	0.0557	0.0600		< 0.020		< 0.020	< 2.0	< 0.000050	< 0.000050	< 0.010	< 0.010	
2022-05-31	FR_FRABCH																					
2022-05-31	FS_INF-K																					
2022-05-31	FS_INF-S																					
2022-05-31	FS_INF-K																					
2022-05-31	FS_INF-S																					
2022-05-31	FS_INF-K																					
2022-05-31	FS_INF-S																					
2022-05-31	FS_INF-K																					
2022-05-31	FS_INF-S																					
2022-06-01	FS_INF-K																					
2022-06-01	FS_INF-S																					
2022-06-01	FS_BPO																< 2.0					
2022-06-01	FS_INF-K																					
2022-06-01	FS_INF-S																					
2022-06-01	FS_INF-K																					
2022-06-01	FS_INF-S																					
2022-06-01	FS_INF-K																					
2022-06-01	FS_INF-S																					
2022-06-01	FS_INF-K																					
2022-06-01	FS_INF-S																					
2022-06-01	FS_INF-K																					
2022-06-01	FS_INF-S																					
2022-06-02	FS_INF-K																					
2022-06-02	FS_INF-S																					
2022-06-02	FS_INF-K																					
2022-06-02	FS_INF-S																					
2022-06-02	FS_BPO																< 2.0					
2022-06-02	FS_INF-K																					
2022-06-02	FS_INF-S																					
2022-06-02	FR_SCOUTDS			151	0.0054	0.0279	0.17	0.14	0.12	0.15	0.0382	0.0398	< 0.020			< 0.020	< 2.0	< 0.000050	< 0.000050	< 0.010	< 0.010	< 0.30
2022-06-02	FS_INF-K																					
2022-06-02	FS_INF-S																					
2022-06-02	FS_INF-K																					
2022-06-02	FS_INF-S																					
2022-06-02	FS_INF-K																					
2022-06-02	FS_INF-S																					
2022-06-02	FS_BPO																					
2022-06-02	FS_INF-K																					
2022-06-02	FS_INF-S																					
2022-06-02	FS_INF-K																					
2022-06-02	FS_INF-S																					
2022-06-03	FS_INF-K																					
2022-06-03	FS_INF-S																					
2022-06-03	FS_INF-K																					
2022-06-03	FS_INF-S																					
2022-06-03	FS_BPO																< 2.0					
2022-06-03	FS_INF-K																					
2022-06-03	FS_INF-S																					
2022-06-03	FS_INF-K																					
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2022-06-03	FS_INF-S																					
2022-06-03	FS_INF-K																					
2022-06-03	FS_INF-S																					
2022-06-04	FS_INF-K																					
2022-06-04	FS_INF-S																					
2022-06-04	FS_INF-K																					
2022-06-04	FS_INF-S																					
2022-06-04	FS_BPO																					

	Parameter	48-h Static acute lethality test using Daphnia ma	96-Hr 100% Conc. Acute lethality test for R. Trout	Alkalinity, Total (As CaCO3)	Aluminum	Aluminum	Antimony	Antimony	Arsenic	Arsenic	Barium	Barium	Beryllium	Beryllium	Beryllium	Beryllium	BIOCHEMICAL OXYGEN DEMAND, FIVE DAY	Bismuth	Bismuth	Boron	Boron	BROMATE
	Fraction	N	N	N	D	T	D	T	D	T	D	T	D	D	T	T	N	D	T	D	T	N
	Unit	%	%	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	mg/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-06-04	FS_INF-K																					
2022-06-04	FS_INF-S																					
2022-06-04	FS_INF-K																					
2022-06-04	FS_INF-S																					
2022-06-04	FS_INF-K																					
2022-06-04	FS_INF-S																					
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2022-06-04	FS_INF-K																					
2022-06-04	FS_INF-S																					
2022-06-04	FS_INF-K																					
2022-06-04	FS_INF-S																					
2022-06-05	FS_INF-K																					
2022-06-05	FS_INF-S																					
2022-06-05	FS_INF-K																					
2022-06-05	FS_INF-S																					
2022-06-05	FS_BPO																					
2022-06-05	FS_INF-K																					
2022-06-05	FS_INF-S																					
2022-06-05	FS_INF-K																					
2022-06-05	FS_INF-S																					
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2022-06-05	FS_INF-K																					
2022-06-05	FS_INF-S																					
2022-06-05	FS_INF-K																					
2022-06-05	FS_INF-S																					
2022-06-06	FS_INF-K																					
2022-06-06	FS_INF-S																					
2022-06-06	FS_INF-K																					
2022-06-06	FS_INF-S																					
2022-06-06	FS_BPO			444													< 2.0					10.4
2022-06-06	FS_INF-K			419																		
2022-06-06	FS_INF-S			360																		
2022-06-06	FS_BPO	0	0																			
2022-06-06	FS_INF-K																					
2022-06-06	FS_INF-S																					
2022-06-06	FS_INF-K																					
2022-06-06	FS_INF-S																					
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2022-06-06	FS_INF-S																					
2022-06-07	FS_INF-K																					
2022-06-07	FS_INF-S																					
2022-06-07	FS_INF-K																					
2022-06-07	FS_INF-S																					
2022-06-07	FS_BPO				0.0038	< 0.0060	0.33	0.34	< 0.10	< 0.20	0.0134	0.0138	0.021		< 0.040		< 2.0	< 0.000050	< 0.000100	0.017	< 0.020	
2022-06-07	FS_INF-K				< 0.0030	< 0.0030	0.48	0.47	< 0.10	< 0.10	0.0193	0.0187	< 0.020			< 0.020		< 0.000050	< 0.000050	0.024	0.022	
2022-06-07	FS_INF-S				< 0.0060	0.0199	0.73	0.74	0.21	0.21	0.0279	0.0278	< 0.040			< 0.040		< 0.000100	< 0.000100	< 0.020	< 0.020	
2022-06-07	FR_FRABCH			158	0.0028	0.206	0.12	0.16	< 0.10	0.26	0.0502	0.0569		< 0.020		< 0.020	< 2.0	< 0.000050	< 0.000050	< 0.010	< 0.010	
2022-06-07	FS_INF-K																					
2022-06-07	FS_INF-S																					
2022-06-07	FS_INF-K																					
2022-06-07	FS_INF-S																					
2022-06-07	FS_INF-K																					
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2022-06-07	FS_INF-S																					
2022-06-08	FS_INF-K																					
2022-06-08	FS_INF-S																					
2022-06-08	FS_INF-K																					
2022-06-08	FS_INF-S																					
2022-06-08	FS_BPO																< 2.0					
2022-06-08	FS_INF-K																					
2022-06-08	FS_INF-S																					
2022-06-08	FS_INF-K																					
2022-06-08	FS_INF-S																					
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2022-06-08	FS_INF-S																					
2022-06-09	FS_INF-K																					
2022-06-09	FS_INF-S																					
2022-06-09	FS_INF-K																					
2022-06-09	FS_INF-S																					

		48-h Static acute lethality test using Daphnia ma	96-Hr 100% Conc. Acute lethality test for R. Trout	Alkalinity, Total (As CaCO3)	Aluminum	Aluminum	Antimony	Antimony	Arsenic	Arsenic	Barium	Barium	Beryllium	Beryllium	Beryllium	Beryllium	BIOCHEMICAL OXYGEN DEMAND, FIVE DAY	Bismuth	Bismuth	Boron	Boron	BROMATE
Parameter		N	N	N	D	T	D	T	D	T	D	T	D	D	T	T	N	D	T	D	T	N
Fraction		%	%	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	mg/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l
Unit		Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
Date	Location Code																					
2022-06-09	FS_BPO																< 2.0					
2022-06-09	FS_INF-K																					
2022-06-09	FS_INF-S																					
2022-06-09	FR_SCOUTDS			89.4	0.0048	0.0866	0.15	0.13	0.13	0.20	0.0353	0.0367	< 0.020			< 0.020	< 2.0	< 0.000050	< 0.000050	< 0.010	< 0.010	< 0.30
2022-06-09	FS_INF-K																					
2022-06-09	FS_INF-S																					
2022-06-09	FR_FRABCH																					
2022-06-09	FS_INF-K																					
2022-06-09	FS_INF-S																					
2022-06-09	FS_INF-K																					
2022-06-09	FS_INF-S																					
2022-06-09	FS_INF-K																					
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2022-06-10	FS_INF-S																					
2022-06-10	FS_INF-K																					
2022-06-10	FS_INF-S																					
2022-06-10	FS_BPO																< 2.0					
2022-06-10	FS_INF-K																					
2022-06-10	FS_INF-S																					
2022-06-10	FS_INF-K																					
2022-06-10	FS_INF-S																					
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2022-06-11	FS_INF-S																					
2022-06-11	FS_BPO																					
2022-06-11	FS_INF-K																					
2022-06-11	FS_INF-S																					
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2022-06-12	FS_INF-K																					
2022-06-12	FS_INF-S																					
2022-06-12	FS_INF-K																					
2022-06-12	FS_INF-S																					
2022-06-12	FS_BPO																					
2022-06-12	FS_INF-K																					
2022-06-12	FS_INF-S																					
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2022-06-12	FS_INF-S																					
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2022-06-12	FS_INF-K																					
2022-06-12	FS_INF-S																					
2022-06-13	FS_INF-K																					
2022-06-13	FS_INF-S																					
2022-06-13	FS_INF-K																					
2022-06-13	FS_INF-S																					
2022-06-13	FS_BPO			455													< 2.0					9.24
2022-06-13	FS_INF-K			351																		< 0.30
2022-06-13	FS_INF-S			407																		< 0.30
2022-06-13	FS_BPO	0	0																			
2022-06-13	FS_INF-K																					
2022-06-13	FS_INF-S																					
2022-06-13	FS_INF-K																					
2022-06-13	FS_INF-S																					
2022-06-13	FS_INF-K																					
2022-06-13	FS_INF-S																					
2022-06-13	FS_INF-K																					
2022-06-13	FS_INF-S																					

Parameter		48-h Static acute lethality test using Daphnia ma	96-Hr 100% Conc. Acute lethality test for R. Trout	Alkalinity, Total (As CaCO3)	Aluminum	Aluminum	Antimony	Antimony	Arsenic	Arsenic	Barium	Barium	Beryllium	Beryllium	Beryllium	Beryllium	BIOCHEMICAL OXYGEN DEMAND, FIVE DAY	Bismuth	Bismuth	Boron	Boron	BROMATE
Fraction		N	N	N	D	T	D	T	D	T	D	T	D	D	T	T	N	D	T	D	T	N
Unit		%	%	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	mg/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-06-14	FS_BPO																					
2022-06-14	FR_FRABCH			167	0.0021	0.218	0.14	0.16	< 0.10	0.29	0.0445	0.0542		< 0.020		< 0.020	< 2.0	< 0.000050	< 0.000050	< 0.010	< 0.010	
2022-06-14	FS_BPO																					
2022-06-14	FR_FRABCH																					
2022-06-14	FS_BPO																					
2022-06-14	FS_BPO																					
2022-06-14	FS_INF-K																					
2022-06-14	FS_INF-S																					
2022-06-14	FS_BPO																< 2.0					
2022-06-14	FS_INF-K				< 0.0060	< 0.0060	0.52	0.50	< 0.20	< 0.20	0.0208	0.0212	< 0.040			< 0.040		< 0.000100	< 0.000100	0.024	0.023	
2022-06-14	FS_INF-S				< 0.0060	0.0300	0.77	0.72	0.25	0.32	0.0285	0.0280	< 0.040			< 0.040		< 0.000100	< 0.000100	< 0.020	< 0.020	
2022-06-15	FS_BPO																					
2022-06-15	FS_BPO																					
2022-06-15	FS_INF-K																					
2022-06-15	FS_INF-S																					
2022-06-15	FS_BPO																< 2.0					
2022-06-15	FS_INF-K																					
2022-06-15	FS_INF-S																					
2022-06-15	FS_INF-K																					
2022-06-15	FS_INF-S																					
2022-06-15	FS_BPO																					
2022-06-15	FS_INF-K																					
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2022-06-15	FS_INF-K																					
2022-06-16	FS_INF-K																					
2022-06-16	FS_INF-S																					
2022-06-16	FS_INF-K																					
2022-06-16	FS_INF-S																					
2022-06-16	FS_BPO																< 2.0					
2022-06-16	FS_INF-K																					
2022-06-16	FS_INF-S																					
2022-06-16	FR_SCOUTDS			142	0.0074	0.0799	0.16	0.16	0.14	0.13	0.0360	0.0384	< 0.020			< 0.020	< 2.0	< 0.000050	< 0.000050	< 0.010	< 0.010	< 0.30
2022-06-16	FS_INF-K																					
2022-06-16	FS_INF-S																					
2022-06-16	FR_SCOUTDS																					
2022-06-16	FS_INF-K																					
2022-06-16	FS_INF-S																					
2022-06-16	FS_INF-K																					
2022-06-16	FS_INF-S																					
2022-06-16	FS_INF-K																					
2022-06-16	FS_INF-S																					
2022-06-16	FS_INF-K																					
2022-06-16	FS_INF-S																					
2022-06-17	FS_INF-K																					
2022-06-17	FS_INF-S																					
2022-06-17	FS_INF-K																					
2022-06-17	FS_INF-S																					
2022-06-17	FS_BPO																< 2.0					
2022-06-17	FS_INF-K																					
2022-06-17	FS_INF-S																					
2022-06-17	FS_INF-K																					
2022-06-17	FS_INF-S																					
2022-06-17	FS_INF-S																					
2022-06-17	FS_INF-S																					
2022-06-18	FS_INF-S																					
2022-06-18	FS_BPO																					
2022-06-18	FS_INF-S																					
2022-06-18	FS_INF-S																					
2022-06-18	FS_INF-S																					
2022-06-18	FS_INF-S																					
2022-06-18	FS_INF-S																					
2022-06-19	FS_INF-S																					
2022-06-19	FS_INF-S																					
2022-06-19	FS_BPO																					
2022-06-19	FS_INF-S																					
2022-06-19	FS_INF-K																					
2022-06-19	FS_INF-S																					
2022-06-19	FS_INF-S																					
2022-06-19	FS_INF-S																					
2022-06-19	FS_INF-S																					
2022-06-20	FS_INF-S																					
2022-06-20	FS_INF-S																					
2022-06-20	FS_BPO			448													< 2.0					11.5
2022-06-20	FS_INF-K																					

		48-h Static acute lethality test using Daphnia ma	96-Hr 100% Conc. Acute lethality test for R. Trout	Alkalinity, Total (As CaCO3)	Aluminum	Aluminum	Antimony	Antimony	Arsenic	Arsenic	Barium	Barium	Beryllium	Beryllium	Beryllium	Beryllium	BIOCHEMICAL OXYGEN DEMAND, FIVE DAY	Bismuth	Bismuth	Boron	Boron	BROMATE
Parameter																						
Fraction		N	N	N	D	T	D	T	D	T	D	T	D	D	T	T	N	D	T	D	T	N
Unit		%	%	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	mg/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-06-20	FS_INF-S			364																		
2022-06-20	FS_BPO	0	0																			
2022-06-20	FS_INF-S																					
2022-06-20	FS_INF-S																					
2022-06-20	FS_INF-S																					
2022-06-20	FS_INF-S																					
2022-06-21	FS_INF-S																					
2022-06-21	FS_INF-S																					
2022-06-21	FS_BPO				< 0.0060	< 0.0060	0.36	0.29	< 0.20	< 0.20	0.0181	0.0166	< 0.040		< 0.040		< 2.0	< 0.000100	< 0.000100	< 0.020	< 0.020	
2022-06-21	FS_INF-S				< 0.0060	0.0118	0.81	0.90	0.24	0.26	0.0339	0.0340	< 0.040			< 0.040		< 0.000100	< 0.000100	< 0.020	< 0.020	
2022-06-21	FR_FRABCH			167	0.0056	0.226	0.17	0.19	0.15	0.33	0.0489	0.0491		< 0.020		0.037	< 2.0	< 0.000050	< 0.000050	< 0.010	< 0.010	
2022-06-21	FS_INF-S																					
2022-06-21	FS_INF-S																					
2022-06-21	FS_INF-S																					
2022-06-21	FS_INF-S																					
2022-06-21	FS_INF-S																					
2022-06-22	FS_INF-S																					
2022-06-22	FS_INF-S																					
2022-06-22	FS_BPO																< 2.0					
2022-06-22	FS_INF-S																					
2022-06-22	FS_INF-K																					
2022-06-22	FS_INF-S																					
2022-06-22	FS_INF-K																					
2022-06-22	FS_INF-S																					
2022-06-22	FS_INF-K																					
2022-06-22	FS_INF-S																					
2022-06-22	FS_INF-K																					
2022-06-22	FS_INF-S																					
2022-06-22	FS_INF-K																					
2022-06-22	FS_INF-S																					
2022-06-23	FS_INF-K																					
2022-06-23	FS_INF-S																					
2022-06-23	FS_INF-K																					
2022-06-23	FS_INF-S																					
2022-06-23	FS_INF-K																					
2022-06-23	FS_INF-S																					
2022-06-23	FS_INF-K																					
2022-06-23	FS_INF-S																					
2022-06-23	FS_INF-K																					
2022-06-23	FS_INF-S																					
2022-06-23	FS_BPO																< 2.0					
2022-06-23	FS_INF-K																					
2022-06-23	FS_INF-S																					
2022-06-23	FR_SCOUTDS			131	0.0055	0.106	0.14	0.13	0.10	0.15	0.0308	0.0327	< 0.020			< 0.020	< 2.0	< 0.000050	< 0.000050	< 0.010	< 0.010	< 0.30
2022-06-23	FS_INF-K																					
2022-06-23	FS_INF-S																					
2022-06-23	FS_INF-K																					
2022-06-23	FS_INF-S																					
2022-06-23	FS_INF-K																					
2022-06-23	FS_INF-S																					
2022-06-23	FS_INF-K																					
2022-06-24	FS_INF-K																					
2022-06-24	FS_INF-S																					
2022-06-24	FS_INF-K																					
2022-06-24	FS_INF-K																					
2022-06-24	FS_BPO																< 2.0					
2022-06-24	FS_INF-K																					
2022-06-24	FS_INF-S																					
2022-06-24	FS_INF-K																					
2022-06-24	FS_INF-S																					
2022-06-24	FS_INF-K																					
2022-06-24	FS_INF-S																					
2022-06-24	FS_INF-K																					
2022-06-24	FS_INF-S																					
2022-06-24	FS_INF-K																					
2022-06-24	FS_INF-S																					
2022-06-25	FS_INF-K																					
2022-06-25	FS_INF-S																					
2022-06-25	FS_INF-K																					
2022-06-25	FS_INF-S																					
2022-06-25	FS_BPO																					
2022-06-25	FS_INF-K																					
2022-06-25	FS_INF-S																					
2022-06-25	FS_INF-K																					
2022-06-25	FS_INF-S																					
2022-06-25	FS_INF-K																					
2022-06-25	FS_INF-S																					
2022-06-25	FS_INF-K																					
2022-06-25	FS_INF-S																					
2022-06-25	FS_INF-K																					
2022-06-25	FS_INF-S																					
2022-06-25	FS_INF-K																					
2022-06-25	FS_INF-S																					
2022-06-26	FS_INF-K																					

Parameter		48-h Static acute lethality test using Daphnia ma	96-Hr 100% Conc. Acute lethality test for R. Trout	Alkalinity, Total (As CaCO3)	Aluminum	Aluminum	Antimony	Antimony	Arsenic	Arsenic	Barium	Barium	Beryllium	Beryllium	Beryllium	Beryllium	BIOCHEMICAL OXYGEN DEMAND, FIVE DAY	Bismuth	Bismuth	Boron	Boron	BROMATE
Fraction		N	N	N	D	T	D	T	D	T	D	T	D	D	T	T	N	D	T	D	T	N
Unit		%	%	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	mg/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-06-26	FS_INF-S																					
2022-06-26	FS_INF-K																					
2022-06-26	FS_INF-S																					
2022-06-26	FS_BPO																					
2022-06-26	FS_INF-K																					
2022-06-26	FS_INF-S																					
2022-06-26	FS_INF-K																					
2022-06-26	FS_INF-S																					
2022-06-26	FS_INF-K																					
2022-06-26	FS_INF-S																					
2022-06-26	FS_INF-K																					
2022-06-26	FS_INF-S																					
2022-06-26	FS_INF-K																					
2022-06-26	FS_INF-S																					
2022-06-27	FS_INF-K																					
2022-06-27	FS_INF-S																					
2022-06-27	FS_INF-K																					
2022-06-27	FS_INF-S																					
2022-06-27	FS_BPO			411													< 2.0					9.07
2022-06-27	FS_INF-K			322																		< 0.30
2022-06-27	FS_INF-S			390																		< 0.30
2022-06-27	FS_BPO	0	0																			
2022-06-27	FS_INF-K																					
2022-06-27	FS_INF-S																					
2022-06-27	FS_INF-K																					
2022-06-27	FS_INF-S																					
2022-06-27	FS_INF-K																					
2022-06-27	FS_INF-S																					
2022-06-27	FS_INF-K																					
2022-06-27	FS_INF-S																					
2022-06-27	FS_BPO																					
2022-06-27	FS_INF-K																					
2022-06-27	FS_INF-S																					
2022-06-27	FS_INF-K																					
2022-06-27	FS_INF-S																					
2022-06-27	FS_BPO																					
2022-06-27	FS_INF-K																					
2022-06-28	FS_INF-S																					
2022-06-28	FS_BPO																					
2022-06-28	FS_INF-K																					
2022-06-28	FS_INF-S																					
2022-06-28	FS_INF-K																					
2022-06-28	FS_INF-S																					
2022-06-28	FS_BPO				< 0.0060	< 0.0060	0.37	0.36	< 0.20	< 0.20	0.0190	0.0181	< 0.040			< 0.040	< 2.0	< 0.000100	< 0.000100	0.026	0.026	
2022-06-28	FS_INF-K				< 0.0060	0.0079	0.62	0.62	< 0.20	< 0.20	0.0239	0.0242	< 0.040			< 0.040		< 0.000100	< 0.000100	0.023	0.024	
2022-06-28	FS_INF-S				< 0.0060	0.0070	0.81	0.81	0.22	0.23	0.0359	0.0360	< 0.040			< 0.040		< 0.000100	< 0.000100	< 0.020	< 0.020	
2022-06-28	FR_FRABCH			175	0.0041	0.0814	0.15	0.19	< 0.10	0.16	0.0407	0.0413		< 0.020		< 0.020	< 2.0	< 0.000050	< 0.000050	< 0.010	< 0.010	
2022-06-28	FR_FRABCH																					
2022-06-28	FS_INF-K																					
2022-06-28	FS_INF-S																					
2022-06-28	FS_INF-K																					
2022-06-28	FS_INF-S																					
2022-06-28	FS_INF-K																					
2022-06-28	FS_INF-S																					
2022-06-28	FS_INF-K																					
2022-06-28	FS_INF-S																					
2022-06-28	FS_INF-K																					
2022-06-28	FS_INF-S																					
2022-06-29	FS_INF-K																					
2022-06-29	FS_INF-S																					
2022-06-29	FS_INF-K																					
2022-06-29	FS_INF-S																					
2022-06-29	FS_BPO																< 2.0					
2022-06-29	FS_INF-K																					
2022-06-29	FS_INF-S																					
2022-06-29	FS_INF-K																					
2022-06-29	FS_INF-S																					
2022-06-29	FS_INF-K																					
2022-06-29	FS_INF-S																					
2022-06-29	FS_BPO																					
2022-06-29	FS_BPO	0	0	433	< 0.0060	< 0.0060	0.35	0.38	< 0.20	< 0.20	0.0193	0.0184	< 0.040			< 0.040	< 2.0	< 0.000100	< 0.000100	0.024	0.022	
2022-06-29	FS_INF-K																					
2022-06-29	FS_INF-S																					
2022-06-29	FS_INF-K																					
2022-06-29	FS_INF-S																					
2022-06-29	FS_INF-K																					
2022-06-29	FS_INF-S																					
2022-06-30	FS_INF-K																					
2022-06-30	FS_INF-S																					
2022-06-30	FS_INF-K																					
2022-06-30	FS_INF-S																					
2022-06-30	FS_BPO				< 0.0060	0.0061	0.34	0.37	< 0.20	< 0.20	0.0194	0.0191	< 0.040			< 0.040	2.2	< 0.000100	< 0.000100	0.021	0.024	
2022-06-30	FS_INF-K																					
2022-06-30	FS_INF-S																					
2022-06-30	FS_BPO																					

Parameter		48-h Static acute lethality test using Daphnia ma	96-Hr 100% Conc. Acute lethality test for R. Trout	Alkalinity, Total (As CaCO3)	Aluminum	Aluminum	Antimony	Antimony	Arsenic	Arsenic	Barium	Barium	Beryllium	Beryllium	Beryllium	Beryllium	BIOCHEMICAL OXYGEN DEMAND, FIVE DAY	Bismuth	Bismuth	Boron	Boron	BROMATE
Fraction		N	N	N	D	T	D	T	D	T	D	T	D	D	T	T	N	D	T	D	T	N
Unit		%	%	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	mg/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-06-30	FR_SCOUTDS																					
2022-06-30	FR_SCOUTDS			167	0.0041	0.0374	0.14	0.14	0.11	0.16	0.0343	0.0325	< 0.020			< 0.020	< 2.0	< 0.000050	< 0.000050	< 0.010	< 0.010	< 0.30
2022-06-30	FS_INF-K																					
2022-06-30	FS_INF-S																					
2022-06-30	FS_INF-K																					
2022-06-30	FS_INF-S																					
2022-06-30	FS_INF-K																					
2022-06-30	FS_INF-S																					
2022-06-30	FS_INF-K																					
2022-06-30	FS_INF-S																					
2022-06-30	FS_INF-K																					
2022-06-30	FS_INF-S																					
2022-07-01	FS_INF-K																					
2022-07-01	FS_INF-S																					
2022-07-01	FS_INF-K																					
2022-07-01	FS_INF-S																					
2022-07-01	FS_BPO																< 2.0					
2022-07-01	FS_INF-K																					
2022-07-01	FS_INF-S																					
2022-07-01	FS_INF-K																					
2022-07-01	FS_INF-S																					
2022-07-01	FS_INF-K																					
2022-07-01	FS_INF-S																					
2022-07-01	FS_INF-K																					
2022-07-01	FS_INF-S																					
2022-07-02	FS_BPO																					
2022-07-02	FS_BPO																					
2022-07-02	FR_SCOUTDS																					
2022-07-02	FR_FRABCH																					
2022-07-02	FS_BPO																					
2022-07-02	FS_INF-K																					
2022-07-02	FS_INF-S																					
2022-07-02	FS_BPO																					
2022-07-02	FS_INF-K																					
2022-07-02	FS_INF-S																					
2022-07-03	FS_INF-K																					
2022-07-03	FS_INF-S																					
2022-07-03	FS_INF-K																					
2022-07-03	FS_INF-S																					
2022-07-03	FS_BPO																					
2022-07-03	FS_INF-K																					
2022-07-03	FS_INF-S																					
2022-07-03	FS_INF-K																					
2022-07-03	FS_INF-S																					
2022-07-03	FR_FRABCH																					
2022-07-03	FS_INF-K																					
2022-07-03	FS_INF-S																					
2022-07-03	FS_INF-K																					
2022-07-03	FS_INF-S																					
2022-07-03	FS_INF-K																					
2022-07-03	FS_INF-S																					
2022-07-04	FS_INF-K																					
2022-07-04	FS_INF-S																					
2022-07-04	FS_INF-K																					
2022-07-04	FS_INF-S																					
2022-07-04	FS_BPO			465													< 2.0					11.1
2022-07-04	FS_INF-K			376																		
2022-07-04	FS_INF-S			399																		
2022-07-04	FS_BPO	0	0																			
2022-07-04	FS_INF-K																					
2022-07-04	FS_INF-S																					
2022-07-04	FS_INF-K																					
2022-07-04	FS_INF-S																					
2022-07-04	FS_INF-K																					
2022-07-04	FS_INF-S																					
2022-07-04	FS_INF-K																					
2022-07-04	FS_INF-S																					
2022-07-04	FS_INF-K																					
2022-07-04	FS_INF-S																					
2022-07-05	FS_INF-K																					
2022-07-05	FS_INF-S																					
2022-07-05	FS_INF-K																					
2022-07-05	FS_INF-S																					
2022-07-05	FS_BPO				< 0.0060	< 0.0060	0.36	0.30	< 0.20	< 0.20	0.0178	0.0162	< 0.040			< 0.040	< 2.0	< 0.000100	< 0.000100	0.024	0.023	
2022-07-05	FS_INF-K				< 0.0060	< 0.0060	0.66	0.63	< 0.20	< 0.20	0.0287	0.0264	< 0.040			< 0.040		< 0.000100	< 0.000100	0.027	0.026	
2022-07-05	FS_INF-S				< 0.0060	0.0380	0.77	0.76	0.25	0.26	0.0357	0.0342	< 0.040			< 0.040		< 0.000100	< 0.000100	< 0.020	< 0.020	
2022-07-05	FR_FRABCH																					
2022-07-05	FS_INF-K																					
2022-07-05	FS_INF-S																					
2022-07-05	FS_INF-K																					
2022-07-05	FS_INF-S																					
2022-07-05	FR_SCOUTDS	0	0	136	0.0031	0.0380	< 0.10	0.13	0.10	0.14	0.0325	0.0323		< 0.020		< 0.020	< 2.0	< 0.000050	< 0.000050	< 0.010	< 0.010	
2022-07-05	FS_INF-K																					

Parameter		48-h Static acute lethality test using Daphnia ma	96-Hr 100% Conc. Acute lethality test for R. Trout	Alkalinity, Total (As CaCO3)	Aluminum	Aluminum	Antimony	Antimony	Arsenic	Arsenic	Barium	Barium	Beryllium	Beryllium	Beryllium	Beryllium	BIOCHEMICAL OXYGEN DEMAND, FIVE DAY	Bismuth	Bismuth	Boron	Boron	BROMATE
Fraction		N	N	N	D	T	D	T	D	T	D	T	D	D	T	T	N	D	T	D	T	N
Unit		%	%	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	mg/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-07-05	FS_INF-S																					
2022-07-05	FS_INF-K																					
2022-07-05	FS_INF-S																					
2022-07-05	FS_INF-K																					
2022-07-05	FS_INF-S																					
2022-07-06	FS_INF-K																					
2022-07-06	FS_INF-S																					
2022-07-06	FS_INF-K																					
2022-07-06	FS_INF-S																					
2022-07-06	FS_BPO																< 2.0					
2022-07-06	FS_INF-K																					
2022-07-06	FS_INF-S																					
2022-07-06	FR_SCOUTDS	0	0	140	0.0030	0.0264	< 0.10	0.13	0.12	0.13	0.0326	0.0325		< 0.020		< 0.020	< 2.0	< 0.000050	< 0.000050	< 0.010	< 0.010	
2022-07-06	FS_INF-K																					
2022-07-06	FS_INF-S																					
2022-07-06	FS_INF-K																					
2022-07-06	FS_INF-S																					
2022-07-06	FS_INF-K																					
2022-07-06	FS_INF-S																					
2022-07-06	FS_INF-K																					
2022-07-06	FS_INF-S																					
2022-07-06	FS_INF-K																					
2022-07-06	FS_INF-S																					
2022-07-07	FS_INF-K																					
2022-07-07	FS_INF-S																					
2022-07-07	FS_INF-K																					
2022-07-07	FS_INF-S																					
2022-07-07	FS_BPO																< 2.0					
2022-07-07	FS_INF-K																					
2022-07-07	FS_INF-S																					
2022-07-07	FR_SCOUTDS			143	0.0034	0.0454	0.14	0.17	0.11	0.13	0.0345	0.0355	< 0.020			< 0.020	< 2.0	< 0.000050	< 0.000050	< 0.010	< 0.010	< 0.30
2022-07-07	FR_SCOUTDS			135	0.0147	0.0152	0.13	0.15	< 0.10	0.11	0.0349	0.0338		< 0.020		< 0.020	< 2.0	< 0.000050	< 0.000050	< 0.010	< 0.010	
2022-07-07	FS_INF-K																					
2022-07-07	FS_INF-S																					
2022-07-07	FS_INF-K																					
2022-07-07	FS_INF-S																					
2022-07-07	FS_BPO																					
2022-07-07	FS_INF-K																					
2022-07-07	FS_INF-S																					
2022-07-07	FS_BPO																					
2022-07-07	FS_INF-K																					
2022-07-08	FS_BPO																					
2022-07-08	FS_INF-K																					
2022-07-08	FS_INF-S																					
2022-07-08	FS_BPO																					
2022-07-08	FS_INF-K																< 2.0					
2022-07-08	FS_INF-S																					
2022-07-08	FR_SCOUTDS	0	0	143	0.0026	0.0194	0.12	0.15	< 0.10	0.13	0.0326	0.0328		< 0.020		< 0.020	< 2.0	< 0.000050	< 0.000050	< 0.010	< 0.010	
2022-07-08	FS_BPO																					
2022-07-08	FS_BPO																					
2022-07-08	FS_INF-K																					
2022-07-08	FS_INF-S																					
2022-07-08	FS_BPO																					
2022-07-08	FS_INF-K																					
2022-07-08	FS_INF-S																					
2022-07-08	FS_BPO																					
2022-07-08	FS_INF-K																					
2022-07-08	FS_INF-S																					
2022-07-08	FS_INF-K																					
2022-07-08	FS_INF-S																					
2022-07-08	FS_INF-K																					
2022-07-08	FS_INF-S																					
2022-07-09	FS_INF-K																					
2022-07-09	FS_INF-S																					
2022-07-09	FS_INF-K																					
2022-07-09	FS_INF-S																					
2022-07-09	FS_BPO																					
2022-07-09	FS_INF-K																					
2022-07-09	FS_INF-S																					
2022-07-09	FR_SCOUTDS	0	0	151	0.0021	0.0172	0.16	0.16	< 0.10	0.12	0.0363	0.0368		< 0.020		< 0.020	< 2.0	< 0.000050	< 0.000050	< 0.010	< 0.010	
2022-07-09	FS_BPO																					
2022-07-10	FS_BPO																					
2022-07-10	FS_INF-K																					
2022-07-10	FS_INF-S																					
2022-07-10	FS_INF-K																					
2022-07-10	FS_INF-S																					
2022-07-10	FS_BPO																					
2022-07-10	FS_INF-K																					
2022-07-10	FS_INF-S																					

Parameter		48-h Static acute lethality test using Daphnia ma	96-Hr 100% Conc. Acute lethality test for R. Trout	Alkalinity, Total (As CaCO3)	Aluminum	Aluminum	Antimony	Antimony	Arsenic	Arsenic	Barium	Barium	Beryllium	Beryllium	Beryllium	Beryllium	BIOCHEMICAL OXYGEN DEMAND, FIVE DAY	Bismuth	Bismuth	Boron	Boron	BROMATE
Fraction		N	N	N	D	T	D	T	D	T	D	T	D	D	T	T	N	D	T	D	T	N
Unit		%	%	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	mg/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-07-10	FS_INF-K																					
2022-07-10	FS_INF-S																					
2022-07-10	FS_INF-K																					
2022-07-10	FS_INF-S																					
2022-07-10	FS_INF-K																					
2022-07-10	FS_INF-S																					
2022-07-10	FS_INF-K																					
2022-07-10	FS_INF-S																					
2022-07-10	FS_INF-K																					
2022-07-10	FS_INF-S																					
2022-07-11	FS_INF-K																					
2022-07-11	FS_INF-S																					
2022-07-11	FS_INF-K																					
2022-07-11	FS_INF-S																					
2022-07-11	FS_BPO			517													< 2.0					10.1
2022-07-11	FS_INF-K			449																		< 0.30
2022-07-11	FS_INF-S			461																		< 0.30
2022-07-11	FS_BPO	0	0																			
2022-07-11	FS_INF-K																					
2022-07-11	FS_INF-S																					
2022-07-11	FS_INF-K																					
2022-07-11	FS_INF-S																					
2022-07-11	FS_INF-K																					
2022-07-11	FS_INF-S																					
2022-07-11	FS_INF-K																					
2022-07-11	FS_INF-S																					
2022-07-11	FS_INF-K																					
2022-07-11	FS_INF-S																					
2022-07-12	FS_INF-K																					
2022-07-12	FS_INF-S																					
2022-07-12	FS_INF-K																					
2022-07-12	FS_INF-S																					
2022-07-12	FS_BPO				< 0.0060	< 0.0060	0.44	0.28	< 0.20	< 0.20	0.0195	0.0201	< 0.040			< 0.040	< 2.0	< 0.000100	< 0.000100	0.020	0.021	
2022-07-12	FS_INF-K				< 0.0060	< 0.0060	0.65	0.66	< 0.20	< 0.20	0.0289	0.0284	< 0.040			< 0.040		< 0.000100	< 0.000100	0.034	0.029	
2022-07-12	FS_INF-S				< 0.0060	0.0066	0.84	0.83	0.25	0.32	0.0374	0.0357	< 0.040			< 0.040		< 0.000100	< 0.000100	< 0.020	< 0.020	
2022-07-12	FS_INF-K																					
2022-07-12	FS_INF-S																					
2022-07-12	FS_BPO																					
2022-07-12	FS_INF-K																					
2022-07-12	FS_INF-S																					
2022-07-12	FS_INF-K																					
2022-07-12	FS_INF-S																					
2022-07-12	FS_INF-K																					
2022-07-12	FS_INF-S																					
2022-07-12	FS_INF-K																					
2022-07-12	FS_INF-S																					
2022-07-13	FS_INF-K																					
2022-07-13	FS_INF-S																					
2022-07-13	FS_INF-K																					
2022-07-13	FS_INF-S																					
2022-07-13	FS_BPO																< 2.0					
2022-07-13	FS_INF-K				< 0.0060	< 0.0060	0.65	0.62	< 0.20	< 0.20	0.0286	0.0293	< 0.040			< 0.040		< 0.000100	< 0.000100	0.029	0.031	
2022-07-13	FS_INF-S				< 0.0060	< 0.0060	0.87	0.80	0.28	0.30	0.0371	0.0379	< 0.040			< 0.040		< 0.000100	< 0.000100	< 0.020	< 0.020	
2022-07-13	FS_BPO																					
2022-07-13	FS_INF-K																					
2022-07-13	FS_INF-S																					
2022-07-13	FR_FRABCH																					
2022-07-13	FS_INF-K																					
2022-07-13	FS_INF-S																					
2022-07-13	FS_INF-K																					
2022-07-13	FS_INF-S																					
2022-07-13	FS_INF-K																					
2022-07-13	FS_INF-S																					
2022-07-13	FS_INF-K																					
2022-07-13	FS_INF-S																					
2022-07-14	FS_INF-K																					
2022-07-14	FS_INF-S																					
2022-07-14	FS_INF-K																					
2022-07-14	FS_INF-S																					
2022-07-14	FS_BPO																< 2.0					
2022-07-14	FS_INF-K																					
2022-07-14	FS_INF-S																					
2022-07-14	FR_SCOUTDS			147	0.0039	0.0347	0.17	0.16	0.14	0.12	0.0380	0.0365	< 0.020			< 0.020	< 2.0	< 0.000050	< 0.000050	< 0.010	< 0.010	< 0.30
2022-07-14	FS_INF-K																					
2022-07-14	FS_INF-S																					
2022-07-14	FS_INF-K																					
2022-07-14	FS_INF-S																					
2022-07-14	FS_INF-K																					
2022-07-14	FS_INF-S																					
2022-07-14	FS_INF-K																					
2022-07-14	FS_INF-S																					
2022-07-14	FS_INF-K																					
2022-07-14	FS_INF-S																					

Parameter		48-h Static acute lethality test using Daphnia ma	96-Hr 100% Conc. Acute lethality test for R. Trout	Alkalinity, Total (As CaCO3)	Aluminum	Aluminum	Antimony	Antimony	Arsenic	Arsenic	Barium	Barium	Beryllium	Beryllium	Beryllium	Beryllium	BIOCHEMICAL OXYGEN DEMAND, FIVE DAY	Bismuth	Bismuth	Boron	Boron	BROMATE
Fraction		N	N	N	D	T	D	T	D	T	D	T	D	D	T	T	N	D	T	D	T	N
Unit		%	%	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	mg/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-07-15	FS_INF-K																					
2022-07-15	FS_INF-S																					
2022-07-15	FS_INF-K																					
2022-07-15	FS_INF-S																					
2022-07-15	FS_BPO																< 2.0					
2022-07-15	FS_INF-K																					
2022-07-15	FS_INF-S																					
2022-07-15	FS_INF-K																					
2022-07-15	FS_INF-S																					
2022-07-15	FS_INF-K																					
2022-07-15	FS_INF-S																					
2022-07-15	FS_INF-K																					
2022-07-15	FS_INF-S																					
2022-07-16	FS_INF-K																					
2022-07-16	FS_INF-S																					
2022-07-16	FS_INF-K																					
2022-07-16	FS_INF-S																					
2022-07-16	FS_BPO																					
2022-07-16	FS_INF-K																					
2022-07-16	FS_INF-S																					
2022-07-16	FS_INF-K																					
2022-07-16	FS_INF-S																					
2022-07-16	FS_INF-K																					
2022-07-16	FS_INF-S																					
2022-07-16	FS_INF-K																					
2022-07-16	FS_INF-K																					
2022-07-16	FS_INF-K																					
2022-07-17	FS_INF-K																					
2022-07-17	FS_INF-K																					
2022-07-17	FS_BPO																					
2022-07-17	FS_INF-K																					
2022-07-17	FS_INF-K																					
2022-07-17	FS_INF-K																					
2022-07-17	FS_INF-K																					
2022-07-17	FS_INF-K																					
2022-07-18	FS_INF-K																					
2022-07-18	FS_INF-K																					
2022-07-18	FS_BPO			533													< 2.0					6.58
2022-07-18	FS_INF-K	17	0	488																		< 0.30
2022-07-18	FS_INF-S																					
2022-07-18	FS_INF-S																					
2022-07-18	FS_BPO	0	0																			
2022-07-18	FS_INF-S			459																		< 0.30
2022-07-18	FS_INF-K																					
2022-07-18	FS_INF-K																					
2022-07-18	FS_INF-K																					
2022-07-18	FS_INF-K																					
2022-07-18	FS_INF-K																					
2022-07-19	FS_INF-K																					
2022-07-19	FS_INF-K																					
2022-07-19	FS_BPO				< 0.0060	< 0.0060	0.40	0.23	< 0.20	< 0.20	0.0127	0.0137	< 0.040		< 0.040		< 2.0	< 0.000100	< 0.000100	0.027	0.030	
2022-07-19	FS_INF-K				< 0.0060	< 0.0060	0.61	0.73	< 0.20	0.21	0.0292	0.0348	< 0.040			< 0.040		< 0.000100	< 0.000100	0.028	0.038	
2022-07-19	FS_INF-S				< 0.0060	< 0.0060	0.87	0.87	0.27	0.35	0.0376	0.0398	< 0.040			< 0.040		< 0.000100	< 0.000100	< 0.020	< 0.020	
2022-07-19	FS_INF-S																					
2022-07-19	FS_INF-K																					
2022-07-19	FS_INF-K																					
2022-07-19	FS_INF-K																					
2022-07-19	FS_INF-K																					
2022-07-19	FS_INF-K																					
2022-07-20	FS_INF-K																					
2022-07-20	FS_INF-K																					
2022-07-20	FS_BPO																< 2.0					
2022-07-20	FS_INF-K																					
2022-07-20	FS_INF-S																					
2022-07-20	FS_INF-K																					
2022-07-20	FS_INF-S																					
2022-07-20	FS_INF-K																					
2022-07-20	FS_INF-K																					
2022-07-20	FS_INF-K																					
2022-07-21	FS_INF-K																					
2022-07-21	FS_INF-K																					
2022-07-21	FS_BPO																< 2.0					
2022-07-21	FS_INF-K																					
2022-07-21	FS_INF-S																					
2022-07-21	FR_SCOUTDS			174	< 0.0030	0.0069	0.19	0.19	0.11	< 0.10	0.0418	0.0408	< 0.020			< 0.020	< 2.0	< 0.000050	< 0.000050	< 0.010	< 0.010	< 0.30
2022-07-21	FS_INF-K																					
2022-07-21	FS_INF-K																					
2022-07-21	FS_INF-K																					

	Parameter	48-h Static acute lethality test using Daphnia ma	96-Hr 100% Conc. Acute lethality test for R. Trout	Alkalinity, Total (As CaCO3)	Aluminum	Aluminum	Antimony	Antimony	Arsenic	Arsenic	Barium	Barium	Beryllium	Beryllium	Beryllium	Beryllium	BIOCHEMICAL OXYGEN DEMAND, FIVE DAY	Bismuth	Bismuth	Boron	Boron	BROMATE
	Fraction	N	N	N	D	T	D	T	D	T	D	T	D	D	T	T	N	D	T	D	T	N
	Unit	%	%	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	mg/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-07-21	FS_INF-K																					
2022-07-21	FS_INF-K																					
2022-07-22	FS_BPO																					
2022-07-22	FS_INF-K																					
2022-07-22	FS_INF-K																					
2022-07-22	FS_INF-K																					
2022-07-22	FS_INF-K																					
2022-07-22	FS_BPO																< 2.0					
2022-07-22	FS_INF-K																					
2022-07-22	FS_INF-S																					
2022-07-22	FS_INF-K																					
2022-07-22	FR_FRABCH																					
2022-07-22	FR_SCOUTDS																					
2022-07-22	FS_INF-S																					
2022-07-22	FR_FRABCH																					
2022-07-22	FS_BPO																					
2022-07-22	FS_INF-S																					
2022-07-23	FS_BPO																					
2022-07-23	FS_INF-K																					
2022-07-23	FS_INF-K																					
2022-07-23	FS_INF-S																					
2022-07-23	FS_BPO																					
2022-07-23	FR_SCOUTDS																					
2022-07-23	FS_BPO																					
2022-07-23	FS_INF-S																					
2022-07-23	FR_SCOUTDS																					
2022-07-23	FR_FRABCH																					
2022-07-24	FR_SCOUTDS																					
2022-07-24	FR_FRABCH																					
2022-07-24	FR_SCOUTDS																					
2022-07-24	FS_INF-S																					
2022-07-24	FS_BPO																					
2022-07-24	FS_INF-K																					
2022-07-24	FS_INF-S																					
2022-07-24	FS_INF-K																					
2022-07-24	FS_INF-K																					
2022-07-25	FS_BPO																					
2022-07-25	FS_INF-K																					
2022-07-25	FS_INF-K																					
2022-07-25	FS_BPO			580													< 2.0					6.78
2022-07-25	FS_INF-K			500																		< 0.30
2022-07-25	FS_INF-S			464																		< 0.30
2022-07-25	FR_FRABCH			198	< 0.0010	0.0080	0.16	0.16	< 0.10	0.10	0.0608	0.0593		< 0.020		< 0.020		< 0.000050	< 0.000050	0.011	0.011	
2022-07-25	FS_INF-S																					
2022-07-25	FS_BPO	0	0																			
2022-07-25	FS_INF-K																					
2022-07-25	FS_INF-K																					
2022-07-25	FS_INF-K																					
2022-07-25	FS_INF-K																					
2022-07-25	FS_INF-K																					
2022-07-26	FS_INF-K																					
2022-07-26	FS_INF-K																					
2022-07-26	FS_BPO				0.0030	< 0.0060	0.16	< 0.20	0.13	< 0.20	0.00985	0.0107	< 0.020			< 0.040	< 2.0	< 0.000050	< 0.000100	0.050	0.045	
2022-07-26	FS_INF-K				< 0.0030	< 0.0030	0.64	0.59	< 0.10	< 0.10	0.0294	0.0289	< 0.020			< 0.020		< 0.000050	< 0.000050	0.028	0.029	
2022-07-26	FS_INF-S				0.0033	0.0191	0.84	0.84	0.22	0.24	0.0374	0.0395	< 0.020			< 0.020		< 0.000050	< 0.000050	0.011	< 0.010	
2022-07-26	FR_FRABCH																					
2022-07-26	FS_INF-K																					
2022-07-26	FS_INF-K																					
2022-07-26	FS_BPO																					
2022-07-26	FS_INF-K																					
2022-07-26	FS_INF-K																					
2022-07-26	FS_INF-K																					
2022-07-27	FS_INF-K																					
2022-07-27	FS_INF-K																					
2022-07-27	FS_BPO																4.0					
2022-07-27	FS_INF-K																					
2022-07-27	FS_INF-S																					
2022-07-27	FS_INF-K																					
2022-07-27	FS_INF-K																					
2022-07-27	FS_INF-K																					
2022-07-27	FS_INF-K																					
2022-07-27	FS_INF-K																					
2022-07-28	FS_INF-K																					
2022-07-28	FS_INF-K																					
2022-07-28	FS_BPO																2.2					
2022-07-28	FS_INF-K																					
2022-07-28	FS_INF-S																					

	Parameter	48-h Static acute lethality test using Daphnia ma	96-Hr 100% Conc. Acute lethality test for R. Trout	Alkalinity, Total (As CaCO3)	Aluminum	Aluminum	Antimony	Antimony	Arsenic	Arsenic	Barium	Barium	Beryllium	Beryllium	Beryllium	Beryllium	BIOCHEMICAL OXYGEN DEMAND, FIVE DAY	Bismuth	Bismuth	Boron	Boron	BROMATE
	Fraction	N	N	N	D	T	D	T	D	T	D	T	D	D	T	T	N	D	T	D	T	N
	Unit	%	%	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	mg/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-07-28	FR_SCOUTDS			178	0.0038	0.0068	0.22	0.19	< 0.10	0.10	0.0462	0.0459	< 0.020			< 0.020	< 2.0	< 0.000050	< 0.000050	0.010	0.010	< 0.30
2022-07-28	FS_INF-K																					
2022-07-28	FS_INF-K																					
2022-07-28	FS_INF-K																					
2022-07-28	FS_INF-S																					
2022-07-28	FS_INF-K																					
2022-07-28	FS_INF-S																					
2022-07-28	FS_INF-K																					
2022-07-29	FS_INF-K																					
2022-07-29	FS_INF-K																					
2022-07-29	FS_BPO																< 2.0					
2022-07-29	FS_INF-K																					
2022-07-29	FS_INF-S																					
2022-07-29	FS_INF-K																					
2022-07-29	FS_INF-K																					
2022-07-29	FS_INF-K																					
2022-07-29	FS_INF-K																					
2022-07-29	FS_INF-K																					
2022-07-30	FS_INF-K																					
2022-07-30	FS_INF-K																					
2022-07-30	FS_BPO																					
2022-07-30	FS_INF-K																					
2022-07-30	FS_INF-S																					
2022-07-30	FS_INF-K																					
2022-07-30	FS_INF-S																					
2022-07-30	FS_INF-K																					
2022-07-30	FS_INF-K																					
2022-07-30	FS_INF-K																					
2022-07-30	FS_INF-K																					
2022-07-31	FS_INF-K																					
2022-07-31	FS_INF-K																					
2022-07-31	FS_BPO																					
2022-07-31	FS_INF-K																					
2022-07-31	FS_INF-S																					
2022-07-31	FS_INF-K																					
2022-07-31	FS_INF-S																					
2022-07-31	FS_INF-K																					
2022-07-31	FS_INF-K																					
2022-07-31	FS_INF-K																					
2022-08-01	FS_INF-K																					
2022-08-01	FS_INF-K																					
2022-08-01	FS_BPO			581													< 2.0					7.37
2022-08-01	FS_INF-K			497																		< 0.30
2022-08-01	FS_INF-S			481																		< 0.30
2022-08-01	FS_INF-S																					
2022-08-01	FS_BPO	0	0																			
2022-08-01	FS_INF-K																					
2022-08-01	FS_INF-K																					
2022-08-01	FS_INF-K																					
2022-08-01	FS_INF-K																					
2022-08-01	FS_INF-K																					
2022-08-02	FS_INF-K																					
2022-08-02	FS_INF-K																					
2022-08-02	FS_BPO				0.0062	0.0066	0.20	< 0.20	< 0.20	0.33	0.0125	0.0112	< 0.040			< 0.040	< 2.0	< 0.000100	< 0.000100	0.041	0.039	
2022-08-02	FS_INF-K				< 0.0060	< 0.0060	0.56	0.57	< 0.20	0.33	0.0307	0.0276	< 0.040			< 0.040		< 0.000100	< 0.000100	0.036	0.036	
2022-08-02	FS_INF-S				< 0.0060	< 0.0060	0.87	0.85	0.25	0.65	0.0387	0.0410	< 0.040			< 0.040		< 0.000100	< 0.000100	< 0.020	< 0.020	
2022-08-02	FS_INF-K																					
2022-08-02	FS_INF-S																					
2022-08-02	FS_BPO																					
2022-08-03	FS_BPO																					
2022-08-03	FS_BPO																					
2022-08-03	FS_BPO																< 2.0					
2022-08-03	FS_INF-K																					
2022-08-03	FS_INF-S																					
2022-08-03	FS_INF-S																					
2022-08-03	FS_INF-K																					
2022-08-03	FS_BPO																					
2022-08-03	FS_INF-K																					
2022-08-04	FS_INF-K																					
2022-08-04	FS_BPO																< 2.0					
2022-08-04	FS_INF-K																					
2022-08-04	FS_INF-S																					
2022-08-04	FR_SCOUTDS			198	< 0.0030	0.0120	0.25	0.24	0.12	0.18	0.0544	0.0590	< 0.020			< 0.020	< 2.0	< 0.000050	< 0.000050	0.014	0.011	< 0.30
2022-08-04	FS_INF-K																					
2022-08-04	FS_INF-K																					
2022-08-04	FS_BPO																					
2022-08-05	FS_BPO																					
2022-08-05	FS_BPO																					

	Parameter	48-h Static acute lethality test using Daphnia ma	96-Hr 100% Conc. Acute lethality test for R. Trout	Alkalinity, Total (As CaCO3)	Aluminum	Aluminum	Antimony	Antimony	Arsenic	Arsenic	Barium	Barium	Beryllium	Beryllium	Beryllium	Beryllium	BIOCHEMICAL OXYGEN DEMAND, FIVE DAY	Bismuth	Bismuth	Boron	Boron	BROMATE
	Fraction	N	N	N	D	T	D	T	D	T	D	T	D	D	T	T	N	D	T	D	T	N
	Unit	%	%	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	mg/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-08-05	FS_BPO																< 2.0					
2022-08-05	FS_INF-K																					
2022-08-05	FS_INF-S																					
2022-08-05	FS_INF-K																					
2022-08-05	FS_INF-S																					
2022-08-05	FS_INF-K																					
2022-08-05	FS_INF-K																					
2022-08-05	FS_INF-K																					
2022-08-06	FS_INF-K																					
2022-08-06	FS_INF-K																					
2022-08-06	FS_BPO																					
2022-08-06	FS_INF-K																					
2022-08-06	FS_INF-S																					
2022-08-06	FS_INF-K																					
2022-08-06	FS_INF-S																					
2022-08-06	FS_INF-K																					
2022-08-06	FS_INF-K																					
2022-08-06	FS_INF-K																					
2022-08-07	FS_INF-K																					
2022-08-07	FS_INF-K																					
2022-08-07	FS_BPO																					
2022-08-07	FS_INF-K																					
2022-08-07	FS_INF-S																					
2022-08-07	FS_INF-K																					
2022-08-07	FS_INF-K																					
2022-08-07	FS_INF-K																					
2022-08-07	FS_INF-K																					
2022-08-08	FS_INF-K																					
2022-08-08	FS_INF-K																					
2022-08-08	FS_BPO			569													< 2.0					6.40
2022-08-08	FS_INF-K	20	0	510																		< 0.30
2022-08-08	FS_INF-S			467																		< 0.30
2022-08-08	FS_BPO	0	0																			
2022-08-08	FS_INF-K																					
2022-08-08	FS_INF-S																					
2022-08-08	FS_INF-K																					
2022-08-08	FS_INF-K																					
2022-08-08	FS_INF-K																					
2022-08-08	FS_INF-K																					
2022-08-09	FS_INF-K																					
2022-08-09	FS_BPO				0.0056	0.0051	0.19	0.22	0.17	0.10	0.0107	0.0111	< 0.020			< 0.020	< 2.0	< 0.000050	< 0.000050	0.045	0.050	
2022-08-09	FS_INF-K				< 0.0030	< 0.0030	0.56	0.59	0.22	< 0.10	0.0285	0.0298	< 0.020			< 0.020		< 0.000050	< 0.000050	0.032	0.032	
2022-08-09	FS_INF-S				0.0031	0.0074	0.76	0.81	0.39	0.26	0.0352	0.0375	< 0.020			< 0.020		< 0.000050	< 0.000050	0.011	0.012	
2022-08-09	FS_INF-K																					
2022-08-09	FS_INF-K																					
2022-08-09	FS_INF-S																					
2022-08-09	FS_INF-K																					
2022-08-09	FS_INF-S																					
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2022-08-10	FS_INF-K																					
2022-08-10	FS_INF-S																					
2022-08-10	FS_INF-K																					
2022-08-10	FS_INF-S																					
2022-08-10	FS_BPO																< 2.0					
2022-08-10	FS_INF-K																					
2022-08-10	FS_INF-S																					
2022-08-10	FS_BPO																					
2022-08-10	FS_INF-K																					
2022-08-10	FS_INF-S																					
2022-08-10	FS_INF-K																					
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2022-08-10	FS_INF-K																					
2022-08-10	FS_INF-S																					
2022-08-11	FS_INF-K																					
2022-08-11	FS_INF-S																					
2022-08-11	FS_INF-K																					
2022-08-11	FS_INF-S																					
2022-08-11	FS_BPO																< 2.0					
2022-08-11	FS_INF-K																					
2022-08-11	FS_INF-S																					
2022-08-11	FR_SCOUTDS			215	0.0044	0.0062	0.20	0.21	0.12	0.12	0.0590	0.0599	< 0.020			< 0.020	< 2.0	< 0.000050	< 0.000050	0.012	0.012	0.49
2022-08-11	FS_INF-K																					
2022-08-11	FS_INF-S																					
2022-08-11	FS_INF-K																					

Parameter		48-h Static acute lethality test using Daphnia ma	96-Hr 100% Conc. Acute lethality test for R. Trout	Alkalinity, Total (As CaCO3)	Aluminum	Aluminum	Antimony	Antimony	Arsenic	Arsenic	Barium	Barium	Beryllium	Beryllium	Beryllium	Beryllium	BIOCHEMICAL OXYGEN DEMAND, FIVE DAY	Bismuth	Bismuth	Boron	Boron	BROMATE
Fraction		N	N	N	D	T	D	T	D	T	D	T	D	D	T	T	N	D	T	D	T	N
Unit		%	%	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	mg/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-08-11	FS_INF-S																					
2022-08-11	FS_INF-K																					
2022-08-11	FS_INF-S																					
2022-08-11	FS_INF-K																					
2022-08-11	FS_INF-S																					
2022-08-12	FS_INF-K																					
2022-08-12	FS_INF-S																					
2022-08-12	FS_INF-K																					
2022-08-12	FS_INF-S																					
2022-08-12	FS_BPO																< 2.0					
2022-08-12	FS_INF-K																					
2022-08-12	FS_INF-S																					
2022-08-12	FS_INF-K																					
2022-08-12	FS_INF-S																					
2022-08-12	FS_INF-K																					
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2022-08-12	FS_INF-K																					
2022-08-12	FS_INF-S																					
2022-08-13	FS_INF-K																					
2022-08-13	FS_INF-S																					
2022-08-13	FS_INF-K																					
2022-08-13	FS_INF-S																					
2022-08-13	FS_BPO																					
2022-08-13	FS_INF-K																					
2022-08-13	FS_INF-S																					
2022-08-13	FS_INF-K																					
2022-08-13	FS_INF-S																					
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2022-08-14	FS_INF-K																					
2022-08-14	FS_INF-S																					
2022-08-14	FS_INF-K																					
2022-08-14	FS_INF-S																					
2022-08-14	FS_BPO																					
2022-08-14	FS_INF-K																					
2022-08-14	FS_INF-S																					
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2022-08-14	FS_INF-S																					
2022-08-14	FS_INF-K																					
2022-08-14	FS_INF-S																					
2022-08-15	FS_INF-K																					
2022-08-15	FS_INF-S																					
2022-08-15	FS_INF-K																					
2022-08-15	FS_INF-S																					
2022-08-15	FS_BPO			576													< 2.0					8.71
2022-08-15	FS_INF-K			506																		< 0.30
2022-08-15	FS_INF-S			488																		< 0.30
2022-08-15	FS_BPO	0	0																			
2022-08-15	FS_INF-K																					
2022-08-15	FS_INF-S																					
2022-08-15	FS_INF-K																					
2022-08-15	FS_INF-S																					
2022-08-15	FS_INF-K																					
2022-08-15	FS_INF-S																					
2022-08-15	FS_INF-K																					
2022-08-15	FS_INF-S																					
2022-08-15	FS_INF-K																					
2022-08-15	FS_INF-S																					
2022-08-16	FS_INF-K																					
2022-08-16	FS_INF-S																					
2022-08-16	FS_BPO				0.0067	0.0055	0.25	0.25	< 0.20	0.10	0.0183	0.0170	< 0.040			< 0.020	< 2.0	< 0.000100	< 0.000050	< 0.020	0.015	
2022-08-16	FS_INF-K				< 0.0060	0.0049	0.56	0.54	< 0.20	< 0.10	0.0297	0.0293	< 0.040			< 0.020		< 0.000100	< 0.000050	0.032	0.025	
2022-08-16	FS_INF-S				< 0.0060	0.0057	0.81	0.74	0.33	0.23	0.0338	0.0337	< 0.040			< 0.020		< 0.000100	< 0.000050	< 0.020	< 0.010	
2022-08-16	FR_FRABCH			245	0.0084	0.0121	0.15	0.15	< 0.10	0.12	0.0803	0.0856		< 0.020		< 0.020	< 2.0	< 0.000050	< 0.000050	0.013	0.016	
2022-08-16	FS_INF-K																					

Parameter		48-h Static acute lethality test using Daphnia ma	96-Hr 100% Conc. Acute lethality test for R. Trout	Alkalinity, Total (As CaCO3)	Aluminum	Aluminum	Antimony	Antimony	Arsenic	Arsenic	Barium	Barium	Beryllium	Beryllium	Beryllium	Beryllium	BIOCHEMICAL OXYGEN DEMAND, FIVE DAY	Bismuth	Bismuth	Boron	Boron	BROMATE
Fraction		N	N	N	D	T	D	T	D	T	D	T	D	D	T	T	N	D	T	D	T	N
Unit		%	%	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	mg/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-08-16	FS_INF-S																					
2022-08-16	FS_INF-K																					
2022-08-16	FS_INF-S																					
2022-08-16	FS_INF-K																					
2022-08-16	FS_INF-S																					
2022-08-16	FS_INF-K																					
2022-08-16	FS_INF-S																					
2022-08-17	FS_INF-K																					
2022-08-17	FS_INF-S																					
2022-08-17	FS_INF-K																					
2022-08-17	FS_INF-S																					
2022-08-17	FS_BPO																< 2.0					
2022-08-17	FS_INF-K																					
2022-08-17	FS_INF-S																					
2022-08-17	FR_FRABCH			221	0.0013	0.0085	0.15	0.15	< 0.10	0.21	0.0808	0.0834		< 0.020		< 0.020		< 0.000050	< 0.000050	0.013	0.014	
2022-08-17	FS_INF-K																					
2022-08-17	FS_INF-S																					
2022-08-17	FS_INF-K																					
2022-08-17	FS_INF-S																					
2022-08-17	FS_INF-K																					
2022-08-17	FS_INF-S																					
2022-08-17	FS_INF-K																					
2022-08-17	FS_INF-S																					
2022-08-17	FS_INF-K																					
2022-08-17	FS_INF-S																					
2022-08-18	FS_INF-K																					
2022-08-18	FS_INF-S																					
2022-08-18	FS_INF-K																					
2022-08-18	FS_INF-S																					
2022-08-18	FS_BPO																< 2.0					
2022-08-18	FS_INF-K																					
2022-08-18	FS_INF-S																					
2022-08-18	FR_SCOUTDS			238	0.0056	0.0064	0.23	0.20	0.16	0.11	0.0664	0.0634	< 0.020			< 0.020	< 2.0	< 0.000050	< 0.000050	0.014	0.012	0.57
2022-08-18	FS_INF-K																					
2022-08-18	FS_INF-S																					
2022-08-18	FS_INF-K																					
2022-08-18	FS_INF-S																					
2022-08-18	FS_INF-K																					
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2022-08-18	FS_INF-S																					
2022-08-18	FS_INF-K																					
2022-08-18	FS_INF-S																					
2022-08-19	FS_INF-K																					
2022-08-19	FS_INF-S																					
2022-08-19	FS_INF-K																					
2022-08-19	FS_BPO			550	< 0.0060	< 0.0060	0.26	0.26	< 0.20	< 0.20	0.0153	0.0168	< 0.040			< 0.040	< 2.0 < 2.0	< 0.000100	< 0.000100	< 0.020	< 0.020	
2022-08-19	FS_INF-K																					
2022-08-19	FS_INF-S																					
2022-08-19	FS_INF-K																					
2022-08-19	FS_INF-S																					
2022-08-19	FS_INF-K																					
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2022-08-19	FS_INF-K																					
2022-08-19	FS_INF-S																					
2022-08-20	FS_INF-K																					
2022-08-20	FS_INF-S																					
2022-08-20	FS_INF-K																					
2022-08-20	FS_INF-S																					
2022-08-20	FS_BPO																					
2022-08-20	FS_INF-K																					
2022-08-20	FS_INF-S																					
2022-08-20	FS_INF-K																					
2022-08-20	FS_INF-S																					
2022-08-20	FS_INF-K																					
2022-08-20	FS_INF-S																					
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2022-08-20	FS_INF-K																					
2022-08-20	FS_INF-S																					
2022-08-20	FS_INF-K																					
2022-08-20	FS_INF-S																					
2022-08-21	FS_INF-K																					
2022-08-21	FS_INF-S																					
2022-08-21	FS_INF-K																					
2022-08-21	FS_INF-S																					
2022-08-21	FS_BPO																					

		48-h Static acute lethality test using Daphnia ma	96-Hr 100% Conc. Acute lethality test for R. Trout	Alkalinity, Total (As CaCO3)	Aluminum	Aluminum	Antimony	Antimony	Arsenic	Arsenic	Barium	Barium	Beryllium	Beryllium	Beryllium	Beryllium	BIOCHEMICAL OXYGEN DEMAND, FIVE DAY	Bismuth	Bismuth	Boron	Boron	BROMATE
Parameter																						
Fraction		N	N	N	D	T	D	T	D	T	D	T	D	D	T	T	N	D	T	D	T	N
Unit		%	%	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	mg/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-08-21	FS_INF-K																					
2022-08-21	FS_INF-S																					
2022-08-21	FS_INF-K																					
2022-08-21	FS_INF-S																					
2022-08-21	FS_INF-K																					
2022-08-21	FS_INF-S																					
2022-08-21	FS_INF-K																					
2022-08-21	FS_INF-S																					
2022-08-21	FS_INF-K																					
2022-08-21	FS_INF-S																					
2022-08-21	FS_INF-K																					
2022-08-21	FS_INF-S																					
2022-08-22	FS_INF-K																					
2022-08-22	FS_INF-S																					
2022-08-22	FS_INF-K																					
2022-08-22	FS_INF-S																					
2022-08-22	FS_BPO			600													< 2.0					7.69
2022-08-22	FS_INF-K			499																		< 0.30
2022-08-22	FS_INF-S			493																		< 0.30
2022-08-22	FS_BPO	0	0																			
2022-08-22	FS_INF-K																					
2022-08-22	FS_INF-S																					
2022-08-22	FS_INF-K																					
2022-08-22	FS_INF-S																					
2022-08-22	FS_INF-K																					
2022-08-22	FS_INF-S																					
2022-08-22	FS_INF-K																					
2022-08-22	FS_INF-S																					
2022-08-23	FS_INF-K																					
2022-08-23	FS_INF-S																					
2022-08-23	FS_INF-K																					
2022-08-23	FS_INF-S																					
2022-08-23	FS_BPO				< 0.0060	0.0040	0.23	0.26	0.22	0.15	0.0163	0.0162	< 0.040			< 0.020	< 2.0	< 0.000100	< 0.000050	0.021	0.022	
2022-08-23	FS_INF-K				< 0.0060	< 0.0060	0.55	0.55	0.21	< 0.20	0.0291	0.0286	< 0.040			< 0.040		< 0.000100	< 0.000100	0.034	0.034	
2022-08-23	FS_INF-S				< 0.0060	0.0183	0.80	0.80	0.36	0.22	0.0342	0.0343	< 0.040			< 0.040		< 0.000100	< 0.000100	< 0.020	< 0.020	
2022-08-23	FR_FRABCH			252	0.0037	0.0372	0.14	0.15	< 0.10	0.14	0.0824	0.0838		< 0.020		< 0.020		< 0.000050	< 0.000050	0.013	0.013	
2022-08-23	FS_BPO																					
2022-08-23	FS_BPO																					
2022-08-24	FS_INF-K																					
2022-08-24	FS_INF-S																					
2022-08-24	FS_BPO																< 2.0					
2022-08-24	FS_INF-K																					
2022-08-24	FS_INF-S																					
2022-08-24	FS_INF-K																					
2022-08-24	FS_INF-S																					
2022-08-24	FR_FRABCH																					
2022-08-24	FR_SCOUTDS																					
2022-08-24	FS_INF-K																					
2022-08-24	FS_INF-S																					
2022-08-24	FS_INF-K																					
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2022-08-24	FS_INF-K																					
2022-08-24	FS_INF-S																					
2022-08-25	FS_INF-K																					
2022-08-25	FS_INF-S																					
2022-08-25	FS_INF-K																					
2022-08-25	FS_INF-S																					
2022-08-25	FS_BPO																< 2.0					
2022-08-25	FS_INF-K																					
2022-08-25	FS_INF-S																					
2022-08-25	FR_SCOUTDS			214	0.0062	0.0070	0.22	0.20	0.14	0.15	0.0679	0.0699	< 0.020			< 0.020	< 2.0	< 0.000050	< 0.000050	0.015	0.013	< 0.30
2022-08-25	FS_INF-K																					
2022-08-25	FS_INF-S																					
2022-08-25	FS_INF-K																					
2022-08-25	FS_INF-S																					
2022-08-25	FS_INF-K																					
2022-08-25	FS_INF-S																					
2022-08-25	FS_INF-K																					
2022-08-25	FS_INF-S																					
2022-08-25	FS_INF-K																					
2022-08-25	FS_INF-S																					
2022-08-26	FS_INF-K																					
2022-08-26	FS_INF-S																					
2022-08-26	FS_INF-K																					
2022-08-26	FS_INF-S																					
2022-08-26	FS_BPO																< 2.0					
2022-08-26	FS_INF-K																					
2022-08-26	FS_INF-S																					
2022-08-26	FS_INF-K																					

Parameter		48-h Static acute lethality test using Daphnia ma	96-Hr 100% Conc. Acute lethality test for R. Trout	Alkalinity, Total (As CaCO3)	Aluminum	Aluminum	Antimony	Antimony	Arsenic	Arsenic	Barium	Barium	Beryllium	Beryllium	Beryllium	Beryllium	BIOCHEMICAL OXYGEN DEMAND, FIVE DAY	Bismuth	Bismuth	Boron	Boron	BROMATE
Fraction		N	N	N	D	T	D	T	D	T	D	T	D	D	T	T	N	D	T	D	T	N
Unit		%	%	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	mg/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-08-26	FS_INF-S																					
2022-08-26	FS_INF-K																					
2022-08-26	FS_INF-S																					
2022-08-26	FS_INF-K																					
2022-08-26	FS_INF-S																					
2022-08-26	FS_INF-K																					
2022-08-26	FS_INF-S																					
2022-08-26	FS_INF-K																					
2022-08-26	FS_INF-S																					
2022-08-27	FS_INF-K																					
2022-08-27	FS_INF-S																					
2022-08-27	FS_INF-K																					
2022-08-27	FS_INF-S																					
2022-08-27	FS_BPO																					
2022-08-27	FS_INF-K																					
2022-08-27	FS_INF-S																					
2022-08-27	FS_INF-K																					
2022-08-27	FS_INF-S																					
2022-08-27	FS_INF-K																					
2022-08-27	FS_INF-S																					
2022-08-27	FS_INF-K																					
2022-08-27	FS_INF-S																					
2022-08-28	FS_BPO																					
2022-08-28	FS_INF-K																					
2022-08-28	FS_INF-S																					
2022-08-28	FR_FRABCH																					
2022-08-28	FR_FRABCH																					
2022-08-28	FR_SCOUTDS																					
2022-08-28	FS_INF-K																					
2022-08-28	FS_INF-S																					
2022-08-29	FS_BPO																					
2022-08-29	FS_BPO																					
2022-08-29	FS_INF-K																					
2022-08-29	FS_INF-S																					
2022-08-29	FR_FRABCH																					
2022-08-29	FR_SCOUTDS																					
2022-08-29	FS_INF-K																					
2022-08-29	FS_INF-S																					
2022-08-29	FS_BPO																					
2022-08-29	FS_BPO	0	0	462													< 2.0					6.74
2022-08-29	FS_INF-K			536																		< 0.30
2022-08-29	FS_INF-S			449																		< 0.30
2022-08-29	FS_INF-S																					
2022-08-30	FS_INF-S																					
2022-08-30	FS_INF-S																					
2022-08-30	FS_BPO				0.0047	0.0064	0.20	< 0.20	0.16	< 0.20	0.0153	0.0153	< 0.020		< 0.040		< 2.0	< 0.000050	< 0.000100	0.028	0.029	
2022-08-30	FS_INF-K				< 0.0060	< 0.0060	0.55	0.54	< 0.20	< 0.20	0.0301	0.0294	< 0.040			< 0.040		< 0.000100	< 0.000100	0.033	0.034	
2022-08-30	FS_INF-S				< 0.0060	0.0318	0.80	0.75	0.29	0.25	0.0336	0.0353	< 0.040			< 0.040		< 0.000100	< 0.000100	< 0.020	< 0.020	
2022-08-30	FR_FRABCH			232	0.0029	< 0.0165	0.16	0.18	< 0.10	0.22	0.0858	0.0814		< 0.020		< 0.020		< 0.000050	< 0.000050	0.013	0.013	
2022-08-30	FS_INF-K																					
2022-08-30	FS_INF-S																					
2022-08-30	FS_INF-S																					
2022-08-30	FS_INF-S																					
2022-08-30	FS_INF-S																					
2022-08-30	FS_INF-S																					
2022-08-31	FS_INF-S																					
2022-08-31	FS_INF-S																					
2022-08-31	FS_BPO																< 2.0					
2022-08-31	FS_INF-K																					
2022-08-31	FS_INF-S																					
2022-08-31	FS_INF-K																					
2022-08-31	FS_INF-S																					
2022-08-31	FS_INF-K																					
2022-08-31	FS_INF-S																					
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2022-08-31	FS_INF-S																					
2022-08-31	FS_INF-K																					
2022-08-31	FS_INF-S																					
2022-09-01	FS_INF-K																					
2022-09-01	FS_INF-S																					
2022-09-01	FS_INF-K																					
2022-09-01	FS_INF-S																					
2022-09-01	FS_BPO																2.0					
2022-09-01	FS_INF-K																					
2022-09-01	FS_INF-S																					
2022-09-01	FR_SCOUTDS			212	0.0086	0.0108	0.21	0.22	0.13	0.31	0.0603	0.0645	< 0.020			< 0.020	< 2.0	< 0.000050	< 0.000050	0.012	0.014	< 0.36
2022-09-01	FS_INF-K																					
2022-09-01	FS_INF-S																					
2022-09-01	FS_INF-K																					
2022-09-01	FS_INF-S																					

		48-h Static acute lethality test using Daphnia ma	96-Hr 100% Conc. Acute lethality test for R. Trout	Alkalinity, Total (As CaCO3)	Aluminum	Aluminum	Antimony	Antimony	Arsenic	Arsenic	Barium	Barium	Beryllium	Beryllium	Beryllium	Beryllium	BIOCHEMICAL OXYGEN DEMAND, FIVE DAY	Bismuth	Bismuth	Boron	Boron	BROMATE
Parameter																						
Fraction		N	N	N	D	T	D	T	D	T	D	T	D	D	T	T	N	D	T	D	T	N
Unit		%	%	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	mg/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-09-01	FS_INF-K																					
2022-09-01	FS_INF-S																					
2022-09-01	FS_INF-K																					
2022-09-01	FS_INF-S																					
2022-09-01	FS_INF-K																					
2022-09-01	FS_INF-S																					
2022-09-02	FS_INF-K																					
2022-09-02	FS_INF-S																					
2022-09-02	FS_INF-K																					
2022-09-02	FS_INF-S																					
2022-09-02	FS_BPO																< 2.0					
2022-09-02	FS_INF-K																					
2022-09-02	FS_INF-S																					
2022-09-02	FS_BPO																					
2022-09-02	FS_INF-K																					
2022-09-02	FS_INF-S																					
2022-09-02	FS_INF-K																					
2022-09-02	FS_INF-S																					
2022-09-02	FS_INF-K																					
2022-09-02	FS_INF-S																					
2022-09-02	FS_INF-K																					
2022-09-02	FS_INF-S																					
2022-09-03	FS_INF-K																					
2022-09-03	FS_INF-K																					
2022-09-03	FS_BPO																					
2022-09-03	FS_INF-K																					
2022-09-03	FS_INF-S																					
2022-09-03	FS_INF-K																					
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2022-09-03	FS_INF-K																					
2022-09-03	FS_INF-K																					
2022-09-03	FS_INF-K																					
2022-09-04	FS_INF-K																					
2022-09-04	FS_INF-K																					
2022-09-04	FS_BPO																					
2022-09-04	FS_INF-K																					
2022-09-04	FS_INF-S																					
2022-09-04	FS_INF-K																					
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2022-09-04	FS_INF-K																					
2022-09-04	FS_INF-K																					
2022-09-05	FS_INF-K																					
2022-09-05	FS_INF-K																					
2022-09-05	FS_BPO			487													< 2.0					5.66
2022-09-05	FS_INF-K	13	10	525																		< 0.30
2022-09-05	FS_INF-S			501																		< 0.30
2022-09-05	FS_BPO	0	0																			
2022-09-05	FS_INF-K																					
2022-09-05	FS_INF-K																					
2022-09-05	FS_INF-K																					
2022-09-05	FS_INF-K																					
2022-09-06	FS_INF-K																					
2022-09-06	FS_BPO				0.0058	0.0053	0.22	0.20	< 0.10	0.16	0.0102	0.00995	< 0.020		< 0.020		2.4	< 0.000050	< 0.000050	0.028	0.030	
2022-09-06	FS_INF-K				< 0.0060	< 0.0060	0.56	0.53	< 0.20	< 0.20	0.0334	0.0301	< 0.040			< 0.040		< 0.000100	< 0.000100	0.038	0.033	
2022-09-06	FS_INF-S				0.0168	0.0081	0.78	0.79	0.27	0.25	0.0357	0.0318	< 0.040			< 0.040		< 0.000100	< 0.000100	< 0.020	< 0.020	
2022-09-06	FR_FRABCH			237	< 0.0010	0.0082	0.15	0.15	< 0.10	0.21	0.0988	0.0869		< 0.020		< 0.020	< 2.0	< 0.000050	< 0.000050	0.014	0.014	
2022-09-06	FS_INF-K																					
2022-09-06	FS_INF-K																					
2022-09-06	FR_FRABCH																					
2022-09-06	FS_INF-K																					
2022-09-06	FS_INF-K																					
2022-09-06	FS_INF-K																					
2022-09-07	FS_INF-K																					
2022-09-07	FS_INF-K																					
2022-09-07	FS_BPO																< 2.0					
2022-09-07	FS_INF-K																					
2022-09-07	FS_INF-S																					
2022-09-07	FS_INF-K																					
2022-09-07	FS_INF-K																					
2022-09-07	FS_INF-K																					
2022-09-07	FS_BPO																					
2022-09-07	FS_INF-K																					
2022-09-07	FS_INF-K																					
2022-09-08	FS_INF-K																					
2022-09-08	FS_INF-S																					
2022-09-08	FS_INF-K																					
2022-09-08	FS_INF-S																					
2022-09-08	FS_BPO																< 2.0					

Parameter		48-h Static acute lethality test using Daphnia ma	96-Hr 100% Conc. Acute lethality test for R. Trout	Alkalinity, Total (As CaCO3)	Aluminum	Aluminum	Antimony	Antimony	Arsenic	Arsenic	Barium	Barium	Beryllium	Beryllium	Beryllium	Beryllium	BIOCHEMICAL OXYGEN DEMAND, FIVE DAY	Bismuth	Bismuth	Boron	Boron	BROMATE
Fraction		N	N	N	D	T	D	T	D	T	D	T	D	D	T	T	N	D	T	D	T	N
Unit		%	%	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	mg/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-09-08	FS_INF-K																					
2022-09-08	FS_INF-S																					
2022-09-08	FR_SCOUTDS			234	0.0036	0.0079	0.30	0.29	0.28	0.12	0.0696	0.0738	< 0.020			< 0.020	< 2.0	< 0.000050	< 0.000050	0.013	0.013	< 0.30
2022-09-08	FS_INF-K																					
2022-09-08	FS_INF-S																					
2022-09-08	FS_INF-K																					
2022-09-08	FS_INF-S																					
2022-09-08	FS_INF-K																					
2022-09-08	FS_INF-S																					
2022-09-08	FS_INF-K																					
2022-09-08	FS_INF-S																					
2022-09-08	FS_INF-K																					
2022-09-08	FS_INF-S																					
2022-09-09	FS_INF-K																					
2022-09-09	FS_INF-S																					
2022-09-09	FS_BPO																< 2.0					
2022-09-09	FS_INF-K																					
2022-09-09	FS_INF-S																					
2022-09-09	FS_INF-K																					
2022-09-09	FS_INF-S																					
2022-09-09	FS_INF-K																					
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2022-09-10	FS_INF-K																					
2022-09-10	FS_INF-S																					
2022-09-10	FS_BPO																					
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2022-09-10	FS_INF-S																					
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2022-09-10	FS_INF-S																					
2022-09-11	FS_INF-K																					
2022-09-11	FS_INF-S																					
2022-09-11	FS_INF-K																					
2022-09-11	FS_INF-S																					
2022-09-11	FS_BPO																					
2022-09-11	FS_INF-K																					
2022-09-11	FS_INF-S																					
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2022-09-12	FS_INF-K																					
2022-09-12	FS_INF-S																					
2022-09-12	FS_INF-K																					
2022-09-12	FS_INF-S																					
2022-09-12	FS_BPO			611													< 2.0					4.69
2022-09-12	FS_INF-K			514																		< 0.30
2022-09-12	FS_INF-S			496																		< 0.30
2022-09-12	FS_BPO	0	0																			
2022-09-12	FS_INF-K																					
2022-09-12	FS_INF-S																					
2022-09-12	FS_INF-K																					
2022-09-12	FS_INF-S																					
2022-09-12	FS_INF-K																					
2022-09-12	FS_INF-S																					
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2022-09-12	FS_INF-K																					
2022-09-12	FS_INF-S																					
2022-09-13	FS_INF-K																					
2022-09-13	FS_INF-S																					
2022-09-13	FS_INF-K																					
2022-09-13	FS_INF-S																					
2022-09-13	FS_BPO				0.0062	0.0051	0.31	0.26	< 0.20	0.18	0.0170	0.0163	< 0.040		< 0.020		< 2.0	< 0.000100	< 0.000050	0.026	0.026	
2022-09-13	FS_INF-K				0.0041	< 0.0060	0.50	0.53	0.30	< 0.20	0.0281	0.0311	< 0.020			< 0.040		< 0.000050	< 0.000100	0.032	0.038	

		Parameter	48-h Static acute lethality test using Daphnia ma	96-Hr 100% Conc. Acute lethality test for R. Trout	Alkalinity, Total (As CaCO3)	Aluminum	Aluminum	Antimony	Antimony	Arsenic	Arsenic	Barium	Barium	Beryllium	Beryllium	Beryllium	Beryllium	BIOCHEMICAL OXYGEN DEMAND, FIVE DAY	Bismuth	Bismuth	Boron	Boron	BROMATE
		Fraction	N	N	N	D	T	D	T	D	T	D	T	D	D	T	T	N	D	T	D	T	N
		Unit	%	%	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	mg/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l
Date	Location Code		Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-09-13	FS_INF-S					0.0051	0.0062	0.76	0.81	0.38	0.25	0.0303	0.0325	< 0.020			< 0.040		< 0.000050	< 0.000100	0.012	< 0.020	
2022-09-13	FR_FRABCH				244	0.0020	0.0076	0.14	0.13	< 0.10	0.20	0.112	0.0973		< 0.020		< 0.020	< 2.0	< 0.000050	< 0.000050	0.015	0.014	
2022-09-13	FS_INF-K																						
2022-09-13	FS_INF-S																						
2022-09-13	FS_INF-K																						
2022-09-13	FS_INF-S																						
2022-09-13	FS_INF-K																						
2022-09-13	FS_INF-S																						
2022-09-13	FR_FRABCH				246	0.0040	0.0088	0.13	0.12	< 0.10	0.16	0.0982	0.0962		< 0.020		< 0.020	< 2.0	< 0.000050	< 0.000050	0.013	0.015	
2022-09-13	FS_INF-K																						
2022-09-13	FS_INF-S																						
2022-09-13	FS_INF-K																						
2022-09-13	FS_INF-S																						
2022-09-14	FS_INF-K																						
2022-09-14	FS_INF-S																						
2022-09-14	FS_INF-K																						
2022-09-14	FS_INF-S																						
2022-09-14	FS_BPO																	< 2.0					
2022-09-14	FS_INF-K																						
2022-09-14	FS_INF-S																						
2022-09-14	FS_BPO																						
2022-09-14	FS_INF-K																						
2022-09-14	FS_INF-S																						
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2022-09-15	FS_INF-K																						
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2022-09-15	FS_INF-S																						
2022-09-15	FS_INF-K																						
2022-09-15	FS_INF-S																						
2022-09-15	FS_BPO																	< 2.0					
2022-09-15	FS_INF-K																						
2022-09-15	FS_INF-S																						
2022-09-15	FR_SCOUTDS				241	< 0.0150	0.0167	0.21	0.20	0.12	< 0.10	0.0720	0.0724	< 0.020			< 0.020	< 2.0	< 0.000050	< 0.000050	0.013	0.014	< 0.51
2022-09-15	FS_INF-K																						
2022-09-15	FS_INF-S																						
2022-09-15	FS_INF-K																						
2022-09-15	FS_INF-S																						
2022-09-15	FS_INF-K																						
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2022-09-15	FS_INF-K																						
2022-09-16	FS_INF-S																						
2022-09-16	FS_INF-K																						
2022-09-16	FS_INF-S																						
2022-09-16	FS_BPO																	< 2.0					
2022-09-16	FS_INF-K																						
2022-09-16	FS_INF-S																						
2022-09-16	FS_INF-K																						
2022-09-16	FS_INF-S																						
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2022-09-17	FS_INF-K																						
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2022-09-17	FS_INF-K																						
2022-09-17	FS_INF-S																						
2022-09-17	FS_BPO																						
2022-09-17	FS_INF-K																						
2022-09-17	FS_INF-S																						
2022-09-17	FS_INF-K																						
2022-09-17	FS_INF-S																						
2022-09-17	FS_INF-K																						
2022-09-17	FS_INF-S																						
2022-09-17	FS_INF-K																						
2022-09-17	FS_INF-S																						
2022-09-17	FS_INF-K																						
2022-09-17	FS_INF-S																						
2022-09-17	FS_INF-K																						
2022-09-17	FS_INF-S																						
2022-09-18	FS_INF-K																						
2022-09-18	FS_INF-S																						
2022-09-18	FS_INF-K																						

	Parameter	48-h Static acute lethality test using Daphnia ma	96-Hr 100% Conc. Acute lethality test for R. Trout	Alkalinity, Total (As CaCO3)	Aluminum	Aluminum	Antimony	Antimony	Arsenic	Arsenic	Barium	Barium	Beryllium	Beryllium	Beryllium	Beryllium	BIOCHEMICAL OXYGEN DEMAND, FIVE DAY	Bismuth	Bismuth	Boron	Boron	BROMATE
	Fraction	N	N	N	D	T	D	T	D	T	D	T	D	D	T	T	N	D	T	D	T	N
	Unit	%	%	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	mg/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-09-18	FS_INF-S																					
2022-09-18	FS_BPO																					
2022-09-18	FS_INF-K																					
2022-09-18	FS_INF-S																					
2022-09-18	FS_INF-K																					
2022-09-18	FS_INF-S																					
2022-09-18	FS_INF-K																					
2022-09-18	FS_INF-S																					
2022-09-18	FS_INF-K																					
2022-09-18	FS_INF-S																					
2022-09-18	FS_INF-K																					
2022-09-18	FS_INF-K																					
2022-09-18	FS_INF-S																					
2022-09-19	FS_INF-K																					
2022-09-19	FS_INF-S																					
2022-09-19	FS_INF-K																					
2022-09-19	FS_INF-S																					
2022-09-19	FS_BPO			612													< 2.0					4.52
2022-09-19	FS_INF-K			501																		< 0.30
2022-09-19	FS_INF-S			523																		< 0.30
2022-09-19	FS_BPO	0	0																			
2022-09-19	FS_INF-K																					
2022-09-19	FS_INF-S																					
2022-09-19	FS_INF-K																					
2022-09-19	FS_INF-S																					
2022-09-19	FS_INF-K																					
2022-09-19	FS_INF-S																					
2022-09-19	FS_INF-K																					
2022-09-19	FS_INF-S																					
2022-09-19	FS_BPO																					
2022-09-19	FS_INF-K																					
2022-09-19	FS_INF-S																					
2022-09-20	FS_INF-K																					
2022-09-20	FS_INF-S																					
2022-09-20	FS_BPO				< 0.0060	< 0.0060	0.35	0.34	< 0.20	< 0.20	0.0143	0.0124	< 0.040			< 0.040	< 2.0	< 0.000100	< 0.000100	0.026	0.028	
2022-09-20	FS_INF-K				0.0035	< 0.0060	0.54	0.55	0.10	0.21	0.0301	0.0288	< 0.020			< 0.040		< 0.000050	< 0.000100	0.034	0.031	< 0.30
2022-09-20	FS_INF-S				0.0065	0.0078	0.72	0.64	< 0.20	0.31	0.0316	0.0258	< 0.040			< 0.040		< 0.000100	< 0.000100	< 0.020	< 0.020	< 0.30
2022-09-20	FS_BPO																					
2022-09-20	FS_INF-K																					
2022-09-20	FS_INF-S																					
2022-09-20	FS_BPO																					
2022-09-20	FS_INF-K																					
2022-09-20	FS_INF-S																					
2022-09-20	FS_BPO																					
2022-09-20	FS_INF-K																					
2022-09-20	FS_INF-S																					
2022-09-20	FS_BPO																					
2022-09-20	FS_INF-K																					
2022-09-20	FS_INF-S																					
2022-09-21	FS_BPO																					
2022-09-21	FS_INF-K																					
2022-09-21	FS_INF-S																					
2022-09-21	FS_BPO																					
2022-09-21	FS_INF-K																					
2022-09-21	FS_INF-S																					
2022-09-21	FS_BPO																< 2.0					
2022-09-21	FS_INF-K																					
2022-09-21	FS_INF-S																					
2022-09-21	FS_BPO																					
2022-09-21	FS_BPO																					
2022-09-21	FS_INF-K																					
2022-09-21	FS_INF-S																					
2022-09-21	FS_BPO																					
2022-09-21	FS_INF-K																					
2022-09-21	FS_INF-S																					
2022-09-21	FS_BPO																					
2022-09-21	FS_INF-K																					
2022-09-21	FS_INF-S																					
2022-09-22	FS_INF-K																					
2022-09-22	FS_INF-S																					
2022-09-22	FS_INF-K																					
2022-09-22	FS_INF-S																					
2022-09-22	FS_BPO																< 2.0					
2022-09-22	FS_INF-K																					
2022-09-22	FS_INF-S																					
2022-09-22	FR_SCOUTDS																					
2022-09-22	FS_INF-K																					

Parameter		48-h Static acute lethality test using Daphnia ma	96-Hr 100% Conc. Acute lethality test for R. Trout	Alkalinity, Total (As CaCO3)	Aluminum	Aluminum	Antimony	Antimony	Arsenic	Arsenic	Barium	Barium	Beryllium	Beryllium	Beryllium	Beryllium	BIOCHEMICAL OXYGEN DEMAND, FIVE DAY	Bismuth	Bismuth	Boron	Boron	BROMATE
Fraction		N	N	N	D	T	D	T	D	T	D	T	D	D	T	T	N	D	T	D	T	N
Unit		%	%	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	mg/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-09-22	FS_INF-S																					
2022-09-22	FS_INF-K																					
2022-09-22	FS_INF-S																					
2022-09-22	FS_INF-K																					
2022-09-22	FS_INF-S																					
2022-09-22	FS_INF-K																					
2022-09-22	FS_INF-S																					
2022-09-22	FS_INF-K																					
2022-09-22	FS_INF-S																					
2022-09-23	FR_SCOUTDS			256	0.0084	0.0072	0.31	0.28	0.15	0.14	0.0782	0.0802	< 0.020			< 0.020	< 2.0	< 0.000050	< 0.000050	0.013	0.014	< 0.30
2022-09-23	FS_INF-K																					
2022-09-23	FS_INF-S																					
2022-09-23	FS_INF-K																					
2022-09-23	FS_INF-S																					
2022-09-23	FS_BPO																< 2.0					
2022-09-23	FS_INF-K																					
2022-09-23	FS_INF-S																					
2022-09-23	FS_INF-K																					
2022-09-23	FS_INF-S																					
2022-09-23	FS_INF-K																					
2022-09-23	FS_INF-S																					
2022-09-23	FS_INF-K																					
2022-09-23	FS_INF-S																					
2022-09-23	FS_INF-K																					
2022-09-23	FS_INF-S																					
2022-09-23	FS_INF-K																					
2022-09-24	FS_INF-K																					
2022-09-24	FS_INF-S																					
2022-09-24	FS_INF-K																					
2022-09-24	FS_INF-S																					
2022-09-24	FS_BPO																					
2022-09-24	FS_INF-K																					
2022-09-24	FS_INF-S																					
2022-09-24	FS_INF-K																					
2022-09-24	FS_INF-S																					
2022-09-24	FS_INF-K																					
2022-09-24	FS_INF-S																					
2022-09-24	FS_INF-K																					
2022-09-24	FS_INF-S																					
2022-09-24	FS_INF-K																					
2022-09-24	FS_INF-S																					
2022-09-25	FS_INF-K																					
2022-09-25	FS_INF-S																					
2022-09-25	FS_INF-K																					
2022-09-25	FS_INF-S																					
2022-09-25	FS_BPO																					
2022-09-25	FS_INF-K																					
2022-09-25	FS_INF-S																					
2022-09-25	FS_INF-K																					
2022-09-25	FS_INF-S																					
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2022-09-25	FS_INF-S																					
2022-09-25	FS_INF-K																					
2022-09-25	FS_INF-S																					
2022-09-25	FS_INF-K																					
2022-09-25	FS_INF-S																					
2022-09-25	FS_INF-K																					
2022-09-25	FS_INF-S																					
2022-09-26	FS_INF-K																					
2022-09-26	FS_INF-S																					
2022-09-26	FS_INF-K																					
2022-09-26	FS_INF-S																					
2022-09-26	FS_BPO			682													< 2.0					5.16
2022-09-26	FS_INF-K			522																		< 0.30
2022-09-26	FS_INF-S			568																		< 0.30
2022-09-26	FS_BPO	0	0																			
2022-09-26	FS_INF-K																					
2022-09-26	FS_INF-S																					
2022-09-26	FS_INF-K																					
2022-09-26	FS_INF-S																					
2022-09-26	FS_INF-K																					
2022-09-26	FS_INF-S																					
2022-09-26	FS_INF-K																					
2022-09-26	FS_INF-S																					
2022-09-26	FS_INF-K																					
2022-09-26	FS_INF-S																					
2022-09-27	FS_INF-K																					
2022-09-27	FS_INF-S																					
2022-09-27	FS_INF-K																					
2022-09-27	FS_INF-S																					

Parameter		48-h Static acute lethality test using Daphnia ma	96-Hr 100% Conc. Acute lethality test for R. Trout	Alkalinity, Total (As CaCO3)	Aluminum	Aluminum	Antimony	Antimony	Arsenic	Arsenic	Barium	Barium	Beryllium	Beryllium	Beryllium	Beryllium	BIOCHEMICAL OXYGEN DEMAND, FIVE DAY	Bismuth	Bismuth	Boron	Boron	BROMATE
Fraction		N	N	N	D	T	D	T	D	T	D	T	D	D	T	T	N	D	T	D	T	N
Unit		%	%	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	mg/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-09-27	FS_BPO				0.0032	< 0.0060	0.24	0.32	< 0.10	< 0.20	0.0117	0.0133	< 0.020		< 0.040		< 2.0	< 0.000050	< 0.000100	0.029	0.031	
2022-09-27	FS_INF-K				< 0.0060	< 0.0060	0.57	0.53	< 0.20	< 0.20	0.0285	0.0268	< 0.040			< 0.040		< 0.000100	< 0.000100	0.033	0.031	
2022-09-27	FS_INF-S				< 0.0060	0.0078	0.72	0.85	0.21	0.21	0.0280	0.0335	< 0.040			< 0.040		< 0.000100	< 0.000100	< 0.020	< 0.020	
2022-09-27	FS_INF-K																					
2022-09-27	FS_INF-S																					
2022-09-27	FS_INF-K																					
2022-09-27	FS_INF-S																					
2022-09-27	FS_INF-K																					
2022-09-27	FS_INF-S																					
2022-09-27	FS_INF-K																					
2022-09-27	FS_INF-S																					
2022-09-27	FS_INF-K																					
2022-09-27	FS_INF-S																					
2022-09-28	FS_INF-K																					
2022-09-28	FS_INF-S																					
2022-09-28	FS_BPO																< 2.0					
2022-09-28	FS_INF-K																					
2022-09-28	FS_INF-S																					
2022-09-28	FS_INF-K																					
2022-09-28	FS_INF-S																					
2022-09-28	FS_INF-K																					
2022-09-28	FS_INF-S																					
2022-09-28	FS_INF-K																					
2022-09-28	FS_INF-S																					
2022-09-28	FS_INF-K																					
2022-09-28	FS_INF-S																					
2022-09-29	FS_INF-K																					
2022-09-29	FS_INF-S																					
2022-09-29	FS_INF-K																					
2022-09-29	FS_INF-S																					
2022-09-29	FS_BPO																< 2.0					
2022-09-29	FS_INF-K																					
2022-09-29	FS_INF-S																					
2022-09-29	FR_SCOUTDS			250	< 0.0030	0.0064	0.30	0.31	0.12	0.13	0.0832	0.0857	< 0.020			< 0.020	< 2.0	< 0.000050	< 0.000050	0.016	0.013	< 0.30
2022-09-29	FS_BPO																					
2022-09-29	FS_BPO																					
2022-09-29	FS_INF-K																					
2022-09-29	FS_INF-S																					
2022-09-29	FS_BPO																					
2022-09-29	FS_INF-K																					
2022-09-29	FS_INF-S																					
2022-09-29	FS_INF-K																					
2022-09-29	FS_INF-S																					
2022-09-29	FS_BPO																					
2022-09-29	FS_INF-K																					
2022-09-29	FS_INF-S																					
2022-09-29	FS_INF-K																					
2022-09-29	FS_INF-S																					
2022-09-30	FS_BPO																					
2022-09-30	FS_INF-K																					
2022-09-30	FS_INF-S																					
2022-09-30	FS_INF-K																					
2022-09-30	FS_INF-S																					
2022-09-30	FS_BPO																< 2.0					
2022-09-30	FS_INF-K																					
2022-09-30	FS_INF-S																					
2022-09-30	FS_INF-K																					
2022-09-30	FS_INF-S																					
2022-09-30	FS_INF-K																					
2022-09-30	FS_INF-S																					
2022-09-30	FS_INF-K																					
2022-09-30	FS_INF-K																					
2022-09-30	FS_INF-S																					
2022-09-30	FS_INF-K																					
2022-09-30	FS_INF-S																					
2022-10-01	FS_INF-K																					
2022-10-01	FS_INF-S																					
2022-10-01	FS_INF-K																					
2022-10-01	FS_INF-S																					
2022-10-01	FS_BPO																					
2022-10-01	FS_INF-K																					
2022-10-01	FS_INF-S																					
2022-10-01	FS_INF-K																					
2022-10-01	FS_INF-S																					
2022-10-01	FS_INF-K																					
2022-10-01	FS_INF-S																					
2022-10-01	FS_INF-K																					
2022-10-01	FS_INF-S																					
2022-10-01	FS_INF-K																					
2022-10-01	FS_INF-S																					

	Parameter	48-h Static acute lethality test using Daphnia ma	96-Hr 100% Conc. Acute lethality test for R. Trout	Alkalinity, Total (As CaCO3)	Aluminum	Aluminum	Antimony	Antimony	Arsenic	Arsenic	Barium	Barium	Beryllium	Beryllium	Beryllium	Beryllium	BIOCHEMICAL OXYGEN DEMAND, FIVE DAY	Bismuth	Bismuth	Boron	Boron	BROMATE
	Fraction	N	N	N	D	T	D	T	D	T	D	T	D	D	T	T	N	D	T	D	T	N
	Unit	%	%	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	mg/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-10-02	FS_INF-K																					
2022-10-02	FS_INF-S																					
2022-10-02	FS_INF-K																					
2022-10-02	FS_INF-S																					
2022-10-02	FS_BPO																					
2022-10-02	FS_INF-K																					
2022-10-02	FS_INF-S																					
2022-10-02	FS_INF-K																					
2022-10-02	FS_INF-S																					
2022-10-02	FS_INF-K																					
2022-10-02	FS_INF-S																					
2022-10-02	FS_INF-K																					
2022-10-02	FS_INF-S																					
2022-10-02	FS_INF-K																					
2022-10-02	FS_INF-S																					
2022-10-02	FS_INF-K																					
2022-10-02	FS_INF-S																					
2022-10-03	FS_INF-K																					
2022-10-03	FS_INF-S																					
2022-10-03	FS_INF-K																					
2022-10-03	FS_INF-S																					
2022-10-03	FS_BPO			552													< 2.0					4.75
2022-10-03	FS_INF-K			528																		< 0.60
2022-10-03	FS_INF-S			535																		< 0.60
2022-10-03	FS_BPO	0	0																			
2022-10-03	FS_INF-K																					
2022-10-03	FS_INF-S																					
2022-10-03	FS_INF-K																					
2022-10-03	FS_INF-S																					
2022-10-03	FS_INF-K																					
2022-10-03	FS_INF-S																					
2022-10-03	FS_INF-K																					
2022-10-03	FS_INF-S																					
2022-10-03	FS_INF-K																					
2022-10-03	FS_INF-S																					
2022-10-03	FS_INF-K																					
2022-10-03	FS_INF-S																					
2022-10-04	FS_INF-K																					
2022-10-04	FS_INF-S																					
2022-10-04	FS_INF-K																					
2022-10-04	FS_BPO				< 0.0060	< 0.0060	0.28	0.26	< 0.20	< 0.20	0.0124	0.0128	< 0.040			< 0.040	< 2.0	< 0.000100	< 0.000100	0.023	< 0.020	
2022-10-04	FS_INF-K				< 0.0060	< 0.0060	0.55	0.50	< 0.20	< 0.20	0.0300	0.0282	< 0.040			< 0.040		< 0.000100	< 0.000100	0.037	0.031	
2022-10-04	FS_INF-S				< 0.0060	0.0077	0.77	0.70	0.23	< 0.20	0.0345	0.0315	< 0.040			< 0.040		< 0.000100	< 0.000100	< 0.020	< 0.020	
2022-10-04	FS_BPO																					
2022-10-04	FS_INF-K																					
2022-10-04	FS_INF-S																					
2022-10-04	FS_INF-K																					
2022-10-04	FS_INF-S																					
2022-10-04	FS_INF-K																					
2022-10-04	FS_INF-S																					
2022-10-04	FS_INF-K																					
2022-10-04	FS_INF-S																					
2022-10-05	FS_INF-K																					
2022-10-05	FS_INF-S																					
2022-10-05	FS_INF-K																					
2022-10-05	FS_INF-S																					
2022-10-05	FS_BPO																< 2.0					
2022-10-05	FS_INF-K																					
2022-10-05	FS_INF-S																					
2022-10-05	FS_INF-K																					
2022-10-05	FS_INF-S																					
2022-10-05	FS_INF-K																					
2022-10-05	FS_INF-S																					
2022-10-05	FS_INF-K																					
2022-10-05	FS_INF-S																					
2022-10-05	FS_INF-K																					
2022-10-05	FS_INF-S																					
2022-10-06	FS_INF-K																					
2022-10-06	FS_INF-S																					
2022-10-06	FS_INF-K																					
2022-10-06	FS_INF-S																					
2022-10-06	FS_BPO																< 2.0					
2022-10-06	FS_INF-K																					
2022-10-06	FS_INF-S																					
2022-10-06	FR_SCOUTDS			288	0.0034	0.0087	0.22	0.23	0.11	0.13	0.0766	0.0845	< 0.020			< 0.020	< 2.0	< 0.000050	< 0.000050	0.013	0.014	1.09
2022-10-06	FS_INF-K																					
2022-10-06	FS_INF-S																					
2022-10-06	FS_INF-K																					
2022-10-06	FS_INF-S																					
2022-10-06	FS_INF-K																					
2022-10-06	FS_INF-S																					

Parameter		48-h Static acute lethality test using Daphnia ma	96-Hr 100% Conc. Acute lethality test for R. Trout	Alkalinity, Total (As CaCO3)	Aluminum	Aluminum	Antimony	Antimony	Arsenic	Arsenic	Barium	Barium	Beryllium	Beryllium	Beryllium	Beryllium	BIOCHEMICAL OXYGEN DEMAND, FIVE DAY	Bismuth	Bismuth	Boron	Boron	BROMATE
Fraction		N	N	N	D	T	D	T	D	T	D	T	D	D	T	T	N	D	T	D	T	N
Unit		%	%	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	mg/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-10-06	FS_INF-K																					
2022-10-06	FS_INF-S																					
2022-10-06	FS_INF-K																					
2022-10-06	FS_INF-S																					
2022-10-07	FS_INF-K																					
2022-10-07	FS_INF-S																					
2022-10-07	FS_INF-K																					
2022-10-07	FS_INF-S																					
2022-10-07	FS_BPO																< 2.0					
2022-10-07	FS_INF-K																					
2022-10-07	FS_INF-S																					
2022-10-07	FS_INF-K																					
2022-10-07	FS_INF-S																					
2022-10-07	FS_INF-K																					
2022-10-07	FS_INF-S																					
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2022-10-07	FS_INF-S																					
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2022-10-07	FS_INF-S																					
2022-10-08	FS_INF-K																					
2022-10-08	FS_INF-S																					
2022-10-08	FS_INF-K																					
2022-10-08	FS_INF-S																					
2022-10-08	FS_BPO																					
2022-10-08	FS_INF-K																					
2022-10-08	FS_INF-S																					
2022-10-08	FS_INF-K																					
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2022-10-09	FS_INF-K																					
2022-10-09	FS_INF-S																					
2022-10-09	FS_INF-K																					
2022-10-09	FS_INF-S																					
2022-10-09	FS_BPO																					
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2022-10-09	FS_INF-S																					
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2022-10-09	FS_INF-S																					
2022-10-10	FS_INF-K																					
2022-10-10	FS_INF-S																					
2022-10-10	FS_INF-K																					
2022-10-10	FS_INF-S																					
2022-10-10	FS_BPO			592													< 2.0					10.9
2022-10-10	FS_INF-K			529																		< 0.30
2022-10-10	FS_INF-S			546																		< 0.30
2022-10-10	FS_BPO	0	0																			
2022-10-10	FS_INF-K																					
2022-10-10	FS_INF-S																					
2022-10-10	FS_INF-K																					
2022-10-10	FS_INF-S																					
2022-10-10	FS_INF-K																					
2022-10-10	FS_INF-S																					
2022-10-10	FS_INF-K																					
2022-10-10	FS_INF-S																					
2022-10-10	FS_INF-K																					
2022-10-10	FS_INF-S																					
2022-10-11	FS_INF-K																					
2022-10-11	FS_INF-S																					
2022-10-11	FS_INF-K																					
2022-10-11	FS_INF-S																					
2022-10-11	FS_BPO				< 0.0060	< 0.0060	0.33	0.28	< 0.20	< 0.20	0.0158	0.0139	< 0.040			< 0.040	< 2.0	< 0.000100	< 0.000100	0.029	0.027	
2022-10-11	FS_INF-K				< 0.0060	< 0.0060	0.58	0.57	< 0.20	< 0.20	0.0306	0.0284	< 0.040			< 0.040		< 0.000100	< 0.000100	0.037	0.032	
2022-10-11	FS_INF-S				< 0.0060	< 0.0060	0.86	0.80	0.28	< 0.20	0.0362	0.0320	< 0.040			< 0.040		< 0.000100	< 0.000100	< 0.020	< 0.020	
2022-10-11	FS_INF-K																					
2022-10-11	FS_INF-S																					
2022-10-11	FR_FRABCH			266	0.0010	0.0063	0.12	0.12	0.10	0.10	0.0911	0.0952		< 0.020		< 0.020	< 2.0	< 0.000050	< 0.000050	0.014	0.014	
2022-10-11	FS_INF-K																					

		48-h Static acute lethality test using Daphnia ma	96-Hr 100% Conc. Acute lethality test for R. Trout	Alkalinity, Total (As CaCO3)	Aluminum	Aluminum	Antimony	Antimony	Arsenic	Arsenic	Barium	Barium	Beryllium	Beryllium	Beryllium	Beryllium	BIOCHEMICAL OXYGEN DEMAND, FIVE DAY	Bismuth	Bismuth	Boron	Boron	BROMATE
Parameter		N	N	N	D	T	D	T	D	T	D	T	D	D	T	T	N	D	T	D	T	N
Fraction		%	%	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	mg/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l
Unit																						
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-10-11	FS_INF-S																					
2022-10-11	FR_FRABCH																					
2022-10-11	FS_INF-K																					
2022-10-11	FS_INF-S																					
2022-10-11	FS_INF-K																					
2022-10-11	FS_INF-S																					
2022-10-11	FS_INF-K																					
2022-10-11	FS_INF-S																					
2022-10-12	FS_INF-K																					
2022-10-12	FS_INF-S																					
2022-10-12	FS_INF-K																					
2022-10-12	FS_INF-S																					
2022-10-12	FS_BPO																< 2.0					
2022-10-12	FS_INF-K																					
2022-10-12	FS_INF-S																					
2022-10-12	FS_INF-K																					
2022-10-12	FS_INF-S																					
2022-10-12	FS_INF-K																					
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2022-10-12	FS_INF-S																					
2022-10-12	FS_INF-K																					
2022-10-12	FS_INF-S																					
2022-10-13	FS_INF-K																					
2022-10-13	FS_INF-S																					
2022-10-13	FS_INF-K																					
2022-10-13	FS_INF-S																					
2022-10-13	FS_BPO																< 2.0					
2022-10-13	FS_INF-K																					
2022-10-13	FS_INF-S																					
2022-10-13	FR_SCOUTDS			248	0.0051	0.0068	0.29	0.29	0.11	0.12	0.0840	0.0785	< 0.020			< 0.020	< 2.0	< 0.000050	< 0.000050	0.015	0.012	< 0.30
2022-10-13	FS_INF-K																					
2022-10-13	FS_INF-S																					
2022-10-13	FS_INF-K																					
2022-10-13	FS_INF-S																					
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2022-10-14	FS_INF-K																					
2022-10-14	FS_INF-S																					
2022-10-14	FS_BPO																< 2.0					
2022-10-14	FS_INF-K																					
2022-10-14	FS_INF-S																					
2022-10-14	FS_INF-K																					
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2022-10-15	FS_INF-K																					
2022-10-15	FS_INF-S																					
2022-10-15	FS_BPO																					
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2022-10-15	FS_INF-K																					
2022-10-15	FS_INF-S																					
2022-10-16	FS_INF-K																					
2022-10-16	FS_INF-S																					
2022-10-16	FS_INF-K																					
2022-10-16	FS_INF-S																					
2022-10-16	FS_BPO																					
2022-10-16	FS_INF-K																					
2022-10-16	FS_INF-S																					

	Parameter	48-h Static acute lethality test using Daphnia ma	96-Hr 100% Conc. Acute lethality test for R. Trout	Alkalinity, Total (As CaCO3)	Aluminum	Aluminum	Antimony	Antimony	Arsenic	Arsenic	Barium	Barium	Beryllium	Beryllium	Beryllium	Beryllium	BIOCHEMICAL OXYGEN DEMAND, FIVE DAY	Bismuth	Bismuth	Boron	Boron	BROMATE
	Fraction	N	N	N	D	T	D	T	D	T	D	T	D	D	T	T	N	D	T	D	T	N
	Unit	%	%	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	mg/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-10-16	FS_INF-K																					
2022-10-16	FS_INF-S																					
2022-10-16	FS_INF-K																					
2022-10-16	FS_INF-S																					
2022-10-16	FS_INF-K																					
2022-10-16	FS_INF-S																					
2022-10-16	FS_INF-K																					
2022-10-16	FS_INF-S																					
2022-10-16	FS_INF-K																					
2022-10-16	FS_INF-S																					
2022-10-17	FS_INF-K																					
2022-10-17	FS_INF-S																					
2022-10-17	FS_INF-K																					
2022-10-17	FS_INF-S																					
2022-10-17	FS_BPO			649													< 2.0					18.9
2022-10-17	FS_INF-K			600																		< 0.30
2022-10-17	FS_INF-S			559																		< 0.30
2022-10-17	FS_BPO	0	0																			
2022-10-17	FS_INF-K																					
2022-10-17	FS_INF-S																					
2022-10-17	FS_INF-K																					
2022-10-17	FS_INF-S																					
2022-10-17	FS_INF-K																					
2022-10-17	FS_INF-S																					
2022-10-17	FS_INF-K																					
2022-10-17	FS_INF-S																					
2022-10-17	FS_INF-K																					
2022-10-17	FS_INF-S																					
2022-10-18	FS_INF-K																					
2022-10-18	FS_INF-S																					
2022-10-18	FS_INF-K																					
2022-10-18	FS_INF-S																					
2022-10-18	FS_BPO				< 0.0060	< 0.0060	0.28	0.28	< 0.20	< 0.20	0.0118	0.0132	< 0.040			< 0.040	< 2.0	< 0.000100	< 0.000100	0.029	0.029	
2022-10-18	FS_INF-K				< 0.0060	< 0.0060	0.53	0.55	< 0.20	< 0.20	0.0282	0.0291	< 0.040			< 0.040		< 0.000100	< 0.000100	0.037	0.036	
2022-10-18	FS_INF-S				0.0072	< 0.0060	0.74	0.68	0.22	0.20	0.0310	0.0301	< 0.040			< 0.040		< 0.000100	< 0.000100	< 0.020	< 0.020	
2022-10-18	FR_FRABCH			267	< 0.0010	0.0041	0.12	0.12	0.11	0.10	0.105	0.0933		< 0.020		< 0.020		< 0.000050	< 0.000050	0.014	0.016	
2022-10-18	FS_INF-K																					
2022-10-18	FS_INF-S																					
2022-10-18	FS_INF-K																					
2022-10-18	FS_INF-S																					
2022-10-18	FS_INF-K																					
2022-10-18	FS_INF-S																					
2022-10-18	FS_INF-K																					
2022-10-18	FS_INF-S																					
2022-10-18	FS_INF-K																					
2022-10-18	FS_INF-S																					
2022-10-19	FS_INF-K																					
2022-10-19	FS_INF-S																					
2022-10-19	FS_INF-K																					
2022-10-19	FS_INF-S																					
2022-10-19	FS_BPO																< 2.0					
2022-10-19	FS_INF-K																					
2022-10-19	FS_INF-S																					
2022-10-19	FS_INF-K																					
2022-10-19	FS_INF-S																					
2022-10-19	FS_INF-K																					
2022-10-19	FS_INF-S																					
2022-10-19	FS_INF-K																					
2022-10-19	FS_INF-S																					
2022-10-19	FS_INF-K																					
2022-10-19	FS_INF-S																					
2022-10-19	FS_INF-K																					
2022-10-19	FS_INF-S																					
2022-10-20	FS_INF-K																					
2022-10-20	FS_INF-S																					
2022-10-20	FS_BPO																< 2.0					
2022-10-20	FS_INF-K																					
2022-10-20	FS_INF-S																					
2022-10-20	FS_BPO																					
2022-10-20	FR_SCOUTDS			270	0.0011	0.0074	0.26	0.33	< 0.10	< 0.10	0.0894	0.0820		< 0.020		< 0.020	< 2.0	< 0.000050	< 0.000050	0.016	0.016	1.04
2022-10-20	FS_INF-K																					
2022-10-20	FS_INF-S																					
2022-10-20	FS_INF-K																					
2022-10-20	FS_INF-S																					
2022-10-20	FS_INF-K																					
2022-10-20	FS_INF-S																					
2022-10-20	FS_INF-K																					
2022-10-20	FS_INF-S																					
2022-10-20	FS_INF-K																					
2022-10-20	FS_INF-S																					
2022-10-21	FS_INF-K																					
2022-10-21	FS_INF-S																					
2022-10-21	FS_INF-K																					

	Parameter	48-h Static acute lethality test using Daphnia ma	96-Hr 100% Conc. Acute lethality test for R. Trout	Alkalinity, Total (As CaCO3)	Aluminum	Aluminum	Antimony	Antimony	Arsenic	Arsenic	Barium	Barium	Beryllium	Beryllium	Beryllium	Beryllium	BIOCHEMICAL OXYGEN DEMAND, FIVE DAY	Bismuth	Bismuth	Boron	Boron	BROMATE
	Fraction	N	N	N	D	T	D	T	D	T	D	T	D	D	T	T	N	D	T	D	T	N
	Unit	%	%	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	mg/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-10-21	FS_INF-S																					
2022-10-21	FS_BPO																< 2.0					
2022-10-21	FS_INF-K																					
2022-10-21	FS_INF-S																					
2022-10-21	FS_INF-K																					
2022-10-21	FS_INF-S																					
2022-10-21	FS_INF-K																					
2022-10-21	FS_INF-S																					
2022-10-21	FS_INF-K																					
2022-10-21	FS_INF-S																					
2022-10-21	FS_INF-K																					
2022-10-21	FS_INF-S																					
2022-10-22	FS_INF-K																					
2022-10-22	FS_INF-S																					
2022-10-22	FS_INF-K																					
2022-10-22	FS_INF-S																					
2022-10-22	FS_BPO																					
2022-10-22	FS_INF-K																					
2022-10-22	FS_INF-S																					
2022-10-22	FS_INF-K																					
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2022-10-23	FS_INF-K																					
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2022-10-23	FS_INF-S																					
2022-10-23	FS_BPO																					
2022-10-23	FS_INF-K																					
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2022-10-24	FS_INF-K																					
2022-10-24	FS_INF-S																					
2022-10-24	FS_INF-K																					
2022-10-24	FS_INF-S																					
2022-10-24	FS_BPO			671													< 2.0					4.06
2022-10-24	FS_INF-K			509																		< 0.30
2022-10-24	FS_INF-S			515																		< 0.30
2022-10-24	FS_BPO	0	10																			
2022-10-24	FS_INF-K																					
2022-10-24	FS_INF-S																					
2022-10-24	FS_INF-K																					
2022-10-24	FS_INF-S																					
2022-10-24	FS_INF-K																					
2022-10-24	FS_INF-S																					
2022-10-24	FS_INF-K																					
2022-10-24	FS_INF-S																					
2022-10-24	FS_INF-K																					
2022-10-24	FS_INF-S																					
2022-10-25	FS_INF-K																					
2022-10-25	FS_INF-S																					
2022-10-25	FS_INF-K																					
2022-10-25	FS_INF-S																					
2022-10-25	FS_BPO				0.0031	< 0.0060	0.24	0.26	< 0.10	< 0.20	0.0120	0.0120	< 0.020			< 0.040	< 2.0	< 0.000050	< 0.000100	0.023	0.028	
2022-10-25	FS_INF-K				< 0.0060	< 0.0060	0.53	0.58	< 0.20	< 0.20	0.0280	0.0267	< 0.040			< 0.040		< 0.000100	< 0.000100	0.036	0.035	
2022-10-25	FS_INF-S				< 0.0060	< 0.0060	0.71	0.74	< 0.20	< 0.20	0.0297	0.0283	< 0.040			< 0.040		< 0.000100	< 0.000100	< 0.020	< 0.020	
2022-10-25	FR_FRABCH			260	< 0.0010	0.0174	0.12	0.12	< 0.10	0.11	0.108	0.122		< 0.020		< 0.020		< 0.000050	< 0.000050	0.014	0.013	
2022-10-25	FR_SCOUTDS																					
2022-10-25	FS_INF-K																					
2022-10-25	FS_INF-S																					
2022-10-25	FS_INF-K																					
2022-10-25	FS_INF-S																					
2022-10-25	FS_INF-K																					
2022-10-25	FS_INF-S																					
2022-10-26	FS_INF-K																					

Parameter		48-h Static acute lethality test using Daphnia ma	96-Hr 100% Conc. Acute lethality test for R. Trout	Alkalinity, Total (As CaCO3)	Aluminum	Aluminum	Antimony	Antimony	Arsenic	Arsenic	Barium	Barium	Beryllium	Beryllium	Beryllium	Beryllium	BIOCHEMICAL OXYGEN DEMAND, FIVE DAY	Bismuth	Bismuth	Boron	Boron	BROMATE
Fraction		N	N	N	D	T	D	T	D	T	D	T	D	D	T	T	N	D	T	D	T	N
Unit		%	%	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	mg/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-10-26	FS_INF-S																					
2022-10-26	FS_INF-K																					
2022-10-26	FS_INF-S																					
2022-10-26	FS_BPO																2.4					
2022-10-26	FS_INF-K																					
2022-10-26	FS_INF-S																					
2022-10-26	FS_INF-K																					
2022-10-26	FS_INF-S																					
2022-10-26	FS_INF-K																					
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2022-10-26	FS_INF-S																					
2022-10-26	FS_INF-K																					
2022-10-26	FS_INF-S																					
2022-10-27	FS_INF-K																					
2022-10-27	FS_INF-S																					
2022-10-27	FS_INF-K																					
2022-10-27	FS_INF-S																					
2022-10-27	FS_BPO																< 2.0					
2022-10-27	FS_INF-K																					
2022-10-27	FS_INF-S																					
2022-10-27	FR_SCOUTDS			262	< 0.0030	0.0060	0.22	0.23	0.12	< 0.10	0.0830	0.0813	< 0.020			< 0.020	< 2.0	< 0.000050	< 0.000050	0.015	0.016	1.45
2022-10-27	FS_INF-K																					
2022-10-27	FS_INF-S																					
2022-10-27	FS_INF-K																					
2022-10-27	FS_INF-S																					
2022-10-27	FS_INF-K																					
2022-10-27	FS_INF-S																					
2022-10-27	FS_INF-K																					
2022-10-27	FS_INF-S																					
2022-10-27	FS_INF-K																					
2022-10-27	FS_INF-S																					
2022-10-28	FS_INF-K																					
2022-10-28	FS_INF-S																					
2022-10-28	FS_INF-K																					
2022-10-28	FS_INF-S																					
2022-10-28	FS_BPO																2.2					
2022-10-28	FS_INF-K																					
2022-10-28	FS_INF-S																					
2022-10-28	FS_INF-K																					
2022-10-28	FS_INF-S																					
2022-10-28	FS_INF-K																					
2022-10-28	FS_INF-S																					
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2022-10-29	FS_INF-K																					
2022-10-29	FS_INF-S																					
2022-10-29	FS_INF-K																					
2022-10-29	FS_BPO																					
2022-10-29	FS_INF-K																					
2022-10-29	FS_INF-S																					
2022-10-29	FS_INF-K																					
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2022-10-29	FS_INF-K																					
2022-10-29	FS_INF-S																					
2022-10-30	FS_INF-K																					
2022-10-30	FS_INF-S																					
2022-10-30	FS_INF-K																					
2022-10-30	FS_INF-S																					
2022-10-30	FS_BPO																					
2022-10-30	FS_INF-K																					
2022-10-30	FS_INF-S																					
2022-10-30	FS_BPO																					
2022-10-30	FS_INF-K																					
2022-10-30	FS_INF-S																					
2022-10-30	FS_INF-K																					
2022-10-30	FS_INF-S																					
2022-10-30	FS_INF-K																					
2022-10-30	FS_INF-S																					
2022-10-30	FS_INF-K																					
2022-10-30	FS_INF-S																					

Parameter		48-h Static acute lethality test using Daphnia ma	96-Hr 100% Conc. Acute lethality test for R. Trout	Alkalinity, Total (As CaCO3)	Aluminum	Aluminum	Antimony	Antimony	Arsenic	Arsenic	Barium	Barium	Beryllium	Beryllium	Beryllium	Beryllium	BIOCHEMICAL OXYGEN DEMAND, FIVE DAY	Bismuth	Bismuth	Boron	Boron	BROMATE
Fraction		N	N	N	D	T	D	T	D	T	D	T	D	D	T	T	N	D	T	D	T	N
Unit		%	%	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	mg/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-10-30	FS_INF-K																					
2022-10-30	FS_INF-S																					
2022-10-31	FS_INF-K																					
2022-10-31	FS_INF-S																					
2022-10-31	FS_INF-S																					
2022-10-31	FS_BPO			510													< 2.0					15.2
2022-10-31	FS_INF-K			498																		< 0.30
2022-10-31	FS_INF-S			452																		< 0.30
2022-10-31	FS_BPO	0	0																			
2022-10-31	FS_BPO																					
2022-10-31	FS_INF-K																					
2022-10-31	FS_INF-S																					
2022-10-31	FS_INF-K																					
2022-10-31	FS_INF-S																					
2022-10-31	FS_BPO																					
2022-11-01	FS_INF-K																					
2022-11-01	FS_INF-S																					
2022-11-01	FS_BPO																					
2022-11-01	FS_INF-K																					
2022-11-01	FS_INF-S																					
2022-11-01	FS_INF-K																					
2022-11-01	FS_INF-S																					
2022-11-01	FS_BPO				< 0.0060	< 0.0060	0.23	0.24	< 0.20	< 0.20	0.0115	0.0126	< 0.040			< 0.040	< 2.0	< 0.000100	< 0.000100	0.024	0.025	
2022-11-01	FS_INF-K				< 0.0060	< 0.0060	0.55	0.45	< 0.20	< 0.20	0.0273	0.0237	< 0.040			< 0.040		< 0.000100	< 0.000100	0.038	0.030	
2022-11-01	FS_INF-S				< 0.0060	0.0216	0.73	0.61	0.29	< 0.20	0.0285	0.0260	< 0.040			< 0.040		< 0.000100	< 0.000100	< 0.020	< 0.020	
2022-11-01	FS_INF-K																					
2022-11-01	FS_INF-S																					
2022-11-01	FR_FRABCH			230	< 0.0010	0.0097	0.12	0.12	< 0.10	0.14	0.0959	0.0920		< 0.020		< 0.020	< 2.0	< 0.000050	< 0.000050	0.012	0.012	
2022-11-01	FS_INF-K																					
2022-11-01	FS_INF-S																					
2022-11-01	FR_FRABCH																					
2022-11-01	FS_BPO																					
2022-11-02	FR_FRABCH																					
2022-11-02	FR_SCOUTDS																					
2022-11-02	FR_FRABCH																					
2022-11-02	FR_SCOUTDS																					
2022-11-02	FS_BPO																< 2.0					
2022-11-02	FS_INF-K																					
2022-11-02	FS_INF-S																					
2022-11-02	FS_BPO																					
2022-11-02	FS_INF-K																					
2022-11-02	FS_INF-S																					
2022-11-03	FS_BPO																					
2022-11-03	FS_INF-K																					
2022-11-03	FS_INF-S																					
2022-11-03	FS_INF-K																					
2022-11-03	FS_INF-S																					
2022-11-03	FS_BPO																< 2.0					
2022-11-03	FS_INF-K																					
2022-11-03	FS_INF-S																					
2022-11-03	FR_SCOUTDS			295	< 0.0030	0.0068	0.22	0.20	< 0.10	< 0.10	0.0765	0.0745	< 0.020			< 0.020	< 2.0	< 0.000050	< 0.000050	0.016	0.014	1.66
2022-11-03	FS_INF-K																					
2022-11-03	FS_INF-S																					
2022-11-03	FS_INF-K																					
2022-11-03	FS_INF-S																					
2022-11-03	FS_INF-K																					
2022-11-03	FS_INF-S																					
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2022-11-03	FS_INF-S																					
2022-11-03	FS_INF-K																					
2022-11-03	FS_INF-S																					
2022-11-04	FS_INF-K																					
2022-11-04	FS_INF-S																					
2022-11-04	FS_INF-K																					
2022-11-04	FS_INF-S																					
2022-11-04	FS_BPO																< 2.0					
2022-11-04	FS_INF-K																					
2022-11-04	FS_INF-S																					
2022-11-04	FS_INF-K																					
2022-11-04	FS_INF-S																					
2022-11-04	FS_INF-K																					
2022-11-04	FS_INF-S																					
2022-11-04	FS_INF-K																					
2022-11-04	FS_INF-S																					
2022-11-04	FS_INF-K																					
2022-11-04	FS_INF-S																					
2022-11-04	FS_INF-K																					
2022-11-04	FS_INF-S																					
2022-11-05	FS_INF-K																					
2022-11-05	FS_INF-S																					
2022-11-05	FS_INF-K																					
2022-11-05	FS_INF-S																					

Parameter		48-h Static acute lethality test using Daphnia ma	96-Hr 100% Conc. Acute lethality test for R. Trout	Alkalinity, Total (As CaCO3)	Aluminum	Aluminum	Antimony	Antimony	Arsenic	Arsenic	Barium	Barium	Beryllium	Beryllium	Beryllium	Beryllium	BIOCHEMICAL OXYGEN DEMAND, FIVE DAY	Bismuth	Bismuth	Boron	Boron	BROMATE
Fraction		N	N	N	D	T	D	T	D	T	D	T	D	D	T	T	N	D	T	D	T	N
Unit		%	%	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	mg/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-11-05	FS_BPO																					
2022-11-05	FS_INF-K																					
2022-11-05	FS_INF-S																					
2022-11-05	FS_INF-K																					
2022-11-05	FS_INF-S																					
2022-11-05	FS_INF-K																					
2022-11-05	FS_INF-S																					
2022-11-05	FS_INF-K																					
2022-11-05	FS_INF-S																					
2022-11-05	FS_INF-K																					
2022-11-05	FS_INF-S																					
2022-11-05	FS_INF-K																					
2022-11-05	FS_INF-S																					
2022-11-06	FS_INF-K																					
2022-11-06	FS_INF-S																					
2022-11-06	FS_INF-K																					
2022-11-06	FS_INF-S																					
2022-11-06	FS_BPO																					
2022-11-06	FS_INF-K																					
2022-11-06	FS_INF-S																					
2022-11-06	FS_INF-K																					
2022-11-06	FS_INF-S																					
2022-11-06	FS_INF-K																					
2022-11-06	FS_INF-S																					
2022-11-06	FS_INF-K																					
2022-11-06	FS_INF-S																					
2022-11-06	FS_INF-K																					
2022-11-06	FS_INF-S																					
2022-11-06	FS_INF-K																					
2022-11-06	FS_INF-S																					
2022-11-07	FS_INF-K																					
2022-11-07	FS_INF-S																					
2022-11-07	FS_INF-K																					
2022-11-07	FS_INF-S																					
2022-11-07	FS_BPO	0	0	604	< 0.0020		0.25		< 0.20		0.00956			< 0.040			< 2.0	< 0.000100		0.025		6.55
2022-11-07	FS_INF-K			533	< 0.0020		0.56		< 0.20		0.0267			< 0.040				< 0.000100		0.035		< 0.30
2022-11-07	FS_INF-S			508	0.0025		0.79		< 0.20		0.0274			< 0.040				< 0.000100		< 0.020		< 0.30
2022-11-07	FS_INF-K																					
2022-11-07	FS_INF-S																					
2022-11-07	FS_INF-K																					
2022-11-07	FS_INF-S																					
2022-11-07	FS_INF-K																					
2022-11-07	FS_INF-S																					
2022-11-07	FS_INF-K																					
2022-11-07	FS_INF-S																					
2022-11-07	FS_INF-K																					
2022-11-07	FS_INF-S																					
2022-11-08	FS_INF-K																					
2022-11-08	FS_INF-S																					
2022-11-08	FS_INF-K																					
2022-11-08	FS_INF-S																					
2022-11-08	FS_BPO				0.0083	< 0.0060	0.26	0.33	< 0.20	< 0.20	0.00971	0.0101	< 0.040			0.051	< 2.0	< 0.000100	< 0.000100	0.025	0.022	
2022-11-08	FS_INF-K				< 0.0060	< 0.0060	0.55	0.51	< 0.20	< 0.20	0.0259	0.0251	< 0.040			< 0.040		< 0.000100	< 0.000100	0.033	0.040	
2022-11-08	FS_INF-S				< 0.0060	0.0076	0.76	0.71	0.20	< 0.20	0.0289	0.0268	< 0.040			< 0.040		< 0.000100	< 0.000100	< 0.020	< 0.020	
2022-11-08	FR_FRABCH			242	< 0.0010	0.0160	< 0.10	0.11	< 0.10	< 0.10	0.0996	0.0878		< 0.020		< 0.020		< 0.000050	< 0.000050	0.014	0.012	
2022-11-08	FS_INF-K																					
2022-11-08	FS_INF-S																					
2022-11-08	FR_FRABCH																					
2022-11-08	FS_INF-K																					
2022-11-08	FS_INF-S																					
2022-11-08	FS_INF-K																					
2022-11-08	FS_INF-S																					
2022-11-08	FS_INF-K																					
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2022-11-08	FS_INF-K																					
2022-11-08	FS_INF-S																					
2022-11-09	FS_INF-K																					
2022-11-09	FS_INF-S																					
2022-11-09	FS_INF-K																					
2022-11-09	FS_INF-S																					
2022-11-09	FS_BPO																< 2.0					
2022-11-09	FS_INF-K																					
2022-11-09	FS_INF-S																					
2022-11-09	FS_INF-K																					
2022-11-09	FS_INF-S																					
2022-11-09	FS_INF-K																					
2022-11-09	FS_INF-S																					
2022-11-10	FS_INF-K																					
2022-11-10	FS_INF-S																					
2022-11-10	FS_INF-K																					
2022-11-10	FS_INF-S																					

Parameter		48-h Static acute lethality test using Daphnia ma	96-Hr 100% Conc. Acute lethality test for R. Trout	Alkalinity, Total (As CaCO3)	Aluminum	Aluminum	Antimony	Antimony	Arsenic	Arsenic	Barium	Barium	Beryllium	Beryllium	Beryllium	Beryllium	BIOCHEMICAL OXYGEN DEMAND, FIVE DAY	Bismuth	Bismuth	Boron	Boron	BROMATE
Fraction		N	N	N	D	T	D	T	D	T	D	T	D	D	T	T	N	D	T	D	T	N
Unit		%	%	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	mg/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-11-10	FS_BPO																< 2.0					
2022-11-10	FS_INF-K																					
2022-11-10	FS_INF-S																					
2022-11-10	FR_SCOUTDS																					
2022-11-10	FR_SCOUTDS																					
2022-11-10	FS_INF-K																					
2022-11-10	FS_INF-S																					
2022-11-10	FS_INF-K																					
2022-11-10	FS_INF-S																					
2022-11-10	FS_INF-K																					
2022-11-10	FS_INF-S																					
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2022-11-10	FS_INF-S																					
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2022-11-10	FS_INF-S																					
2022-11-11	FS_INF-K																					
2022-11-11	FS_INF-S																					
2022-11-11	FS_INF-K																					
2022-11-11	FS_INF-S																					
2022-11-11	FS_BPO																< 2.0					
2022-11-11	FS_INF-K																					
2022-11-11	FS_INF-S																					
2022-11-11	FS_INF-K																					
2022-11-11	FS_INF-S																					
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2022-11-11	FS_INF-S																					
2022-11-12	FS_INF-K																					
2022-11-12	FS_INF-S																					
2022-11-12	FS_INF-K																					
2022-11-12	FS_INF-S																					
2022-11-12	FS_BPO																					
2022-11-12	FS_INF-K																					
2022-11-12	FS_INF-S																					
2022-11-12	FS_INF-K																					
2022-11-12	FS_INF-S																					
2022-11-12	FS_INF-K																					
2022-11-12	FS_INF-S																					
2022-11-13	FS_BPO																					
2022-11-13	FS_INF-K																					
2022-11-13	FS_INF-S																					
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2022-11-13	FS_INF-K																					
2022-11-13	FS_INF-S																					
2022-11-14	FS_INF-K																					
2022-11-14	FS_INF-S																					
2022-11-14	FS_INF-K																					
2022-11-14	FS_INF-S																					
2022-11-14	FS_BPO	0	0	660	< 0.0020		0.22		< 0.20		0.0106			< 0.040			< 2.0	< 0.000100		0.020		5.01
2022-11-14	FS_INF-K			564	< 0.0020		0.47		< 0.20		0.0250			< 0.040				< 0.000100		0.031		< 0.60
2022-11-14	FS_INF-S			529	0.0030		0.67		< 0.20		0.0272			< 0.040				< 0.000100		< 0.020		< 0.60
2022-11-14	FS_BPO																					
2022-11-14	FS_INF-K																					
2022-11-14	FS_INF-S																					
2022-11-14	FS_INF-K																					
2022-11-14	FS_INF-S																					
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2022-11-14	FS_INF-S																					
2022-11-14	FS_INF-K																					
2022-11-14	FS_INF-S																					
2022-11-15	FS_INF-K																					
2022-11-15	FS_INF-S																					
2022-11-15	FS_INF-K																					
2022-11-15	FS_INF-S																					
2022-11-15	FS_BPO				< 0.0060	< 0.0060	0.23	0.23	< 0.20	< 0.20	0.00926	0.00995	< 0.040			< 0.040	< 2.0	< 0.000100	< 0.000100	0.022	0.022	

Parameter		48-h Static acute lethality test using Daphnia ma	96-Hr 100% Conc. Acute lethality test for R. Trout	Alkalinity, Total (As CaCO3)	Aluminum	Aluminum	Antimony	Antimony	Arsenic	Arsenic	Barium	Barium	Beryllium	Beryllium	Beryllium	Beryllium	BIOCHEMICAL OXYGEN DEMAND, FIVE DAY	Bismuth	Bismuth	Boron	Boron	BROMATE
Fraction		N	N	N	D	T	D	T	D	T	D	T	D	D	T	T	N	D	T	D	T	N
Unit		%	%	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	mg/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-11-15	FS_INF-K				< 0.0060	< 0.0060	0.54	0.51	< 0.20	< 0.20	0.0263	0.0239	< 0.040			< 0.040		< 0.000100	< 0.000100	0.035	0.033	
2022-11-15	FS_INF-S				0.0084	< 0.0060	0.72	0.70	< 0.20	< 0.20	0.0289	0.0269	< 0.040			< 0.040		< 0.000100	< 0.000100	< 0.020	< 0.020	
2022-11-15	FS_INF-K																					
2022-11-15	FS_INF-S																					
2022-11-16	FR_SCOUTDS																					
2022-11-16	FR_FRABCH																					
2022-11-16	FR_SCOUTDS																					
2022-11-16	FR_FRABCH																					
2022-11-16	FS_BPO																< 2.0					
2022-11-16	FS_INF-K																					
2022-11-16	FS_INF-S																					
2022-11-16	FS_INF-K																					
2022-11-16	FS_INF-S																					
2022-11-16	FS_INF-K																					
2022-11-16	FS_INF-S																					
2022-11-16	FS_INF-K																					
2022-11-16	FS_INF-S																					
2022-11-16	FS_INF-K																					
2022-11-16	FS_INF-S																					
2022-11-17	FS_INF-K																					
2022-11-17	FS_INF-S																					
2022-11-17	FS_INF-K																					
2022-11-17	FS_INF-S																					
2022-11-17	FS_BPO																< 2.0					
2022-11-17	FS_INF-K																					
2022-11-17	FS_INF-S																					
2022-11-17	FR_SCOUTDS			274	0.0031	0.0044	0.24	0.31	0.12	0.12	0.0878	0.0812	< 0.020			< 0.020	< 2.0	< 0.000050	< 0.000050	0.015	0.015	0.84
2022-11-17	FS_INF-K																					
2022-11-17	FS_INF-S																					
2022-11-17	FS_INF-K																					
2022-11-17	FS_INF-S																					
2022-11-17	FS_INF-K																					
2022-11-17	FS_INF-S																					
2022-11-18	FS_BPO																< 2.0					
2022-11-18	FS_INF-K																					
2022-11-18	FS_INF-S																					
2022-11-18	FS_INF-K																					
2022-11-18	FS_INF-S																					
2022-11-18	FS_INF-K																					
2022-11-18	FS_INF-S																					
2022-11-18	FS_INF-K																					
2022-11-18	FS_INF-S																					
2022-11-18	FS_INF-K																					
2022-11-18	FS_INF-S																					
2022-11-18	FS_BPO																					
2022-11-18	FS_INF-K																					
2022-11-18	FS_INF-S																					
2022-11-19	FS_INF-K																					
2022-11-19	FS_INF-S																					
2022-11-19	FS_INF-K																					
2022-11-19	FS_INF-S																					
2022-11-19	FS_INF-K																					
2022-11-19	FS_INF-S																					
2022-11-19	FS_INF-K																					
2022-11-19	FS_INF-S																					
2022-11-19	FS_INF-K																					
2022-11-19	FS_INF-S																					
2022-11-19	FS_INF-K																					
2022-11-19	FS_INF-S																					
2022-11-20	FS_INF-K																					
2022-11-20	FS_INF-S																					
2022-11-20	FS_INF-K																					
2022-11-20	FS_INF-S																					
2022-11-20	FS_BPO																					
2022-11-20	FS_INF-K																					
2022-11-20	FS_INF-S																					
2022-11-20	FS_INF-K																					
2022-11-20	FS_INF-S																					
2022-11-20	FS_INF-K																					
2022-11-20	FS_INF-S																					
2022-11-20	FS_INF-K																					
2022-11-20	FS_INF-S																					
2022-11-20	FS_INF-K																					
2022-11-20	FS_INF-S																					
2022-11-20	FS_INF-K																					
2022-11-20	FS_INF-S																					
2022-11-21	FS_INF-K																					
2022-11-21	FS_INF-S																					
2022-11-21	FS_INF-K																					

	Parameter	48-h Static acute lethality test using Daphnia ma	96-Hr 100% Conc. Acute lethality test for R. Trout	Alkalinity, Total (As CaCO3)	Aluminum	Aluminum	Antimony	Antimony	Arsenic	Arsenic	Barium	Barium	Beryllium	Beryllium	Beryllium	Beryllium	BIOCHEMICAL OXYGEN DEMAND, FIVE DAY	Bismuth	Bismuth	Boron	Boron	BROMATE
	Fraction	N	N	N	D	T	D	T	D	T	D	T	D	D	T	T	N	D	T	D	T	N
	Unit	%	%	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	mg/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-11-21	FS_INF-S																					
2022-11-21	FS_BPO	0	0	629													< 2.0					6.87
2022-11-21	FS_INF-K			522																		< 0.60
2022-11-21	FS_INF-S			502																		< 0.30
2022-11-21	FS_INF-K																					
2022-11-21	FS_INF-S																					
2022-11-21	FS_INF-K																					
2022-11-21	FS_INF-S																					
2022-11-21	FS_INF-K																					
2022-11-21	FS_INF-S																					
2022-11-21	FS_INF-K																					
2022-11-21	FS_INF-S																					
2022-11-22	FS_INF-K																					
2022-11-22	FS_INF-S																					
2022-11-22	FS_INF-K																					
2022-11-22	FS_INF-S																					
2022-11-22	FS_BPO				< 0.0060	< 0.0060	0.26	0.26	< 0.20	< 0.20	0.0100	0.0103	< 0.040			< 0.040	< 2.0	< 0.000100	< 0.000100	0.030	0.025	
2022-11-22	FS_INF-K				< 0.0060	< 0.0060	0.54	0.52	< 0.20	< 0.20	0.0253	0.0248	< 0.040			< 0.040		< 0.000100	< 0.000100	0.036	0.035	
2022-11-22	FS_INF-S				< 0.0060	< 0.0060	0.74	0.72	< 0.20	< 0.20	0.0269	0.0281	< 0.040			< 0.040		< 0.000100	< 0.000100	< 0.020	< 0.020	
2022-11-22	FS_INF-K																					
2022-11-22	FS_INF-S																					
2022-11-22	FS_INF-K																					
2022-11-22	FS_INF-S																					
2022-11-22	FS_INF-K																					
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2022-11-23	FS_INF-S																					
2022-11-24	FS_INF-K																					
2022-11-24	FS_INF-S																					
2022-11-24	FS_INF-K																					
2022-11-24	FS_BPO																< 2.0					
2022-11-24	FS_INF-K																					
2022-11-24	FS_INF-S																					
2022-11-24	FR_SCOUTDS			282	< 0.0060	0.0057	0.23	0.22	< 0.20	0.13	0.0883	0.0877	< 0.040			< 0.020	< 2.0	< 0.000100	< 0.000050	< 0.020	0.013	1.24
2022-11-24	FS_INF-K																					
2022-11-24	FS_INF-S																					
2022-11-24	FS_INF-K																					
2022-11-24	FS_INF-S																					
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2022-11-25	FS_INF-K																					
2022-11-25	FS_INF-S																					
2022-11-25	FS_BPO																< 2.0					
2022-11-25	FS_INF-K																					
2022-11-25	FS_INF-S																					
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2022-11-25	FS_INF-K																					
2022-11-25	FS_INF-S																					
2022-11-25	FS_INF-K																					
2022-11-25	FS_INF-S																					
2022-11-26	FS_INF-K																					

Parameter		48-h Static acute lethality test using Daphnia ma	96-Hr 100% Conc. Acute lethality test for R. Trout	Alkalinity, Total (As CaCO3)	Aluminum	Aluminum	Antimony	Antimony	Arsenic	Arsenic	Barium	Barium	Beryllium	Beryllium	Beryllium	Beryllium	BIOCHEMICAL OXYGEN DEMAND, FIVE DAY	Bismuth	Bismuth	Boron	Boron	BROMATE
Fraction		N	N	N	D	T	D	T	D	T	D	T	D	D	T	T	N	D	T	D	T	N
Unit		%	%	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	mg/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-11-26	FS_INF-S																					
2022-11-26	FS_INF-K																					
2022-11-26	FS_INF-S																					
2022-11-26	FS_BPO																					
2022-11-26	FS_INF-K																					
2022-11-26	FS_INF-S																					
2022-11-26	FS_INF-K																					
2022-11-26	FS_INF-S																					
2022-11-26	FS_INF-K																					
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2022-11-26	FS_INF-S																					
2022-11-27	FS_INF-K																					
2022-11-27	FS_INF-S																					
2022-11-27	FS_INF-K																					
2022-11-27	FS_INF-S																					
2022-11-27	FS_BPO																					
2022-11-27	FS_INF-K																					
2022-11-27	FS_INF-S																					
2022-11-27	FS_INF-K																					
2022-11-27	FS_INF-S																					
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2022-11-27	FS_INF-K																					
2022-11-27	FS_INF-S																					
2022-11-27	FS_INF-K																					
2022-11-27	FS_INF-S																					
2022-11-28	FS_INF-K																					
2022-11-28	FS_INF-S																					
2022-11-28	FS_INF-K																					
2022-11-28	FS_INF-S																					
2022-11-28	FS_INF-K																					
2022-11-28	FS_INF-S																					
2022-11-28	FS_INF-K																					
2022-11-28	FS_INF-S																					
2022-11-28	FS_INF-K																					
2022-11-28	FS_INF-S																					
2022-11-28	FS_BPO	3	0	656													< 2.0					6.46
2022-11-28	FS_INF-K			534																		< 0.30
2022-11-28	FS_INF-S			514																		< 0.30
2022-11-28	FS_INF-K																					
2022-11-28	FS_INF-S																					
2022-11-28	FS_INF-K																					
2022-11-28	FS_INF-S																					
2022-11-28	FS_INF-K																					
2022-11-28	FS_INF-S																					
2022-11-28	FS_INF-K																					
2022-11-28	FS_INF-S																					
2022-11-28	FS_INF-K																					
2022-11-28	FS_INF-S																					
2022-11-29	FS_INF-K																					
2022-11-29	FS_INF-S																					
2022-11-29	FS_INF-K																					
2022-11-29	FS_INF-S																					
2022-11-29	FS_BPO				< 0.0060	< 0.0060	0.26	0.28	< 0.20	< 0.20	0.00976	0.00983	< 0.040			< 0.040	< 2.0	< 0.000100	< 0.000100	0.032	0.026	
2022-11-29	FS_INF-K				0.0094	< 0.0060	0.54	0.52	< 0.20	< 0.20	0.0233	0.0240	< 0.040			< 0.040		< 0.000100	< 0.000100	0.033	0.032	
2022-11-29	FS_INF-S				< 0.0060	< 0.0060	0.74	0.73	< 0.20	< 0.20	0.0262	0.0257	< 0.040			< 0.040		< 0.000100	< 0.000100	< 0.020	< 0.020	
2022-11-29	FS_INF-K																					
2022-11-29	FS_INF-S																					
2022-11-29	FS_INF-K																					
2022-11-29	FS_INF-S																					
2022-11-29	FS_BPO																					
2022-11-29	FS_INF-K																					
2022-11-29	FS_INF-S																					
2022-11-29	FS_INF-K																					
2022-11-29	FS_INF-S																					
2022-11-29	FS_BPO																					
2022-11-29	FS_INF-K																					
2022-11-29	FS_INF-S																					
2022-11-30	FS_INF-K																					
2022-11-30	FS_INF-S																					
2022-11-30	FS_BPO																					
2022-11-30	FS_INF-K																					
2022-11-30	FS_INF-S																					
2022-11-30	FS_BPO																< 2.0					
2022-11-30	FS_INF-K																					
2022-11-30	FS_INF-S																					
2022-11-30	FS_INF-K																					
2022-11-30	FS_INF-S																					
2022-11-30	FS_INF-K																					

Parameter		48-h Static acute lethality test using Daphnia ma	96-Hr 100% Conc. Acute lethality test for R. Trout	Alkalinity, Total (As CaCO3)	Aluminum	Aluminum	Antimony	Antimony	Arsenic	Arsenic	Barium	Barium	Beryllium	Beryllium	Beryllium	Beryllium	BIOCHEMICAL OXYGEN DEMAND, FIVE DAY	Bismuth	Bismuth	Boron	Boron	BROMATE
Fraction		N	N	N	D	T	D	T	D	T	D	T	D	D	T	T	N	D	T	D	T	N
Unit		%	%	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	mg/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-11-30	FS_INF-S																					
2022-11-30	FS_INF-K																					
2022-11-30	FS_INF-S																					
2022-11-30	FS_INF-K																					
2022-11-30	FS_INF-S																					
2022-11-30	FS_INF-K																					
2022-11-30	FS_INF-S																					
2022-12-01	FS_INF-K																					
2022-12-01	FS_INF-S																					
2022-12-01	FS_INF-K																					
2022-12-01	FS_INF-S																					
2022-12-01	FS_BPO																< 2.0					
2022-12-01	FS_INF-K																					
2022-12-01	FS_INF-S																					
2022-12-01	FR_SCOUTDS			329	0.0036	0.0099	0.23	0.24	< 0.10	< 0.10	0.0737	0.0713	< 0.020			< 0.020	< 2.0	< 0.000050	< 0.000050	0.014	0.014	1.87
2022-12-01	FS_INF-K																					
2022-12-01	FS_INF-S																					
2022-12-01	FS_INF-S																					
2022-12-01	FS_INF-S																					
2022-12-01	FS_INF-S																					
2022-12-01	FS_INF-S																					
2022-12-02	FS_INF-S																					
2022-12-02	FS_INF-S																					
2022-12-02	FS_BPO																< 2.0					
2022-12-02	FS_INF-S																					
2022-12-02	FS_INF-S																					
2022-12-02	FS_BPO																					
2022-12-02	FS_INF-S																					
2022-12-02	FS_INF-S																					
2022-12-02	FS_INF-S																					
2022-12-03	FS_INF-S																					
2022-12-03	FS_INF-S																					
2022-12-03	FS_BPO																					
2022-12-03	FS_INF-S																					
2022-12-03	FS_INF-S																					
2022-12-03	FS_INF-S																					
2022-12-03	FS_INF-S																					
2022-12-03	FS_INF-S																					
2022-12-04	FS_INF-S																					
2022-12-04	FS_INF-S																					
2022-12-04	FS_BPO																					
2022-12-04	FS_INF-S																					
2022-12-04	FS_INF-S																					
2022-12-04	FS_INF-S																					
2022-12-04	FS_INF-S																					
2022-12-04	FS_INF-S																					
2022-12-04	FS_INF-S																					
2022-12-05	FS_INF-S																					
2022-12-05	FS_INF-S																					
2022-12-05	FS_BPO	0	0	590													< 2.0					8.01
2022-12-05	FS_INF-S	3	0	543																		< 0.30
2022-12-05	FS_INF-S																					
2022-12-05	FS_INF-S																					
2022-12-05	FS_INF-S																					
2022-12-05	FS_INF-S																					
2022-12-05	FS_INF-S																					
2022-12-06	FS_INF-S																					
2022-12-06	FS_INF-S																					
2022-12-06	FS_BPO				< 0.0060	0.0076	< 0.20	< 0.20	< 0.20	< 0.20	0.0108	0.0112	< 0.040			< 0.040	< 2.0	< 0.000100	< 0.000100	0.021	0.021	
2022-12-06	FS_INF-S				< 0.0060	0.0078	0.72	0.73	< 0.20	0.20	0.0243	0.0266	< 0.040			< 0.040		< 0.000100	< 0.000100	< 0.020	< 0.020	
2022-12-06	FS_INF-S																					
2022-12-06	FS_INF-S																					
2022-12-06	FS_INF-S																					
2022-12-06	FS_INF-S																					
2022-12-07	FS_INF-S																					
2022-12-07	FS_INF-S																					
2022-12-07	FS_BPO																< 2.0					
2022-12-07	FS_INF-K																					
2022-12-07	FS_INF-S																					
2022-12-07	FS_INF-S																					
2022-12-07	FS_INF-K																					
2022-12-07	FS_INF-S																					
2022-12-07	FS_INF-K																					
2022-12-07	FS_INF-S																					
2022-12-08	FS_BPO																< 2.0					
2022-12-08	FS_INF-K																					
2022-12-08	FS_INF-S																					

Parameter		48-h Static acute lethality test using Daphnia ma	96-Hr 100% Conc. Acute lethality test for R. Trout	Alkalinity, Total (As CaCO3)	Aluminum	Aluminum	Antimony	Antimony	Arsenic	Arsenic	Barium	Barium	Beryllium	Beryllium	Beryllium	Beryllium	BIOCHEMICAL OXYGEN DEMAND, FIVE DAY	Bismuth	Bismuth	Boron	Boron	BROMATE
Fraction		N	N	N	D	T	D	T	D	T	D	T	D	D	T	T	N	D	T	D	T	N
Unit		%	%	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	mg/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-12-08	FR_SCOUTDS			290	0.0033	< 0.0030	0.18	0.18	< 0.10	0.12	0.0823	0.0863	< 0.020			< 0.020	< 2.0	< 0.000050	< 0.000050	0.010	0.010	1.46
2022-12-08	FS_INF-K																					
2022-12-08	FS_INF-S																					
2022-12-08	FS_INF-K																					
2022-12-08	FS_INF-S																					
2022-12-08	FS_BPO																					
2022-12-08	FS_INF-K																					
2022-12-08	FS_INF-S																					
2022-12-08	FS_INF-K																					
2022-12-08	FS_INF-S																					
2022-12-08	FS_INF-K																					
2022-12-08	FS_INF-S																					
2022-12-09	FS_INF-K																					
2022-12-09	FS_INF-S																					
2022-12-09	FS_INF-K																					
2022-12-09	FS_INF-S																					
2022-12-09	FS_BPO																< 2.0					
2022-12-09	FS_INF-K																					
2022-12-09	FS_INF-S																					
2022-12-09	FS_INF-K																					
2022-12-09	FS_INF-S																					
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2022-12-10	FS_INF-K																					
2022-12-10	FS_INF-S																					
2022-12-10	FS_INF-K																					
2022-12-10	FS_INF-S																					
2022-12-10	FS_BPO																					
2022-12-10	FS_INF-K																					
2022-12-10	FS_INF-S																					
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2022-12-11	FS_INF-K																					
2022-12-11	FS_INF-S																					
2022-12-11	FS_BPO																					
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2022-12-12	FS_INF-K																					
2022-12-12	FS_INF-S																					
2022-12-12	FS_INF-K																					
2022-12-12	FS_INF-S																					
2022-12-12	FS_BPO	0	0	567													< 2.0					10.5
2022-12-12	FS_INF-K			291																		< 0.30
2022-12-12	FS_INF-S			314																		< 0.30
2022-12-12	FS_INF-K																					
2022-12-12	FS_INF-S																					
2022-12-12	FR_FRABCH																					
2022-12-12	FS_INF-K																					
2022-12-12	FS_INF-S																					
2022-12-12	FS_INF-K																					
2022-12-12	FS_INF-S																					
2022-12-12	FS_INF-K																					
2022-12-12	FS_INF-S																					
2022-12-13	FS_INF-K																					
2022-12-13	FS_INF-S																					
2022-12-13	FS_INF-K																					
2022-12-13	FS_INF-S																					

		48-h Static acute lethality test using Daphnia ma	96-Hr 100% Conc. Acute lethality test for R. Trout	Alkalinity, Total (As CaCO3)	Aluminum	Aluminum	Antimony	Antimony	Arsenic	Arsenic	Barium	Barium	Beryllium	Beryllium	Beryllium	Beryllium	BIOCHEMICAL OXYGEN DEMAND, FIVE DAY	Bismuth	Bismuth	Boron	Boron	BROMATE
Parameter		N	N	N	D	T	D	T	D	T	D	T	D	D	T	T	N	D	T	D	T	N
Fraction		%	%	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	mg/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l
Unit		Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
Date	Location Code																					
2022-12-13	FS_BPO				0.0061	< 0.0060	0.27	0.30	< 0.20	< 0.20	0.0116	0.0107	< 0.040		< 0.040		< 2.0	< 0.000100	< 0.000100	0.023	0.025	
2022-12-13	FS_INF-K				< 0.0060	< 0.0060	0.54	0.48	< 0.20	< 0.20	0.0256	0.0233	< 0.040			< 0.040		< 0.000100	< 0.000100	0.033	0.031	
2022-12-13	FS_INF-S				< 0.0060	0.0125	0.72	0.71	< 0.20	0.26	0.0279	0.0274	< 0.040			< 0.040		< 0.000100	< 0.000100	< 0.020	< 0.020	
2022-12-13	FR_SCOUTDS																					
2022-12-13	FS_INF-K																					
2022-12-13	FS_INF-S																					
2022-12-13	FS_INF-K																					
2022-12-13	FS_INF-S																					
2022-12-13	FS_INF-K																					
2022-12-13	FS_INF-S																					
2022-12-13	FS_INF-K																					
2022-12-13	FS_INF-S																					
2022-12-13	FS_INF-K																					
2022-12-14	FS_INF-K																					
2022-12-14	FS_INF-S																					
2022-12-14	FS_INF-K																					
2022-12-14	FS_INF-S																					
2022-12-14	FS_BPO																< 2.0					
2022-12-14	FS_INF-K																					
2022-12-14	FS_INF-S																					
2022-12-14	FS_INF-K																					
2022-12-14	FS_INF-S																					
2022-12-14	FS_INF-K																					
2022-12-14	FS_INF-S																					
2022-12-14	FS_INF-K																					
2022-12-14	FS_INF-S																					
2022-12-14	FS_INF-K																					
2022-12-14	FS_INF-S																					
2022-12-15	FS_INF-K																					
2022-12-15	FS_INF-S																					
2022-12-15	FS_INF-K																					
2022-12-15	FS_INF-S																					
2022-12-15	FS_INF-K																					
2022-12-15	FS_INF-S																					
2022-12-15	FS_BPO																< 2.0					
2022-12-15	FS_INF-K																					
2022-12-15	FS_INF-S																					
2022-12-15	FR_SCOUTDS			284	0.0040	0.0056	0.21	0.31	0.11	0.12	0.0900	0.0981	< 0.020			< 0.020	< 2.0	< 0.000050	< 0.000050	0.014	0.014	1.58
2022-12-15	FS_INF-K																					
2022-12-15	FS_INF-S																					
2022-12-15	FS_INF-K																					
2022-12-15	FS_INF-S																					
2022-12-15	FS_INF-K																					
2022-12-15	FS_INF-S																					
2022-12-15	FS_INF-K																					
2022-12-15	FS_INF-S																					
2022-12-15	FS_INF-K																					
2022-12-16	FS_INF-S																					
2022-12-16	FS_INF-K																					
2022-12-16	FS_INF-S																					
2022-12-16	FS_INF-K																					
2022-12-16	FS_BPO																< 2.0					
2022-12-16	FS_INF-K																					
2022-12-16	FS_INF-S																					
2022-12-16	FS_INF-K																					
2022-12-16	FS_INF-S																					
2022-12-16	FR_FRABCH			250	< 0.0010	< 0.0030	0.12	< 0.10	< 0.10	< 0.10	0.0976	0.0944		< 0.020		< 0.020	< 2.0	< 0.000050	< 0.000050	0.014	0.012	
2022-12-16	FS_INF-K																					
2022-12-16	FS_INF-S																					
2022-12-16	FS_INF-K																					
2022-12-16	FS_INF-S																					
2022-12-16	FS_INF-K																					
2022-12-16	FS_INF-S																					
2022-12-16	FS_INF-K																					
2022-12-16	FS_INF-S																					
2022-12-17	FS_INF-K																					
2022-12-17	FS_INF-S																					
2022-12-17	FS_INF-K																					
2022-12-17	FS_INF-S																					
2022-12-17	FS_BPO																					
2022-12-17	FS_INF-K																					
2022-12-17	FS_INF-S																					
2022-12-17	FS_INF-K																					
2022-12-17	FS_INF-S																					
2022-12-17	FS_INF-K																					
2022-12-17	FS_INF-S																					
2022-12-17	FS_INF-K																					
2022-12-17	FS_INF-S																					
2022-12-17	FS_INF-K																					
2022-12-17	FS_INF-S																					
2022-12-17	FS_INF-K																					

	Parameter	48-h Static acute lethality test using Daphnia ma	96-Hr 100% Conc. Acute lethality test for R. Trout	Alkalinity, Total (As CaCO3)	Aluminum	Aluminum	Antimony	Antimony	Arsenic	Arsenic	Barium	Barium	Beryllium	Beryllium	Beryllium	Beryllium	BIOCHEMICAL OXYGEN DEMAND, FIVE DAY	Bismuth	Bismuth	Boron	Boron	BROMATE
	Fraction	N	N	N	D	T	D	T	D	T	D	T	D	D	T	T	N	D	T	D	T	N
	Unit	%	%	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	mg/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-12-17	FS_INF-S																					
2022-12-18	FS_INF-K																					
2022-12-18	FS_INF-S																					
2022-12-18	FS_INF-K																					
2022-12-18	FS_INF-S																					
2022-12-18	FS_BPO																					
2022-12-18	FS_INF-K																					
2022-12-18	FS_INF-S																					
2022-12-18	FS_INF-K																					
2022-12-18	FS_INF-S																					
2022-12-18	FS_INF-K																					
2022-12-18	FS_INF-S																					
2022-12-18	FS_INF-K																					
2022-12-18	FS_INF-S																					
2022-12-19	FS_INF-K																					
2022-12-19	FS_INF-S																					
2022-12-19	FS_INF-K																					
2022-12-19	FS_INF-S																					
2022-12-19	FS_BPO	0	0	661													< 2.0					8.97
2022-12-19	FS_INF-K			492																		< 0.60
2022-12-19	FS_INF-S			474																		< 0.60
2022-12-19	FS_INF-K																					
2022-12-19	FS_INF-S																					
2022-12-19	FS_INF-K																					
2022-12-19	FS_INF-S																					
2022-12-19	FS_INF-K																					
2022-12-19	FS_INF-S																					
2022-12-19	FS_INF-K																					
2022-12-19	FS_INF-S																					
2022-12-19	FS_INF-K																					
2022-12-19	FS_INF-S																					
2022-12-20	FS_INF-K																					
2022-12-20	FS_INF-S																					
2022-12-20	FS_BPO				< 0.0060	< 0.0060	0.28	0.26	< 0.20	< 0.20	0.00943	0.0102	< 0.040		< 0.040		< 2.0	< 0.000100	< 0.000100	0.030	0.032	
2022-12-20	FS_INF-K				< 0.0060	< 0.0060	0.55	0.50	< 0.20	< 0.20	0.0232	0.0226	< 0.040		< 0.040			< 0.000100	< 0.000100	0.036		
2022-12-20	FS_INF-S				< 0.0060	0.0060	0.74	0.74	0.24	< 0.20	0.0260	0.0258	< 0.040		< 0.040			< 0.000100	< 0.000100	< 0.020		
2022-12-20	FS_INF-K																					
2022-12-20	FS_INF-S																					
2022-12-20	FS_INF-K																					
2022-12-20	FS_INF-S																					
2022-12-20	FS_INF-K																					
2022-12-20	FS_INF-S																					
2022-12-20	FS_INF-K																					
2022-12-20	FS_INF-S																					
2022-12-20	FS_INF-K																					
2022-12-20	FS_INF-S																					
2022-12-21	FS_INF-K																					
2022-12-21	FS_INF-S																					
2022-12-21	FS_INF-K																					
2022-12-21	FS_INF-S																					
2022-12-21	FS_BPO	0	0														< 2.0					
2022-12-21	FS_INF-K																					
2022-12-21	FS_INF-S																					
2022-12-21	FS_INF-K																					
2022-12-21	FS_INF-S																					
2022-12-21	FR_FRABCH																					
2022-12-21	FR_FRABCH																					
2022-12-21	FS_INF-K																					
2022-12-21	FS_INF-S																					
2022-12-21	FS_INF-K																					
2022-12-21	FS_INF-S																					
2022-12-21	FS_INF-K																					
2022-12-21	FS_INF-S																					
2022-12-21	FS_INF-K																					
2022-12-21	FS_INF-S																					
2022-12-22	FS_INF-K																					
2022-12-22	FS_INF-S																					
2022-12-22	FS_INF-K																					
2022-12-22	FS_INF-S																					
2022-12-22	FS_BPO																< 2.0					
2022-12-22	FS_INF-K																					
2022-12-22	FS_INF-S																					
2022-12-22	FR_SCOUTDS			273	0.0055	0.0067	0.35	0.34	0.11	0.10	0.0884	0.0869	< 0.020		< 0.020		< 2.0	< 0.000050	< 0.000050	0.013	0.013	< 0.30
2022-12-22	FR_SCOUTDS																					
2022-12-23	FS_BPO																< 2.0					
2022-12-23	FS_INF-K																					
2022-12-23	FS_INF-S																					
2022-12-23	FS_BPO																					

Parameter		48-h Static acute lethality test using Daphnia ma	96-Hr 100% Conc. Acute lethality test for R. Trout	Alkalinity, Total (As CaCO3)	Aluminum	Aluminum	Antimony	Antimony	Arsenic	Arsenic	Barium	Barium	Beryllium	Beryllium	Beryllium	Beryllium	BIOCHEMICAL OXYGEN DEMAND, FIVE DAY	Bismuth	Bismuth	Boron	Boron	BROMATE
Fraction		N	N	N	D	T	D	T	D	T	D	T	D	D	T	T	N	D	T	D	T	N
Unit		%	%	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	mg/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-12-23	FR_FRABCH																					
2022-12-23	FR_SCOUTDS																					
2022-12-23	FS_BPO																					
2022-12-23	FS_INF-K																					
2022-12-23	FS_INF-S																					
2022-12-23	FR_SCOUTDS																					
2022-12-23	FS_INF-K																					
2022-12-23	FS_INF-S																					
2022-12-23	FS_INF-K																					
2022-12-23	FS_INF-S																					
2022-12-23	FS_INF-K																					
2022-12-23	FS_INF-S																					
2022-12-24	FS_INF-K																					
2022-12-24	FS_INF-S																					
2022-12-24	FS_INF-K																					
2022-12-24	FS_INF-S																					
2022-12-24	FS_BPO																< 2.0					
2022-12-24	FS_INF-K																					
2022-12-24	FS_INF-S																					
2022-12-24	FS_INF-K																					
2022-12-24	FS_INF-S																					
2022-12-24	FS_INF-K																					
2022-12-24	FS_INF-S																					
2022-12-24	FS_BPO																					
2022-12-24	FS_INF-K																					
2022-12-24	FS_INF-S																					
2022-12-25	FS_BPO																					
2022-12-25	FS_INF-K																					
2022-12-25	FS_INF-S																					
2022-12-25	FS_INF-K																					
2022-12-25	FS_INF-S																					
2022-12-25	FS_BPO																					
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2022-12-25	FS_INF-S																					
2022-12-26	FS_INF-K																					
2022-12-26	FS_INF-S																					
2022-12-26	FS_INF-K																					
2022-12-26	FS_INF-K																					
2022-12-26	FS_BPO	0	0	583													< 2.0					9.59
2022-12-26	FS_INF-K			489																		< 0.60
2022-12-26	FS_INF-S			479																		< 0.30
2022-12-26	FS_INF-K																					
2022-12-26	FS_INF-S																					
2022-12-26	FS_INF-K																					
2022-12-26	FS_INF-S																					
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2022-12-26	FS_INF-K																					
2022-12-26	FS_INF-S																					
2022-12-27	FS_INF-K																					
2022-12-27	FS_INF-S																					
2022-12-27	FS_INF-K																					
2022-12-27	FS_INF-S																					
2022-12-27	FS_BPO				< 0.0060	< 0.0060	< 0.20	0.21	< 0.20	< 0.20	0.0101	0.0104	< 0.040			< 0.040	< 2.0	< 0.000100	< 0.000100	0.030	0.029	
2022-12-27	FS_INF-K				< 0.0060	< 0.0060	0.48	0.48	< 0.20	0.24	0.0237	0.0238	< 0.040			< 0.040		< 0.000100	< 0.000100	0.035	0.044	
2022-12-27	FS_INF-S				< 0.0060	< 0.0060	0.71	0.70	0.26	0.31	0.0260	0.0248	< 0.040			< 0.040		< 0.000100	< 0.000100	< 0.020	< 0.020	
2022-12-27	FS_INF-K																					
2022-12-27	FS_INF-S																					
2022-12-27	FS_INF-K																					
2022-12-27	FS_INF-S																					
2022-12-27	FS_INF-K																					
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2022-12-27	FS_INF-K																					
2022-12-27	FS_INF-S																					
2022-12-28	FS_INF-K																					
2022-12-28	FS_INF-S																					
2022-12-28	FS_INF-K																					
2022-12-28	FS_INF-S																					

Parameter		48-h Static acute lethality test using Daphnia ma	96-Hr 100% Conc. Acute lethality test for R. Trout	Alkalinity, Total (As CaCO3)	Aluminum	Aluminum	Antimony	Antimony	Arsenic	Arsenic	Barium	Barium	Beryllium	Beryllium	Beryllium	Beryllium	BIOCHEMICAL OXYGEN DEMAND, FIVE DAY	Bismuth	Bismuth	Boron	Boron	BROMATE
Fraction		N	N	N	D	T	D	T	D	T	D	T	D	D	T	T	N	D	T	D	T	N
Unit		%	%	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	mg/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-12-28	FS_BPO																< 2.0					
2022-12-28	FS_INF-K																					
2022-12-28	FS_INF-S																					
2022-12-28	FS_INF-K																					
2022-12-28	FS_INF-S																					
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2022-12-29	FS_INF-K																					
2022-12-29	FS_INF-S																					
2022-12-29	FS_INF-K																					
2022-12-29	FS_INF-S																					
2022-12-29	FS_BPO																< 2.0					
2022-12-29	FS_INF-K																					
2022-12-29	FS_INF-S																					
2022-12-29	FR_SCOUTDS			276	< 0.0030	0.0065	0.20	0.25	< 0.10	0.10	0.0834	0.0876	< 0.020			< 0.020	< 2.0	< 0.000050	< 0.000050	0.015	0.016	< 0.30
2022-12-29	FS_INF-K																					
2022-12-29	FS_INF-S																					
2022-12-29	FS_INF-K																					
2022-12-29	FS_INF-S																					
2022-12-29	FS_INF-K																					
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2022-12-30	FS_INF-K																					
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2022-12-30	FS_INF-K																					
2022-12-30	FS_INF-S																					
2022-12-31	FS_INF-K																					
2022-12-31	FS_INF-S																					
2022-12-31	FS_INF-K																					
2022-12-31	FS_INF-S																					
2022-12-31	FS_BPO																< 2.0					
2022-12-31	FS_INF-K																					
2022-12-31	FS_INF-S																					
2022-12-31	FS_BPO																					
2022-12-31	FS_INF-K																					
2022-12-31	FS_INF-S																					
2022-12-31	FS_INF-K																					
2022-12-31	FS_INF-S																					
2022-12-31	FS_INF-K																					
2022-12-31	FS_INF-S																					
2022-12-31	FS_INF-K																					
2022-12-31	FS_INF-S																					

	Parameter	Bromide	Cadmium	Cadmium	Cadmium	Cadmium	Calcium	Carbon, Dissolved Organic	Carbon, Total Organic	Chloride	Chromium	Chromium	Cobalt	Cobalt	Cobalt	Cobalt	Conductivity, Field	Conductivity, Field	Conductivity, Lab	Copper	Copper	Dimethylseleneoxide
	Fraction	N	D	D	T	T	T	D	T	D	D	T	D	D	T	T	N	N	N	D	T	D
	Unit	mg/l	mg/l	ug/l	mg/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	mg/l	ug/l	us/cm	uS/cm at 25 C	us/cm	mg/l	mg/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-01-01	FS_BPO																					
2022-01-01	FS_BPO																					
2022-01-01	FS_BPO																					0.037
2022-01-01	FS_INF-S																					
2022-01-01	FS_BPO																					
2022-01-01	FS_BPO																					
2022-01-01	FS_BPO																					
2022-01-01	FS_BPO																					
2022-01-01	FS_BPO																					
2022-01-01	FS_INF-S																					
2022-01-02	FS_BPO																					0.031
2022-01-02	FS_INF-S																					
2022-01-02	FS_BPO																					
2022-01-02	FS_BPO																					
2022-01-02	FS_BPO																					
2022-01-02	FS_INF-S																					
2022-01-03	FS_BPO	< 0.250						1.98	2.90	57.6									2800			0.034
2022-01-03	FS_INF-S	< 0.250								4.53									2970			
2022-01-03	FS_BPO																					
2022-01-03	FS_BPO																					
2022-01-03	FS_INF-S																					
2022-01-04	FS_BPO		< 0.0150		< 0.0200		300				< 0.20	< 0.20	< 0.20		< 0.20					< 1.00	< 1.00	0.037
2022-01-04	FS_INF-S																					0.026
2022-01-04	FS_BPO																					
2022-01-04	FS_INF-S																					
2022-01-05	FS_BPO																					0.026
2022-01-05	FS_INF-S																					
2022-01-05	FS_BPO																					
2022-01-05	FS_INF-S																					
2022-01-06	FR_SCOUTDS																					< 0.010
2022-01-06	FS_BPO																					0.026
2022-01-06	FS_INF-S																					
2022-01-06	FS_BPO																					
2022-01-06	FR_FRABCH																					
2022-01-06	FR_SCOUTDS	< 0.250		0.124		0.110	188	0.68	0.61	5.21	0.11	0.10	0.11			0.10			1490	0.28	< 0.50	
2022-01-06	FR_FRABCH	< 0.250		0.0307		0.0554	164	0.74	1.08	2.40	0.11	0.21	< 0.10			< 0.10	1300		1130	< 0.20	< 0.50	
2022-01-06	FR_SCOUTDS																1463					
2022-01-06	FS_INF-S																					
2022-01-07	FS_BPO																					0.030
2022-01-07	FS_INF-S																					
2022-01-07	FS_BPO																					
2022-01-07	FS_INF-S																					
2022-01-08	FS_BPO																					0.029
2022-01-08	FS_INF-S																					
2022-01-08	FS_BPO																					
2022-01-08	FS_INF-S																					
2022-01-09	FS_BPO																					0.031
2022-01-09	FS_INF-S																					
2022-01-09	FS_BPO																					
2022-01-09	FS_INF-S																					
2022-01-10	FS_BPO	< 0.250						1.62	1.73	56.5									2910			0.026
2022-01-10	FS_INF-S	< 0.250						1.87	1.82	3.84									3010			
2022-01-10	FS_BPO																					
2022-01-10	FS_INF-S																					
2022-01-10	FS_BPO																					
2022-01-10	FS_INF-S																					
2022-01-11	FS_BPO																					0.025
2022-01-11	FS_INF-S																					0.026
2022-01-11	FS_BPO																					
2022-01-11	FS_INF-S																					
2022-01-12	FS_BPO																					0.011
2022-01-12	FS_INF-S																					
2022-01-12	FS_BPO																					
2022-01-12	FS_INF-S																					
2022-01-13	FR_SCOUTDS																					< 0.010
2022-01-13	FS_BPO																					0.014
2022-01-13	FS_INF-S		0.427		0.398		379				< 0.20	< 0.20	0.35		0.30					< 1.00	< 1.00	
2022-01-13	FS_BPO																					
2022-01-13	FR_SCOUTDS	< 0.250		0.0891		0.0948	167	0.78	1.06	7.02	< 0.10	< 0.10	< 0.10			< 0.10			1410	< 0.20	< 0.50	
2022-01-13	FS_INF-S																					
2022-01-14	FS_BPO																					< 0.010

	Parameter	Bromide	Cadmium	Cadmium	Cadmium	Cadmium	Calcium	Carbon, Dissolved Organic	Carbon, Total Organic	Chloride	Chromium	Chromium	Cobalt	Cobalt	Cobalt	Cobalt	Conductivity, Field	Conductivity, Field	Conductivity, Lab	Copper	Copper	Dimethylseleneoxide
	Fraction	N	D	D	T	T	T	D	T	D	D	T	D	D	T	T	N	N	N	D	T	D
	Unit	mg/l	mg/l	ug/l	mg/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	mg/l	ug/l	us/cm	uS/cm at 25 C	us/cm	mg/l	mg/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-01-14	FS_INF-S																					
2022-01-14	FS_BPO																					
2022-01-14	FS_INF-S																					
2022-01-15	FS_BPO																					0.015
2022-01-15	FS_INF-S																					
2022-01-15	FS_BPO																					
2022-01-15	FS_INF-S																					
2022-01-16	FS_BPO																					< 0.010
2022-01-16	FS_INF-S																					
2022-01-16	FS_BPO																					
2022-01-16	FS_INF-S																					
2022-01-17	FS_BPO	< 0.250						1.81	1.64	56.8									2880			0.011
2022-01-17	FS_INF-S	< 0.250						1.74	1.72	4.09									3010			
2022-01-17	FS_BPO																					
2022-01-17	FS_BPO																					
2022-01-17	FS_BPO																					
2022-01-17	FR_FRABCH	< 0.250		0.0330		0.0382	151	< 0.50	< 0.50	2.20	< 0.10	0.28	< 0.10			< 0.10	1263		1200	< 0.20	< 0.50	
2022-01-17	FS_BPO																					
2022-01-17	FS_INF-S																					
2022-01-18	FS_BPO		< 0.0250		< 0.0250		374				< 0.20	< 0.20	< 0.20		< 0.20					< 1.00	< 1.00	< 0.010
2022-01-18	FS_INF-S		0.542		0.576		406				< 0.50	< 0.20	< 0.50		0.33					< 2.50	< 1.00	0.041
2022-01-18	FS_BPO																					
2022-01-18	FS_INF-S																					
2022-01-19	FS_BPO																					< 0.010
2022-01-19	FS_INF-S																					
2022-01-19	FS_BPO																					
2022-01-19	FS_INF-S																					
2022-01-20	FR_SCOUTDS																					< 0.010
2022-01-20	FS_BPO																					< 0.010
2022-01-20	FS_INF-S																					
2022-01-20	FS_BPO																					
2022-01-20	FR_SCOUTDS	< 0.250		0.0973		0.0996	187	0.90	1.00	6.95	< 0.10	0.10	0.11			0.10			1500	0.26	< 0.50	
2022-01-20	FS_BPO																					
2022-01-20	FS_BPO																					
2022-01-21	FS_BPO																					
2022-01-21	FS_INF-S																					
2022-01-21	FS_BPO																					< 0.010
2022-01-21	FS_INF-S																					
2022-01-21	FS_BPO																					
2022-01-21	FS_BPO																					
2022-01-21	FS_BPO																					
2022-01-21	FS_INF-S																					
2022-01-21	FS_INF-S																					
2022-01-22	FS_BPO																					
2022-01-22	FS_INF-S																					
2022-01-22	FS_BPO																					0.011
2022-01-22	FS_BPO																					
2022-01-22	FS_BPO																					
2022-01-22	FS_INF-S																					
2022-01-23	FS_BPO																					0.013
2022-01-23	FS_INF-S																					
2022-01-23	FS_BPO																					
2022-01-23	FS_INF-S																					
2022-01-24	FS_BPO	< 0.250						1.44	1.55	67.1									2900			< 0.010
2022-01-24	FS_INF-S	< 0.250						1.71	1.63	4.70									2970			
2022-01-24	FS_BPO																					
2022-01-24	FS_BPO																					
2022-01-24	FS_BPO																					
2022-01-24	FS_INF-S																					
2022-01-24	FS_INF-S																					
2022-01-25	FS_BPO																					0.014
2022-01-25	FS_INF-S		0.426		0.385		388				< 0.20	< 0.50	0.28		< 0.50					2.75	< 2.50	0.029
2022-01-25	FS_BPO																					
2022-01-25	FS_INF-S																					
2022-01-26	FS_BPO																					< 0.010
2022-01-26	FS_INF-S																					
2022-01-26	FS_BPO																					
2022-01-26	FS_INF-S																					
2022-01-27	FR_SCOUTDS																					< 0.010
2022-01-27	FS_BPO																					< 0.010
2022-01-27	FS_INF-S																					
2022-01-27	FS_BPO																					
2022-01-27	FR_FRABCH																					
2022-01-27	FR_SCOUTDS	< 0.250		0.0997		0.0956	185	0.90	0.80	6.22	0.16	0.13				0.12			1510	0.22	< 0.50	

	Parameter	Bromide	Cadmium	Cadmium	Cadmium	Cadmium	Calcium	Carbon, Dissolved Organic	Carbon, Total Organic	Chloride	Chromium	Chromium	Cobalt	Cobalt	Cobalt	Cobalt	Conductivity, Field	Conductivity, Field	Conductivity, Lab	Copper	Copper	Dimethylseleneoxide
	Fraction	N	D	D	T	T	T	D	T	D	D	T	D	D	T	T	N	N	N	D	T	D
	Unit	mg/l	mg/l	ug/l	mg/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	mg/l	ug/l	us/cm	uS/cm at 25 C	us/cm	mg/l	mg/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-01-27	FR_FRABCH	< 0.250		0.0367		0.0368	159	< 0.50	< 0.50	2.50	0.29	0.15	< 0.10			< 0.10	1293		1210	< 0.20	< 0.50	
2022-01-27	FS_BPO																					
2022-01-27	FS_INF-S																					
2022-01-28	FS_BPO																					
2022-01-28	FS_INF-S																					
2022-01-28	FS_BPO																					
2022-01-29	FS_BPO																					< 0.010
2022-01-29	FS_INF-S																					
2022-01-29	FS_BPO																					
2022-01-30	FS_BPO																					
2022-01-30	FS_INF-S																					
2022-01-30	FS_BPO																					
2022-01-31	FS_BPO	< 0.250						1.86	1.84	61.8									2890			
2022-01-31	FS_INF-S	< 0.250						1.65	1.77	3.60									2880			
2022-01-31	FS_BPO																					
2022-01-31	FS_BPO																					
2022-02-01	FS_BPO																					0.011
2022-02-01	FS_INF-S																					
2022-02-01	FS_BPO																					
2022-02-01	FR_FRABCH	< 0.250		0.0332		0.0423	174	< 0.50	0.52	2.45	0.10	0.14	< 0.10			< 0.10	1293		1210	< 0.20	< 0.50	
2022-02-02	FS_BPO																					
2022-02-02	FS_INF-S																					
2022-02-02	FS_BPO																					
2022-02-03	FR_SCOUTDS																					< 0.010
2022-02-03	FS_BPO																					< 0.010
2022-02-03	FS_INF-S																					
2022-02-03	FS_BPO																					
2022-02-03	FR_SCOUTDS	< 0.250		0.0906		0.0950	200	0.98	1.18	9.30	< 0.10	0.11	< 0.10			0.11			1600	0.31	< 0.50	
2022-02-04	FS_BPO																					
2022-02-04	FS_INF-S																					
2022-02-04	FS_BPO																					
2022-02-05	FS_BPO																					< 0.010
2022-02-05	FS_INF-S																					
2022-02-05	FS_BPO																					
2022-02-05	FS_BPO																					
2022-02-06	FS_BPO																					
2022-02-06	FS_INF-S																					
2022-02-06	FS_BPO																					
2022-02-06	FS_BPO																					
2022-02-06	FS_INF-S																					
2022-02-07	FS_BPO	< 0.250						1.62	1.54	71.8									3000			
2022-02-07	FS_INF-S	< 0.250						1.53	1.46	3.58									3040			
2022-02-07	FS_BPO																					
2022-02-07	FS_BPO																					
2022-02-08	FR_SCOUTDS																					< 0.010
2022-02-08	FS_BPO		< 0.0100		< 0.0150		384				< 0.20	< 0.20	< 0.20		< 0.20					< 1.00	< 1.00	0.014
2022-02-08	FS_INF-S		0.383		0.404		398				< 0.20	< 0.20	0.26		0.28					< 1.00	< 1.00	0.040
2022-02-08	FS_BPO																					
2022-02-09	FS_BPO																					
2022-02-09	FS_INF-S																					
2022-02-09	FS_BPO																					
2022-02-09	FR_FRABCH																					
2022-02-10	FR_SCOUTDS																					< 0.010
2022-02-10	FS_BPO																					< 0.010
2022-02-10	FS_INF-S		0.470		0.434		393				< 0.20	< 0.20	0.28		0.30					< 1.00	< 1.00	
2022-02-10	FS_BPO																					
2022-02-10	FR_SCOUTDS	< 0.250		0.0745		0.0815	184	0.76	0.52	8.11	< 0.10	0.13	0.10			0.14			1430	< 0.20	< 0.50	
2022-02-11	FS_BPO																					
2022-02-11	FS_INF-S																					
2022-02-11	FS_BPO																					
2022-02-12	FS_BPO																					< 0.010
2022-02-12	FS_INF-S																					
2022-02-12	FS_BPO																					
2022-02-13	FS_BPO																					0.011
2022-02-13	FS_INF-S																					
2022-02-13	FS_BPO																					
2022-02-14	FS_BPO	< 0.250						1.88	1.64	70.7									2980			
2022-02-14	FS_INF-S	< 0.250						1.76	1.72	3.81									2980			

	Parameter	Bromide	Cadmium	Cadmium	Cadmium	Cadmium	Calcium	Carbon, Dissolved Organic	Carbon, Total Organic	Chloride	Chromium	Chromium	Cobalt	Cobalt	Cobalt	Cobalt	Conductivity, Field	Conductivity, Field	Conductivity, Lab	Copper	Copper	Dimethylseleneoxide
	Fraction	N	D	D	T	T	T	D	T	D	D	T	D	D	T	T	N	N	N	D	T	D
	Unit	mg/l	mg/l	ug/l	mg/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	mg/l	ug/l	us/cm	uS/cm at 25 C	us/cm	mg/l	mg/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-02-14	FS_BPO																					
2022-02-14	FS_BPO																					
2022-02-14	FS_INF-S																					
2022-02-15	FS_BPO				< 0.0250		368					< 0.50			< 0.50						< 2.50	0.016
2022-02-15	FS_INF-S		0.437		0.447		399				0.23	< 0.50	0.31		< 0.50					< 1.00	< 2.50	
2022-02-15	FS_BPO																					
2022-02-15	FR_FRABCH																					
2022-02-15	FS_BPO																					
2022-02-16	FS_BPO																					
2022-02-16	FS_INF-S																					
2022-02-16	FS_BPO																					
2022-02-16	FS_INF-S																					
2022-02-16	FS_BPO																					
2022-02-16	FR_FRABCH	< 0.250		0.0368		0.0418	161	0.60	0.66	3.30	0.16	0.84	< 0.10			< 0.10			1260	< 0.20	0.54	
2022-02-16	FS_BPO																					
2022-02-16	FS_INF-S																					
2022-02-17	FR_SCOUTDS																					< 0.010
2022-02-17	FS_BPO																					0.019
2022-02-17	FS_INF-S																					
2022-02-17	FS_BPO																					
2022-02-17	FR_SCOUTDS	< 0.250	0.0856		0.100		191	0.88	0.98	7.92	< 0.10	0.16	0.10		0.13				1490	< 0.50	< 0.50	
2022-02-18	FS_BPO																					
2022-02-18	FS_INF-S																					
2022-02-18	FS_BPO																					
2022-02-19	FS_BPO																					
2022-02-19	FS_INF-S																					
2022-02-19	FS_BPO																					
2022-02-20	FS_BPO																					< 0.010
2022-02-20	FS_INF-S																					
2022-02-20	FS_BPO																					
2022-02-20	FS_BPO																					
2022-02-21	FS_BPO	< 0.250						3.19	2.80	66.0									2960			
2022-02-21	FS_INF-S	< 0.250						1.71	2.29	4.04									2970			
2022-02-21	FS_BPO																					
2022-02-21	FS_BPO																					
2022-02-21	FS_BPO																					
2022-02-22	FS_BPO																					
2022-02-22	FS_BPO																					< 0.010
2022-02-22	FS_INF-S		0.465		0.506		423				< 0.20	< 0.20	0.29		0.29					< 1.00	< 1.00	
2022-02-22	FS_BPO																					
2022-02-22	FR_FRABCH																1388					
2022-02-22	FS_BPO																					
2022-02-22	FS_BPO																					
2022-02-22	FS_INF-S																					
2022-02-23	FS_BPO																					
2022-02-23	FS_BPO																					
2022-02-23	FS_INF-S																					
2022-02-23	FS_BPO																					
2022-02-24	FR_SCOUTDS																					< 0.010
2022-02-24	FS_BPO																					< 0.010
2022-02-24	FS_INF-S																					
2022-02-24	FS_BPO																					
2022-02-24	FR_SCOUTDS	< 0.250	0.0669		0.0632		196	0.78	0.74	12.2	0.22	0.18	0.11		0.11				1520	< 0.50	< 0.50	
2022-02-25	FS_BPO																					
2022-02-25	FS_INF-S																					
2022-02-25	FS_BPO																					
2022-02-25	FR_SCOUTDS																					
2022-02-25	FS_INF-K																					
2022-02-25	FS_INF-K																					
2022-02-25	FS_INF-K																					
2022-02-26	FS_BPO																					
2022-02-26	FS_INF-K																					
2022-02-26	FS_INF-S																					
2022-02-26	FS_BPO																					
2022-02-27	FS_BPO																					< 0.010
2022-02-27	FS_INF-K				0.589		478					< 1.00			< 0.20						< 1.00	
2022-02-27	FS_INF-S																					
2022-02-27	FS_BPO																					
2022-02-28	FS_BPO	< 0.250						3.24	2.65	65.1									2970			
2022-02-28	FS_INF-K	< 0.250	1.62					0.74	0.68	1.99	< 0.50		< 0.50						2830	< 1.00		

	Parameter	Bromide	Cadmium	Cadmium	Cadmium	Cadmium	Calcium	Carbon, Dissolved Organic	Carbon, Total Organic	Chloride	Chromium	Chromium	Cobalt	Cobalt	Cobalt	Cobalt	Conductivity, Field	Conductivity, Field	Conductivity, Lab	Copper	Copper	Dimethylseleneoxide
	Fraction	N	D	D	T	T	T	D	T	D	D	T	D	D	T	T	N	N	N	D	T	D
	Unit	mg/l	mg/l	ug/l	mg/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	mg/l	ug/l	us/cm	uS/cm at 25 C	us/cm	mg/l	mg/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-02-28	FS_INF-S	< 0.250						2.06	1.82	4.16									3020			
2022-02-28	FS_BPO																					
2022-02-28	FS_BPO																					
2022-03-01	FS_BPO		< 0.0100		< 0.0100		388				< 0.20	< 0.20	< 0.20		< 0.20					< 1.00	< 1.00	< 0.010
2022-03-01	FS_INF-K		1.59		1.62		438				< 0.20	< 0.20	< 0.20		< 0.20					< 1.00	< 1.00	< 0.010
2022-03-01	FS_INF-S		0.353		0.387		393				1.05	< 0.20	0.25		0.24					< 1.00	< 1.00	0.030
2022-03-01	FS_BPO																					
2022-03-01	FR_FRABCH	< 0.250		0.0311		0.0397	191	< 0.50	< 0.50	2.69	0.12	0.13	< 0.10			< 0.10			1230	< 0.20	< 0.50	
2022-03-02	FS_BPO																					
2022-03-02	FS_INF-K																					
2022-03-02	FS_INF-S																					
2022-03-02	FS_BPO																					
2022-03-02	FR_FRABCH																					
2022-03-03	FR_SCOUTDS																					< 0.010
2022-03-03	FS_BPO																					< 0.010
2022-03-03	FS_INF-K																					
2022-03-03	FS_INF-S																					
2022-03-03	FS_BPO																					
2022-03-03	FR_SCOUTDS	< 0.250	0.0826		0.0765		172	0.75	0.86	6.80	0.31	0.12	0.10		< 0.10				1420	< 0.50	< 0.50	
2022-03-04	FS_BPO																					
2022-03-04	FS_INF-K																					
2022-03-04	FS_INF-S																					
2022-03-04	FS_BPO																					
2022-03-04	FS_BPO																					
2022-03-05	FS_BPO																					
2022-03-05	FS_INF-K																					
2022-03-05	FS_INF-S																					
2022-03-05	FS_BPO																					
2022-03-06	FS_BPO																					< 0.010
2022-03-06	FS_INF-K																					
2022-03-06	FS_INF-S																					
2022-03-06	FS_BPO																					
2022-03-07	FS_BPO	< 0.250						1.81	1.96	65.8									2860			
2022-03-07	FS_INF-K	< 0.250						< 0.50	< 0.50	2.04									2880			
2022-03-07	FS_INF-S	< 0.250						1.67	1.92	4.36									2990			
2022-03-07	FS_BPO																					
2022-03-07	FS_BPO																					
2022-03-08	FS_BPO				< 0.0200		365					< 0.20			< 0.20						< 1.00	< 0.010
2022-03-08	FS_INF-K		1.57		1.74		434				0.36	< 0.20	< 0.20		< 0.20					< 1.00	< 1.00	< 0.010
2022-03-08	FS_INF-S		0.396		0.404		401				< 0.20	< 0.20	0.26		0.25					< 1.00	< 1.00	0.016
2022-03-08	FS_BPO																					
2022-03-08	FS_INF-S																					
2022-03-08	FS_BPO																					
2022-03-08	FR_FRABCH	< 0.250		0.0400		0.0388	168	0.57	0.61	3.70	0.11	0.16		< 0.10		< 0.10		1353	1250	0.39	< 0.50	
2022-03-08	FS_BPO																					
2022-03-08	FS_BPO																					
2022-03-09	FS_BPO																					
2022-03-09	FS_BPO																					
2022-03-09	FS_INF-K																					
2022-03-09	FS_INF-S																					
2022-03-09	FS_BPO																					
2022-03-10	FR_SCOUTDS																					< 0.010
2022-03-10	FS_BPO																					< 0.010
2022-03-10	FS_INF-K																					
2022-03-10	FS_INF-S																					
2022-03-10	FS_BPO																					
2022-03-10	FR_SCOUTDS	< 0.250	0.0652		0.0905		204	0.51	0.66	8.80	0.35	0.11	0.12		0.13				1490	< 0.50	< 0.50	
2022-03-11	FS_BPO																					
2022-03-11	FS_INF-K																					
2022-03-11	FS_INF-S																					
2022-03-11	FS_BPO																					
2022-03-12	FS_BPO																					
2022-03-12	FS_INF-K																					
2022-03-12	FS_INF-S																					
2022-03-12	FS_BPO																					
2022-03-13	FS_BPO																					< 0.010
2022-03-13	FS_INF-K																					
2022-03-13	FS_INF-S																					
2022-03-13	FS_BPO																					

	Parameter	Bromide	Cadmium	Cadmium	Cadmium	Cadmium	Calcium	Carbon, Dissolved Organic	Carbon, Total Organic	Chloride	Chromium	Chromium	Cobalt	Cobalt	Cobalt	Cobalt	Conductivity, Field	Conductivity, Field	Conductivity, Lab	Copper	Copper	Dimethylseleneoxide
	Fraction	N	D	D	T	T	T	D	T	D	D	T	D	D	T	T	N	N	N	D	T	D
	Unit	mg/l	mg/l	ug/l	mg/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	mg/l	ug/l	us/cm	uS/cm at 25 C	us/cm	mg/l	mg/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-03-14	FS_BPO	< 0.250						2.10	2.11	64.5									2880			
2022-03-14	FS_INF-K																					
2022-03-14	FS_INF-S																					
2022-03-14	FS_BPO																					
2022-03-14	FS_BPO																					
2022-03-15	FS_BPO				< 0.0150		417					< 0.20			< 0.20						< 1.00	0.015
2022-03-15	FS_INF-K		1.75		1.69		432				< 0.20	< 0.20	< 0.20		< 0.20					< 1.00	< 1.00	< 0.010
2022-03-15	FS_INF-S		0.417		0.379		387				< 0.20	< 0.20	0.34		0.38					< 1.00	< 1.00	0.032
2022-03-15	FS_BPO																					
2022-03-15	FR_FRABCH	< 0.250		0.0362		0.0390	173	< 0.50	< 0.50	3.59	0.17	0.17	0.10			< 0.10		891	1260	< 0.20	< 0.50	
2022-03-16	FS_BPO																					
2022-03-16	FS_INF-K																					
2022-03-16	FS_INF-S																					
2022-03-16	FS_BPO																					
2022-03-17	FR_SCOUTDS																					< 0.010
2022-03-17	FS_BPO																					0.012
2022-03-17	FS_INF-K																					
2022-03-17	FS_INF-S																					
2022-03-17	FS_BPO																					
2022-03-17	FR_SCOUTDS	< 0.250	0.106		0.145		192	0.72	5.01	2.99	< 0.10	0.23	0.13		0.23				1310	< 0.50	< 0.50	
2022-03-18	FS_BPO																					
2022-03-18	FS_INF-K																					
2022-03-18	FS_INF-S																					
2022-03-18	FS_BPO																					
2022-03-19	FS_BPO																					
2022-03-19	FS_INF-K																					
2022-03-19	FS_INF-S																					
2022-03-19	FS_BPO																					
2022-03-20	FS_BPO																					0.013
2022-03-20	FS_INF-K																					
2022-03-20	FS_INF-S																					
2022-03-20	FS_BPO																					
2022-03-21	FS_BPO	< 0.250						2.01	1.93	62.7									2830			
2022-03-21	FS_INF-K	< 0.250						< 0.50	< 0.50	2.13									2970			
2022-03-21	FS_INF-S	< 0.250						1.71	1.94	4.22									2910			
2022-03-21	FS_BPO																					
2022-03-21	FS_BPO																					
2022-03-22	FS_BPO		< 0.0100		< 0.0150		345				< 0.20	< 0.20	< 0.20		< 0.20					< 1.00	< 1.00	0.012
2022-03-22	FS_INF-K		1.69		1.54		402				< 0.20	< 0.20	< 0.20		< 0.20					< 1.00	< 1.00	
2022-03-22	FS_INF-S		0.415		0.392		339				< 0.20	< 0.20	0.29		0.30					< 1.00	< 1.00	
2022-03-22	FS_BPO																					
2022-03-23	FS_BPO																					
2022-03-23	FS_INF-K																					
2022-03-23	FS_INF-S																					
2022-03-23	FS_BPO																					
2022-03-23	FR_FRABCH	< 0.250		0.0386		0.0406	164	< 0.50	0.71	4.14	< 0.10	0.15		< 0.10		< 0.10			1260	< 0.20	0.59	
2022-03-23	FR_FRABCH																					
2022-03-24	FR_SCOUTDS																					< 0.010
2022-03-24	FS_BPO																					< 0.010
2022-03-24	FS_INF-K																					
2022-03-24	FS_INF-S																					
2022-03-24	FS_BPO																					
2022-03-24	FR_SCOUTDS	< 0.250	0.0912		0.121		176	0.94	1.60	6.39	< 0.10	0.17	0.19		0.27				1290	< 0.50	< 0.50	
2022-03-25	FS_BPO																					
2022-03-25	FS_INF-K																					
2022-03-25	FS_INF-S																					
2022-03-25	FS_BPO																					
2022-03-26	FS_BPO																					
2022-03-26	FS_INF-K																					
2022-03-26	FS_INF-S																					
2022-03-26	FS_BPO																					
2022-03-27	FS_BPO																					< 0.010
2022-03-27	FS_INF-K																					
2022-03-27	FS_INF-S																					
2022-03-27	FS_BPO																					
2022-03-28	FS_BPO	< 0.250						2.00	1.97	70.0									2580			
2022-03-28	FS_INF-K																					
2022-03-28	FS_INF-S																					
2022-03-28	FS_BPO																					

	Parameter	Bromide	Cadmium	Cadmium	Cadmium	Cadmium	Calcium	Carbon, Dissolved Organic	Carbon, Total Organic	Chloride	Chromium	Chromium	Cobalt	Cobalt	Cobalt	Cobalt	Conductivity, Field	Conductivity, Field	Conductivity, Lab	Copper	Copper	Dimethylseleneoxide
	Fraction	N	D	D	T	T	T	D	T	D	D	T	D	D	T	T	N	N	N	D	T	D
	Unit	mg/l	mg/l	ug/l	mg/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	mg/l	ug/l	us/cm	uS/cm at 25 C	us/cm	mg/l	mg/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-03-28	FS_BPO																					
2022-03-29	FS_BPO		< 0.0100		< 0.0200		334				< 0.20	< 0.20	< 0.20		0.22					< 1.00	< 1.00	0.013
2022-03-29	FS_INF-K		1.73		1.69		437				< 0.20	< 0.20	< 0.20		< 0.20					< 1.00	< 1.00	< 0.010
2022-03-29	FS_INF-S		0.481		0.501		292				< 0.20	0.62	0.30		0.40					< 1.00	< 1.00	0.032
2022-03-29	FS_BPO																					
2022-03-30	FS_BPO																					
2022-03-30	FS_INF-K																					
2022-03-30	FS_INF-S																					
2022-03-30	FR_FRABCH	< 0.250		0.0475		0.0612	172	0.90	1.09	5.03	< 0.10	0.23		0.12		0.14			1200	0.21	< 0.50	
2022-03-30	FS_BPO																					
2022-03-30	FS_BPO																					
2022-03-31	FR_SCOUTDS																					< 0.010
2022-03-31	FS_BPO																					< 0.010
2022-03-31	FS_INF-K																					
2022-03-31	FS_INF-S																					
2022-03-31	FS_BPO																					
2022-03-31	FR_SCOUTDS	< 0.250	0.122		0.155		138	1.32	2.15	4.68	< 0.10	0.26	0.49		0.57				1090	1.30	1.47	
2022-04-01	FS_BPO																					
2022-04-01	FS_INF-K																					
2022-04-01	FS_INF-S																					
2022-04-01	FS_BPO																					
2022-04-01	FR_FRABCH																					
2022-04-02	FS_BPO																					
2022-04-02	FS_INF-K																					
2022-04-02	FS_INF-S																					
2022-04-02	FS_BPO																					
2022-04-02	FS_INF-S																					
2022-04-03	FS_BPO																					< 0.010
2022-04-03	FS_INF-K																					
2022-04-03	FS_INF-S																					
2022-04-03	FS_BPO																					
2022-04-04	FS_BPO	< 0.250						1.26	1.55	78.0									2580			
2022-04-04	FS_INF-K	< 0.250						< 0.50	< 0.50	2.70									2890			
2022-04-04	FS_INF-S	< 0.250						1.70	1.86	4.06									2740			
2022-04-04	FS_BPO																					
2022-04-04	FS_BPO																					
2022-04-05	FS_BPO		< 0.0100		< 0.0150		432				< 0.20	< 0.20	< 0.20		< 0.20					< 1.00	< 1.00	
2022-04-05	FS_INF-K		1.65		1.76		514				< 0.20	< 0.20	< 0.20		< 0.20					< 1.00	< 1.00	
2022-04-05	FS_INF-S		0.663		0.668		430				< 0.20	< 0.20	0.40		0.42					< 1.00	< 1.00	
2022-04-05	FS_BPO																					
2022-04-05	FR_FRABCH	< 0.250		0.0544		0.0646	155	1.55	1.26	4.86	< 0.10	0.15		0.17		0.19			1210	< 0.20	< 0.50	
2022-04-06	FS_BPO																					< 0.010
2022-04-06	FS_INF-K																					< 0.010
2022-04-06	FS_INF-S																					0.041
2022-04-06	FS_BPO																					
2022-04-06	FS_INF-K																					
2022-04-06	FS_INF-S																					
2022-04-06	FS_BPO																					
2022-04-06	FR_FRABCH																					
2022-04-07	FS_BPO																					< 0.010
2022-04-07	FS_INF-K																					
2022-04-07	FS_INF-S																					
2022-04-07	FS_BPO																					
2022-04-07	FR_SCOUTDS	< 0.250	0.153		0.157		158	0.99	1.29	5.47	0.12	0.13	0.69		0.69				1270	< 0.50	< 0.50	< 0.010
2022-04-08	FS_BPO																					
2022-04-08	FS_INF-K																					
2022-04-08	FS_INF-S																					
2022-04-08	FS_BPO																					
2022-04-09	FS_BPO																					
2022-04-09	FS_INF-K																					
2022-04-09	FS_INF-S																					
2022-04-09	FS_BPO																					
2022-04-10	FS_BPO																					< 0.010
2022-04-10	FS_INF-K																					
2022-04-10	FS_INF-S																					
2022-04-10	FS_BPO																					
2022-04-11	FS_BPO	< 0.250						1.89	1.93	77.9									2690			

		Bromide	Cadmium	Cadmium	Cadmium	Cadmium	Calcium	Carbon, Dissolved Organic	Carbon, Total Organic	Chloride	Chromium	Chromium	Cobalt	Cobalt	Cobalt	Cobalt	Conductivity, Field	Conductivity, Field	Conductivity, Lab	Copper	Copper	Dimethylseleneoxide
Parameter		N	D	D	T	T	T	D	T	D	D	T	D	D	T	T	N	N	N	D	T	D
Unit		mg/l	mg/l	ug/l	mg/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	mg/l	ug/l	us/cm	uS/cm at 25 C	us/cm	mg/l	mg/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-04-11	FS_INF-K																					
2022-04-11	FS_INF-S																					
2022-04-11	FS_BPO																					
2022-04-11	FS_BPO																					
2022-04-12	FS_BPO		< 0.0150		< 0.0200		371				< 0.20	< 0.20	0.20		< 0.20					< 1.00	< 1.00	< 0.010
2022-04-12	FS_INF-K		1.56		1.59		425				< 0.20	< 0.20	< 0.20		< 0.20					< 1.00	< 1.00	< 0.010
2022-04-12	FS_INF-S		0.627		0.663		363				< 0.20	0.36	0.42		0.43					< 1.00	< 1.00	0.039
2022-04-12	FS_BPO																					
2022-04-12	FR_FRABCH	< 0.250		0.0656		0.0907	167	0.97	0.94	5.27	< 0.10	0.17		0.16		0.18			1200	< 0.20	< 0.50	
2022-04-13	FS_BPO																					
2022-04-13	FS_INF-K																					
2022-04-13	FS_INF-S																					
2022-04-13	FS_BPO																					
2022-04-14	FS_BPO																					< 0.010
2022-04-14	FS_INF-K																					
2022-04-14	FS_INF-S																					
2022-04-14	FS_BPO																					
2022-04-14	FR_SCOUTDS	< 0.250	0.180		0.191		178	1.64	1.73	5.01	0.14	0.11	0.31		0.32				1320	< 0.50	< 0.50	< 0.010
2022-04-15	FS_BPO																					
2022-04-15	FS_BPO																					
2022-04-15	FS_BPO																					
2022-04-15	FS_INF-K																					
2022-04-15	FS_INF-S																					
2022-04-15	FS_BPO																					
2022-04-15	FS_BPO																					
2022-04-15	FS_BPO																					
2022-04-16	FS_BPO																					
2022-04-16	FS_BPO																					
2022-04-16	FS_BPO																					
2022-04-16	FS_INF-K																					
2022-04-16	FS_INF-S																					
2022-04-16	FS_BPO																					
2022-04-16	FS_BPO																					
2022-04-17	FS_BPO																					< 0.010
2022-04-17	FS_INF-K																					
2022-04-17	FS_INF-S																					
2022-04-17	FS_BPO																					
2022-04-18	FS_BPO	< 0.250						2.12	2.26	66.0									2640			
2022-04-18	FS_INF-K	< 0.250						< 0.50	< 0.50	2.21									2770			
2022-04-18	FS_INF-S	< 0.250						1.98	1.93	3.70									2800			
2022-04-18	FS_BPO																					
2022-04-18	FS_BPO																					
2022-04-19	FS_BPO		< 0.0250		< 0.0150		370				< 0.20	< 0.20	0.21		0.23					< 1.00	< 1.00	< 0.010
2022-04-19	FS_INF-K		1.54		1.77		441				< 0.20	< 0.20	< 0.20		< 0.20					< 1.00	< 1.00	
2022-04-19	FS_INF-S		0.510		0.559		378				< 0.20	< 0.20	0.38		0.41					< 1.00	< 1.00	
2022-04-19	FS_BPO																					
2022-04-20	FS_BPO																					
2022-04-20	FR_FRABCH	< 0.250		0.0687		0.0727	160	0.85	0.83	3.36	< 0.10	0.11		< 0.10		< 0.10			1260	< 0.20	< 0.50	
2022-04-21	FR_SCOUTDS																					
2022-04-21	FS_INF-K																					
2022-04-21	FR_SCOUTDS	< 0.250	0.181		0.194		162	1.06	3.18	3.28	0.15	0.11	0.20		0.20				1320	< 0.50	< 0.50	0.017
2022-04-21	FS_INF-K																					
2022-04-22	FS_BPO																					
2022-04-22	FS_INF-S																					
2022-04-22	FR_SCOUTDS																					
2022-04-22	FS_BPO																					
2022-04-22	FR_FRABCH																					
2022-04-22	FR_FRABCH																					
2022-04-22	FS_BPO																					
2022-04-22	FS_INF-S																					
2022-04-22	FS_INF-S																					
2022-04-22	FS_BPO																					
2022-04-22	FS_BPO																					
2022-04-22	FS_INF-S																					
2022-04-22	FS_INF-S																					
2022-04-23	FS_BPO																					
2022-04-23	FS_INF-S																					
2022-04-23	FS_BPO																					
2022-04-23	FS_INF-S																					
2022-04-24	FS_BPO																					< 0.010
2022-04-24	FS_INF-S																					
2022-04-24	FS_BPO																					

Parameter		Bromide	Cadmium	Cadmium	Cadmium	Cadmium	Calcium	Carbon, Dissolved Organic	Carbon, Total Organic	Chloride	Chromium	Chromium	Cobalt	Cobalt	Cobalt	Cobalt	Conductivity, Field	Conductivity, Field	Conductivity, Lab	Copper	Copper	Dimethylseleneoxide
Fraction		N	D	D	T	T	T	D	T	D	D	T	D	D	T	T	N	N	N	D	T	D
Unit		mg/l	mg/l	ug/l	mg/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	mg/l	ug/l	us/cm	uS/cm at 25 C	us/cm	mg/l	mg/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-04-24	FS_INF-S																					
2022-04-25	FS_BPO	< 0.250						2.02	2.35	78.5									2690			
2022-04-25	FS_INF-S																					
2022-04-25	FS_BPO																					
2022-04-25	FS_BPO																					
2022-04-26	FS_BPO																					0.013
2022-04-26	FS_INF-S		0.670		0.673		361				0.22	< 0.20	0.39		0.38					< 1.00	< 1.00	0.088
2022-04-26	FS_BPO																					
2022-04-27	FS_BPO																					
2022-04-27	FS_INF-S																					
2022-04-27	FS_BPO																					
2022-04-28	FS_BPO																					< 0.010
2022-04-28	FS_INF-S																					
2022-04-28	FS_BPO																					
2022-04-28	FR_SCOUTDS	< 0.250	0.196		0.213		125	2.12	2.79	4.90	0.12	0.16	0.59		0.63				992	0.53	0.54	< 0.010
2022-04-28	FR_FRABCH																					
2022-04-29	FS_BPO																					
2022-04-29	FS_INF-S																					
2022-04-29	FS_BPO																					
2022-04-30	FS_BPO																					
2022-04-30	FS_INF-S																					
2022-04-30	FS_BPO																					
2022-05-01	FS_BPO																					< 0.010
2022-05-01	FS_INF-K																					
2022-05-01	FS_INF-S																					
2022-05-01	FS_BPO																					
2022-05-01	FS_INF-K																					
2022-05-01	FS_BPO																					
2022-05-01	FS_BPO																					
2022-05-02	FS_BPO	< 0.250						2.85	3.08	79.1									2790			
2022-05-02	FS_INF-S	< 0.250						2.28	2.56	4.26									2720			
2022-05-02	FS_BPO																					
2022-05-02	FS_BPO																					
2022-05-02	FS_BPO																					
2022-05-02	FS_BPO																					
2022-05-02	FS_INF-S																					
2022-05-03	FS_BPO		< 0.0150		< 0.0200		339				< 0.20	< 0.20	0.39		0.45					< 1.00	< 1.00	< 0.010
2022-05-03	FS_INF-S		0.745		0.816		345				< 0.20	< 0.20	0.50		0.50					< 1.00	1.01	
2022-05-03	FS_BPO																					
2022-05-04	FS_BPO																					
2022-05-04	FS_INF-S																					
2022-05-04	FS_BPO																					
2022-05-05	FS_BPO																					< 0.010
2022-05-05	FS_INF-K																					
2022-05-05	FS_INF-S																					
2022-05-05	FS_BPO																					
2022-05-05	FR_SCOUTDS	< 0.250	0.154		0.161		106	5.31	3.34	1.80	0.13	0.18	0.24		0.29				896	< 0.50	0.52	< 0.010
2022-05-05	FR_FRABCH																					
2022-05-06	FS_BPO																					
2022-05-06	FS_INF-K																					
2022-05-06	FS_INF-S																					
2022-05-06	FS_BPO																					
2022-05-07	FS_BPO																					
2022-05-07	FS_INF-K																					
2022-05-07	FS_INF-S																					
2022-05-07	FS_BPO																					
2022-05-07	FS_INF-S																					
2022-05-08	FS_BPO																					< 0.010
2022-05-08	FS_INF-K																					
2022-05-08	FS_INF-S																					
2022-05-08	FS_BPO																					
2022-05-08	FS_INF-S																					
2022-05-08	FS_BPO																					
2022-05-09	FS_INF-S																					
2022-05-09	FS_INF-S																					
2022-05-09	FS_BPO	< 0.250						3.03	2.99	73.1									2300			
2022-05-09	FS_INF-K																					
2022-05-09	FS_INF-S																					
2022-05-09	FS_BPO																					
2022-05-09	FS_BPO																					
2022-05-10	FS_INF-S																					
2022-05-10	FS_INF-S																					

Parameter		Bromide	Cadmium	Cadmium	Cadmium	Cadmium	Calcium	Carbon, Dissolved Organic	Carbon, Total Organic	Chloride	Chromium	Chromium	Cobalt	Cobalt	Cobalt	Cobalt	Conductivity, Field	Conductivity, Field	Conductivity, Lab	Copper	Copper	Dimethylseleneoxide
Fraction		N	D	D	T	T	T	D	T	D	D	T	D	D	T	T	N	N	N	D	T	D
Unit		mg/l	mg/l	ug/l	mg/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	mg/l	ug/l	us/cm	uS/cm at 25 C	us/cm	mg/l	mg/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-05-10	FS_BPO		< 0.0150		< 0.0100		292				< 0.20	< 0.20	0.22		0.21					< 1.00	< 1.00	< 0.010
2022-05-10	FS_INF-K		1.42		1.36		396				< 0.20	< 0.20	< 0.20		< 0.20					< 1.00	< 1.00	< 0.010
2022-05-10	FS_INF-S		0.900		0.941		281				< 0.20	< 0.20	0.67		0.64					< 1.00	< 1.00	0.028
2022-05-10	FS_BPO																					
2022-05-10	FR_FRABCH																					
2022-05-11	FS_BPO																					
2022-05-11	FS_INF-K																					
2022-05-11	FS_INF-S																					
2022-05-11	FS_BPO																					
2022-05-12	FS_BPO																					< 0.010
2022-05-12	FS_INF-K																					
2022-05-12	FS_INF-S																					
2022-05-12	FS_BPO																					
2022-05-12	FR_SCOUTDS	< 0.250	0.149		0.177		128	2.00	1.92	3.27	0.22	0.10	0.19		0.21				931	0.89	< 0.50	< 0.010
2022-05-12	FS_INF-K																					
2022-05-12	FS_INF-S																					
2022-05-12	FS_INF-K																					
2022-05-12	FS_INF-S																					
2022-05-12	FS_INF-K																					
2022-05-12	FS_INF-S																					
2022-05-12	FS_INF-K																					
2022-05-12	FS_INF-S																					
2022-05-12	FS_INF-K																					
2022-05-12	FS_INF-S																					
2022-05-13	FS_INF-K																					
2022-05-13	FS_INF-S																					
2022-05-13	FS_INF-K																					
2022-05-13	FS_INF-S																					
2022-05-13	FS_BPO																					
2022-05-13	FS_INF-K																					
2022-05-13	FS_INF-S																					
2022-05-13	FS_BPO																					
2022-05-13	FS_INF-K																					
2022-05-13	FS_INF-S																					
2022-05-13	FS_INF-K																					
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2022-05-13	FS_INF-K																					
2022-05-13	FS_INF-S																					
2022-05-14	FS_INF-K																					
2022-05-14	FS_INF-S																					
2022-05-14	FS_INF-K																					
2022-05-14	FS_INF-S																					
2022-05-14	FS_BPO																					
2022-05-14	FS_INF-K																					
2022-05-14	FS_INF-S																					
2022-05-14	FS_BPO																					
2022-05-14	FS_INF-K																					
2022-05-14	FS_INF-S																					
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2022-05-14	FS_INF-K																					
2022-05-14	FS_INF-S																					
2022-05-14	FS_INF-K																					
2022-05-14	FS_INF-S																					
2022-05-15	FS_INF-K																					
2022-05-15	FS_INF-S																					
2022-05-15	FS_INF-K																					
2022-05-15	FS_INF-S																					
2022-05-15	FS_BPO																					< 0.010
2022-05-15	FS_INF-K																					
2022-05-15	FS_INF-S																					
2022-05-15	FS_BPO																					
2022-05-15	FS_INF-K																					
2022-05-15	FS_INF-S																					
2022-05-15	FS_INF-K																					
2022-05-15	FS_INF-S																					
2022-05-15	FS_INF-K																					
2022-05-15	FS_INF-S																					
2022-05-16	FS_INF-K																					
2022-05-16	FS_INF-S																					
2022-05-16	FS_INF-K																					
2022-05-16	FS_INF-S																					
2022-05-16	FS_BPO	< 0.250						2.61	2.76	71.2									2490			

	Parameter	Bromide	Cadmium	Cadmium	Cadmium	Cadmium	Calcium	Carbon, Dissolved Organic	Carbon, Total Organic	Chloride	Chromium	Chromium	Cobalt	Cobalt	Cobalt	Cobalt	Conductivity, Field	Conductivity, Field	Conductivity, Lab	Copper	Copper	Dimethylseleneoxide
	Fraction	N	D	D	T	T	T	D	T	D	D	T	D	D	T	T	N	N	N	D	T	D
	Unit	mg/l	mg/l	ug/l	mg/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	mg/l	ug/l	us/cm	uS/cm at 25 C	us/cm	mg/l	mg/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-05-16	FS_INF-K	< 0.250						< 0.50	< 0.50	1.82									2610			
2022-05-16	FS_INF-S	< 0.250						2.11	1.98	3.25									2520			
2022-05-16	FS_BPO																					
2022-05-16	FS_BPO																					
2022-05-16	FS_INF-K																					
2022-05-16	FS_INF-S																					
2022-05-16	FS_INF-K																					
2022-05-16	FS_INF-S																					
2022-05-16	FS_INF-K																					
2022-05-16	FS_INF-S																					
2022-05-16	FS_INF-K																					
2022-05-16	FS_INF-S																					
2022-05-16	FS_INF-K																					
2022-05-16	FS_INF-S																					
2022-05-17	FS_INF-K																					
2022-05-17	FS_INF-S																					
2022-05-17	FS_INF-K																					
2022-05-17	FS_INF-S																					
2022-05-17	FS_BPO		< 0.0200		< 0.0150		312				< 0.20	< 0.20	< 0.20		< 0.20					< 1.00	< 1.00	< 0.010
2022-05-17	FS_INF-K		1.43		1.38		366				< 0.20	< 0.20	< 0.20		< 0.20					< 1.00	< 1.00	
2022-05-17	FS_INF-S		0.931		0.918		321				< 0.20	< 0.20	0.50		0.46					1.42	< 1.00	
2022-05-17	FS_BPO																					
2022-05-17	FR_FRABCH	< 0.250		0.0630		0.0787	116	1.31	1.46	3.01	0.15	0.17		< 0.10		< 0.10			902	0.40	0.83	
2022-05-17	FS_INF-K																					
2022-05-17	FS_INF-S																					
2022-05-17	FS_INF-K																					
2022-05-17	FS_INF-S																					
2022-05-17	FS_INF-K																					
2022-05-17	FS_INF-S																					
2022-05-17	FS_INF-K																					
2022-05-17	FS_INF-S																					
2022-05-17	FS_INF-K																					
2022-05-17	FS_INF-S																					
2022-05-17	FS_INF-K																					
2022-05-17	FS_INF-S																					
2022-05-18	FS_INF-K																					
2022-05-18	FS_INF-S																					
2022-05-18	FS_INF-K																					
2022-05-18	FS_INF-S																					
2022-05-18	FS_BPO																					
2022-05-18	FS_INF-K																					
2022-05-18	FS_INF-S																					
2022-05-18	FS_BPO																					
2022-05-18	FS_BPO																					
2022-05-18	FS_INF-K																					
2022-05-18	FS_INF-S																					
2022-05-18	FS_INF-K																					
2022-05-18	FS_INF-S																					
2022-05-18	FS_INF-K																					
2022-05-18	FS_INF-S																					
2022-05-19	FS_INF-K																					
2022-05-19	FS_INF-S																					
2022-05-19	FS_INF-K																					
2022-05-19	FS_INF-S																					
2022-05-19	FS_BPO																					< 0.010
2022-05-19	FS_INF-K																					
2022-05-19	FS_INF-S																					
2022-05-19	FS_BPO																					
2022-05-19	FR_SCOUTDS	< 0.050	0.124		0.137		99.1	1.72	1.61	0.79	0.12	0.15	0.11		0.12				776	< 0.50	< 0.50	< 0.010
2022-05-19	FS_INF-K																					
2022-05-19	FS_INF-S																					
2022-05-19	FS_INF-K																					
2022-05-19	FS_INF-S																					
2022-05-19	FS_INF-K																					
2022-05-19	FS_INF-S																					
2022-05-19	FS_INF-K																					
2022-05-19	FS_INF-S																					
2022-05-19	FS_INF-K																					
2022-05-19	FS_INF-S																					
2022-05-20	FS_INF-K																					
2022-05-20	FS_INF-S																					
2022-05-20	FS_INF-K																					
2022-05-20	FS_INF-S																					
2022-05-20	FS_BPO																					
2022-05-20	FS_INF-K																					
2022-05-20	FS_INF-S																					
2022-05-20	FS_BPO																					
2022-05-20	FS_INF-K																					
2022-05-20	FS_INF-S																					
2022-05-20	FS_INF-K																					
2022-05-20	FS_INF-S																					
2022-05-20	FS_INF-K																					
2022-05-20	FS_INF-S																					

	Parameter	Bromide	Cadmium	Cadmium	Cadmium	Cadmium	Calcium	Carbon, Dissolved Organic	Carbon, Total Organic	Chloride	Chromium	Chromium	Cobalt	Cobalt	Cobalt	Cobalt	Conductivity, Field	Conductivity, Field	Conductivity, Lab	Copper	Copper	Dimethylseleneoxide
	Fraction	N	D	D	T	T	T	D	T	D	D	T	D	D	T	T	N	N	N	D	T	D
	Unit	mg/l	mg/l	ug/l	mg/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	mg/l	ug/l	us/cm	uS/cm at 25 C	us/cm	mg/l	mg/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-05-20	FS_INF-K																					
2022-05-20	FS_INF-S																					
2022-05-21	FS_INF-K																					
2022-05-21	FS_INF-S																					
2022-05-21	FS_INF-K																					
2022-05-21	FS_INF-S																					
2022-05-21	FS_BPO																					
2022-05-21	FS_INF-K																					
2022-05-21	FS_INF-S																					
2022-05-21	FS_BPO																					
2022-05-21	FS_INF-K																					
2022-05-21	FS_INF-S																					
2022-05-21	FS_INF-K																					
2022-05-21	FS_INF-S																					
2022-05-21	FS_INF-K																					
2022-05-21	FS_INF-S																					
2022-05-21	FS_INF-K																					
2022-05-21	FS_INF-S																					
2022-05-22	FS_INF-K																					
2022-05-22	FS_INF-S																					
2022-05-22	FS_INF-K																					
2022-05-22	FS_INF-S																					
2022-05-22	FS_BPO																					< 0.010
2022-05-22	FS_INF-K																					
2022-05-22	FS_INF-S																					
2022-05-22	FS_BPO																					
2022-05-22	FS_BPO																					
2022-05-22	FS_BPO																					
2022-05-22	FS_INF-K																					
2022-05-22	FS_INF-S																					
2022-05-22	FS_INF-K																					
2022-05-22	FS_INF-S																					
2022-05-22	FS_INF-K																					
2022-05-22	FS_INF-S																					
2022-05-23	FS_INF-K																					
2022-05-23	FS_INF-S																					
2022-05-23	FS_INF-K																					
2022-05-23	FS_INF-S																					
2022-05-23	FS_BPO	< 0.250						2.24	2.33	70.4									2420			
2022-05-23	FS_INF-K																					
2022-05-23	FS_INF-S																					
2022-05-23	FS_BPO																					
2022-05-23	FS_BPO																					
2022-05-23	FR_FRABCH																					
2022-05-23	FS_INF-K																					
2022-05-23	FS_INF-S																					
2022-05-23	FS_INF-K																					
2022-05-23	FS_INF-S																					
2022-05-23	FS_INF-K																					
2022-05-23	FS_INF-S																					
2022-05-23	FS_INF-K																					
2022-05-23	FS_INF-S																					
2022-05-24	FS_INF-K																					
2022-05-24	FS_INF-S																					
2022-05-24	FS_INF-K																					
2022-05-24	FS_INF-S																					
2022-05-24	FS_BPO		< 0.0150		< 0.0200		285				0.64	< 0.20	< 0.20		< 0.20					< 1.00	< 1.00	< 0.010
2022-05-24	FS_INF-K		0.958		1.25		378				< 0.20	< 0.10	< 0.20		< 0.10					< 1.00	< 0.50	0.612
2022-05-24	FS_INF-S		1.06		1.03		356				< 0.20	< 0.20	0.46		0.47					1.53	1.02	0.059
2022-05-24	FS_BPO																					
2022-05-24	FR_FRABCH	< 0.050		0.0646		0.0716	127	1.16	1.30	3.18	< 0.10	0.12		< 0.10		< 0.10			970	0.23	< 0.50	
2022-05-24	FS_INF-K																					
2022-05-24	FS_INF-S																					
2022-05-24	FS_INF-K																					
2022-05-24	FS_INF-S																					
2022-05-24	FS_INF-K																					
2022-05-24	FS_INF-S																					
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2022-05-24	FS_INF-K																					
2022-05-24	FS_INF-S																					
2022-05-25	FS_INF-K																					
2022-05-25	FS_INF-S																					
2022-05-25	FS_INF-K																					
2022-05-25	FS_INF-S																					
2022-05-25	FS_BPO																					
2022-05-25	FS_INF-K																					
2022-05-25	FS_INF-S																					
2022-05-25	FS_BPO																					
2022-05-25	FS_INF-K																					
2022-05-25	FS_INF-S																					
2022-05-25	FS_INF-K																					

Parameter		Bromide	Cadmium	Cadmium	Cadmium	Cadmium	Calcium	Carbon, Dissolved Organic	Carbon, Total Organic	Chloride	Chromium	Chromium	Cobalt	Cobalt	Cobalt	Cobalt	Conductivity, Field	Conductivity, Field	Conductivity, Lab	Copper	Copper	Dimethylseleneoxide
Fraction		N	D	D	T	T	T	D	T	D	D	T	D	D	T	T	N	N	N	D	T	D
Unit		mg/l	mg/l	ug/l	mg/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	mg/l	ug/l	us/cm	uS/cm at 25 C	us/cm	mg/l	mg/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-05-25	FS_INF-S																					
2022-05-25	FS_INF-K																					
2022-05-25	FS_INF-S																					
2022-05-25	FS_INF-K																					
2022-05-25	FS_INF-S																					
2022-05-25	FS_INF-K																					
2022-05-25	FS_INF-S																					
2022-05-26	FS_INF-K																					
2022-05-26	FS_INF-S																					
2022-05-26	FS_INF-K																					
2022-05-26	FS_INF-S																					
2022-05-26	FS_BPO																					< 0.010
2022-05-26	FS_INF-K																					
2022-05-26	FS_INF-S																					
2022-05-26	FS_BPO																					
2022-05-26	FR_SCOUTDS	< 0.050	0.0685			0.0830	84.8	1.58	2.41	2.10	0.10	0.16	< 0.10			< 0.10			685	< 0.50	< 0.50	< 0.010
2022-05-26	FS_INF-K																					
2022-05-26	FS_INF-S																					
2022-05-26	FS_INF-K																					
2022-05-26	FS_INF-S																					
2022-05-26	FS_INF-K																					
2022-05-26	FS_INF-S																					
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2022-05-26	FS_INF-S																					
2022-05-26	FS_INF-K																					
2022-05-26	FS_INF-S																					
2022-05-27	FS_INF-K																					
2022-05-27	FS_INF-S																					
2022-05-27	FS_INF-K																					
2022-05-27	FS_INF-S																					
2022-05-27	FS_BPO																					
2022-05-27	FS_INF-K																					
2022-05-27	FS_INF-S																					
2022-05-27	FS_INF-K																					
2022-05-27	FS_INF-S																					
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2022-05-28	FS_INF-K																					
2022-05-28	FS_INF-S																					
2022-05-28	FS_INF-K																					
2022-05-28	FS_INF-S																					
2022-05-28	FS_BPO																					
2022-05-28	FS_INF-K																					
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2022-05-29	FS_INF-K																					
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2022-05-29	FS_INF-K																					
2022-05-29	FS_INF-S																					
2022-05-29	FS_BPO																					< 0.010
2022-05-29	FS_INF-K																					
2022-05-29	FS_INF-S																					
2022-05-29	FS_BPO																					
2022-05-29	FS_INF-K																					
2022-05-29	FS_INF-S																					
2022-05-29	FS_INF-K																					
2022-05-29	FS_INF-S																					
2022-05-29	FS_INF-K																					
2022-05-29	FS_INF-S																					
2022-05-29	FS_INF-K																					
2022-05-29	FS_INF-S																					
2022-05-30	FS_INF-K																					
2022-05-30	FS_INF-S																					
2022-05-30	FS_BPO	< 0.250						2.56	2.52	65.0									2420			
2022-05-30	FS_INF-K	< 0.250						0.99	0.93	1.51									2350			

	Parameter	Bromide	Cadmium	Cadmium	Cadmium	Cadmium	Calcium	Carbon, Dissolved Organic	Carbon, Total Organic	Chloride	Chromium	Chromium	Cobalt	Cobalt	Cobalt	Cobalt	Conductivity, Field	Conductivity, Field	Conductivity, Lab	Copper	Copper	Dimethylseleneoxide
	Fraction	N	D	D	T	T	T	D	T	D	D	T	D	D	T	T	N	N	N	D	T	D
	Unit	mg/l	mg/l	ug/l	mg/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	mg/l	ug/l	us/cm	uS/cm at 25 C	us/cm	mg/l	mg/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-05-30	FS_INF-S	< 0.250						2.40	2.44	3.48									2530			
2022-05-30	FS_BPO																					
2022-05-30	FS_INF-K																					
2022-05-30	FS_INF-S																					
2022-05-30	FS_INF-K																					
2022-05-30	FS_INF-S																					
2022-05-30	FS_INF-K																					
2022-05-30	FS_INF-S																					
2022-05-30	FS_INF-K																					
2022-05-30	FS_INF-S																					
2022-05-30	FS_INF-K																					
2022-05-30	FS_INF-S																					
2022-05-31	FS_INF-K																					
2022-05-31	FS_INF-S																					
2022-05-31	FS_INF-K																					
2022-05-31	FS_INF-S																					
2022-05-31	FS_BPO		< 0.0150			< 0.0200	306				< 0.20	< 0.20	< 0.20			< 0.20				< 1.00	< 1.00	< 0.010
2022-05-31	FS_INF-K		1.23			1.20	333				< 0.10	< 0.20	< 0.10			< 0.20				< 0.50	< 1.00	
2022-05-31	FS_INF-S		1.24			1.22	316				< 0.20	< 0.20	0.53			0.55				< 1.00	< 1.00	
2022-05-31	FR_FRABCH	< 0.050		0.0399		0.0643	83.2	1.88	1.79	1.70	0.10	0.30		< 0.10		0.12			710	0.22	< 0.50	
2022-05-31	FR_FRABCH																					
2022-05-31	FS_INF-K																					
2022-05-31	FS_INF-S																					
2022-05-31	FS_INF-K																					
2022-05-31	FS_INF-S																					
2022-05-31	FS_INF-K																					
2022-05-31	FS_INF-S																					
2022-05-31	FS_INF-K																					
2022-05-31	FS_INF-S																					
2022-06-01	FS_INF-K																					
2022-06-01	FS_INF-S																					
2022-06-01	FS_BPO																					
2022-06-01	FS_INF-K																					
2022-06-01	FS_INF-S																					
2022-06-01	FS_INF-K																					
2022-06-01	FS_INF-S																					
2022-06-01	FS_INF-K																					
2022-06-01	FS_INF-S																					
2022-06-01	FS_INF-K																					
2022-06-01	FS_INF-S																					
2022-06-01	FS_INF-K																					
2022-06-01	FS_INF-S																					
2022-06-02	FS_INF-K																					
2022-06-02	FS_INF-S																					
2022-06-02	FS_INF-K																					
2022-06-02	FS_INF-S																					
2022-06-02	FS_BPO																					< 0.010
2022-06-02	FS_INF-K																					
2022-06-02	FS_INF-S																					
2022-06-02	FR_SCOUTDS	< 0.050	0.0603			0.0580	62.5	3.95	1.59	1.44	< 0.10	0.13	< 0.10			< 0.10			528	< 0.50	< 0.50	< 0.010
2022-06-02	FS_INF-K																					
2022-06-02	FS_INF-S																					
2022-06-02	FS_INF-K																					
2022-06-02	FS_INF-S																					
2022-06-02	FS_INF-K																					
2022-06-02	FS_INF-S																					
2022-06-02	FS_BPO																					
2022-06-02	FS_INF-K																					
2022-06-02	FS_INF-S																					
2022-06-02	FS_INF-K																					
2022-06-02	FS_INF-S																					
2022-06-03	FS_INF-K																					
2022-06-03	FS_INF-S																					
2022-06-03	FS_INF-K																					
2022-06-03	FS_INF-S																					
2022-06-03	FS_BPO																					
2022-06-03	FS_INF-K																					
2022-06-03	FS_INF-S																					
2022-06-03	FS_INF-K																					
2022-06-03	FS_INF-S																					
2022-06-03	FS_INF-K																					
2022-06-03	FS_INF-S																					
2022-06-03	FS_INF-K																					
2022-06-03	FS_INF-S																					
2022-06-04	FS_INF-K																					
2022-06-04	FS_INF-S																					
2022-06-04	FS_INF-K																					
2022-06-04	FS_INF-S																					
2022-06-04	FS_BPO																					

	Parameter	Bromide	Cadmium	Cadmium	Cadmium	Cadmium	Calcium	Carbon, Dissolved Organic	Carbon, Total Organic	Chloride	Chromium	Chromium	Cobalt	Cobalt	Cobalt	Cobalt	Conductivity, Field	Conductivity, Field	Conductivity, Lab	Copper	Copper	Dimethylseleneoxide
	Fraction	N	D	D	T	T	T	D	T	D	D	T	D	D	T	T	N	N	N	D	T	D
	Unit	mg/l	mg/l	ug/l	mg/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	mg/l	ug/l	us/cm	uS/cm at 25 C	us/cm	mg/l	mg/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-06-04	FS_INF-K																					
2022-06-04	FS_INF-S																					
2022-06-04	FS_INF-K																					
2022-06-04	FS_INF-S																					
2022-06-04	FS_INF-K																					
2022-06-04	FS_INF-S																					
2022-06-04	FS_INF-K																					
2022-06-04	FS_INF-S																					
2022-06-04	FS_INF-K																					
2022-06-04	FS_INF-S																					
2022-06-04	FS_INF-K																					
2022-06-04	FS_INF-S																					
2022-06-05	FS_INF-K																					
2022-06-05	FS_INF-S																					
2022-06-05	FS_INF-K																					
2022-06-05	FS_INF-S																					
2022-06-05	FS_BPO																					< 0.010
2022-06-05	FS_INF-K																					
2022-06-05	FS_INF-S																					
2022-06-05	FS_INF-K																					
2022-06-05	FS_INF-S																					
2022-06-05	FS_INF-K																					
2022-06-05	FS_INF-S																					
2022-06-05	FS_INF-K																					
2022-06-05	FS_INF-S																					
2022-06-05	FS_INF-K																					
2022-06-05	FS_INF-S																					
2022-06-05	FS_INF-K																					
2022-06-05	FS_INF-S																					
2022-06-06	FS_INF-K																					
2022-06-06	FS_INF-S																					
2022-06-06	FS_INF-K																					
2022-06-06	FS_INF-S																					
2022-06-06	FS_BPO	< 0.250						2.02	2.17	70.9									2590			
2022-06-06	FS_INF-K																					
2022-06-06	FS_INF-S																					
2022-06-06	FS_BPO																					
2022-06-06	FS_INF-K																					
2022-06-06	FS_INF-S																					
2022-06-06	FS_INF-K																					
2022-06-06	FS_INF-S																					
2022-06-06	FS_INF-K																					
2022-06-06	FS_INF-S																					
2022-06-07	FS_INF-K																					
2022-06-07	FS_INF-S																					
2022-06-07	FS_INF-K																					
2022-06-07	FS_INF-S																					
2022-06-07	FS_BPO		0.0123		< 0.0100		324				< 0.10	< 0.20	0.19		< 0.20					0.59	< 1.00	< 0.010
2022-06-07	FS_INF-K		1.04			0.993	275				< 0.10	< 0.10	< 0.10			< 0.10				< 0.50	< 0.50	< 0.010
2022-06-07	FS_INF-S		1.26			1.29	286				< 0.20	< 0.20	0.54			0.52				< 1.00	< 1.00	0.035
2022-06-07	FR_FRABCH	< 0.050		0.0261		0.110	79.0	1.59	1.99	1.24	< 0.10	0.42		< 0.10		0.30			575	0.23	0.77	< 0.010
2022-06-07	FS_INF-K																					
2022-06-07	FS_INF-S																					
2022-06-07	FS_INF-K																					
2022-06-07	FS_INF-S																					
2022-06-07	FS_INF-K																					
2022-06-07	FS_INF-S																					
2022-06-07	FS_INF-K																					
2022-06-07	FS_INF-S																					
2022-06-07	FS_INF-K																					
2022-06-07	FS_INF-S																					
2022-06-08	FS_INF-K																					
2022-06-08	FS_INF-S																					
2022-06-08	FS_INF-K																					
2022-06-08	FS_INF-S																					
2022-06-08	FS_BPO																					
2022-06-08	FS_INF-K																					
2022-06-08	FS_INF-S																					
2022-06-08	FS_INF-K																					
2022-06-08	FS_INF-S																					
2022-06-08	FS_INF-K																					
2022-06-08	FS_INF-S																					
2022-06-08	FS_INF-K																					
2022-06-08	FS_INF-S																					
2022-06-08	FS_INF-K																					
2022-06-08	FS_INF-S																					
2022-06-09	FS_INF-K																					
2022-06-09	FS_INF-S																					
2022-06-09	FS_INF-K																					
2022-06-09	FS_INF-S																					

Parameter		Bromide	Cadmium	Cadmium	Cadmium	Cadmium	Calcium	Carbon, Dissolved Organic	Carbon, Total Organic	Chloride	Chromium	Chromium	Cobalt	Cobalt	Cobalt	Cobalt	Conductivity, Field	Conductivity, Field	Conductivity, Lab	Copper	Copper	Dimethylseleneoxide
Fraction		N	D	D	T	T	T	D	T	D	D	T	D	D	T	T	N	N	N	D	T	D
Unit		mg/l	mg/l	ug/l	mg/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	mg/l	ug/l	us/cm	uS/cm at 25 C	us/cm	mg/l	mg/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-06-09	FS_BPO																					< 0.010
2022-06-09	FS_INF-K																					
2022-06-09	FS_INF-S																					
2022-06-09	FR_SCOUTDS	< 0.050	0.0232			0.0636	50.7	1.97	2.34	0.24	0.11	0.26	< 0.10			0.17			357	< 0.50	< 0.50	< 0.010
2022-06-09	FS_INF-K																					
2022-06-09	FS_INF-S																					
2022-06-09	FR_FRABCH																					
2022-06-09	FS_INF-K																					
2022-06-09	FS_INF-S																					
2022-06-09	FS_INF-K																					
2022-06-09	FS_INF-S																					
2022-06-09	FS_INF-K																					
2022-06-09	FS_INF-S																					
2022-06-09	FS_INF-K																					
2022-06-09	FS_INF-S																					
2022-06-10	FS_INF-K																					
2022-06-10	FS_INF-S																					
2022-06-10	FS_INF-K																					
2022-06-10	FS_INF-S																					
2022-06-10	FS_BPO																					
2022-06-10	FS_INF-K																					
2022-06-10	FS_INF-S																					
2022-06-10	FS_INF-K																					
2022-06-10	FS_INF-S																					
2022-06-10	FS_INF-K																					
2022-06-10	FS_INF-S																					
2022-06-10	FS_INF-K																					
2022-06-10	FS_INF-S																					
2022-06-10	FS_INF-K																					
2022-06-10	FS_INF-S																					
2022-06-10	FS_INF-K																					
2022-06-10	FS_INF-S																					
2022-06-11	FS_INF-K																					
2022-06-11	FS_INF-S																					
2022-06-11	FS_INF-K																					
2022-06-11	FS_INF-S																					
2022-06-11	FS_INF-K																					
2022-06-11	FS_INF-S																					
2022-06-11	FS_BPO																					
2022-06-11	FS_INF-K																					
2022-06-11	FS_INF-S																					
2022-06-11	FS_INF-K																					
2022-06-11	FS_INF-S																					
2022-06-11	FS_INF-K																					
2022-06-11	FS_INF-S																					
2022-06-11	FS_INF-K																					
2022-06-11	FS_INF-S																					
2022-06-12	FS_INF-K																					
2022-06-12	FS_INF-S																					
2022-06-12	FS_INF-K																					
2022-06-12	FS_INF-S																					
2022-06-12	FS_BPO																					0.014
2022-06-12	FS_INF-K																					
2022-06-12	FS_INF-S																					
2022-06-12	FS_INF-K																					
2022-06-12	FS_INF-S																					
2022-06-12	FS_INF-K																					
2022-06-12	FS_INF-S																					
2022-06-12	FS_INF-K																					
2022-06-12	FS_INF-S																					
2022-06-12	FS_INF-K																					
2022-06-12	FS_INF-S																					
2022-06-12	FS_INF-K																					
2022-06-12	FS_INF-S																					
2022-06-13	FS_INF-K																					
2022-06-13	FS_INF-S																					
2022-06-13	FS_INF-K																					
2022-06-13	FS_INF-S																					
2022-06-13	FS_BPO	< 0.250						2.42	2.44	67.4									2560			
2022-06-13	FS_INF-K	< 0.250						0.82	0.91	0.73									1460			
2022-06-13	FS_INF-S	< 0.250						1.98	1.97	3.03									2760			
2022-06-13	FS_BPO																					
2022-06-13	FS_INF-K																					
2022-06-13	FS_INF-S																					
2022-06-13	FS_INF-K																					
2022-06-13	FS_INF-S																					
2022-06-13	FS_INF-K																					
2022-06-13	FS_INF-S																					
2022-06-13	FS_INF-K																					
2022-06-13	FS_INF-S																					

	Parameter	Bromide	Cadmium	Cadmium	Cadmium	Cadmium	Calcium	Carbon, Dissolved Organic	Carbon, Total Organic	Chloride	Chromium	Chromium	Cobalt	Cobalt	Cobalt	Cobalt	Conductivity, Field	Conductivity, Field	Conductivity, Lab	Copper	Copper	Dimethylseleneoxide
	Fraction	N	D	D	T	T	T	D	T	D	D	T	D	D	T	T	N	N	N	D	T	D
	Unit	mg/l	mg/l	ug/l	mg/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	mg/l	ug/l	us/cm	uS/cm at 25 C	us/cm	mg/l	mg/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-06-14	FS_BPO																					
2022-06-14	FR_FRABCH	< 0.050		0.0518		0.135	79.2	1.89	3.30	0.87	< 0.10	0.51		< 0.10		0.31			585	0.21	0.87	
2022-06-14	FS_BPO																					
2022-06-14	FR_FRABCH																					
2022-06-14	FS_BPO																					
2022-06-14	FS_BPO																					
2022-06-14	FS_INF-K																					
2022-06-14	FS_INF-S																					
2022-06-14	FS_BPO																					0.032
2022-06-14	FS_INF-K		0.781			0.708	188				< 0.20	< 0.20	0.20			0.21				< 1.00	< 1.00	< 0.010
2022-06-14	FS_INF-S		1.36			1.20	336				0.12	< 0.20	0.72			0.67				< 1.00	< 1.00	0.015
2022-06-15	FS_BPO																					
2022-06-15	FS_BPO																					
2022-06-15	FS_INF-K																					
2022-06-15	FS_INF-S																					
2022-06-15	FS_BPO																					
2022-06-15	FS_INF-K																					
2022-06-15	FS_INF-S																					
2022-06-15	FS_INF-K																					
2022-06-15	FS_INF-S																					
2022-06-15	FS_BPO																					
2022-06-15	FS_INF-K																					
2022-06-15	FS_INF-S																					
2022-06-15	FS_INF-K																					
2022-06-15	FS_INF-S																					
2022-06-15	FS_INF-K																					
2022-06-15	FS_INF-S																					
2022-06-15	FS_INF-K																					
2022-06-15	FS_INF-S																					
2022-06-15	FS_INF-K																					
2022-06-15	FS_INF-S																					
2022-06-16	FS_INF-K																					
2022-06-16	FS_INF-S																					
2022-06-16	FS_INF-K																					
2022-06-16	FS_INF-S																					
2022-06-16	FS_BPO																					0.027
2022-06-16	FS_INF-K																					
2022-06-16	FS_INF-S																					
2022-06-16	FR_SCOUTDS	< 0.050	0.0556			0.0730	55.6	2.33	2.09	1.04	0.13	0.21	< 0.10			0.12			463	< 0.50	0.52	< 0.010
2022-06-16	FS_INF-K																					
2022-06-16	FS_INF-S																					
2022-06-16	FR_SCOUTDS																					
2022-06-16	FS_INF-K																					
2022-06-16	FS_INF-S																					
2022-06-16	FS_INF-K																					
2022-06-16	FS_INF-S																					
2022-06-16	FS_INF-K																					
2022-06-16	FS_INF-S																					
2022-06-16	FS_INF-K																					
2022-06-16	FS_INF-S																					
2022-06-17	FS_INF-K																					
2022-06-17	FS_INF-S																					
2022-06-17	FS_INF-K																					
2022-06-17	FS_INF-S																					
2022-06-17	FS_BPO																					
2022-06-17	FS_INF-K																					
2022-06-17	FS_INF-S																					
2022-06-17	FS_INF-K																					
2022-06-17	FS_INF-S																					
2022-06-17	FS_INF-S																					
2022-06-17	FS_INF-S																					
2022-06-18	FS_INF-S																					
2022-06-18	FS_INF-S																					
2022-06-18	FS_BPO																					
2022-06-18	FS_INF-S																					
2022-06-18	FS_INF-S																					
2022-06-18	FS_INF-S																					
2022-06-18	FS_INF-S																					
2022-06-18	FS_INF-S																					
2022-06-19	FS_INF-S																					
2022-06-19	FS_INF-S																					
2022-06-19	FS_BPO																					0.018
2022-06-19	FS_INF-S																					
2022-06-19	FS_INF-K																					
2022-06-19	FS_INF-S																					
2022-06-19	FS_INF-S																					
2022-06-19	FS_INF-S																					
2022-06-19	FS_INF-S																					
2022-06-20	FS_INF-S																					
2022-06-20	FS_INF-S																					
2022-06-20	FS_BPO	< 0.250						2.35	2.52	69.2									2510			
2022-06-20	FS_INF-K																					

Parameter		Bromide	Cadmium	Cadmium	Cadmium	Cadmium	Calcium	Carbon, Dissolved Organic	Carbon, Total Organic	Chloride	Chromium	Chromium	Cobalt	Cobalt	Cobalt	Cobalt	Conductivity, Field	Conductivity, Field	Conductivity, Lab	Copper	Copper	Dimethylseleneoxide
Fraction		N	D	D	T	T	T	D	T	D	D	T	D	D	T	T	N	N	N	D	T	D
Unit		mg/l	mg/l	ug/l	mg/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	mg/l	ug/l	us/cm	uS/cm at 25 C	us/cm	mg/l	mg/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-06-20	FS_INF-S																					
2022-06-20	FS_BPO																					
2022-06-20	FS_INF-S																					
2022-06-20	FS_INF-S																					
2022-06-20	FS_INF-S																					
2022-06-20	FS_INF-S																					
2022-06-21	FS_INF-S																					
2022-06-21	FS_INF-S																					
2022-06-21	FS_BPO		0.0264		0.0164		315				< 0.20	< 0.20	< 0.20		< 0.20					< 1.00	< 1.00	< 0.010
2022-06-21	FS_INF-S		1.14			1.09	318				< 0.20	< 0.20	1.06			1.07				< 1.00	< 1.00	0.022
2022-06-21	FR_FRABCH	< 0.050		0.0485		0.153	74.3	4.28	4.07	1.03	0.10	0.48		< 0.10		0.38			581	0.52	0.93	
2022-06-21	FS_INF-S																					
2022-06-21	FS_INF-S																					
2022-06-21	FS_INF-S																					
2022-06-21	FS_INF-S																					
2022-06-21	FS_INF-S																					
2022-06-22	FS_INF-S																					
2022-06-22	FS_INF-S																					
2022-06-22	FS_BPO																					
2022-06-22	FS_INF-S																					
2022-06-22	FS_INF-K																					
2022-06-22	FS_INF-S																					
2022-06-22	FS_INF-K																					
2022-06-22	FS_INF-S																					
2022-06-22	FS_INF-K																					
2022-06-22	FS_INF-S																					
2022-06-22	FS_INF-K																					
2022-06-22	FS_INF-S																					
2022-06-22	FS_INF-K																					
2022-06-23	FS_INF-K																					
2022-06-23	FS_INF-S																					
2022-06-23	FS_INF-K																					
2022-06-23	FS_INF-K																					
2022-06-23	FS_INF-S																					< 0.010
2022-06-23	FS_INF-K																					
2022-06-23	FS_INF-S																					
2022-06-23	FR_SCOUTDS	< 0.050	0.0283			0.0577	51.5	1.60	1.88	0.96	0.10	0.27	< 0.10			0.11			370	< 0.50	< 0.50	< 0.010
2022-06-23	FS_INF-K																					
2022-06-23	FS_INF-S																					
2022-06-23	FS_INF-K																					
2022-06-23	FS_INF-S																					
2022-06-23	FS_INF-K																					
2022-06-23	FS_INF-S																					
2022-06-23	FS_INF-K																					
2022-06-23	FS_INF-S																					
2022-06-24	FS_INF-K																					
2022-06-24	FS_INF-S																					
2022-06-24	FS_INF-K																					
2022-06-24	FS_INF-S																					
2022-06-24	FS_BPO																					
2022-06-24	FS_INF-K																					
2022-06-24	FS_INF-S																					
2022-06-24	FS_INF-K																					
2022-06-24	FS_INF-S																					
2022-06-24	FS_INF-K																					
2022-06-24	FS_INF-S																					
2022-06-24	FS_INF-K																					
2022-06-24	FS_INF-S																					
2022-06-24	FS_INF-K																					
2022-06-24	FS_INF-S																					
2022-06-25	FS_INF-K																					
2022-06-25	FS_INF-S																					
2022-06-25	FS_INF-K																					
2022-06-25	FS_INF-S																					
2022-06-25	FS_BPO																					
2022-06-25	FS_INF-K																					
2022-06-25	FS_INF-S																					
2022-06-25	FS_INF-K																					
2022-06-25	FS_INF-S																					
2022-06-25	FS_INF-K																					
2022-06-25	FS_INF-S																					
2022-06-25	FS_INF-K																					
2022-06-25	FS_INF-S																					
2022-06-25	FS_INF-K																					
2022-06-25	FS_INF-S																					
2022-06-25	FS_INF-K																					
2022-06-25	FS_INF-S																					
2022-06-26	FS_INF-K																					

Parameter		Bromide	Cadmium	Cadmium	Cadmium	Cadmium	Calcium	Carbon, Dissolved Organic	Carbon, Total Organic	Chloride	Chromium	Chromium	Cobalt	Cobalt	Cobalt	Cobalt	Conductivity, Field	Conductivity, Field	Conductivity, Lab	Copper	Copper	Dimethylseleneoxide
Fraction		N	D	D	T	T	T	D	T	D	D	T	D	D	T	T	N	N	N	D	T	D
Unit		mg/l	mg/l	ug/l	mg/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	mg/l	ug/l	us/cm	uS/cm at 25 C	us/cm	mg/l	mg/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-06-26	FS_INF-S																					
2022-06-26	FS_INF-K																					
2022-06-26	FS_INF-S																					
2022-06-26	FS_BPO																					0.011
2022-06-26	FS_INF-K																					
2022-06-26	FS_INF-S																					
2022-06-26	FS_INF-K																					
2022-06-26	FS_INF-S																					
2022-06-26	FS_INF-K																					
2022-06-26	FS_INF-S																					
2022-06-26	FS_INF-K																					
2022-06-26	FS_INF-S																					
2022-06-26	FS_INF-K																					
2022-06-26	FS_INF-S																					
2022-06-27	FS_INF-K																					
2022-06-27	FS_INF-S																					
2022-06-27	FS_INF-K																					
2022-06-27	FS_INF-S																					
2022-06-27	FS_BPO	< 0.250						2.03	2.03	71.7									2250			
2022-06-27	FS_INF-K	< 0.250						0.77	0.82	0.59									1060			
2022-06-27	FS_INF-S	< 0.250						1.88	1.85	3.50									2490			
2022-06-27	FS_BPO																					
2022-06-27	FS_INF-K																					
2022-06-27	FS_INF-S																					
2022-06-27	FS_INF-K																					
2022-06-27	FS_INF-S																					
2022-06-27	FS_INF-K																					
2022-06-27	FS_INF-S																					
2022-06-27	FS_BPO																					
2022-06-27	FS_INF-K																					
2022-06-27	FS_INF-S																					
2022-06-27	FS_INF-K																					
2022-06-27	FS_INF-S																					
2022-06-28	FS_BPO																					
2022-06-28	FS_INF-K																					
2022-06-28	FS_INF-S																					
2022-06-28	FS_INF-K																					
2022-06-28	FS_INF-S																					
2022-06-28	FS_BPO		0.0176			0.0234	290				< 0.20	< 0.20	< 0.20			< 0.20				< 1.00	1.01	< 0.010
2022-06-28	FS_INF-K		0.586			0.611	143				< 0.20	< 0.20	< 0.20			< 0.20				< 1.00	< 1.00	
2022-06-28	FS_INF-S		1.26			1.23	334				< 0.20	< 0.20	1.00			1.04				1.01	1.17	
2022-06-28	FR_FRABCH	< 0.050		0.0599		0.0870	70.8	1.00	1.42	0.98	< 0.10	0.21		< 0.10		0.12			598	2.41	0.82	
2022-06-28	FR_FRABCH																					
2022-06-28	FS_INF-K																					
2022-06-28	FS_INF-S																					
2022-06-28	FS_INF-K																					
2022-06-28	FS_INF-S																					
2022-06-28	FS_INF-K																					
2022-06-28	FS_INF-S																					
2022-06-28	FS_INF-K																					
2022-06-28	FS_INF-S																					
2022-06-28	FS_INF-K																					
2022-06-28	FS_INF-S																					
2022-06-29	FS_INF-K																					
2022-06-29	FS_INF-S																					
2022-06-29	FS_INF-K																					
2022-06-29	FS_INF-S																					
2022-06-29	FS_BPO																					
2022-06-29	FS_INF-K																					
2022-06-29	FS_INF-S																					
2022-06-29	FS_INF-K																					
2022-06-29	FS_INF-S																					
2022-06-29	FS_INF-K																					
2022-06-29	FS_INF-S																					
2022-06-29	FS_BPO																					
2022-06-29	FS_BPO	< 0.250	< 0.0150			< 0.0250	285	2.82	2.81	68.8	< 0.20	< 0.20	< 0.20			< 0.20			2310	< 1.00	1.03	
2022-06-29	FS_INF-K																					
2022-06-29	FS_INF-S																					
2022-06-29	FS_INF-K																					
2022-06-29	FS_INF-S																					
2022-06-29	FS_INF-K																					
2022-06-29	FS_INF-S																					
2022-06-30	FS_INF-K																					
2022-06-30	FS_INF-S																					
2022-06-30	FS_INF-K																					
2022-06-30	FS_INF-S																					
2022-06-30	FS_BPO		0.0205			0.0330	318				< 0.20	< 0.20	< 0.20			< 0.20				< 1.00	1.24	0.014
2022-06-30	FS_INF-K																					
2022-06-30	FS_INF-S																					
2022-06-30	FS_BPO																					

	Parameter	Bromide	Cadmium	Cadmium	Cadmium	Cadmium	Calcium	Carbon, Dissolved Organic	Carbon, Total Organic	Chloride	Chromium	Chromium	Cobalt	Cobalt	Cobalt	Cobalt	Conductivity, Field	Conductivity, Field	Conductivity, Lab	Copper	Copper	Dimethylseleneoxide
	Fraction	N	D	D	T	T	T	D	T	D	D	T	D	D	T	T	N	N	N	D	T	D
	Unit	mg/l	mg/l	ug/l	mg/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	mg/l	ug/l	us/cm	uS/cm at 25 C	us/cm	mg/l	mg/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-06-30	FR_SCOUTDS																					
2022-06-30	FR_SCOUTDS	< 0.050	0.0491			0.0568	60.1	1.43	1.82	1.33	< 0.10	0.17	< 0.10			< 0.10			452	< 0.50	< 0.50	< 0.010
2022-06-30	FS_INF-K																					
2022-06-30	FS_INF-S																					
2022-06-30	FS_INF-K																					
2022-06-30	FS_INF-S																					
2022-06-30	FS_INF-K																					
2022-06-30	FS_INF-S																					
2022-06-30	FS_INF-K																					
2022-06-30	FS_INF-S																					
2022-06-30	FS_INF-K																					
2022-06-30	FS_INF-S																					
2022-07-01	FS_INF-K																					
2022-07-01	FS_INF-S																					
2022-07-01	FS_INF-K																					
2022-07-01	FS_INF-S																					
2022-07-01	FS_BPO																					
2022-07-01	FS_INF-K																					
2022-07-01	FS_INF-S																					
2022-07-01	FS_INF-K																					
2022-07-01	FS_INF-S																					
2022-07-01	FS_INF-K																					
2022-07-01	FS_INF-S																					
2022-07-01	FS_INF-K																					
2022-07-01	FS_INF-S																					
2022-07-02	FS_BPO																					
2022-07-02	FS_BPO																					
2022-07-02	FR_SCOUTDS																					
2022-07-02	FR_FRABCH																					
2022-07-02	FS_BPO																					
2022-07-02	FS_INF-K																					
2022-07-02	FS_INF-S																					
2022-07-02	FS_BPO																					
2022-07-02	FS_INF-K																					
2022-07-02	FS_INF-S																					
2022-07-03	FS_INF-K																					
2022-07-03	FS_INF-S																					
2022-07-03	FS_INF-K																					
2022-07-03	FS_INF-S																					
2022-07-03	FS_BPO																					< 0.010
2022-07-03	FS_INF-K																					
2022-07-03	FS_INF-S																					
2022-07-03	FS_INF-K																					
2022-07-03	FS_INF-S																					
2022-07-03	FR_FRABCH																					
2022-07-03	FS_INF-K																					
2022-07-03	FS_INF-S																					
2022-07-03	FS_INF-K																					
2022-07-03	FS_INF-S																					
2022-07-03	FS_INF-K																					
2022-07-03	FS_INF-S																					
2022-07-04	FS_INF-K																					
2022-07-04	FS_INF-S																					
2022-07-04	FS_INF-K																					
2022-07-04	FS_INF-S																					
2022-07-04	FS_BPO	< 0.250						2.43	2.83	76.9									2440			
2022-07-04	FS_INF-K																					
2022-07-04	FS_INF-S																					
2022-07-04	FS_BPO																					
2022-07-04	FS_INF-K																					
2022-07-04	FS_INF-S																					
2022-07-04	FS_INF-K																					
2022-07-04	FS_INF-S																					
2022-07-04	FS_INF-K																					
2022-07-04	FS_INF-S																					
2022-07-04	FS_INF-K																					
2022-07-04	FS_INF-S																					
2022-07-05	FS_INF-K																					
2022-07-05	FS_INF-S																					
2022-07-05	FS_INF-K																					
2022-07-05	FS_INF-S																					
2022-07-05	FS_BPO		0.0258			0.0210	288				< 0.20	< 0.20	< 0.20			< 0.20				< 1.00	< 1.00	< 0.010
2022-07-05	FS_INF-K		0.719			0.653	173				< 0.20	< 0.20	< 0.20			< 0.20				< 1.00	< 1.00	< 0.010
2022-07-05	FS_INF-S		1.26			1.16	319				< 0.20	< 0.20	1.05			0.99				< 1.00	< 1.00	0.047
2022-07-05	FR_FRABCH																					
2022-07-05	FS_INF-K																					
2022-07-05	FS_INF-S																					
2022-07-05	FS_INF-K																					
2022-07-05	FS_INF-S																					
2022-07-05	FR_SCOUTDS	< 0.050		0.0498		0.0561	56.6	1.38	1.54	1.64	0.11	0.16		< 0.10		< 0.10			453	0.27	< 0.50	
2022-07-05	FS_INF-K																					

Parameter		Bromide	Cadmium	Cadmium	Cadmium	Cadmium	Calcium	Carbon, Dissolved Organic	Carbon, Total Organic	Chloride	Chromium	Chromium	Cobalt	Cobalt	Cobalt	Cobalt	Conductivity, Field	Conductivity, Field	Conductivity, Lab	Copper	Copper	Dimethylseleneoxide
Fraction		N	D	D	T	T	T	D	T	D	D	T	D	D	T	T	N	N	N	D	T	D
Unit		mg/l	mg/l	ug/l	mg/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	mg/l	ug/l	us/cm	uS/cm at 25 C	us/cm	mg/l	mg/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-07-05	FS_INF-S																					
2022-07-05	FS_INF-K																					
2022-07-05	FS_INF-S																					
2022-07-05	FS_INF-K																					
2022-07-05	FS_INF-S																					
2022-07-06	FS_INF-K																					
2022-07-06	FS_INF-S																					
2022-07-06	FS_INF-K																					
2022-07-06	FS_INF-S																					
2022-07-06	FS_BPO																					
2022-07-06	FS_INF-K																					
2022-07-06	FS_INF-S																					
2022-07-06	FR_SCOUTDS	< 0.050		0.0506		0.0527	59.1	1.46	1.44	1.69	0.11	0.13		< 0.10		< 0.10			475	0.36	< 0.50	
2022-07-06	FS_INF-K																					
2022-07-06	FS_INF-S																					
2022-07-06	FS_INF-K																					
2022-07-06	FS_INF-S																					
2022-07-06	FS_INF-K																					
2022-07-06	FS_INF-S																					
2022-07-06	FS_INF-K																					
2022-07-06	FS_INF-S																					
2022-07-06	FS_INF-K																					
2022-07-06	FS_INF-S																					
2022-07-07	FS_INF-K																					
2022-07-07	FS_INF-S																					
2022-07-07	FS_INF-K																					
2022-07-07	FS_INF-S																					
2022-07-07	FS_BPO																					< 0.010
2022-07-07	FS_INF-K																					
2022-07-07	FS_INF-S																					
2022-07-07	FR_SCOUTDS	< 0.050	0.0470			0.0635	64.2	1.09	1.22	1.63	0.10	0.17	< 0.10			< 0.10			470	< 0.50	< 0.50	< 0.010
2022-07-07	FS_SCOUTDS	< 0.050		0.0563		0.0629	59.9	0.98	1.29	1.87	< 0.10	0.12		< 0.10		< 0.10			428	< 0.20	2.86	
2022-07-07	FS_INF-K																					
2022-07-07	FS_INF-S																					
2022-07-07	FS_INF-K																					
2022-07-07	FS_INF-S																					
2022-07-07	FS_BPO																					
2022-07-07	FS_INF-K																					
2022-07-07	FS_INF-S																					
2022-07-07	FS_BPO																					
2022-07-07	FS_INF-K																					
2022-07-07	FS_INF-S																					
2022-07-08	FS_BPO																					
2022-07-08	FS_INF-K																					
2022-07-08	FS_INF-S																					
2022-07-08	FS_BPO																					
2022-07-08	FS_INF-K																					
2022-07-08	FS_INF-S																					
2022-07-08	FR_SCOUTDS	< 0.050		0.0486		0.0623	57.9	1.21	1.15	1.21	< 0.10	0.12		< 0.10		< 0.10			468	0.27	< 0.50	
2022-07-08	FS_BPO																					
2022-07-08	FS_BPO																					
2022-07-08	FS_INF-K																					
2022-07-08	FS_INF-S																					
2022-07-08	FS_BPO																					
2022-07-08	FS_INF-K																					
2022-07-08	FS_INF-S																					
2022-07-08	FS_BPO																					
2022-07-08	FS_INF-K																					
2022-07-08	FS_INF-S																					
2022-07-08	FS_INF-K																					
2022-07-08	FS_INF-S																					
2022-07-08	FS_INF-K																					
2022-07-08	FS_INF-S																					
2022-07-09	FS_INF-K																					
2022-07-09	FS_INF-S																					
2022-07-09	FS_INF-K																					
2022-07-09	FS_INF-S																					
2022-07-09	FS_BPO																					
2022-07-09	FS_INF-K																					
2022-07-09	FS_INF-S																					
2022-07-09	FR_SCOUTDS	< 0.050		0.0888		0.0882	64.0	0.94	1.07	0.42	< 0.10	0.12		< 0.10		< 0.10			534	< 0.20	< 0.50	
2022-07-09	FS_BPO																					
2022-07-10	FS_BPO																					
2022-07-10	FS_INF-K																					
2022-07-10	FS_INF-S																					
2022-07-10	FS_INF-K																					
2022-07-10	FS_INF-S																					
2022-07-10	FS_BPO																					0.023
2022-07-10	FS_INF-K																					
2022-07-10	FS_INF-S																					

Parameter		Bromide	Cadmium	Cadmium	Cadmium	Cadmium	Calcium	Carbon, Dissolved Organic	Carbon, Total Organic	Chloride	Chromium	Chromium	Cobalt	Cobalt	Cobalt	Cobalt	Conductivity, Field	Conductivity, Field	Conductivity, Lab	Copper	Copper	Dimethylseleneoxide
Fraction		N	D	D	T	T	T	D	T	D	D	T	D	D	T	T	N	N	N	D	T	D
Unit		mg/l	mg/l	ug/l	mg/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	mg/l	ug/l	us/cm	uS/cm at 25 C	us/cm	mg/l	mg/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-07-10	FS_INF-K																					
2022-07-10	FS_INF-S																					
2022-07-10	FS_INF-K																					
2022-07-10	FS_INF-S																					
2022-07-10	FS_INF-K																					
2022-07-10	FS_INF-S																					
2022-07-10	FS_INF-K																					
2022-07-10	FS_INF-S																					
2022-07-10	FS_INF-K																					
2022-07-10	FS_INF-S																					
2022-07-11	FS_INF-K																					
2022-07-11	FS_INF-S																					
2022-07-11	FS_INF-K																					
2022-07-11	FS_INF-S																					
2022-07-11	FS_BPO	< 0.250						2.44	2.57	72.2									2540			
2022-07-11	FS_INF-K	< 0.250						0.74	0.66	0.63									1490			
2022-07-11	FS_INF-S	< 0.250						2.00	2.03	3.36									2830			
2022-07-11	FS_BPO																					
2022-07-11	FS_INF-K																					
2022-07-11	FS_INF-S																					
2022-07-11	FS_INF-K																					
2022-07-11	FS_INF-S																					
2022-07-11	FS_INF-K																					
2022-07-11	FS_INF-S																					
2022-07-11	FS_INF-K																					
2022-07-11	FS_INF-S																					
2022-07-11	FS_INF-K																					
2022-07-11	FS_INF-S																					
2022-07-12	FS_INF-K																					
2022-07-12	FS_INF-S																					
2022-07-12	FS_INF-K																					
2022-07-12	FS_INF-S																					
2022-07-12	FS_BPO		0.0225			0.0159	312				< 0.20	< 0.20	< 0.20			< 0.20				< 1.00	< 1.00	< 0.010
2022-07-12	FS_INF-K		0.786			0.791	195				< 0.20	< 0.20	< 0.20			< 0.20				< 1.00	< 1.00	
2022-07-12	FS_INF-S		1.34			1.31	330				< 0.20	< 0.20	1.18			1.11				< 1.00	< 1.00	
2022-07-12	FS_INF-K																					
2022-07-12	FS_INF-S																					
2022-07-12	FS_BPO																					
2022-07-12	FS_INF-K																					
2022-07-12	FS_INF-S																					
2022-07-12	FS_INF-K																					
2022-07-12	FS_INF-S																					
2022-07-12	FS_INF-K																					
2022-07-12	FS_INF-S																					
2022-07-12	FS_INF-K																					
2022-07-12	FS_INF-S																					
2022-07-13	FS_INF-K																					
2022-07-13	FS_INF-S																					
2022-07-13	FS_INF-K																					
2022-07-13	FS_INF-S																					
2022-07-13	FS_BPO																					
2022-07-13	FS_INF-K		0.823			0.779	202				< 0.20	< 0.20	< 0.20			< 0.20				< 1.00	< 1.00	
2022-07-13	FS_INF-S		1.32			1.36	346				< 0.20	< 0.20	1.11			1.15				< 1.00	< 1.00	
2022-07-13	FS_BPO																					
2022-07-13	FS_INF-K																					
2022-07-13	FS_INF-S																					
2022-07-13	FR_FRABCH																					
2022-07-13	FS_INF-K																					
2022-07-13	FS_INF-S																					
2022-07-13	FS_INF-K																					
2022-07-13	FS_INF-S																					
2022-07-13	FS_INF-K																					
2022-07-13	FS_INF-S																					
2022-07-13	FS_INF-K																					
2022-07-13	FS_INF-S																					
2022-07-14	FS_INF-K																					
2022-07-14	FS_INF-S																					
2022-07-14	FS_INF-K																					
2022-07-14	FS_INF-S																					
2022-07-14	FS_BPO																					< 0.010
2022-07-14	FS_INF-K																					
2022-07-14	FS_INF-S																					
2022-07-14	FR_SCOUTDS	< 0.050	0.0575			0.0638	64.6	0.80	1.30	1.75	< 0.10	0.16	< 0.10			< 0.10			525	< 0.50	< 0.50	< 0.010
2022-07-14	FS_INF-K																					
2022-07-14	FS_INF-S																					
2022-07-14	FS_INF-K																					
2022-07-14	FS_INF-S																					
2022-07-14	FS_INF-K																					
2022-07-14	FS_INF-S																					
2022-07-14	FS_INF-K																					
2022-07-14	FS_INF-S																					
2022-07-14	FS_INF-K																					
2022-07-14	FS_INF-S																					

Parameter		Bromide	Cadmium	Cadmium	Cadmium	Cadmium	Calcium	Carbon, Dissolved Organic	Carbon, Total Organic	Chloride	Chromium	Chromium	Cobalt	Cobalt	Cobalt	Cobalt	Conductivity, Field	Conductivity, Field	Conductivity, Lab	Copper	Copper	Dimethylseleneoxide
Fraction		N	D	D	T	T	T	D	T	D	D	T	D	D	T	T	N	N	N	D	T	D
Unit		mg/l	mg/l	ug/l	mg/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	mg/l	ug/l	us/cm	uS/cm at 25 C	us/cm	mg/l	mg/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-07-15	FS_INF-K																					
2022-07-15	FS_INF-S																					
2022-07-15	FS_INF-K																					
2022-07-15	FS_INF-S																					
2022-07-15	FS_BPO																					
2022-07-15	FS_INF-K																					
2022-07-15	FS_INF-S																					
2022-07-15	FS_INF-K																					
2022-07-15	FS_INF-S																					
2022-07-15	FS_INF-K																					
2022-07-15	FS_INF-S																					
2022-07-15	FS_INF-K																					
2022-07-15	FS_INF-S																					
2022-07-15	FS_INF-K																					
2022-07-16	FS_INF-K																					
2022-07-16	FS_INF-S																					
2022-07-16	FS_INF-K																					
2022-07-16	FS_INF-S																					
2022-07-16	FS_BPO																					
2022-07-16	FS_INF-K																					
2022-07-16	FS_INF-S																					
2022-07-16	FS_INF-K																					
2022-07-16	FS_INF-S																					
2022-07-16	FS_INF-K																					
2022-07-16	FS_INF-S																					
2022-07-16	FS_INF-K																					
2022-07-16	FS_INF-K																					
2022-07-16	FS_INF-K																					
2022-07-17	FS_INF-K																					
2022-07-17	FS_INF-K																					
2022-07-17	FS_BPO																					< 0.010
2022-07-17	FS_INF-K																					
2022-07-17	FS_INF-K																					
2022-07-17	FS_INF-K																					
2022-07-17	FS_INF-K																					
2022-07-17	FS_INF-K																					
2022-07-17	FS_INF-K																					
2022-07-18	FS_INF-K																					
2022-07-18	FS_BPO	< 0.250						1.81	2.34	65.1									1840			
2022-07-18	FS_INF-K	< 0.250						0.81	0.77	0.69									1580			
2022-07-18	FS_INF-S																					
2022-07-18	FS_INF-S																					
2022-07-18	FS_BPO																					
2022-07-18	FS_INF-S	< 0.250						1.73	1.84	3.25									2840			
2022-07-18	FS_INF-K																					
2022-07-18	FS_INF-K																					
2022-07-18	FS_INF-K																					
2022-07-18	FS_INF-K																					
2022-07-18	FS_INF-K																					
2022-07-19	FS_INF-K																					
2022-07-19	FS_INF-K																					
2022-07-19	FS_BPO		0.0177		0.0266		236				< 0.20	0.10	< 0.20		< 0.20					< 1.00	< 1.00	0.011
2022-07-19	FS_INF-K		0.846			1.03	259				< 0.20	< 0.20	< 0.20			< 0.20				< 1.00	< 1.00	< 0.010
2022-07-19	FS_INF-S		1.42			1.46	375				< 0.20	< 0.20	1.16			1.22				< 1.00	< 1.00	0.036
2022-07-19	FS_INF-S																					
2022-07-19	FS_INF-K																					
2022-07-19	FS_INF-K																					
2022-07-19	FS_INF-K																					
2022-07-19	FS_INF-K																					
2022-07-19	FS_INF-K																					
2022-07-20	FS_INF-K																					
2022-07-20	FS_INF-K																					
2022-07-20	FS_BPO																					
2022-07-20	FS_INF-K																					
2022-07-20	FS_INF-S																					
2022-07-20	FS_INF-K																					
2022-07-20	FS_INF-S																					
2022-07-20	FS_INF-K																					
2022-07-20	FS_INF-K																					
2022-07-20	FS_INF-K																					
2022-07-21	FS_INF-K																					
2022-07-21	FS_INF-K																					
2022-07-21	FS_BPO																					< 0.010
2022-07-21	FS_INF-K																					
2022-07-21	FS_INF-S																					
2022-07-21	FR_SCOUTDS	< 0.050	0.103			0.108	78.3	0.78	0.79	0.52	< 0.10	< 0.10	< 0.10			< 0.10			627	< 0.50	< 0.50	< 0.010
2022-07-21	FS_INF-K																					
2022-07-21	FS_INF-K																					
2022-07-21	FS_INF-K																					

Parameter		Bromide	Cadmium	Cadmium	Cadmium	Cadmium	Calcium	Carbon, Dissolved Organic	Carbon, Total Organic	Chloride	Chromium	Chromium	Cobalt	Cobalt	Cobalt	Cobalt	Conductivity, Field	Conductivity, Field	Conductivity, Lab	Copper	Copper	Dimethylseleneoxide
Fraction		N	D	D	T	T	T	D	T	D	D	T	D	D	T	T	N	N	N	D	T	D
Unit		mg/l	mg/l	ug/l	mg/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	mg/l	ug/l	us/cm	uS/cm at 25 C	us/cm	mg/l	mg/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-07-21	FS_INF-K																					
2022-07-21	FS_INF-K																					
2022-07-22	FS_BPO																					
2022-07-22	FS_INF-K																					
2022-07-22	FS_INF-K																					
2022-07-22	FS_INF-K																					
2022-07-22	FS_INF-K																					
2022-07-22	FS_BPO																					
2022-07-22	FS_INF-K																					
2022-07-22	FS_INF-S																					
2022-07-22	FS_INF-K																					
2022-07-22	FR_FRABCH																					
2022-07-22	FR_SCOUTDS																					
2022-07-22	FS_INF-S																					
2022-07-22	FR_FRABCH																					
2022-07-22	FS_BPO																					
2022-07-22	FS_INF-S																					
2022-07-23	FS_BPO																					
2022-07-23	FS_INF-K																					
2022-07-23	FS_INF-K																					
2022-07-23	FS_INF-S																					
2022-07-23	FS_BPO																					
2022-07-23	FR_SCOUTDS																					
2022-07-23	FS_BPO																					
2022-07-23	FS_INF-S																					
2022-07-23	FR_SCOUTDS																					
2022-07-23	FR_FRABCH																					
2022-07-24	FR_SCOUTDS																					
2022-07-24	FR_FRABCH																					
2022-07-24	FR_SCOUTDS																					
2022-07-24	FS_INF-S																					
2022-07-24	FS_BPO																					0.160
2022-07-24	FS_INF-K																					
2022-07-24	FS_INF-S																					
2022-07-24	FS_INF-K																					
2022-07-24	FS_INF-K																					
2022-07-25	FS_BPO																					
2022-07-25	FS_INF-K																					
2022-07-25	FS_INF-K																					
2022-07-25	FS_BPO	< 0.250						2.25	2.69	84.6									1640			
2022-07-25	FS_INF-K	< 0.250						0.85	0.82	0.86									1710			
2022-07-25	FS_INF-S	< 0.250						2.20	2.28	3.82									2890			
2022-07-25	FR_FRABCH	< 0.050		0.0567		0.0618	102	< 0.50	< 0.50	1.37	0.11	0.12		< 0.10		< 0.10			802	< 0.20	< 0.50	
2022-07-25	FS_INF-S																					
2022-07-25	FS_BPO																					
2022-07-25	FS_INF-K																					
2022-07-25	FS_INF-K																					
2022-07-25	FS_INF-K																					
2022-07-25	FS_INF-K																					
2022-07-25	FS_INF-K																					
2022-07-26	FS_INF-K																					
2022-07-26	FS_INF-K																					
2022-07-26	FS_BPO		0.0223			< 0.0100	214				0.17	< 0.20	< 0.10			< 0.20				< 0.50	< 1.00	0.026
2022-07-26	FS_INF-K		0.901			0.874	265				< 0.10	< 0.10	< 0.10			< 0.10				< 0.50	< 0.50	
2022-07-26	FS_INF-S		1.32			1.33	431				0.10	0.14	1.17			1.31				0.80	0.89	
2022-07-26	FR_FRABCH																					
2022-07-26	FS_INF-K																					
2022-07-26	FS_INF-K																					
2022-07-26	FS_BPO																					
2022-07-26	FS_INF-K																					
2022-07-26	FS_INF-K																					
2022-07-26	FS_INF-K																					
2022-07-27	FS_INF-K																					
2022-07-27	FS_INF-K																					
2022-07-27	FS_BPO																					
2022-07-27	FS_INF-K																					
2022-07-27	FS_INF-S																					
2022-07-27	FS_INF-K																					
2022-07-27	FS_INF-K																					
2022-07-27	FS_INF-K																					
2022-07-27	FS_INF-K																					
2022-07-27	FS_INF-K																					
2022-07-28	FS_INF-K																					
2022-07-28	FS_INF-K																					
2022-07-28	FS_BPO																					< 0.010
2022-07-28	FS_INF-K																					
2022-07-28	FS_INF-S																					

	Parameter	Bromide	Cadmium	Cadmium	Cadmium	Cadmium	Calcium	Carbon, Dissolved Organic	Carbon, Total Organic	Chloride	Chromium	Chromium	Cobalt	Cobalt	Cobalt	Cobalt	Conductivity, Field	Conductivity, Field	Conductivity, Lab	Copper	Copper	Dimethylseleneoxide
	Fraction	N	D	D	T	T	T	D	T	D	D	T	D	D	T	T	N	N	N	D	T	D
	Unit	mg/l	mg/l	ug/l	mg/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	mg/l	ug/l	us/cm	uS/cm at 25 C	us/cm	mg/l	mg/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-07-28	FR_SCOUTDS	< 0.050	0.134			0.126	103	0.59	< 0.50	0.75	< 0.10	< 0.10	0.10			< 0.10			788	< 0.50	< 0.50	< 0.010
2022-07-28	FS_INF-K																					
2022-07-28	FS_INF-K																					
2022-07-28	FS_INF-K																					
2022-07-28	FS_INF-S																					
2022-07-28	FS_INF-K																					
2022-07-28	FS_INF-S																					
2022-07-28	FS_INF-K																					
2022-07-29	FS_INF-K																					
2022-07-29	FS_INF-K																					
2022-07-29	FS_BPO																					
2022-07-29	FS_INF-K																					
2022-07-29	FS_INF-S																					
2022-07-29	FS_INF-K																					
2022-07-29	FS_INF-K																					
2022-07-29	FS_INF-K																					
2022-07-29	FS_INF-K																					
2022-07-29	FS_INF-K																					
2022-07-30	FS_INF-K																					
2022-07-30	FS_INF-K																					
2022-07-30	FS_BPO																					
2022-07-30	FS_INF-K																					
2022-07-30	FS_INF-S																					
2022-07-30	FS_INF-K																					
2022-07-30	FS_INF-S																					
2022-07-30	FS_INF-K																					
2022-07-30	FS_INF-K																					
2022-07-30	FS_INF-K																					
2022-07-30	FS_INF-K																					
2022-07-31	FS_INF-K																					
2022-07-31	FS_INF-K																					
2022-07-31	FS_BPO																					< 0.010
2022-07-31	FS_INF-K																					
2022-07-31	FS_INF-S																					
2022-07-31	FS_INF-K																					
2022-07-31	FS_INF-S																					
2022-07-31	FS_INF-K																					
2022-07-31	FS_INF-K																					
2022-07-31	FS_INF-K																					
2022-07-31	FS_INF-K																					
2022-08-01	FS_INF-K																					
2022-08-01	FS_INF-K																					
2022-08-01	FS_BPO	< 0.250						1.54	1.68	64.0									1750			
2022-08-01	FS_INF-K	< 0.250						< 0.50	< 0.50	0.96									1500			
2022-08-01	FS_INF-S	< 0.250						1.65	1.77	3.89									2940			
2022-08-01	FS_INF-S																					
2022-08-01	FS_BPO																					
2022-08-01	FS_INF-K																					
2022-08-01	FS_INF-K																					
2022-08-01	FS_INF-K																					
2022-08-01	FS_INF-K																					
2022-08-02	FS_INF-K																					
2022-08-02	FS_INF-K																					
2022-08-02	FS_BPO		0.0260			0.0583	233				< 0.20	< 0.20	< 0.20			< 0.20				< 1.00	< 1.00	< 0.010
2022-08-02	FS_INF-K		1.02			1.05	260				< 0.20	< 0.20	< 0.20			< 0.20				< 1.00	< 1.00	< 0.010
2022-08-02	FS_INF-S		1.28			1.26	380				< 0.20	< 0.20	1.12			0.98				< 1.00	< 1.00	0.087
2022-08-02	FS_INF-K																					
2022-08-02	FS_INF-S																					
2022-08-02	FS_BPO																					
2022-08-03	FS_BPO																					
2022-08-03	FS_BPO																					
2022-08-03	FS_INF-K																					
2022-08-03	FS_INF-S																					
2022-08-03	FS_INF-S																					
2022-08-03	FS_INF-K																					
2022-08-03	FS_INF-K																					
2022-08-03	FS_BPO																					
2022-08-03	FS_INF-K																					
2022-08-04	FS_INF-K																					
2022-08-04	FS_BPO																					0.021
2022-08-04	FS_INF-K																					
2022-08-04	FS_INF-S																					
2022-08-04	FR_SCOUTDS	< 0.250	0.161			0.165	118	< 0.50	< 0.50	0.91	< 0.10	0.12	0.12			0.13			912	< 0.50	< 0.50	< 0.010
2022-08-04	FS_INF-K																					
2022-08-04	FS_INF-K																					
2022-08-04	FS_BPO																					
2022-08-05	FS_BPO																					
2022-08-05	FS_BPO																					

Parameter		Bromide	Cadmium	Cadmium	Cadmium	Cadmium	Calcium	Carbon, Dissolved Organic	Carbon, Total Organic	Chloride	Chromium	Chromium	Cobalt	Cobalt	Cobalt	Cobalt	Conductivity, Field	Conductivity, Field	Conductivity, Lab	Copper	Copper	Dimethylseleneoxide
Fraction		N	D	D	T	T	T	D	T	D	D	T	D	D	T	T	N	N	N	D	T	D
Unit		mg/l	mg/l	ug/l	mg/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	mg/l	ug/l	us/cm	uS/cm at 25 C	us/cm	mg/l	mg/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-08-05	FS_BPO																					
2022-08-05	FS_INF-K																					
2022-08-05	FS_INF-S																					
2022-08-05	FS_INF-K																					
2022-08-05	FS_INF-S																					
2022-08-05	FS_INF-K																					
2022-08-05	FS_INF-K																					
2022-08-05	FS_INF-K																					
2022-08-06	FS_INF-K																					
2022-08-06	FS_INF-K																					
2022-08-06	FS_BPO																					
2022-08-06	FS_INF-K																					
2022-08-06	FS_INF-S																					
2022-08-06	FS_INF-K																					
2022-08-06	FS_INF-S																					
2022-08-06	FS_INF-K																					
2022-08-06	FS_INF-K																					
2022-08-06	FS_INF-K																					
2022-08-07	FS_INF-K																					
2022-08-07	FS_INF-K																					
2022-08-07	FS_BPO																					0.024
2022-08-07	FS_INF-K																					
2022-08-07	FS_INF-S																					
2022-08-07	FS_INF-K																					
2022-08-07	FS_INF-K																					
2022-08-07	FS_INF-K																					
2022-08-07	FS_INF-K																					
2022-08-08	FS_INF-K																					
2022-08-08	FS_INF-K																					
2022-08-08	FS_BPO	< 0.250						2.10	2.64	76.2									1780			
2022-08-08	FS_INF-K	< 0.250						0.70	0.73	1.16									1840			
2022-08-08	FS_INF-S	< 0.250						2.30	2.37	4.19									2910			
2022-08-08	FS_BPO																					
2022-08-08	FS_INF-K																					
2022-08-08	FS_INF-S																					
2022-08-08	FS_INF-K																					
2022-08-08	FS_INF-K																					
2022-08-08	FS_INF-K																					
2022-08-08	FS_INF-K																					
2022-08-09	FS_INF-K																					
2022-08-09	FS_INF-K																					
2022-08-09	FS_BPO		0.0176			0.0143	267				0.13	0.12	< 0.10			< 0.10				< 0.50	0.56	0.044
2022-08-09	FS_INF-K		0.992			0.999	293				< 0.10	< 0.10	< 0.10			< 0.10				< 0.50	< 0.50	< 0.010
2022-08-09	FS_INF-S		1.25			1.36	449				0.12	0.39	0.92			1.05				0.87	0.99	0.066
2022-08-09	FS_INF-K																					
2022-08-09	FS_INF-K																					
2022-08-09	FS_INF-S																					
2022-08-09	FS_INF-K																					
2022-08-09	FS_INF-S																					
2022-08-09	FS_INF-K																					
2022-08-09	FS_INF-S																					
2022-08-10	FS_INF-K																					
2022-08-10	FS_INF-S																					
2022-08-10	FS_INF-K																					
2022-08-10	FS_INF-S																					
2022-08-10	FS_BPO																					
2022-08-10	FS_INF-K																					
2022-08-10	FS_INF-S																					
2022-08-10	FS_INF-K																					
2022-08-10	FS_INF-S																					
2022-08-10	FS_INF-K																					
2022-08-10	FS_INF-S																					
2022-08-10	FS_INF-K																					
2022-08-10	FS_INF-S																					
2022-08-11	FS_INF-K																					
2022-08-11	FS_INF-S																					
2022-08-11	FS_INF-K																					
2022-08-11	FS_INF-S																					
2022-08-11	FS_BPO																					0.031
2022-08-11	FS_INF-K																					
2022-08-11	FS_INF-S																					
2022-08-11	FR_SCOUTDS	< 0.050	0.0721			0.0828	113	< 0.50	< 0.50	5.40	0.16	0.10	< 0.10			< 0.10			922	< 0.50	< 0.50	< 0.010
2022-08-11	FS_INF-K																					
2022-08-11	FS_INF-S																					
2022-08-11	FS_INF-K																					

Parameter		Bromide	Cadmium	Cadmium	Cadmium	Cadmium	Calcium	Carbon, Dissolved Organic	Carbon, Total Organic	Chloride	Chromium	Chromium	Cobalt	Cobalt	Cobalt	Cobalt	Conductivity, Field	Conductivity, Field	Conductivity, Lab	Copper	Copper	Dimethylseleneoxide
Fraction		N	D	D	T	T	T	D	T	D	D	T	D	D	T	T	N	N	N	D	T	D
Unit		mg/l	mg/l	ug/l	mg/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	mg/l	ug/l	us/cm	uS/cm at 25 C	us/cm	mg/l	mg/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-08-11	FS_INF-S																					
2022-08-11	FS_INF-K																					
2022-08-11	FS_INF-S																					
2022-08-11	FS_INF-K																					
2022-08-11	FS_INF-S																					
2022-08-12	FS_INF-K																					
2022-08-12	FS_INF-S																					
2022-08-12	FS_INF-K																					
2022-08-12	FS_INF-S																					
2022-08-12	FS_BPO																					
2022-08-12	FS_INF-K																					
2022-08-12	FS_INF-S																					
2022-08-12	FS_INF-K																					
2022-08-12	FS_INF-S																					
2022-08-12	FS_INF-K																					
2022-08-12	FS_INF-S																					
2022-08-12	FS_INF-K																					
2022-08-12	FS_INF-S																					
2022-08-12	FS_INF-K																					
2022-08-12	FS_INF-S																					
2022-08-12	FS_INF-K																					
2022-08-12	FS_INF-S																					
2022-08-13	FS_INF-K																					
2022-08-13	FS_INF-S																					
2022-08-13	FS_INF-K																					
2022-08-13	FS_INF-S																					
2022-08-13	FS_BPO																					
2022-08-13	FS_INF-K																					
2022-08-13	FS_INF-S																					
2022-08-13	FS_INF-K																					
2022-08-13	FS_INF-S																					
2022-08-13	FS_INF-K																					
2022-08-13	FS_INF-S																					
2022-08-13	FS_INF-K																					
2022-08-13	FS_INF-S																					
2022-08-13	FS_INF-K																					
2022-08-13	FS_INF-S																					
2022-08-14	FS_INF-K																					
2022-08-14	FS_INF-S																					
2022-08-14	FS_INF-K																					
2022-08-14	FS_INF-S																					
2022-08-14	FS_BPO																					0.039
2022-08-14	FS_INF-K																					
2022-08-14	FS_INF-S																					
2022-08-14	FS_INF-K																					
2022-08-14	FS_INF-S																					
2022-08-14	FS_INF-K																					
2022-08-14	FS_INF-S																					
2022-08-14	FS_INF-S																					
2022-08-14	FS_INF-K																					
2022-08-14	FS_INF-S																					
2022-08-14	FS_INF-K																					
2022-08-14	FS_INF-S																					
2022-08-15	FS_INF-K																					
2022-08-15	FS_INF-S																					
2022-08-15	FS_INF-K																					
2022-08-15	FS_INF-S																					
2022-08-15	FS_BPO	< 0.250						1.81	1.95	76.3									2990			
2022-08-15	FS_INF-K	< 0.250						< 0.50	< 0.50	1.13									2140			
2022-08-15	FS_INF-S	< 0.250						1.65	1.66	3.49									3290			
2022-08-15	FS_BPO																					
2022-08-15	FS_INF-K																					
2022-08-15	FS_INF-S																					
2022-08-15	FS_INF-K																					
2022-08-15	FS_INF-S																					
2022-08-15	FS_INF-K																					
2022-08-15	FS_INF-S																					
2022-08-15	FS_INF-K																					
2022-08-15	FS_INF-S																					
2022-08-15	FS_INF-K																					
2022-08-15	FS_INF-S																					
2022-08-16	FS_INF-K																					
2022-08-16	FS_INF-S																					
2022-08-16	FS_BPO		0.0191			0.0179	374				< 0.20	0.13	< 0.20			0.12				1.32	0.68	0.025
2022-08-16	FS_INF-K		1.12			1.06	300				< 0.20	< 0.10	< 0.20			< 0.10				< 1.00	< 0.50	< 0.010
2022-08-16	FS_INF-S		1.45			1.37	420				< 0.20	0.12	0.97			0.97				< 1.00	0.86	0.090
2022-08-16	FR_FRABCH	< 0.050		0.0365		0.0468	137	0.79	0.88	3.55	0.13	0.15		< 0.10		< 0.10			993	< 0.20	< 0.50	
2022-08-16	FS_INF-K																					

Parameter		Bromide	Cadmium	Cadmium	Cadmium	Cadmium	Calcium	Carbon, Dissolved Organic	Carbon, Total Organic	Chloride	Chromium	Chromium	Cobalt	Cobalt	Cobalt	Cobalt	Conductivity, Field	Conductivity, Field	Conductivity, Lab	Copper	Copper	Dimethylseleneoxide
Fraction		N	D	D	T	T	T	D	T	D	D	T	D	D	T	T	N	N	N	D	T	D
Unit		mg/l	mg/l	ug/l	mg/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	mg/l	ug/l	us/cm	uS/cm at 25 C	us/cm	mg/l	mg/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-08-16	FS_INF-S																					
2022-08-16	FS_INF-K																					
2022-08-16	FS_INF-S																					
2022-08-16	FS_INF-K																					
2022-08-16	FS_INF-S																					
2022-08-16	FS_INF-K																					
2022-08-16	FS_INF-S																					
2022-08-17	FS_INF-K																					
2022-08-17	FS_INF-S																					
2022-08-17	FS_INF-K																					
2022-08-17	FS_INF-S																					
2022-08-17	FS_BPO																					
2022-08-17	FS_INF-K																					
2022-08-17	FS_INF-S																					
2022-08-17	FR_FRABCH	< 0.050		0.0451		0.0486	128	0.81	0.70	3.56	0.16	0.50 0.17		< 0.10		< 0.10			995	0.80	0.80	
2022-08-17	FS_INF-K																					
2022-08-17	FS_INF-S																					
2022-08-17	FS_INF-K																					
2022-08-17	FS_INF-S																					
2022-08-17	FS_INF-K																					
2022-08-17	FS_INF-S																					
2022-08-17	FS_INF-K																					
2022-08-17	FS_INF-S																					
2022-08-17	FS_INF-K																					
2022-08-17	FS_INF-S																					
2022-08-18	FS_INF-K																					
2022-08-18	FS_INF-S																					
2022-08-18	FS_INF-K																					
2022-08-18	FS_INF-S																					
2022-08-18	FS_BPO																					0.023
2022-08-18	FS_INF-K																					
2022-08-18	FS_INF-S																					
2022-08-18	FR_SCOUTDS	< 0.250	0.0648			0.0615	130	0.95	0.86	7.81	0.14	0.11	< 0.10			< 0.10			1070	< 0.50	< 0.50	< 0.010
2022-08-18	FS_INF-K																					
2022-08-18	FS_INF-S																					
2022-08-18	FS_INF-K																					
2022-08-18	FS_INF-S																					
2022-08-18	FS_INF-K																					
2022-08-18	FS_INF-S																					
2022-08-18	FS_INF-K																					
2022-08-18	FS_INF-S																					
2022-08-18	FS_INF-K																					
2022-08-19	FS_INF-S																					
2022-08-19	FS_INF-K																					
2022-08-19	FS_INF-S																					
2022-08-19	FS_BPO	< 0.250	0.0171			0.0137	370	2.80	2.52	66.1	< 0.20	< 0.20	< 0.20			< 0.20			2610	< 1.00	< 1.00	0.058
2022-08-19	FS_INF-K																					
2022-08-19	FS_INF-S																					
2022-08-19	FS_INF-K																					
2022-08-19	FS_INF-S																					
2022-08-19	FS_INF-K																					
2022-08-19	FS_INF-S																					
2022-08-19	FS_INF-K																					
2022-08-19	FS_INF-S																					
2022-08-19	FS_INF-K																					
2022-08-19	FS_INF-S																					
2022-08-19	FS_INF-K																					
2022-08-20	FS_INF-S																					
2022-08-20	FS_INF-K																					
2022-08-20	FS_INF-S																					
2022-08-20	FS_INF-K																					
2022-08-20	FS_BPO																					
2022-08-20	FS_INF-K																					
2022-08-20	FS_INF-S																					
2022-08-20	FS_INF-K																					
2022-08-20	FS_INF-S																					
2022-08-20	FS_INF-K																					
2022-08-20	FS_INF-S																					
2022-08-20	FS_INF-K																					
2022-08-20	FS_INF-S																					
2022-08-20	FS_INF-K																					
2022-08-20	FS_INF-S																					
2022-08-21	FS_INF-K																					
2022-08-21	FS_INF-S																					
2022-08-21	FS_INF-K																					
2022-08-21	FS_INF-S																					
2022-08-21	FS_BPO																					0.024

	Parameter	Bromide	Cadmium	Cadmium	Cadmium	Cadmium	Calcium	Carbon, Dissolved Organic	Carbon, Total Organic	Chloride	Chromium	Chromium	Cobalt	Cobalt	Cobalt	Cobalt	Conductivity, Field	Conductivity, Field	Conductivity, Lab	Copper	Copper	Dimethylseleneoxide
	Fraction	N	D	D	T	T	T	D	T	D	D	T	D	D	T	T	N	N	N	D	T	D
	Unit	mg/l	mg/l	ug/l	mg/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	mg/l	ug/l	us/cm	uS/cm at 25 C	us/cm	mg/l	mg/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-08-21	FS_INF-K																					
2022-08-21	FS_INF-S																					
2022-08-21	FS_INF-K																					
2022-08-21	FS_INF-S																					
2022-08-21	FS_INF-K																					
2022-08-21	FS_INF-S																					
2022-08-21	FS_INF-K																					
2022-08-21	FS_INF-S																					
2022-08-21	FS_INF-K																					
2022-08-21	FS_INF-S																					
2022-08-21	FS_INF-K																					
2022-08-21	FS_INF-S																					
2022-08-22	FS_INF-K																					
2022-08-22	FS_INF-S																					
2022-08-22	FS_INF-K																					
2022-08-22	FS_INF-S																					
2022-08-22	FS_BPO	< 0.250						1.91	1.99	69.3									2570			
2022-08-22	FS_INF-K	< 0.250						< 0.50	< 0.50	5.37									2000			
2022-08-22	FS_INF-S	< 0.250						1.89	1.66	3.81									2960			
2022-08-22	FS_BPO																					
2022-08-22	FS_INF-K																					
2022-08-22	FS_INF-S																					
2022-08-22	FS_INF-K																					
2022-08-22	FS_INF-S																					
2022-08-22	FS_INF-K																					
2022-08-22	FS_INF-S																					
2022-08-22	FS_INF-K																					
2022-08-22	FS_INF-S																					
2022-08-23	FS_INF-K																					
2022-08-23	FS_INF-S																					
2022-08-23	FS_INF-K																					
2022-08-23	FS_INF-S																					
2022-08-23	FS_BPO		0.0192			0.0218	403				< 0.20	0.16	< 0.20			0.12				< 1.00	0.76	0.030
2022-08-23	FS_INF-K		1.12			1.09	320				< 0.20	< 0.20	< 0.20			< 0.20				< 1.00	< 1.00	
2022-08-23	FS_INF-S		1.50			1.36	456				< 0.20	0.24	0.95			0.98				< 1.00	1.72	
2022-08-23	FR_FRABCH	< 0.250		0.0374		0.0570	140	0.50	0.80	4.03	0.12	0.21		< 0.10		0.11			985	< 0.20	< 0.50	
2022-08-23	FS_BPO																					
2022-08-23	FS_BPO																					
2022-08-24	FS_INF-K																					
2022-08-24	FS_INF-S																					
2022-08-24	FS_BPO																					
2022-08-24	FS_INF-K																					
2022-08-24	FS_INF-S																					
2022-08-24	FS_INF-K																					
2022-08-24	FS_INF-S																					
2022-08-24	FR_FRABCH																					
2022-08-24	FR_SCOUTDS																					
2022-08-24	FS_INF-K																					
2022-08-24	FS_INF-S																					
2022-08-24	FS_INF-K																					
2022-08-24	FS_INF-S																					
2022-08-24	FS_INF-K																					
2022-08-24	FS_INF-S																					
2022-08-24	FS_INF-K																					
2022-08-24	FS_INF-S																					
2022-08-25	FS_INF-K																					
2022-08-25	FS_INF-S																					
2022-08-25	FS_INF-K																					
2022-08-25	FS_INF-S																					
2022-08-25	FS_BPO																					0.040
2022-08-25	FS_INF-K																					
2022-08-25	FS_INF-S																					
2022-08-25	FR_SCOUTDS	< 0.050	0.0799			0.0966	131	< 0.50	< 0.50	5.26	0.14	0.13	< 0.10			< 0.10			974	< 0.50	< 0.50	0.013
2022-08-25	FS_INF-K																					
2022-08-25	FS_INF-S																					
2022-08-25	FS_INF-K																					
2022-08-25	FS_INF-S																					
2022-08-25	FS_INF-K																					
2022-08-25	FS_INF-S																					
2022-08-25	FS_INF-K																					
2022-08-25	FS_INF-S																					
2022-08-25	FS_INF-K																					
2022-08-25	FS_INF-S																					
2022-08-26	FS_INF-K																					
2022-08-26	FS_INF-S																					
2022-08-26	FS_INF-K																					
2022-08-26	FS_INF-S																					
2022-08-26	FS_BPO																					
2022-08-26	FS_INF-K																					
2022-08-26	FS_INF-S																					
2022-08-26	FS_INF-K																					

Parameter		Bromide	Cadmium	Cadmium	Cadmium	Cadmium	Calcium	Carbon, Dissolved Organic	Carbon, Total Organic	Chloride	Chromium	Chromium	Cobalt	Cobalt	Cobalt	Cobalt	Conductivity, Field	Conductivity, Field	Conductivity, Lab	Copper	Copper	Dimethylseleneoxide
Fraction		N	D	D	T	T	T	D	T	D	D	T	D	D	T	T	N	N	N	D	T	D
Unit		mg/l	mg/l	ug/l	mg/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	mg/l	ug/l	us/cm	uS/cm at 25 C	us/cm	mg/l	mg/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-08-26	FS_INF-S																					
2022-08-26	FS_INF-K																					
2022-08-26	FS_INF-S																					
2022-08-26	FS_INF-K																					
2022-08-26	FS_INF-S																					
2022-08-26	FS_INF-K																					
2022-08-26	FS_INF-S																					
2022-08-26	FS_INF-K																					
2022-08-26	FS_INF-S																					
2022-08-27	FS_INF-K																					
2022-08-27	FS_INF-S																					
2022-08-27	FS_INF-K																					
2022-08-27	FS_INF-S																					
2022-08-27	FS_BPO																					
2022-08-27	FS_INF-K																					
2022-08-27	FS_INF-S																					
2022-08-27	FS_INF-K																					
2022-08-27	FS_INF-S																					
2022-08-27	FS_INF-K																					
2022-08-27	FS_INF-S																					
2022-08-27	FS_INF-K																					
2022-08-27	FS_INF-S																					
2022-08-28	FS_BPO																					0.089
2022-08-28	FS_INF-K																					
2022-08-28	FS_INF-S																					
2022-08-28	FR_FRABCH																					
2022-08-28	FR_FRABCH																					
2022-08-28	FR_SCOUTDS																					
2022-08-28	FS_INF-K																					
2022-08-28	FS_INF-S																					
2022-08-29	FS_BPO																					
2022-08-29	FS_BPO																					
2022-08-29	FS_INF-K																					
2022-08-29	FS_INF-S																					
2022-08-29	FS_BPO																					
2022-08-29	FS_BPO	< 0.250						1.82	1.93	67.6									2770			
2022-08-29	FS_INF-K	< 0.250						< 0.50	< 0.50	1.67									2130			
2022-08-29	FS_INF-S	< 0.500						1.79	1.95	3.28									3030			
2022-08-29	FS_INF-S																					
2022-08-30	FS_INF-S																					
2022-08-30	FS_INF-S																					
2022-08-30	FS_BPO		0.0105		0.0134		353				0.11	< 0.20	0.17		< 0.20					0.53	< 1.00	0.058
2022-08-30	FS_INF-K		1.14			1.19	330				< 0.20	< 0.20	< 0.20			< 0.20				< 1.00	< 1.00	< 0.010
2022-08-30	FS_INF-S		1.35			1.42	410				< 0.20	< 0.20	0.84			1.00				< 1.00	1.07	0.037
2022-08-30	FR_FRABCH	< 0.250		0.0448		0.0476	129	0.57	0.51	3.72	0.11	0.28		< 0.10		< 0.10			971	0.33	< 0.50	
2022-08-30	FS_INF-K																					
2022-08-30	FS_INF-S																					
2022-08-30	FS_INF-S																					
2022-08-30	FS_INF-S																					
2022-08-30	FS_INF-S																					
2022-08-31	FS_INF-S																					
2022-08-31	FS_INF-S																					
2022-08-31	FS_BPO																					
2022-08-31	FS_INF-K																					
2022-08-31	FS_INF-S																					
2022-08-31	FS_INF-K																					
2022-08-31	FS_INF-S																					
2022-08-31	FS_INF-K																					
2022-08-31	FS_INF-S																					
2022-08-31	FS_INF-K																					
2022-08-31	FS_INF-S																					
2022-08-31	FS_INF-K																					
2022-08-31	FS_INF-S																					
2022-09-01	FS_INF-K																					
2022-09-01	FS_INF-S																					
2022-09-01	FS_INF-K																					
2022-09-01	FS_INF-S																					
2022-09-01	FS_BPO																					0.055
2022-09-01	FS_INF-K																					
2022-09-01	FS_INF-S																					
2022-09-01	FR_SCOUTDS	< 0.250	0.0611			0.0688	128	1.00	0.83	7.95	0.12	0.16	< 0.10			< 0.10			972	< 0.50	< 0.50	0.012
2022-09-01	FS_INF-K																					
2022-09-01	FS_INF-S																					
2022-09-01	FS_INF-K																					
2022-09-01	FS_INF-S																					

	Parameter	Bromide	Cadmium	Cadmium	Cadmium	Cadmium	Calcium	Carbon, Dissolved Organic	Carbon, Total Organic	Chloride	Chromium	Chromium	Cobalt	Cobalt	Cobalt	Cobalt	Conductivity, Field	Conductivity, Field	Conductivity, Lab	Copper	Copper	Dimethylseleneoxide
	Fraction	N	D	D	T	T	T	D	T	D	D	T	D	D	T	T	N	N	N	D	T	D
	Unit	mg/l	mg/l	ug/l	mg/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	mg/l	ug/l	us/cm	uS/cm at 25 C	us/cm	mg/l	mg/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-09-01	FS_INF-K																					
2022-09-01	FS_INF-S																					
2022-09-01	FS_INF-K																					
2022-09-01	FS_INF-S																					
2022-09-01	FS_INF-K																					
2022-09-01	FS_INF-S																					
2022-09-02	FS_INF-K																					
2022-09-02	FS_INF-S																					
2022-09-02	FS_INF-K																					
2022-09-02	FS_INF-S																					
2022-09-02	FS_BPO																					
2022-09-02	FS_INF-K																					
2022-09-02	FS_INF-S																					
2022-09-02	FS_BPO																					
2022-09-02	FS_INF-K																					
2022-09-02	FS_INF-S																					
2022-09-02	FS_INF-K																					
2022-09-02	FS_INF-S																					
2022-09-02	FS_INF-K																					
2022-09-02	FS_INF-S																					
2022-09-02	FS_INF-K																					
2022-09-02	FS_INF-S																					
2022-09-03	FS_INF-K																					
2022-09-03	FS_INF-K																					
2022-09-03	FS_BPO																					
2022-09-03	FS_INF-K																					
2022-09-03	FS_INF-S																					
2022-09-03	FS_INF-K																					
2022-09-03	FS_INF-K																					
2022-09-03	FS_INF-K																					
2022-09-03	FS_INF-K																					
2022-09-03	FS_INF-K																					
2022-09-04	FS_INF-K																					
2022-09-04	FS_INF-K																					
2022-09-04	FS_BPO																					0.067
2022-09-04	FS_INF-K																					
2022-09-04	FS_INF-S																					
2022-09-04	FS_INF-K																					
2022-09-04	FS_INF-K																					
2022-09-04	FS_INF-K																					
2022-09-04	FS_INF-K																					
2022-09-04	FS_INF-K																					
2022-09-05	FS_INF-K																					
2022-09-05	FS_INF-K																					
2022-09-05	FS_BPO	< 0.250						1.67	1.78	70.4									2320			
2022-09-05	FS_INF-K	< 0.250						0.65	0.68	1.31									2150			
2022-09-05	FS_INF-S	< 0.250						1.83	1.99	3.73									3070			
2022-09-05	FS_BPO																					
2022-09-05	FS_INF-K																					
2022-09-05	FS_INF-K																					
2022-09-05	FS_INF-K																					
2022-09-05	FS_INF-K																					
2022-09-05	FS_INF-K																					
2022-09-06	FS_INF-K																					
2022-09-06	FS_BPO		0.0119		0.0138		294				0.20	< 0.10	< 0.10		< 0.10					< 0.50	< 0.50	0.048
2022-09-06	FS_INF-K		1.27			1.24	320				< 0.20	< 0.20	< 0.20			< 0.20				< 1.00	< 1.00	
2022-09-06	FS_INF-S		1.56			1.46	408				< 0.20	< 0.20	0.95			0.90				< 1.00	1.02	
2022-09-06	FR_FRABCH	< 0.250		0.0576		0.0561	136	< 0.50	0.51	2.99	0.15	< 0.10		< 0.10		< 0.10			1050	< 0.20	< 0.50	
2022-09-06	FS_INF-K																					
2022-09-06	FS_INF-K																					
2022-09-06	FR_FRABCH																					
2022-09-06	FS_INF-K																					
2022-09-06	FS_INF-K																					
2022-09-06	FS_INF-K																					
2022-09-07	FS_INF-K																					
2022-09-07	FS_INF-K																					
2022-09-07	FS_BPO																					
2022-09-07	FS_INF-K																					
2022-09-07	FS_INF-S																					
2022-09-07	FS_INF-K																					
2022-09-07	FS_INF-K																					
2022-09-07	FS_INF-K																					
2022-09-07	FS_BPO																					
2022-09-07	FS_INF-K																					
2022-09-07	FS_INF-K																					
2022-09-08	FS_INF-K																					
2022-09-08	FS_INF-S																					
2022-09-08	FS_INF-K																					
2022-09-08	FS_INF-S																					
2022-09-08	FS_BPO																					0.032

	Parameter	Bromide	Cadmium	Cadmium	Cadmium	Cadmium	Calcium	Carbon, Dissolved Organic	Carbon, Total Organic	Chloride	Chromium	Chromium	Cobalt	Cobalt	Cobalt	Cobalt	Conductivity, Field	Conductivity, Field	Conductivity, Lab	Copper	Copper	Dimethylseleneoxide
	Fraction	N	D	D	T	T	T	D	T	D	D	T	D	D	T	T	N	N	N	D	T	D
	Unit	mg/l	mg/l	ug/l	mg/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	mg/l	ug/l	us/cm	uS/cm at 25 C	us/cm	mg/l	mg/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-09-08	FS_INF-K																					
2022-09-08	FS_INF-S																					
2022-09-08	FR_SCOUTDS	< 0.250	0.193			0.215	161	< 0.50	< 0.50	2.15	0.15	0.15	0.13			0.14			1170	< 0.50	< 0.50	0.016
2022-09-08	FS_INF-K																					
2022-09-08	FS_INF-S																					
2022-09-08	FS_INF-K																					
2022-09-08	FS_INF-S																					
2022-09-08	FS_INF-K																					
2022-09-08	FS_INF-S																					
2022-09-08	FS_INF-K																					
2022-09-08	FS_INF-S																					
2022-09-08	FS_INF-K																					
2022-09-08	FS_INF-S																					
2022-09-09	FS_INF-K																					
2022-09-09	FS_INF-S																					
2022-09-09	FS_BPO																					
2022-09-09	FS_INF-K																					
2022-09-09	FS_INF-S																					
2022-09-09	FS_INF-K																					
2022-09-09	FS_INF-S																					
2022-09-09	FS_INF-K																					
2022-09-09	FS_INF-S																					
2022-09-09	FS_INF-K																					
2022-09-09	FS_INF-S																					
2022-09-09	FS_INF-K																					
2022-09-09	FS_INF-S																					
2022-09-10	FS_INF-K																					
2022-09-10	FS_INF-S																					
2022-09-10	FS_INF-K																					
2022-09-10	FS_INF-S																					
2022-09-10	FS_BPO																					
2022-09-10	FS_INF-K																					
2022-09-10	FS_INF-S																					
2022-09-10	FS_INF-K																					
2022-09-10	FS_INF-S																					
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2022-09-10	FS_INF-S																					
2022-09-11	FS_INF-K																					
2022-09-11	FS_INF-S																					
2022-09-11	FS_INF-K																					
2022-09-11	FS_INF-S																					
2022-09-11	FS_BPO																					0.051
2022-09-11	FS_INF-K																					
2022-09-11	FS_INF-S																					
2022-09-11	FS_INF-K																					
2022-09-11	FS_INF-S																					
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2022-09-11	FS_INF-S																					
2022-09-11	FS_INF-K																					
2022-09-11	FS_INF-S																					
2022-09-12	FS_INF-K																					
2022-09-12	FS_INF-S																					
2022-09-12	FS_INF-K																					
2022-09-12	FS_INF-S																					
2022-09-12	FS_BPO	< 0.250						2.35	2.45	67.7									2660			
2022-09-12	FS_INF-K	< 0.250						1.03	1.00	1.37									2220			
2022-09-12	FS_INF-S	< 0.250						2.32	2.21	3.92									3070			
2022-09-12	FS_BPO																					
2022-09-12	FS_INF-K																					
2022-09-12	FS_INF-S																					
2022-09-12	FS_INF-K																					
2022-09-12	FS_INF-S																					
2022-09-12	FS_INF-K																					
2022-09-12	FS_INF-S																					
2022-09-12	FS_INF-K																					
2022-09-12	FS_INF-S																					
2022-09-12	FS_INF-K																					
2022-09-12	FS_INF-S																					
2022-09-13	FS_INF-K																					
2022-09-13	FS_INF-S																					
2022-09-13	FS_INF-K																					
2022-09-13	FS_INF-S																					
2022-09-13	FS_BPO		0.0189		0.0170		417				< 0.20	< 0.20	< 0.20		0.21					< 1.00	0.53	0.041
2022-09-13	FS_INF-K		1.15			1.31	362				< 0.10	< 0.20	< 0.10			< 0.20				< 0.50	< 1.00	< 0.010

	Parameter	Bromide	Cadmium	Cadmium	Cadmium	Cadmium	Calcium	Carbon, Dissolved Organic	Carbon, Total Organic	Chloride	Chromium	Chromium	Cobalt	Cobalt	Cobalt	Cobalt	Conductivity, Field	Conductivity, Field	Conductivity, Lab	Copper	Copper	Dimethylseleneoxide
	Fraction	N	D	D	T	T	T	D	T	D	D	T	D	D	T	T	N	N	N	D	T	D
	Unit	mg/l	mg/l	ug/l	mg/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	mg/l	ug/l	us/cm	uS/cm at 25 C	us/cm	mg/l	mg/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-09-13	FS_INF-S		1.38			1.52	478				0.11	< 0.20	0.77			0.89				1.36	< 1.00	< 0.010
2022-09-13	FR_FRABCH	< 0.250		0.0428		0.0408	140	0.66	0.62	4.09	0.13	0.14		< 0.10		< 0.10			1060	0.35	< 0.50	
2022-09-13	FS_INF-K																					
2022-09-13	FS_INF-S																					
2022-09-13	FS_INF-K																					
2022-09-13	FS_INF-S																					
2022-09-13	FS_INF-K																					
2022-09-13	FS_INF-S																					
2022-09-13	FR_FRABCH	< 0.250		0.0396		0.0415	150	< 0.50	< 0.50	4.26	0.12	0.15		< 0.10		< 0.10			1060	< 0.20	< 0.50	
2022-09-13	FS_INF-K																					
2022-09-13	FS_INF-S																					
2022-09-13	FS_INF-K																					
2022-09-13	FS_INF-S																					
2022-09-14	FS_INF-K																					
2022-09-14	FS_INF-S																					
2022-09-14	FS_INF-K																					
2022-09-14	FS_INF-S																					
2022-09-14	FS_BPO																					
2022-09-14	FS_INF-K																					
2022-09-14	FS_INF-S																					
2022-09-14	FS_BPO																					
2022-09-14	FS_INF-K																					
2022-09-14	FS_INF-S																					
2022-09-14	FS_INF-K																					
2022-09-14	FS_INF-S																					
2022-09-14	FS_INF-K																					
2022-09-14	FS_INF-S																					
2022-09-14	FS_INF-K																					
2022-09-14	FS_INF-S																					
2022-09-15	FS_INF-K																					
2022-09-15	FS_INF-S																					
2022-09-15	FS_INF-K																					
2022-09-15	FS_INF-S																					
2022-09-15	FS_INF-K																					
2022-09-15	FS_INF-S																					
2022-09-15	FS_BPO																					0.034
2022-09-15	FS_INF-K																					
2022-09-15	FS_INF-S																					
2022-09-15	FR_SCOUTDS	< 0.250	0.0704			0.0754	168	< 0.50	< 0.50	6.71	0.14	0.13	< 0.10			< 0.10			1110	< 0.50	< 0.50	< 0.010
2022-09-15	FS_INF-K																					
2022-09-15	FS_INF-S																					
2022-09-15	FS_INF-K																					
2022-09-15	FS_INF-S																					
2022-09-15	FS_INF-K																					
2022-09-15	FS_INF-S																					
2022-09-15	FS_INF-K																					
2022-09-15	FS_INF-S																					
2022-09-15	FS_INF-K																					
2022-09-15	FS_INF-S																					
2022-09-16	FS_INF-K																					
2022-09-16	FS_INF-S																					
2022-09-16	FS_INF-K																					
2022-09-16	FS_INF-S																					
2022-09-16	FS_BPO																					
2022-09-16	FS_INF-K																					
2022-09-16	FS_INF-S																					
2022-09-16	FS_INF-K																					
2022-09-16	FS_INF-S																					
2022-09-16	FS_INF-K																					
2022-09-16	FS_INF-S																					
2022-09-16	FS_INF-K																					
2022-09-16	FS_INF-S																					
2022-09-16	FS_INF-K																					
2022-09-16	FS_INF-S																					
2022-09-17	FS_INF-K																					
2022-09-17	FS_INF-S																					
2022-09-17	FS_INF-K																					
2022-09-17	FS_INF-S																					
2022-09-17	FS_BPO																					
2022-09-17	FS_INF-K																					
2022-09-17	FS_INF-S																					
2022-09-17	FS_INF-K																					
2022-09-17	FS_INF-S																					
2022-09-17	FS_INF-K																					
2022-09-17	FS_INF-S																					
2022-09-17	FS_INF-K																					
2022-09-17	FS_INF-S																					
2022-09-17	FS_INF-K																					
2022-09-17	FS_INF-S																					
2022-09-17	FS_INF-K																					
2022-09-17	FS_INF-S																					
2022-09-18	FS_INF-K																					
2022-09-18	FS_INF-S																					
2022-09-18	FS_INF-K																					

	Parameter	Bromide	Cadmium	Cadmium	Cadmium	Cadmium	Calcium	Carbon, Dissolved Organic	Carbon, Total Organic	Chloride	Chromium	Chromium	Cobalt	Cobalt	Cobalt	Cobalt	Conductivity, Field	Conductivity, Field	Conductivity, Lab	Copper	Copper	Dimethylseleneoxide
	Fraction	N	D	D	T	T	T	D	T	D	D	T	D	D	T	T	N	N	N	D	T	D
	Unit	mg/l	mg/l	ug/l	mg/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	mg/l	ug/l	us/cm	uS/cm at 25 C	us/cm	mg/l	mg/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-09-18	FS_INF-S																					
2022-09-18	FS_BPO																					0.047
2022-09-18	FS_INF-K																					
2022-09-18	FS_INF-S																					
2022-09-18	FS_INF-K																					
2022-09-18	FS_INF-S																					
2022-09-18	FS_INF-K																					
2022-09-18	FS_INF-S																					
2022-09-18	FS_INF-K																					
2022-09-18	FS_INF-S																					
2022-09-18	FS_INF-K																					
2022-09-18	FS_INF-S																					
2022-09-19	FS_INF-K																					
2022-09-19	FS_INF-S																					
2022-09-19	FS_INF-K																					
2022-09-19	FS_INF-S																					
2022-09-19	FS_BPO	< 0.250						2.15	2.14	65.9									2520			
2022-09-19	FS_INF-K	< 0.250						< 0.50	< 0.50	1.49									2240			
2022-09-19	FS_INF-S	< 0.250						1.59	2.04	4.39									3090			
2022-09-19	FS_BPO																					
2022-09-19	FS_INF-K																					
2022-09-19	FS_INF-S																					
2022-09-19	FS_INF-K																					
2022-09-19	FS_INF-S																					
2022-09-19	FS_INF-K																					
2022-09-19	FS_INF-S																					
2022-09-19	FS_INF-K																					
2022-09-19	FS_INF-S																					
2022-09-19	FS_BPO																					
2022-09-19	FS_INF-K																					
2022-09-19	FS_INF-S																					
2022-09-20	FS_INF-K																					
2022-09-20	FS_INF-S																					
2022-09-20	FS_BPO		0.0171			0.0154	411				0.22	< 0.20	0.21			< 0.20				< 1.00	< 1.00	0.052
2022-09-20	FS_INF-K		1.23			1.14	328				< 0.10	0.26	< 0.10			< 0.20				< 0.50	< 1.00	
2022-09-20	FS_INF-S		1.46			1.21	340				< 0.20	< 0.20	0.72			0.60				< 1.00	< 1.00	
2022-09-20	FS_BPO																					
2022-09-20	FS_INF-K																					
2022-09-20	FS_INF-S																					
2022-09-20	FS_BPO																					
2022-09-20	FS_INF-K																					
2022-09-20	FS_INF-S																					
2022-09-20	FS_BPO																					
2022-09-20	FS_INF-K																					
2022-09-20	FS_INF-S																					
2022-09-20	FS_BPO																					
2022-09-20	FS_INF-K																					
2022-09-20	FS_INF-S																					
2022-09-21	FS_BPO																					
2022-09-21	FS_INF-K																					
2022-09-21	FS_INF-S																					
2022-09-21	FS_BPO																					
2022-09-21	FS_INF-K																					
2022-09-21	FS_INF-S																					
2022-09-21	FS_BPO																					
2022-09-21	FS_INF-K																					
2022-09-21	FS_INF-S																					
2022-09-21	FS_BPO																					
2022-09-21	FS_INF-K																					
2022-09-21	FS_INF-S																					
2022-09-21	FS_INF-K																					
2022-09-21	FS_INF-S																					
2022-09-22	FS_INF-K																					
2022-09-22	FS_INF-S																					
2022-09-22	FS_INF-K																					
2022-09-22	FS_INF-S																					
2022-09-22	FS_BPO																					0.038
2022-09-22	FS_INF-K																					
2022-09-22	FS_INF-S																					
2022-09-22	FR_SCOUTDS																					
2022-09-22	FS_INF-K																					

	Parameter	Bromide	Cadmium	Cadmium	Cadmium	Cadmium	Calcium	Carbon, Dissolved Organic	Carbon, Total Organic	Chloride	Chromium	Chromium	Cobalt	Cobalt	Cobalt	Cobalt	Conductivity, Field	Conductivity, Field	Conductivity, Lab	Copper	Copper	Dimethylseleneoxide
	Fraction	N	D	D	T	T	T	D	T	D	D	T	D	D	T	T	N	N	N	D	T	D
	Unit	mg/l	mg/l	ug/l	mg/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	mg/l	ug/l	us/cm	uS/cm at 25 C	us/cm	mg/l	mg/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-09-22	FS_INF-S																					
2022-09-22	FS_INF-K																					
2022-09-22	FS_INF-S																					
2022-09-22	FS_INF-K																					
2022-09-22	FS_INF-S																					
2022-09-22	FS_INF-K																					
2022-09-22	FS_INF-S																					
2022-09-22	FS_INF-K																					
2022-09-22	FS_INF-S																					
2022-09-23	FR_SCOUTDS	< 0.250	0.135			0.133	169	2.77	1.44	5.87	0.14	0.11	0.11			0.11			1210	< 0.50	< 0.50	0.015
2022-09-23	FS_INF-K																					
2022-09-23	FS_INF-S																					
2022-09-23	FS_INF-K																					
2022-09-23	FS_INF-S																					
2022-09-23	FS_BPO																					
2022-09-23	FS_INF-K																					
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2022-09-23	FS_INF-K																					
2022-09-23	FS_INF-S																					
2022-09-24	FS_INF-K																					
2022-09-24	FS_INF-S																					
2022-09-24	FS_INF-K																					
2022-09-24	FS_INF-S																					
2022-09-24	FS_BPO																					
2022-09-24	FS_INF-K																					
2022-09-24	FS_INF-S																					
2022-09-24	FS_INF-K																					
2022-09-24	FS_INF-S																					
2022-09-24	FS_INF-K																					
2022-09-24	FS_INF-S																					
2022-09-24	FS_INF-K																					
2022-09-24	FS_INF-S																					
2022-09-24	FS_INF-K																					
2022-09-24	FS_INF-S																					
2022-09-25	FS_INF-K																					
2022-09-25	FS_INF-S																					
2022-09-25	FS_INF-K																					
2022-09-25	FS_INF-S																					
2022-09-25	FS_BPO																					0.028
2022-09-25	FS_INF-K																					
2022-09-25	FS_INF-S																					
2022-09-25	FS_INF-K																					
2022-09-25	FS_INF-S																					
2022-09-25	FS_INF-K																					
2022-09-25	FS_INF-S																					
2022-09-25	FS_INF-K																					
2022-09-25	FS_INF-S																					
2022-09-25	FS_INF-K																					
2022-09-25	FS_INF-S																					
2022-09-25	FS_INF-K																					
2022-09-25	FS_INF-S																					
2022-09-26	FS_INF-K																					
2022-09-26	FS_INF-S																					
2022-09-26	FS_INF-K																					
2022-09-26	FS_INF-S																					
2022-09-26	FS_BPO	< 0.250						2.16	2.22	67.0									2580			
2022-09-26	FS_INF-K	< 0.250						< 0.50	< 0.50	1.36									2330			
2022-09-26	FS_INF-S	< 0.250						1.40	1.51	3.58									3150			
2022-09-26	FS_BPO																					
2022-09-26	FS_INF-K																					
2022-09-26	FS_INF-S																					
2022-09-26	FS_INF-K																					
2022-09-26	FS_INF-S																					
2022-09-26	FS_INF-K																					
2022-09-26	FS_INF-S																					
2022-09-26	FS_INF-K																					
2022-09-26	FS_INF-S																					
2022-09-27	FS_INF-K																					
2022-09-27	FS_INF-S																					
2022-09-27	FS_INF-K																					
2022-09-27	FS_INF-S																					

Parameter		Bromide	Cadmium	Cadmium	Cadmium	Cadmium	Calcium	Carbon, Dissolved Organic	Carbon, Total Organic	Chloride	Chromium	Chromium	Cobalt	Cobalt	Cobalt	Cobalt	Conductivity, Field	Conductivity, Field	Conductivity, Lab	Copper	Copper	Dimethylseleneoxide
Fraction		N	D	D	T	T	T	D	T	D	D	T	D	D	T	T	N	N	N	D	T	D
Unit		mg/l	mg/l	ug/l	mg/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	mg/l	ug/l	us/cm	uS/cm at 25 C	us/cm	mg/l	mg/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-09-27	FS_BPO		0.114		0.0260		394				0.34	0.57	0.27		0.36					0.59	< 1.00	0.047
2022-09-27	FS_INF-K		1.40			1.20	326				< 0.20	< 0.20	< 0.20			< 0.20				< 1.00	< 1.00	< 0.010
2022-09-27	FS_INF-S		1.42			1.71	451				0.20	< 0.20	0.67			0.94				< 1.00	1.01	0.030
2022-09-27	FS_INF-K																					
2022-09-27	FS_INF-S																					
2022-09-27	FS_INF-K																					
2022-09-27	FS_INF-S																					
2022-09-27	FS_INF-K																					
2022-09-27	FS_INF-S																					
2022-09-27	FS_INF-K																					
2022-09-27	FS_INF-S																					
2022-09-27	FS_INF-K																					
2022-09-27	FS_INF-S																					
2022-09-28	FS_INF-K																					
2022-09-28	FS_INF-S																					
2022-09-28	FS_BPO																					
2022-09-28	FS_INF-K																					
2022-09-28	FS_INF-S																					
2022-09-28	FS_INF-K																					
2022-09-28	FS_INF-S																					
2022-09-28	FS_INF-K																					
2022-09-28	FS_INF-S																					
2022-09-28	FS_INF-K																					
2022-09-28	FS_INF-S																					
2022-09-28	FS_INF-K																					
2022-09-28	FS_INF-S																					
2022-09-29	FS_INF-K																					
2022-09-29	FS_INF-S																					
2022-09-29	FS_INF-K																					
2022-09-29	FS_INF-S																					
2022-09-29	FS_BPO																					0.083
2022-09-29	FS_INF-K																					
2022-09-29	FS_INF-S																					
2022-09-29	FR_SCOUTDS	< 0.250	0.176			0.217	184	0.69	0.70	2.30	0.10	< 0.10	0.11			0.12			1320	< 0.50	< 0.50	< 0.010
2022-09-29	FS_BPO																					
2022-09-29	FS_BPO																					
2022-09-29	FS_INF-K																					
2022-09-29	FS_INF-S																					
2022-09-29	FS_BPO																					
2022-09-29	FS_INF-K																					
2022-09-29	FS_INF-S																					
2022-09-29	FS_INF-K																					
2022-09-29	FS_INF-S																					
2022-09-29	FS_BPO																					
2022-09-29	FS_INF-K																					
2022-09-29	FS_INF-S																					
2022-09-29	FS_INF-K																					
2022-09-29	FS_INF-S																					
2022-09-30	FS_BPO																					
2022-09-30	FS_INF-K																					
2022-09-30	FS_INF-S																					
2022-09-30	FS_INF-K																					
2022-09-30	FS_INF-S																					
2022-09-30	FS_BPO																					
2022-09-30	FS_INF-K																					
2022-09-30	FS_INF-S																					
2022-09-30	FS_INF-K																					
2022-09-30	FS_INF-S																					
2022-09-30	FS_INF-K																					
2022-09-30	FS_INF-S																					
2022-09-30	FS_INF-K																					
2022-09-30	FS_INF-S																					
2022-09-30	FS_INF-K																					
2022-09-30	FS_INF-S																					
2022-10-01	FS_INF-K																					
2022-10-01	FS_INF-S																					
2022-10-01	FS_INF-K																					
2022-10-01	FS_INF-S																					
2022-10-01	FS_BPO																					
2022-10-01	FS_INF-K																					
2022-10-01	FS_INF-S																					
2022-10-01	FS_INF-K																					
2022-10-01	FS_INF-S																					
2022-10-01	FS_INF-K																					
2022-10-01	FS_INF-S																					
2022-10-01	FS_INF-K																					
2022-10-01	FS_INF-S																					
2022-10-01	FS_INF-K																					
2022-10-01	FS_INF-S																					

	Parameter	Bromide	Cadmium	Cadmium	Cadmium	Cadmium	Calcium	Carbon, Dissolved Organic	Carbon, Total Organic	Chloride	Chromium	Chromium	Cobalt	Cobalt	Cobalt	Cobalt	Conductivity, Field	Conductivity, Field	Conductivity, Lab	Copper	Copper	Dimethylseleneoxide
	Fraction	N	D	D	T	T	T	D	T	D	D	T	D	D	T	T	N	N	N	D	T	D
	Unit	mg/l	mg/l	ug/l	mg/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	mg/l	ug/l	us/cm	uS/cm at 25 C	us/cm	mg/l	mg/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-10-02	FS_INF-K																					
2022-10-02	FS_INF-S																					
2022-10-02	FS_INF-K																					
2022-10-02	FS_INF-S																					
2022-10-02	FS_BPO																					0.063
2022-10-02	FS_INF-K																					
2022-10-02	FS_INF-S																					
2022-10-02	FS_INF-K																					
2022-10-02	FS_INF-S																					
2022-10-02	FS_INF-K																					
2022-10-02	FS_INF-S																					
2022-10-02	FS_INF-K																					
2022-10-02	FS_INF-S																					
2022-10-02	FS_INF-K																					
2022-10-02	FS_INF-S																					
2022-10-03	FS_INF-K																					
2022-10-03	FS_INF-S																					
2022-10-03	FS_INF-K																					
2022-10-03	FS_INF-S																					
2022-10-03	FS_BPO	< 0.250						2.58	2.77	63.4									2590			
2022-10-03	FS_INF-K	< 0.250						0.65	0.68	1.44									2190			
2022-10-03	FS_INF-S	< 0.250						2.15	1.92	3.83									2840			
2022-10-03	FS_BPO																					
2022-10-03	FS_INF-K																					
2022-10-03	FS_INF-S																					
2022-10-03	FS_INF-K																					
2022-10-03	FS_INF-S																					
2022-10-03	FS_INF-K																					
2022-10-03	FS_INF-S																					
2022-10-03	FS_INF-K																					
2022-10-03	FS_INF-S																					
2022-10-03	FS_INF-K																					
2022-10-03	FS_INF-S																					
2022-10-04	FS_INF-K																					
2022-10-04	FS_INF-S																					
2022-10-04	FS_INF-K																					
2022-10-04	FS_INF-S																					
2022-10-04	FS_BPO		0.0169			0.0137	363				< 0.20	0.21	< 0.20			0.23				< 1.00	1.01	0.056
2022-10-04	FS_INF-K		1.26			1.39	342				< 0.20	< 0.20	< 0.20			< 0.20				< 1.00	< 1.00	< 0.010
2022-10-04	FS_INF-S		1.70			1.55	410				< 0.20	< 0.20	0.88			0.76				1.40	1.04	0.023
2022-10-04	FS_BPO																					
2022-10-04	FS_INF-K																					
2022-10-04	FS_INF-S																					
2022-10-04	FS_INF-K																					
2022-10-04	FS_INF-S																					
2022-10-04	FS_INF-K																					
2022-10-04	FS_INF-S																					
2022-10-04	FS_INF-K																					
2022-10-04	FS_INF-S																					
2022-10-05	FS_INF-K																					
2022-10-05	FS_INF-S																					
2022-10-05	FS_INF-K																					
2022-10-05	FS_INF-S																					
2022-10-05	FS_BPO																					
2022-10-05	FS_INF-K																					
2022-10-05	FS_INF-S																					
2022-10-05	FS_INF-K																					
2022-10-05	FS_INF-S																					
2022-10-05	FS_INF-K																					
2022-10-05	FS_INF-S																					
2022-10-05	FS_INF-K																					
2022-10-05	FS_INF-S																					
2022-10-05	FS_INF-K																					
2022-10-05	FS_INF-S																					
2022-10-06	FS_INF-K																					
2022-10-06	FS_INF-S																					
2022-10-06	FS_INF-K																					
2022-10-06	FS_INF-S																					
2022-10-06	FS_BPO																					0.089
2022-10-06	FS_INF-K																					
2022-10-06	FS_INF-S																					
2022-10-06	FR_SCOUTDS	< 0.250	0.0554			0.0607	207	0.85	0.83	11.9	< 0.10	0.16	< 0.10			< 0.10			1260	< 0.50	< 0.50	0.015
2022-10-06	FS_INF-K																					
2022-10-06	FS_INF-S																					
2022-10-06	FS_INF-K																					
2022-10-06	FS_INF-S																					
2022-10-06	FS_INF-K																					
2022-10-06	FS_INF-S																					

Parameter		Bromide	Cadmium	Cadmium	Cadmium	Cadmium	Calcium	Carbon, Dissolved Organic	Carbon, Total Organic	Chloride	Chromium	Chromium	Cobalt	Cobalt	Cobalt	Cobalt	Conductivity, Field	Conductivity, Field	Conductivity, Lab	Copper	Copper	Dimethylseleneoxide
Fraction		N	D	D	T	T	T	D	T	D	D	T	D	D	T	T	N	N	N	D	T	D
Unit		mg/l	mg/l	ug/l	mg/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	mg/l	ug/l	us/cm	uS/cm at 25 C	us/cm	mg/l	mg/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-10-06	FS_INF-K																					
2022-10-06	FS_INF-S																					
2022-10-06	FS_INF-K																					
2022-10-06	FS_INF-S																					
2022-10-07	FS_INF-K																					
2022-10-07	FS_INF-S																					
2022-10-07	FS_INF-K																					
2022-10-07	FS_INF-S																					
2022-10-07	FS_BPO																					
2022-10-07	FS_INF-K																					
2022-10-07	FS_INF-S																					
2022-10-07	FS_INF-K																					
2022-10-07	FS_INF-S																					
2022-10-07	FS_INF-K																					
2022-10-07	FS_INF-S																					
2022-10-07	FS_INF-K																					
2022-10-07	FS_INF-S																					
2022-10-07	FS_INF-K																					
2022-10-07	FS_INF-S																					
2022-10-08	FS_INF-K																					
2022-10-08	FS_INF-S																					
2022-10-08	FS_INF-K																					
2022-10-08	FS_INF-S																					
2022-10-08	FS_BPO																					
2022-10-08	FS_INF-K																					
2022-10-08	FS_INF-S																					
2022-10-08	FS_INF-K																					
2022-10-08	FS_INF-S																					
2022-10-08	FS_INF-K																					
2022-10-08	FS_INF-S																					
2022-10-08	FS_INF-K																					
2022-10-08	FS_INF-S																					
2022-10-09	FS_INF-K																					
2022-10-09	FS_INF-S																					
2022-10-09	FS_INF-K																					
2022-10-09	FS_BPO																					0.055
2022-10-09	FS_INF-K																					
2022-10-09	FS_INF-S																					
2022-10-09	FS_INF-K																					
2022-10-09	FS_INF-S																					
2022-10-09	FS_INF-K																					
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2022-10-09	FS_INF-S																					
2022-10-10	FS_INF-K																					
2022-10-10	FS_INF-S																					
2022-10-10	FS_INF-K																					
2022-10-10	FS_INF-S																					
2022-10-10	FS_BPO	< 0.250						2.29	2.38	95.2									2600			
2022-10-10	FS_INF-K	< 0.250						0.70	0.71	1.54									2300			
2022-10-10	FS_INF-S	< 0.250						1.81	1.88	4.28									2960			
2022-10-10	FS_BPO																					
2022-10-10	FS_INF-K																					
2022-10-10	FS_INF-S																					
2022-10-10	FS_INF-K																					
2022-10-10	FS_INF-S																					
2022-10-10	FS_INF-K																					
2022-10-10	FS_INF-S																					
2022-10-10	FS_INF-K																					
2022-10-10	FS_INF-S																					
2022-10-10	FS_INF-K																					
2022-10-10	FS_INF-S																					
2022-10-11	FS_INF-K																					
2022-10-11	FS_INF-S																					
2022-10-11	FS_INF-K																					
2022-10-11	FS_INF-S																					
2022-10-11	FS_BPO		0.0115			0.0134	408				0.26	0.31	0.23			0.20				< 1.00	< 1.00	0.041
2022-10-11	FS_INF-K		1.42			1.38	349				< 0.20	< 0.20	< 0.20			< 0.20				< 1.00	< 1.00	< 0.010
2022-10-11	FS_INF-S		1.75			1.56	428				< 0.20	< 0.20	0.89			0.79				2.07	1.16	0.031
2022-10-11	FS_INF-K																					
2022-10-11	FS_INF-S																					
2022-10-11	FR_FRABCH	< 0.250		0.0357		0.0341	132	< 0.50	< 0.50	7.36	0.10	0.14		< 0.10		< 0.10			1080	< 0.20	< 0.50	
2022-10-11	FS_INF-K																					

Parameter		Bromide	Cadmium	Cadmium	Cadmium	Cadmium	Calcium	Carbon, Dissolved Organic	Carbon, Total Organic	Chloride	Chromium	Chromium	Cobalt	Cobalt	Cobalt	Cobalt	Conductivity, Field	Conductivity, Field	Conductivity, Lab	Copper	Copper	Dimethylseleneoxide
Fraction		N	D	D	T	T	T	D	T	D	D	T	D	D	T	T	N	N	N	D	T	D
Unit		mg/l	mg/l	ug/l	mg/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	mg/l	ug/l	us/cm	uS/cm at 25 C	us/cm	mg/l	mg/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-10-11	FS_INF-S																					
2022-10-11	FR_FRABCH																					
2022-10-11	FS_INF-K																					
2022-10-11	FS_INF-S																					
2022-10-11	FS_INF-K																					
2022-10-11	FS_INF-S																					
2022-10-11	FS_INF-K																					
2022-10-11	FS_INF-S																					
2022-10-12	FS_INF-K																					
2022-10-12	FS_INF-S																					
2022-10-12	FS_INF-K																					
2022-10-12	FS_INF-S																					
2022-10-12	FS_BPO																					
2022-10-12	FS_INF-K																					
2022-10-12	FS_INF-S																					
2022-10-12	FS_INF-K																					
2022-10-12	FS_INF-S																					
2022-10-12	FS_INF-K																					
2022-10-12	FS_INF-S																					
2022-10-12	FS_INF-K																					
2022-10-12	FS_INF-S																					
2022-10-12	FS_INF-K																					
2022-10-12	FS_INF-S																					
2022-10-12	FS_INF-K																					
2022-10-13	FS_INF-S																					
2022-10-13	FS_INF-K																					
2022-10-13	FS_INF-S																					
2022-10-13	FS_INF-K																					
2022-10-13	FS_INF-S																					
2022-10-13	FS_BPO																					0.015
2022-10-13	FS_INF-K																					
2022-10-13	FS_INF-S																					
2022-10-13	FR_SCOUTDS	< 0.250	0.260			0.223	166	0.63	0.65	5.97	0.17	0.13	0.14			0.14			1290	< 0.50	< 0.50	< 0.010
2022-10-13	FS_INF-K																					
2022-10-13	FS_INF-S																					
2022-10-13	FS_INF-K																					
2022-10-13	FS_INF-S																					
2022-10-13	FS_INF-K																					
2022-10-13	FS_INF-S																					
2022-10-13	FS_INF-K																					
2022-10-13	FS_INF-S																					
2022-10-14	FS_INF-K																					
2022-10-14	FS_INF-S																					
2022-10-14	FS_INF-K																					
2022-10-14	FS_INF-S																					
2022-10-14	FS_BPO																					
2022-10-14	FS_INF-K																					
2022-10-14	FS_INF-S																					
2022-10-14	FS_INF-K																					
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2022-10-14	FS_INF-K																					
2022-10-14	FS_INF-S																					
2022-10-15	FS_INF-K																					
2022-10-15	FS_INF-S																					
2022-10-15	FS_INF-K																					
2022-10-15	FS_INF-S																					
2022-10-15	FS_BPO																					
2022-10-15	FS_INF-K																					
2022-10-15	FS_INF-S																					
2022-10-15	FS_INF-K																					
2022-10-15	FS_INF-S																					
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2022-10-15	FS_INF-K																					
2022-10-15	FS_INF-S																					
2022-10-16	FS_INF-K																					
2022-10-16	FS_INF-S																					
2022-10-16	FS_INF-K																					
2022-10-16	FS_INF-S																					
2022-10-16	FS_BPO																					
2022-10-16	FS_INF-K																					
2022-10-16	FS_INF-S																					

Parameter		Bromide	Cadmium	Cadmium	Cadmium	Cadmium	Calcium	Carbon, Dissolved Organic	Carbon, Total Organic	Chloride	Chromium	Chromium	Cobalt	Cobalt	Cobalt	Cobalt	Conductivity, Field	Conductivity, Field	Conductivity, Lab	Copper	Copper	Dimethylseleneoxide
Fraction		N	D	D	T	T	T	D	T	D	D	T	D	D	T	T	N	N	N	D	T	D
Unit		mg/l	mg/l	ug/l	mg/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	mg/l	ug/l	us/cm	uS/cm at 25 C	us/cm	mg/l	mg/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-10-16	FS_INF-K																					
2022-10-16	FS_INF-S																					
2022-10-16	FS_INF-K																					
2022-10-16	FS_INF-S																					
2022-10-16	FS_INF-K																					
2022-10-16	FS_INF-S																					
2022-10-16	FS_INF-K																					
2022-10-16	FS_INF-S																					
2022-10-16	FS_INF-K																					
2022-10-16	FS_INF-S																					
2022-10-17	FS_INF-K																					
2022-10-17	FS_INF-S																					
2022-10-17	FS_INF-K																					
2022-10-17	FS_INF-S																					
2022-10-17	FS_BPO	< 0.250						2.33	2.89	120									2620			
2022-10-17	FS_INF-K	< 0.250						0.60	< 0.50	1.64									2380			
2022-10-17	FS_INF-S	< 0.250						1.89	1.74	4.34									3010			
2022-10-17	FS_BPO																					
2022-10-17	FS_INF-K																					
2022-10-17	FS_INF-S																					
2022-10-17	FS_INF-K																					
2022-10-17	FS_INF-S																					
2022-10-17	FS_INF-K																					
2022-10-17	FS_INF-S																					
2022-10-17	FS_INF-K																					
2022-10-17	FS_INF-S																					
2022-10-17	FS_INF-K																					
2022-10-17	FS_INF-S																					
2022-10-18	FS_INF-K																					
2022-10-18	FS_INF-S																					
2022-10-18	FS_INF-K																					
2022-10-18	FS_INF-S																					
2022-10-18	FS_BPO		0.0198			0.0237	415				< 0.20	< 0.20	< 0.20			< 0.20				1.24	< 1.00	0.019
2022-10-18	FS_INF-K		1.41			1.50	457				19.1	< 0.20	< 0.20			< 0.20				< 1.00	< 1.00	
2022-10-18	FS_INF-S		1.67			1.41	472				< 0.20	< 0.20	0.78			0.77				1.18	1.02	
2022-10-18	FR_FRABCH	< 0.250		0.0348		0.0321	179	0.54	< 0.50	7.58	0.12	0.15		< 0.10		< 0.10			1100	< 0.20	< 0.50	
2022-10-18	FS_INF-K																					
2022-10-18	FS_INF-S																					
2022-10-18	FS_INF-K																					
2022-10-18	FS_INF-S																					
2022-10-18	FS_INF-K																					
2022-10-18	FS_INF-S																					
2022-10-18	FS_INF-K																					
2022-10-18	FS_INF-S																					
2022-10-18	FS_INF-K																					
2022-10-18	FS_INF-S																					
2022-10-19	FS_INF-K																					
2022-10-19	FS_INF-S																					
2022-10-19	FS_INF-K																					
2022-10-19	FS_INF-S																					
2022-10-19	FS_BPO																					
2022-10-19	FS_INF-K																					
2022-10-19	FS_INF-S																					
2022-10-19	FS_INF-K																					
2022-10-19	FS_INF-S																					
2022-10-19	FS_INF-K																					
2022-10-19	FS_INF-S																					
2022-10-19	FS_INF-K																					
2022-10-19	FS_INF-S																					
2022-10-19	FS_INF-K																					
2022-10-19	FS_INF-S																					
2022-10-20	FS_INF-K																					
2022-10-20	FS_INF-S																					
2022-10-20	FS_BPO																					
2022-10-20	FS_INF-K																					
2022-10-20	FS_INF-S																					
2022-10-20	FS_BPO																					
2022-10-20	FR_SCOUTDS	< 0.250		0.0674		0.0657	187	0.57	0.68	11.4	< 0.10	0.14		< 0.10		< 0.10			1300	0.24	< 0.50	0.014
2022-10-20	FS_INF-K																					
2022-10-20	FS_INF-S																					
2022-10-20	FS_INF-K																					
2022-10-20	FS_INF-S																					
2022-10-20	FS_INF-K																					
2022-10-20	FS_INF-S																					
2022-10-20	FS_INF-K																					
2022-10-20	FS_INF-S																					
2022-10-20	FS_INF-K																					
2022-10-20	FS_INF-S																					
2022-10-21	FS_INF-K																					
2022-10-21	FS_INF-S																					
2022-10-21	FS_INF-K																					

Parameter		Bromide	Cadmium	Cadmium	Cadmium	Cadmium	Calcium	Carbon, Dissolved Organic	Carbon, Total Organic	Chloride	Chromium	Chromium	Cobalt	Cobalt	Cobalt	Cobalt	Conductivity, Field	Conductivity, Field	Conductivity, Lab	Copper	Copper	Dimethylseleneoxide
Fraction		N	D	D	T	T	T	D	T	D	D	T	D	D	T	T	N	N	N	D	T	D
Unit		mg/l	mg/l	ug/l	mg/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	mg/l	ug/l	us/cm	uS/cm at 25 C	us/cm	mg/l	mg/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-10-21	FS_INF-S																					
2022-10-21	FS_BPO																					
2022-10-21	FS_INF-K																					
2022-10-21	FS_INF-S																					
2022-10-21	FS_INF-K																					
2022-10-21	FS_INF-S																					
2022-10-21	FS_INF-K																					
2022-10-21	FS_INF-S																					
2022-10-21	FS_INF-K																					
2022-10-21	FS_INF-S																					
2022-10-21	FS_INF-K																					
2022-10-21	FS_INF-S																					
2022-10-22	FS_INF-K																					
2022-10-22	FS_INF-S																					
2022-10-22	FS_INF-K																					
2022-10-22	FS_INF-S																					
2022-10-22	FS_BPO																					
2022-10-22	FS_INF-K																					
2022-10-22	FS_INF-S																					
2022-10-22	FS_INF-K																					
2022-10-22	FS_INF-S																					
2022-10-22	FS_INF-K																					
2022-10-22	FS_INF-S																					
2022-10-22	FS_INF-K																					
2022-10-22	FS_INF-S																					
2022-10-22	FS_INF-K																					
2022-10-22	FS_INF-S																					
2022-10-22	FS_INF-K																					
2022-10-23	FS_INF-K																					
2022-10-23	FS_INF-S																					
2022-10-23	FS_INF-K																					
2022-10-23	FS_INF-S																					
2022-10-23	FS_INF-K																					
2022-10-23	FS_INF-S																					
2022-10-23	FS_INF-K																					
2022-10-23	FS_INF-S																					
2022-10-23	FS_INF-K																					
2022-10-23	FS_INF-S																					
2022-10-23	FS_BPO																					0.020
2022-10-23	FS_INF-K																					
2022-10-23	FS_INF-S																					
2022-10-23	FS_INF-K																					
2022-10-23	FS_INF-S																					
2022-10-23	FS_INF-K																					
2022-10-23	FS_INF-S																					
2022-10-23	FS_INF-K																					
2022-10-23	FS_INF-S																					
2022-10-23	FS_INF-K																					
2022-10-24	FS_INF-S																					
2022-10-24	FS_INF-K																					
2022-10-24	FS_INF-S																					
2022-10-24	FS_BPO	< 0.250						2.13	2.21	65.9								2520				
2022-10-24	FS_INF-K	< 0.250						< 0.50	< 0.50	1.52								2460				
2022-10-24	FS_INF-S	< 0.250						1.83	1.62	3.72								2910				
2022-10-24	FS_BPO																					
2022-10-24	FS_INF-K																					
2022-10-24	FS_INF-S																					
2022-10-24	FS_INF-K																					
2022-10-24	FS_INF-S																					
2022-10-24	FS_INF-K																					
2022-10-24	FS_INF-S																					
2022-10-24	FS_INF-K																					
2022-10-24	FS_INF-S																					
2022-10-24	FS_INF-K																					
2022-10-24	FS_INF-S																					
2022-10-25	FS_INF-K																					
2022-10-25	FS_INF-S																					
2022-10-25	FS_INF-K																					
2022-10-25	FS_INF-S																					
2022-10-25	FS_BPO		0.0194			0.0192	428				< 0.10	< 0.20	0.16			< 0.20				0.65	< 1.00	0.024
2022-10-25	FS_INF-K		1.46			1.32	429				< 0.20	< 0.20	< 0.20			< 0.20				< 1.00	< 1.00	< 0.010
2022-10-25	FS_INF-S		1.47			1.36	470				< 0.20	< 0.20	0.72			0.66				< 1.00	< 1.00	0.017
2022-10-25	FR_FRABCH	< 0.250		0.0436		0.0412	152	< 0.50	< 0.50	7.09	0.12	0.13		< 0.10		< 0.10			1110	< 0.20	< 0.50	
2022-10-25	FR_SCOUTDS																					
2022-10-25	FS_INF-K																					
2022-10-25	FS_INF-S																					
2022-10-25	FS_INF-K																					
2022-10-25	FS_INF-S																					
2022-10-25	FS_INF-K																					
2022-10-25	FS_INF-S																					
2022-10-26	FS_INF-K																					

	Parameter	Bromide	Cadmium	Cadmium	Cadmium	Cadmium	Calcium	Carbon, Dissolved Organic	Carbon, Total Organic	Chloride	Chromium	Chromium	Cobalt	Cobalt	Cobalt	Cobalt	Conductivity, Field	Conductivity, Field	Conductivity, Lab	Copper	Copper	Dimethylseleneoxide
	Fraction	N	D	D	T	T	T	D	T	D	D	T	D	D	T	T	N	N	N	D	T	D
	Unit	mg/l	mg/l	ug/l	mg/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	mg/l	ug/l	us/cm	uS/cm at 25 C	us/cm	mg/l	mg/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-10-26	FS_INF-S																					
2022-10-26	FS_INF-K																					
2022-10-26	FS_INF-S																					
2022-10-26	FS_BPO																					
2022-10-26	FS_INF-K																					
2022-10-26	FS_INF-S																					
2022-10-26	FS_INF-K																					
2022-10-26	FS_INF-S																					
2022-10-26	FS_INF-K																					
2022-10-26	FS_INF-S																					
2022-10-26	FS_INF-K																					
2022-10-26	FS_INF-S																					
2022-10-26	FS_INF-K																					
2022-10-26	FS_INF-S																					
2022-10-26	FS_INF-K																					
2022-10-26	FS_INF-S																					
2022-10-27	FS_INF-K																					
2022-10-27	FS_INF-S																					
2022-10-27	FS_INF-K																					
2022-10-27	FS_INF-S																					
2022-10-27	FS_BPO																					0.059
2022-10-27	FS_INF-K																					
2022-10-27	FS_INF-S																					
2022-10-27	FR_SCOUTDS	< 0.250	0.0707			0.0636	197	0.51	0.50	13.3	< 0.10	0.11	< 0.10			< 0.10			1290	< 0.50	< 0.50	0.013
2022-10-27	FS_INF-K																					
2022-10-27	FS_INF-S																					
2022-10-27	FS_INF-K																					
2022-10-27	FS_INF-S																					
2022-10-27	FS_INF-K																					
2022-10-27	FS_INF-S																					
2022-10-27	FS_INF-K																					
2022-10-27	FS_INF-S																					
2022-10-27	FS_INF-K																					
2022-10-27	FS_INF-S																					
2022-10-28	FS_INF-K																					
2022-10-28	FS_INF-S																					
2022-10-28	FS_INF-K																					
2022-10-28	FS_INF-S																					
2022-10-28	FS_BPO																					
2022-10-28	FS_INF-K																					
2022-10-28	FS_INF-S																					
2022-10-28	FS_INF-K																					
2022-10-28	FS_INF-S																					
2022-10-28	FS_INF-K																					
2022-10-28	FS_INF-S																					
2022-10-28	FS_INF-K																					
2022-10-28	FS_INF-S																					
2022-10-28	FS_INF-K																					
2022-10-28	FS_INF-S																					
2022-10-29	FS_INF-K																					
2022-10-29	FS_INF-S																					
2022-10-29	FS_INF-K																					
2022-10-29	FS_INF-S																					
2022-10-29	FS_BPO																					
2022-10-29	FS_INF-K																					
2022-10-29	FS_INF-S																					
2022-10-29	FS_INF-K																					
2022-10-29	FS_INF-S																					
2022-10-29	FS_INF-K																					
2022-10-29	FS_INF-S																					
2022-10-29	FS_INF-K																					
2022-10-29	FS_INF-S																					
2022-10-29	FS_INF-K																					
2022-10-29	FS_INF-S																					
2022-10-29	FS_INF-K																					
2022-10-29	FS_INF-S																					
2022-10-30	FS_INF-K																					
2022-10-30	FS_INF-S																					
2022-10-30	FS_INF-K																					
2022-10-30	FS_INF-S																					
2022-10-30	FS_BPO																					0.074
2022-10-30	FS_INF-K																					
2022-10-30	FS_INF-S																					
2022-10-30	FS_BPO																					
2022-10-30	FS_INF-K																					
2022-10-30	FS_INF-S																					
2022-10-30	FS_INF-K																					
2022-10-30	FS_INF-S																					
2022-10-30	FS_INF-K																					
2022-10-30	FS_INF-S																					
2022-10-30	FS_INF-K																					
2022-10-30	FS_INF-S																					

	Parameter	Bromide	Cadmium	Cadmium	Cadmium	Cadmium	Calcium	Carbon, Dissolved Organic	Carbon, Total Organic	Chloride	Chromium	Chromium	Cobalt	Cobalt	Cobalt	Cobalt	Conductivity, Field	Conductivity, Field	Conductivity, Lab	Copper	Copper	Dimethylseleneoxide
	Fraction	N	D	D	T	T	T	D	T	D	D	T	D	D	T	T	N	N	N	D	T	D
	Unit	mg/l	mg/l	ug/l	mg/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	mg/l	ug/l	us/cm	uS/cm at 25 C	us/cm	mg/l	mg/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-10-30	FS_INF-K																					
2022-10-30	FS_INF-S																					
2022-10-31	FS_INF-K																					
2022-10-31	FS_INF-S																					
2022-10-31	FS_INF-S																					
2022-10-31	FS_BPO	< 0.250						2.01	2.18	140									2820			
2022-10-31	FS_INF-K	< 0.250						< 0.50	< 0.50	2.00									2620			
2022-10-31	FS_INF-S	< 0.250						1.48	1.85	3.93									3130			
2022-10-31	FS_BPO																					
2022-10-31	FS_BPO																					
2022-10-31	FS_INF-K																					
2022-10-31	FS_INF-S																					
2022-10-31	FS_INF-K																					
2022-10-31	FS_INF-S																					
2022-10-31	FS_BPO																					
2022-11-01	FS_INF-K																					
2022-11-01	FS_INF-S																					
2022-11-01	FS_BPO																					
2022-11-01	FS_INF-K																					
2022-11-01	FS_INF-S																					
2022-11-01	FS_INF-K																					
2022-11-01	FS_INF-S																					
2022-11-01	FS_BPO		0.0248			0.0107	382				< 0.20	0.29	< 0.20			< 0.20				< 1.00	< 1.00	0.073
2022-11-01	FS_INF-K		1.54			1.40	348				< 0.20	< 0.20	< 0.20			< 0.20				< 1.00	< 1.00	
2022-11-01	FS_INF-S		1.33			1.31	357				< 0.20	< 0.20	0.62			0.71				< 1.00	< 1.00	
2022-11-01	FS_INF-K																					
2022-11-01	FS_INF-S																					
2022-11-01	FR_FRABCH	< 0.250		0.0418		0.0367	151	< 0.50	< 0.50	6.31	0.12	0.15		< 0.10		< 0.10			1170	< 0.20	< 0.50	
2022-11-01	FS_INF-K																					
2022-11-01	FS_INF-S																					
2022-11-01	FR_FRABCH																					
2022-11-01	FS_BPO																					
2022-11-02	FR_FRABCH																					
2022-11-02	FR_SCOUTDS																					
2022-11-02	FR_FRABCH																					
2022-11-02	FR_SCOUTDS																					
2022-11-02	FS_BPO																					
2022-11-02	FS_INF-K																					
2022-11-02	FS_INF-S																					
2022-11-02	FS_BPO																					
2022-11-02	FS_INF-K																					
2022-11-02	FS_INF-S																					
2022-11-03	FS_BPO																					
2022-11-03	FS_INF-K																					
2022-11-03	FS_INF-S																					
2022-11-03	FS_INF-K																					
2022-11-03	FS_INF-S																					
2022-11-03	FS_BPO																					0.035
2022-11-03	FS_INF-K																					
2022-11-03	FS_INF-S																					
2022-11-03	FR_SCOUTDS	< 0.250	0.0674			0.0743	164	0.86	0.71	20.8	0.12	0.13	< 0.10			< 0.10			1230	< 0.50	< 0.50	< 0.010
2022-11-03	FS_INF-K																					
2022-11-03	FS_INF-S																					
2022-11-03	FS_INF-K																					
2022-11-03	FS_INF-S																					
2022-11-03	FS_INF-K																					
2022-11-03	FS_INF-S																					
2022-11-03	FS_INF-K																					
2022-11-03	FS_INF-S																					
2022-11-03	FS_INF-K																					
2022-11-03	FS_INF-S																					
2022-11-04	FS_INF-K																					
2022-11-04	FS_INF-S																					
2022-11-04	FS_INF-K																					
2022-11-04	FS_INF-K																					
2022-11-04	FS_BPO																					
2022-11-04	FS_INF-K																					
2022-11-04	FS_INF-S																					
2022-11-04	FS_INF-K																					
2022-11-04	FS_INF-S																					
2022-11-04	FS_INF-K																					
2022-11-04	FS_INF-S																					
2022-11-04	FS_INF-K																					
2022-11-04	FS_INF-S																					
2022-11-04	FS_INF-K																					
2022-11-04	FS_INF-S																					
2022-11-04	FS_INF-K																					
2022-11-04	FS_INF-S																					
2022-11-05	FS_INF-K																					
2022-11-05	FS_INF-S																					
2022-11-05	FS_INF-K																					
2022-11-05	FS_INF-S																					

Parameter		Bromide	Cadmium	Cadmium	Cadmium	Cadmium	Calcium	Carbon, Dissolved Organic	Carbon, Total Organic	Chloride	Chromium	Chromium	Cobalt	Cobalt	Cobalt	Cobalt	Conductivity, Field	Conductivity, Field	Conductivity, Lab	Copper	Copper	Dimethylseleneoxide
Fraction		N	D	D	T	T	T	D	T	D	D	T	D	D	T	T	N	N	N	D	T	D
Unit		mg/l	mg/l	ug/l	mg/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	mg/l	ug/l	us/cm	uS/cm at 25 C	us/cm	mg/l	mg/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-11-05	FS_BPO																					
2022-11-05	FS_INF-K																					
2022-11-05	FS_INF-S																					
2022-11-05	FS_INF-K																					
2022-11-05	FS_INF-S																					
2022-11-05	FS_INF-K																					
2022-11-05	FS_INF-S																					
2022-11-05	FS_INF-K																					
2022-11-05	FS_INF-S																					
2022-11-05	FS_INF-K																					
2022-11-05	FS_INF-S																					
2022-11-06	FS_INF-K																					
2022-11-06	FS_INF-S																					
2022-11-06	FS_INF-K																					
2022-11-06	FS_INF-S																					
2022-11-06	FS_BPO																					0.055
2022-11-06	FS_INF-K																					
2022-11-06	FS_INF-S																					
2022-11-06	FS_INF-K																					
2022-11-06	FS_INF-S																					
2022-11-06	FS_INF-K																					
2022-11-06	FS_INF-S																					
2022-11-06	FS_INF-K																					
2022-11-06	FS_INF-S																					
2022-11-06	FS_INF-K																					
2022-11-06	FS_INF-S																					
2022-11-06	FS_INF-K																					
2022-11-06	FS_INF-S																					
2022-11-07	FS_INF-K																					
2022-11-07	FS_INF-S																					
2022-11-07	FS_INF-K																					
2022-11-07	FS_INF-S																					
2022-11-07	FS_BPO	< 0.250		0.0115				1.86	2.00	87.1	0.98			< 0.20					2700	0.46		
2022-11-07	FS_INF-K	< 0.250		1.43				0.55	0.69	1.65	< 0.20			< 0.20					2500	< 0.40		
2022-11-07	FS_INF-S	< 0.250		1.20				1.67	1.75	4.22	< 0.20			0.58					2960	0.70		
2022-11-07	FS_INF-K																					
2022-11-07	FS_INF-S																					
2022-11-07	FS_INF-K																					
2022-11-07	FS_INF-S																					
2022-11-07	FS_INF-K																					
2022-11-07	FS_INF-S																					
2022-11-07	FS_INF-K																					
2022-11-07	FS_INF-S																					
2022-11-07	FS_INF-K																					
2022-11-07	FS_INF-S																					
2022-11-08	FS_INF-K																					
2022-11-08	FS_INF-S																					
2022-11-08	FS_INF-K																					
2022-11-08	FS_INF-S																					
2022-11-08	FS_BPO		0.0111			0.0255	383				0.79	0.84	< 0.20			< 0.20				< 1.00	< 1.00	0.035
2022-11-08	FS_INF-K		1.56			1.54	387				< 0.20	< 0.20	< 0.20			< 0.20				< 1.00	< 1.00	< 0.010
2022-11-08	FS_INF-S		1.25			1.25	406				< 0.20	< 0.20	0.53			0.49				< 1.00	< 1.00	0.026
2022-11-08	FR_FRABCH	< 0.250		0.0308		0.0395	150	0.62	0.56	6.98	0.11	0.12		< 0.10		< 0.10			1150	< 0.20	< 0.50	
2022-11-08	FS_INF-K																					
2022-11-08	FS_INF-S																					
2022-11-08	FR_FRABCH																					
2022-11-08	FS_INF-K																					
2022-11-08	FS_INF-S																					
2022-11-08	FS_INF-K																					
2022-11-08	FS_INF-S																					
2022-11-08	FS_INF-K																					
2022-11-08	FS_INF-S																					
2022-11-08	FS_INF-K																					
2022-11-08	FS_INF-S																					
2022-11-09	FS_INF-K																					
2022-11-09	FS_INF-S																					
2022-11-09	FS_INF-K																					
2022-11-09	FS_INF-S																					
2022-11-09	FS_BPO																					
2022-11-09	FS_INF-K																					
2022-11-09	FS_INF-S																					
2022-11-09	FS_INF-K																					
2022-11-09	FS_INF-S																					
2022-11-09	FS_INF-K																					
2022-11-09	FS_INF-S																					
2022-11-10	FS_INF-K																					
2022-11-10	FS_INF-S																					
2022-11-10	FS_INF-K																					
2022-11-10	FS_INF-S																					

Parameter		Bromide	Cadmium	Cadmium	Cadmium	Cadmium	Calcium	Carbon, Dissolved Organic	Carbon, Total Organic	Chloride	Chromium	Chromium	Cobalt	Cobalt	Cobalt	Cobalt	Conductivity, Field	Conductivity, Field	Conductivity, Lab	Copper	Copper	Dimethylseleneoxide
Fraction		N	D	D	T	T	T	D	T	D	D	T	D	D	T	T	N	N	N	D	T	D
Unit		mg/l	mg/l	ug/l	mg/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	mg/l	ug/l	us/cm	uS/cm at 25 C	us/cm	mg/l	mg/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-11-10	FS_BPO																					0.026
2022-11-10	FS_INF-K																					
2022-11-10	FS_INF-S																					
2022-11-10	FR_SCOUTDS																					
2022-11-10	FR_SCOUTDS																					0.016
2022-11-10	FS_INF-K																					
2022-11-10	FS_INF-S																					
2022-11-10	FS_INF-K																					
2022-11-10	FS_INF-S																					
2022-11-10	FS_INF-K																					
2022-11-10	FS_INF-S																					
2022-11-10	FS_INF-K																					
2022-11-10	FS_INF-S																					
2022-11-10	FS_INF-K																					
2022-11-11	FS_INF-K																					
2022-11-11	FS_INF-S																					
2022-11-11	FS_INF-K																					
2022-11-11	FS_INF-S																					
2022-11-11	FS_BPO																					
2022-11-11	FS_INF-K																					
2022-11-11	FS_INF-S																					
2022-11-11	FS_INF-K																					
2022-11-11	FS_INF-S																					
2022-11-11	FS_INF-K																					
2022-11-11	FS_INF-S																					
2022-11-11	FS_INF-K																					
2022-11-11	FS_INF-S																					
2022-11-11	FS_INF-K																					
2022-11-11	FS_INF-S																					
2022-11-12	FS_INF-K																					
2022-11-12	FS_INF-S																					
2022-11-12	FS_INF-K																					
2022-11-12	FS_INF-S																					
2022-11-12	FS_BPO																					
2022-11-12	FS_INF-K																					
2022-11-12	FS_INF-S																					
2022-11-12	FS_INF-K																					
2022-11-12	FS_INF-S																					
2022-11-12	FS_INF-K																					
2022-11-12	FS_INF-S																					
2022-11-12	FS_INF-K																					
2022-11-12	FS_INF-S																					
2022-11-13	FS_BPO																					0.041
2022-11-13	FS_INF-K																					
2022-11-13	FS_INF-S																					
2022-11-13	FS_INF-K																					
2022-11-13	FS_INF-S																					
2022-11-13	FS_INF-K																					
2022-11-13	FS_INF-S																					
2022-11-13	FS_INF-K																					
2022-11-13	FS_INF-S																					
2022-11-13	FS_INF-K																					
2022-11-13	FS_INF-S																					
2022-11-14	FS_INF-K																					
2022-11-14	FS_INF-S																					
2022-11-14	FS_INF-K																					
2022-11-14	FS_INF-S																					
2022-11-14	FS_BPO	< 0.250		< 0.0100				2.12	2.01	73.0				< 0.20					2640	0.47		
2022-11-14	FS_INF-K	< 0.250		1.18				< 0.50	< 0.50	1.54				< 0.20					2550	< 0.40		
2022-11-14	FS_INF-S	< 0.250		0.819				1.76	1.88	4.08				0.45					2980	0.62		
2022-11-14	FS_BPO																					
2022-11-14	FS_INF-K																					
2022-11-14	FS_INF-S																					
2022-11-14	FS_INF-K																					
2022-11-14	FS_INF-S																					
2022-11-14	FS_INF-K																					
2022-11-14	FS_INF-S																					
2022-11-14	FS_INF-K																					
2022-11-14	FS_INF-S																					
2022-11-14	FS_INF-K																					
2022-11-14	FS_INF-S																					
2022-11-15	FS_INF-K																					
2022-11-15	FS_INF-S																					
2022-11-15	FS_INF-K																					
2022-11-15	FS_INF-S																					
2022-11-15	FS_BPO		0.0109			< 0.0100	372				0.26	0.20	< 0.20			< 0.20				< 1.00	< 1.00	0.067

	Parameter	Bromide	Cadmium	Cadmium	Cadmium	Cadmium	Calcium	Carbon, Dissolved Organic	Carbon, Total Organic	Chloride	Chromium	Chromium	Cobalt	Cobalt	Cobalt	Cobalt	Conductivity, Field	Conductivity, Field	Conductivity, Lab	Copper	Copper	Dimethylseleneoxide
	Fraction	N	D	D	T	T	T	D	T	D	D	T	D	D	T	T	N	N	N	D	T	D
	Unit	mg/l	mg/l	ug/l	mg/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	mg/l	ug/l	us/cm	uS/cm at 25 C	us/cm	mg/l	mg/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-11-15	FS_INF-K		1.50			1.54	401				< 0.20	< 0.20	< 0.20			< 0.20				< 1.00	< 1.00	
2022-11-15	FS_INF-S		1.12			1.19	426				< 0.20	< 0.20	0.50			0.47				< 1.00	< 1.00	
2022-11-15	FS_INF-K																					
2022-11-15	FS_INF-S																					
2022-11-16	FR_SCOUTDS																					
2022-11-16	FR_FRABCH																					
2022-11-16	FR_SCOUTDS																					
2022-11-16	FR_FRABCH																					
2022-11-16	FS_BPO																					
2022-11-16	FS_INF-K																					
2022-11-16	FS_INF-S																					
2022-11-16	FS_INF-K																					
2022-11-16	FS_INF-S																					
2022-11-16	FS_INF-K																					
2022-11-16	FS_INF-S																					
2022-11-16	FS_INF-K																					
2022-11-16	FS_INF-S																					
2022-11-16	FS_INF-K																					
2022-11-16	FS_INF-S																					
2022-11-17	FS_INF-K																					
2022-11-17	FS_INF-S																					
2022-11-17	FS_INF-K																					
2022-11-17	FS_INF-S																					
2022-11-17	FS_BPO																					0.051
2022-11-17	FS_INF-K																					
2022-11-17	FS_INF-S																					
2022-11-17	FR_SCOUTDS	< 0.250	0.0775			0.0674	190	0.88	1.06	12.8	0.14	0.18	< 0.10			0.11			1440	< 0.50	< 0.50	0.013
2022-11-17	FS_INF-K																					
2022-11-17	FS_INF-S																					
2022-11-17	FS_INF-K																					
2022-11-17	FS_INF-S																					
2022-11-17	FS_INF-K																					
2022-11-17	FS_INF-S																					
2022-11-18	FS_BPO																					
2022-11-18	FS_INF-K																					
2022-11-18	FS_INF-S																					
2022-11-18	FS_INF-K																					
2022-11-18	FS_INF-S																					
2022-11-18	FS_INF-K																					
2022-11-18	FS_INF-S																					
2022-11-18	FS_INF-K																					
2022-11-18	FS_INF-S																					
2022-11-18	FS_INF-K																					
2022-11-18	FS_INF-S																					
2022-11-18	FS_BPO																					
2022-11-18	FS_INF-K																					
2022-11-18	FS_INF-S																					
2022-11-19	FS_INF-K																					
2022-11-19	FS_INF-S																					
2022-11-19	FS_INF-K																					
2022-11-19	FS_INF-S																					
2022-11-19	FS_BPO																					
2022-11-19	FS_INF-K																					
2022-11-19	FS_INF-S																					
2022-11-19	FS_INF-K																					
2022-11-19	FS_INF-S																					
2022-11-19	FS_INF-K																					
2022-11-19	FS_INF-S																					
2022-11-19	FS_INF-K																					
2022-11-19	FS_INF-S																					
2022-11-19	FS_INF-K																					
2022-11-19	FS_INF-S																					
2022-11-19	FS_INF-K																					
2022-11-19	FS_INF-S																					
2022-11-20	FS_INF-K																					
2022-11-20	FS_INF-S																					
2022-11-20	FS_INF-K																					
2022-11-20	FS_INF-S																					
2022-11-20	FS_BPO																					0.017
2022-11-20	FS_INF-K																					
2022-11-20	FS_INF-S																					
2022-11-20	FS_INF-K																					
2022-11-20	FS_INF-S																					
2022-11-20	FS_INF-K																					
2022-11-20	FS_INF-S																					
2022-11-20	FS_INF-K																					
2022-11-20	FS_INF-S																					
2022-11-20	FS_INF-K																					
2022-11-20	FS_INF-S																					
2022-11-21	FS_INF-K																					
2022-11-21	FS_INF-S																					
2022-11-21	FS_INF-K																					

	Parameter	Bromide	Cadmium	Cadmium	Cadmium	Cadmium	Calcium	Carbon, Dissolved Organic	Carbon, Total Organic	Chloride	Chromium	Chromium	Cobalt	Cobalt	Cobalt	Cobalt	Conductivity, Field	Conductivity, Field	Conductivity, Lab	Copper	Copper	Dimethylseleneoxide
	Fraction	N	D	D	T	T	T	D	T	D	D	T	D	D	T	T	N	N	N	D	T	D
	Unit	mg/l	mg/l	ug/l	mg/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	mg/l	ug/l	us/cm	uS/cm at 25 C	us/cm	mg/l	mg/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-11-21	FS_INF-S																					
2022-11-21	FS_BPO	< 0.250						1.88	1.94	77.1									2740			
2022-11-21	FS_INF-K	< 0.250						< 0.50	< 0.50	1.66									2770			
2022-11-21	FS_INF-S	< 0.250						1.30	1.46	4.13									3230			
2022-11-21	FS_INF-K																					
2022-11-21	FS_INF-S																					
2022-11-21	FS_INF-K																					
2022-11-21	FS_INF-S																					
2022-11-21	FS_INF-K																					
2022-11-21	FS_INF-S																					
2022-11-21	FS_INF-K																					
2022-11-21	FS_INF-S																					
2022-11-21	FS_INF-K																					
2022-11-22	FS_INF-S																					
2022-11-22	FS_INF-K																					
2022-11-22	FS_INF-S																					
2022-11-22	FS_BPO		0.0146			0.0100	401				< 0.20	0.23	0.24			< 0.20				< 1.00	1.07	0.017
2022-11-22	FS_INF-K		1.54			1.60	474				< 0.20	< 0.20	< 0.20			< 0.20				< 1.00	< 1.00	< 0.010
2022-11-22	FS_INF-S		1.09			0.976	487				< 0.20	< 0.20	0.38			0.45				< 1.00	< 1.00	< 0.010
2022-11-22	FS_INF-K																					
2022-11-22	FS_INF-S																					
2022-11-22	FS_INF-K																					
2022-11-22	FS_INF-S																					
2022-11-22	FS_INF-K																					
2022-11-22	FS_INF-S																					
2022-11-22	FS_INF-K																					
2022-11-22	FS_INF-S																					
2022-11-22	FS_INF-K																					
2022-11-22	FS_INF-S																					
2022-11-23	FS_INF-K																					
2022-11-23	FS_INF-S																					
2022-11-23	FS_BPO																					
2022-11-23	FS_INF-K																					
2022-11-23	FS_INF-S																					
2022-11-23	FS_INF-K																					
2022-11-23	FS_INF-S																					
2022-11-23	FS_INF-K																					
2022-11-23	FS_INF-S																					
2022-11-23	FS_INF-K																					
2022-11-23	FS_INF-S																					
2022-11-24	FS_INF-K																					
2022-11-24	FS_INF-S																					
2022-11-24	FS_INF-K																					
2022-11-24	FS_BPO																					< 0.010
2022-11-24	FS_INF-K																					
2022-11-24	FS_INF-S																					
2022-11-24	FR_SCOUTDS	< 0.250	0.0617			0.0713	224	< 0.50	0.60	12.7	< 0.20	0.12	< 0.20			< 0.10			1440	< 1.00	< 0.50	< 0.010
2022-11-24	FS_INF-K																					
2022-11-24	FS_INF-S																					
2022-11-24	FS_INF-K																					
2022-11-24	FS_INF-S																					
2022-11-24	FS_INF-K																					
2022-11-24	FS_INF-S																					
2022-11-24	FS_INF-K																					
2022-11-24	FS_INF-S																					
2022-11-24	FS_INF-K																					
2022-11-24	FS_INF-S																					
2022-11-25	FS_INF-K																					
2022-11-25	FS_INF-S																					
2022-11-25	FS_INF-K																					
2022-11-25	FS_INF-S																					
2022-11-25	FS_BPO																					
2022-11-25	FS_INF-K																					
2022-11-25	FS_INF-S																					
2022-11-25	FS_INF-K																					
2022-11-25	FS_INF-S																					
2022-11-25	FS_INF-K																					
2022-11-25	FS_INF-S																					
2022-11-25	FS_INF-K																					
2022-11-25	FS_INF-S																					
2022-11-25	FS_INF-K																					
2022-11-25	FS_INF-S																					
2022-11-25	FS_INF-K																					
2022-11-25	FS_INF-S																					
2022-11-26	FS_INF-K																					

Parameter		Bromide	Cadmium	Cadmium	Cadmium	Cadmium	Calcium	Carbon, Dissolved Organic	Carbon, Total Organic	Chloride	Chromium	Chromium	Cobalt	Cobalt	Cobalt	Cobalt	Conductivity, Field	Conductivity, Field	Conductivity, Lab	Copper	Copper	Dimethylseleneoxide
Fraction		N	D	D	T	T	T	D	T	D	D	T	D	D	T	T	N	N	N	D	T	D
Unit		mg/l	mg/l	ug/l	mg/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	mg/l	ug/l	us/cm	uS/cm at 25 C	us/cm	mg/l	mg/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-11-26	FS_INF-S																					
2022-11-26	FS_INF-K																					
2022-11-26	FS_INF-S																					
2022-11-26	FS_BPO																					
2022-11-26	FS_INF-K																					
2022-11-26	FS_INF-S																					
2022-11-26	FS_INF-K																					
2022-11-26	FS_INF-S																					
2022-11-26	FS_INF-K																					
2022-11-26	FS_INF-S																					
2022-11-26	FS_INF-K																					
2022-11-26	FS_INF-S																					
2022-11-26	FS_INF-K																					
2022-11-26	FS_INF-S																					
2022-11-27	FS_INF-K																					
2022-11-27	FS_INF-S																					
2022-11-27	FS_INF-K																					
2022-11-27	FS_INF-S																					
2022-11-27	FS_BPO																					< 0.010
2022-11-27	FS_INF-K																					
2022-11-27	FS_INF-S																					
2022-11-27	FS_INF-K																					
2022-11-27	FS_INF-S																					
2022-11-27	FS_INF-K																					
2022-11-27	FS_INF-S																					
2022-11-27	FS_INF-K																					
2022-11-27	FS_INF-S																					
2022-11-27	FS_INF-K																					
2022-11-27	FS_INF-S																					
2022-11-28	FS_INF-K																					
2022-11-28	FS_INF-S																					
2022-11-28	FS_BPO	< 0.250						2.13	2.41	75.6									2640			
2022-11-28	FS_INF-K	< 0.250						< 0.50	< 0.50	1.91									2660			
2022-11-28	FS_INF-S	< 0.250						1.65	1.71	3.56									3040			
2022-11-28	FS_INF-K																					
2022-11-28	FS_INF-S																					
2022-11-28	FS_INF-K																					
2022-11-28	FS_INF-S																					
2022-11-28	FS_INF-K																					
2022-11-28	FS_INF-S																					
2022-11-28	FS_INF-K																					
2022-11-28	FS_INF-S																					
2022-11-28	FS_INF-K																					
2022-11-28	FS_INF-S																					
2022-11-29	FS_INF-K																					
2022-11-29	FS_INF-S																					
2022-11-29	FS_INF-K																					
2022-11-29	FS_INF-S																					
2022-11-29	FS_BPO		0.0167			0.0173	392				0.29	0.36	0.31			0.29				< 1.00	< 1.00	0.012
2022-11-29	FS_INF-K		1.50			1.54	410				< 0.20	< 0.20	< 0.20			< 0.20				< 1.00	< 1.00	
2022-11-29	FS_INF-S		0.946			0.961	435				< 0.20	< 0.20	0.46			0.42				3.51	< 1.00	
2022-11-29	FS_INF-K																					
2022-11-29	FS_INF-S																					
2022-11-29	FS_INF-K																					
2022-11-29	FS_INF-S																					
2022-11-29	FS_BPO																					
2022-11-29	FS_INF-K																					
2022-11-29	FS_INF-S																					
2022-11-29	FS_INF-K																					
2022-11-29	FS_INF-S																					
2022-11-29	FS_BPO																					
2022-11-29	FS_BPO																					
2022-11-29	FS_INF-K																					
2022-11-29	FS_INF-S																					
2022-11-30	FS_INF-K																					
2022-11-30	FS_INF-S																					
2022-11-30	FS_BPO																					
2022-11-30	FS_INF-K																					
2022-11-30	FS_INF-S																					
2022-11-30	FS_BPO																					
2022-11-30	FS_INF-K																					
2022-11-30	FS_INF-S																					
2022-11-30	FS_INF-K																					
2022-11-30	FS_INF-S																					
2022-11-30	FS_INF-K																					

Parameter		Bromide	Cadmium	Cadmium	Cadmium	Cadmium	Calcium	Carbon, Dissolved Organic	Carbon, Total Organic	Chloride	Chromium	Chromium	Cobalt	Cobalt	Cobalt	Cobalt	Conductivity, Field	Conductivity, Field	Conductivity, Lab	Copper	Copper	Dimethylseleneoxide
Fraction		N	D	D	T	T	T	D	T	D	D	T	D	D	T	T	N	N	N	D	T	D
Unit		mg/l	mg/l	ug/l	mg/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	mg/l	ug/l	us/cm	uS/cm at 25 C	us/cm	mg/l	mg/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-11-30	FS_INF-S																					
2022-11-30	FS_INF-K																					
2022-11-30	FS_INF-S																					
2022-11-30	FS_INF-K																					
2022-11-30	FS_INF-S																					
2022-11-30	FS_INF-K																					
2022-11-30	FS_INF-S																					
2022-12-01	FS_INF-K																					
2022-12-01	FS_INF-S																					
2022-12-01	FS_INF-K																					
2022-12-01	FS_INF-S																					
2022-12-01	FS_BPO																					< 0.010
2022-12-01	FS_INF-K																					
2022-12-01	FS_INF-S																					
2022-12-01	FR_SCOUTDS	< 0.250	0.0651			0.0549	224	0.78	0.74	22.6	0.15	< 0.10	0.12			0.11			1670	< 0.50	< 0.50	< 0.010
2022-12-01	FS_INF-K																					
2022-12-01	FS_INF-S																					
2022-12-01	FS_INF-S																					
2022-12-01	FS_INF-S																					
2022-12-01	FS_INF-S																					
2022-12-01	FS_INF-S																					
2022-12-02	FS_INF-S																					
2022-12-02	FS_INF-S																					
2022-12-02	FS_BPO																					
2022-12-02	FS_INF-S																					
2022-12-02	FS_INF-S																					
2022-12-02	FS_BPO																					
2022-12-02	FS_INF-S																					
2022-12-02	FS_INF-S																					
2022-12-02	FS_INF-S																					
2022-12-03	FS_INF-S																					
2022-12-03	FS_INF-S																					
2022-12-03	FS_BPO																					
2022-12-03	FS_INF-S																					
2022-12-03	FS_INF-S																					
2022-12-03	FS_INF-S																					
2022-12-03	FS_INF-S																					
2022-12-03	FS_INF-S																					
2022-12-04	FS_INF-S																					
2022-12-04	FS_INF-S																					
2022-12-04	FS_BPO																					0.015
2022-12-04	FS_INF-S																					
2022-12-04	FS_INF-S																					
2022-12-04	FS_INF-S																					
2022-12-04	FS_INF-S																					
2022-12-04	FS_INF-S																					
2022-12-04	FS_INF-S																					
2022-12-05	FS_INF-S																					
2022-12-05	FS_INF-S																					
2022-12-05	FS_BPO	< 0.250						2.64	2.79	78.6									3030			
2022-12-05	FS_INF-S	< 0.250						1.79	1.68	4.06									3160			
2022-12-05	FS_INF-S																					
2022-12-05	FS_INF-S																					
2022-12-05	FS_INF-S																					
2022-12-05	FS_INF-S																					
2022-12-05	FS_INF-S																					
2022-12-06	FS_INF-S																					
2022-12-06	FS_INF-S																					
2022-12-06	FS_BPO		0.0136			0.0182	429				0.83	1.08	< 0.20			0.25				< 1.00	1.08	0.021
2022-12-06	FS_INF-S		0.838			0.861	466				< 0.20	< 0.20	0.33			0.41				1.28	1.20	0.030
2022-12-06	FS_INF-S																					
2022-12-06	FS_INF-S																					
2022-12-06	FS_INF-S																					
2022-12-06	FS_INF-S																					
2022-12-06	FS_INF-S																					
2022-12-07	FS_INF-S																					
2022-12-07	FS_INF-S																					
2022-12-07	FS_BPO																					
2022-12-07	FS_INF-K																					
2022-12-07	FS_INF-S																					
2022-12-07	FS_INF-S																					
2022-12-07	FS_INF-K																					
2022-12-07	FS_INF-S																					
2022-12-07	FS_INF-K																					
2022-12-07	FS_INF-S																					
2022-12-08	FS_BPO																					0.013
2022-12-08	FS_INF-K																					
2022-12-08	FS_INF-S																					

	Parameter	Bromide	Cadmium	Cadmium	Cadmium	Cadmium	Calcium	Carbon, Dissolved Organic	Carbon, Total Organic	Chloride	Chromium	Chromium	Cobalt	Cobalt	Cobalt	Cobalt	Conductivity, Field	Conductivity, Field	Conductivity, Lab	Copper	Copper	Dimethylseleneoxide
	Fraction	N	D	D	T	T	T	D	T	D	D	T	D	D	T	T	N	N	N	D	T	D
	Unit	mg/l	mg/l	ug/l	mg/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	mg/l	ug/l	us/cm	uS/cm at 25 C	us/cm	mg/l	mg/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-12-08	FR_SCOUTDS	< 0.250	0.0554			0.0681	192	0.62	0.60	14.1	0.19	0.24	< 0.10			< 0.10			1580	< 0.50	< 0.50	< 0.010
2022-12-08	FS_INF-K																					
2022-12-08	FS_INF-S																					
2022-12-08	FS_INF-K																					
2022-12-08	FS_INF-S																					
2022-12-08	FS_BPO																					
2022-12-08	FS_INF-K																					
2022-12-08	FS_INF-S																					
2022-12-08	FS_INF-K																					
2022-12-08	FS_INF-S																					
2022-12-08	FS_INF-K																					
2022-12-08	FS_INF-S																					
2022-12-09	FS_INF-K																					
2022-12-09	FS_INF-S																					
2022-12-09	FS_INF-K																					
2022-12-09	FS_INF-S																					
2022-12-09	FS_BPO																					
2022-12-09	FS_INF-K																					
2022-12-09	FS_INF-S																					
2022-12-09	FS_INF-K																					
2022-12-09	FS_INF-S																					
2022-12-09	FS_INF-K																					
2022-12-09	FS_INF-S																					
2022-12-09	FS_INF-K																					
2022-12-09	FS_INF-S																					
2022-12-09	FS_INF-K																					
2022-12-09	FS_INF-S																					
2022-12-10	FS_INF-K																					
2022-12-10	FS_INF-S																					
2022-12-10	FS_INF-K																					
2022-12-10	FS_INF-S																					
2022-12-10	FS_BPO																					
2022-12-10	FS_INF-K																					
2022-12-10	FS_INF-S																					
2022-12-10	FS_INF-K																					
2022-12-10	FS_INF-S																					
2022-12-10	FS_INF-K																					
2022-12-10	FS_INF-S																					
2022-12-10	FS_INF-K																					
2022-12-10	FS_INF-S																					
2022-12-10	FS_INF-K																					
2022-12-10	FS_INF-S																					
2022-12-11	FS_INF-K																					
2022-12-11	FS_INF-S																					
2022-12-11	FS_INF-K																					
2022-12-11	FS_INF-S																					
2022-12-11	FS_BPO																					< 0.010
2022-12-11	FS_INF-K																					
2022-12-11	FS_INF-S																					
2022-12-11	FS_INF-K																					
2022-12-11	FS_INF-S																					
2022-12-11	FS_INF-K																					
2022-12-11	FS_INF-S																					
2022-12-11	FS_INF-K																					
2022-12-11	FS_INF-S																					
2022-12-11	FS_INF-K																					
2022-12-11	FS_INF-S																					
2022-12-11	FS_INF-K																					
2022-12-11	FS_INF-S																					
2022-12-12	FS_INF-K																					
2022-12-12	FS_INF-S																					
2022-12-12	FS_INF-K																					
2022-12-12	FS_INF-S																					
2022-12-12	FS_BPO	< 0.250						1.93	2.20	84.7									2970			
2022-12-12	FS_INF-K	< 0.250						< 0.50	< 0.50	1.90									2600			
2022-12-12	FS_INF-S	< 0.250						1.18	1.60	4.03									3190			
2022-12-12	FS_INF-K																					
2022-12-12	FS_INF-S																					
2022-12-12	FR_FRABCH																					
2022-12-12	FS_INF-K																					
2022-12-12	FS_INF-S																					
2022-12-12	FS_INF-K																					
2022-12-12	FS_INF-S																					
2022-12-12	FS_INF-K																					
2022-12-12	FS_INF-S																					
2022-12-13	FS_INF-K																					
2022-12-13	FS_INF-S																					
2022-12-13	FS_INF-K																					
2022-12-13	FS_INF-S																					

	Parameter	Bromide	Cadmium	Cadmium	Cadmium	Cadmium	Calcium	Carbon, Dissolved Organic	Carbon, Total Organic	Chloride	Chromium	Chromium	Cobalt	Cobalt	Cobalt	Cobalt	Conductivity, Field	Conductivity, Field	Conductivity, Lab	Copper	Copper	Dimethylseleneoxide
	Fraction	N	D	D	T	T	T	D	T	D	D	T	D	D	T	T	N	N	N	D	T	D
	Unit	mg/l	mg/l	ug/l	mg/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	mg/l	ug/l	us/cm	uS/cm at 25 C	us/cm	mg/l	mg/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-12-13	FS_BPO		0.0201		0.0105		409				0.22	0.24	0.33		0.33					< 1.00	< 1.00	< 0.010
2022-12-13	FS_INF-K		1.65			1.58	423				< 0.20	< 0.20	< 0.20			< 0.20				< 1.00	< 1.00	< 0.010
2022-12-13	FS_INF-S		0.835			0.829	446				< 0.20	< 0.20	0.45			0.47				1.38	< 1.00	0.032
2022-12-13	FR_SCOUTDS																					
2022-12-13	FS_INF-K																					
2022-12-13	FS_INF-S																					
2022-12-13	FS_INF-K																					
2022-12-13	FS_INF-S																					
2022-12-13	FS_INF-K																					
2022-12-13	FS_INF-S																					
2022-12-13	FS_INF-K																					
2022-12-13	FS_INF-S																					
2022-12-14	FS_INF-K																					
2022-12-14	FS_INF-S																					
2022-12-14	FS_INF-K																					
2022-12-14	FS_INF-S																					
2022-12-14	FS_BPO																					
2022-12-14	FS_INF-K																					
2022-12-14	FS_INF-S																					
2022-12-14	FS_INF-K																					
2022-12-14	FS_INF-S																					
2022-12-14	FS_INF-K																					
2022-12-14	FS_INF-S																					
2022-12-14	FS_INF-K																					
2022-12-14	FS_INF-S																					
2022-12-14	FS_INF-K																					
2022-12-14	FS_INF-S																					
2022-12-14	FS_INF-K																					
2022-12-15	FS_INF-S																					
2022-12-15	FS_INF-K																					
2022-12-15	FS_INF-S																					
2022-12-15	FS_INF-K																					
2022-12-15	FS_INF-S																					
2022-12-15	FS_BPO																					0.017
2022-12-15	FS_INF-K																					
2022-12-15	FS_INF-S																					
2022-12-15	FR_SCOUTDS	< 0.250	0.0517			0.0754	214	< 0.50	0.58	13.7	< 0.10	0.12	< 0.10			0.10			1500	< 0.50	< 0.50	< 0.010
2022-12-15	FS_INF-K																					
2022-12-15	FS_INF-S																					
2022-12-15	FS_INF-K																					
2022-12-15	FS_INF-S																					
2022-12-15	FS_INF-K																					
2022-12-15	FS_INF-S																					
2022-12-15	FS_INF-K																					
2022-12-15	FS_INF-S																					
2022-12-15	FS_INF-K																					
2022-12-15	FS_INF-S																					
2022-12-16	FS_INF-K																					
2022-12-16	FS_INF-S																					
2022-12-16	FS_INF-K																					
2022-12-16	FS_INF-S																					
2022-12-16	FS_BPO																					
2022-12-16	FS_INF-K																					
2022-12-16	FS_INF-S																					
2022-12-16	FS_INF-K																					
2022-12-16	FS_INF-S																					
2022-12-16	FR_FRABCH	< 0.250		0.0376		0.0312	149	< 0.50	< 0.50	9.29	0.11	0.14		< 0.10		< 0.10			1030	< 0.20	< 0.50	< 0.010
2022-12-16	FS_INF-K																					
2022-12-16	FS_INF-S																					
2022-12-16	FS_INF-K																					
2022-12-16	FS_INF-S																					
2022-12-16	FS_INF-K																					
2022-12-16	FS_INF-S																					
2022-12-16	FS_INF-K																					
2022-12-16	FS_INF-S																					
2022-12-17	FS_INF-K																					
2022-12-17	FS_INF-S																					
2022-12-17	FS_INF-K																					
2022-12-17	FS_INF-S																					
2022-12-17	FS_BPO																					
2022-12-17	FS_INF-K																					
2022-12-17	FS_INF-S																					
2022-12-17	FS_INF-K																					
2022-12-17	FS_INF-S																					
2022-12-17	FS_INF-K																					
2022-12-17	FS_INF-S																					
2022-12-17	FS_INF-K																					
2022-12-17	FS_INF-S																					
2022-12-17	FS_INF-K																					
2022-12-17	FS_INF-K																					

Parameter		Bromide	Cadmium	Cadmium	Cadmium	Cadmium	Calcium	Carbon, Dissolved Organic	Carbon, Total Organic	Chloride	Chromium	Chromium	Cobalt	Cobalt	Cobalt	Cobalt	Conductivity, Field	Conductivity, Field	Conductivity, Lab	Copper	Copper	Dimethylseleneoxide
Fraction		N	D	D	T	T	T	D	T	D	D	T	D	D	T	T	N	N	N	D	T	D
Unit		mg/l	mg/l	ug/l	mg/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	mg/l	ug/l	us/cm	uS/cm at 25 C	us/cm	mg/l	mg/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-12-17	FS_INF-S																					
2022-12-18	FS_INF-K																					
2022-12-18	FS_INF-S																					
2022-12-18	FS_INF-K																					
2022-12-18	FS_INF-S																					
2022-12-18	FS_BPO																					0.023
2022-12-18	FS_INF-K																					
2022-12-18	FS_INF-S																					
2022-12-18	FS_INF-K																					
2022-12-18	FS_INF-S																					
2022-12-18	FS_INF-K																					
2022-12-18	FS_INF-S																					
2022-12-18	FS_INF-K																					
2022-12-18	FS_INF-S																					
2022-12-19	FS_INF-K																					
2022-12-19	FS_INF-S																					
2022-12-19	FS_INF-K																					
2022-12-19	FS_INF-S																					
2022-12-19	FS_BPO	< 0.250						1.92	2.16	83.2									2840			
2022-12-19	FS_INF-K	< 0.250						< 0.50	< 0.50	1.96									2800			
2022-12-19	FS_INF-S	< 0.250						1.94	1.68	4.44									3270			
2022-12-19	FS_INF-K																					
2022-12-19	FS_INF-S																					
2022-12-19	FS_INF-K																					
2022-12-19	FS_INF-S																					
2022-12-19	FS_INF-K																					
2022-12-19	FS_INF-S																					
2022-12-19	FS_INF-K																					
2022-12-19	FS_INF-S																					
2022-12-19	FS_INF-K																					
2022-12-19	FS_INF-S																					
2022-12-20	FS_INF-K																					
2022-12-20	FS_INF-S																					
2022-12-20	FS_INF-K																					
2022-12-20	FS_INF-S																					
2022-12-20	FS_INF-K																					
2022-12-20	FS_INF-S																					
2022-12-20	FS_INF-K																					
2022-12-20	FS_INF-S																					
2022-12-20	FS_INF-K																					
2022-12-20	FS_INF-S																					
2022-12-20	FS_INF-S																					
2022-12-20	FS_INF-K		0.0171		0.0197		417				< 0.20	< 0.20	0.29		0.34					< 1.00	< 1.00	< 0.010
2022-12-20	FS_INF-K		1.78		1.71		433				< 0.20	< 0.10	< 0.20		< 0.20					< 1.00	< 1.00	< 0.010
2022-12-20	FS_INF-S		0.880		0.831		444				< 0.20	< 0.10	0.36		0.36					< 1.00	< 1.00	0.027
2022-12-20	FS_INF-K																					
2022-12-20	FS_INF-S																					
2022-12-20	FS_INF-K																					
2022-12-20	FS_INF-S																					
2022-12-20	FS_INF-K																					
2022-12-20	FS_INF-S																					
2022-12-20	FS_INF-K																					
2022-12-20	FS_INF-S																					
2022-12-20	FS_INF-K																					
2022-12-20	FS_INF-S																					
2022-12-21	FS_INF-K																					
2022-12-21	FS_INF-S																					
2022-12-21	FS_INF-K																					
2022-12-21	FS_INF-S																					
2022-12-21	FS_BPO																					
2022-12-21	FS_INF-K																					
2022-12-21	FS_INF-S																					
2022-12-21	FS_INF-K																					
2022-12-21	FS_INF-S																					
2022-12-21	FR_FRABCH																					
2022-12-21	FR_FRABCH																					
2022-12-21	FS_INF-K																					
2022-12-21	FS_INF-S																					
2022-12-21	FS_INF-K																					
2022-12-21	FS_INF-S																					
2022-12-21	FS_INF-K																					
2022-12-21	FS_INF-S																					
2022-12-21	FS_INF-K																					
2022-12-21	FS_INF-S																					
2022-12-22	FS_INF-K																					
2022-12-22	FS_INF-S																					
2022-12-22	FS_INF-K																					
2022-12-22	FS_INF-S																					
2022-12-22	FS_BPO																					0.011
2022-12-22	FS_INF-K																					
2022-12-22	FS_INF-S																					
2022-12-22	FR_SCOUTDS	< 0.250	0.207		0.230		249	0.69	0.90	3.08	0.43	0.43	0.15		0.15				1770	< 0.50	< 0.50	0.019
2022-12-22	FR_SCOUTDS																					
2022-12-23	FS_BPO																					
2022-12-23	FS_INF-K																					
2022-12-23	FS_INF-S																					
2022-12-23	FS_BPO																					

Parameter		Bromide	Cadmium	Cadmium	Cadmium	Cadmium	Calcium	Carbon, Dissolved Organic	Carbon, Total Organic	Chloride	Chromium	Chromium	Cobalt	Cobalt	Cobalt	Cobalt	Conductivity, Field	Conductivity, Field	Conductivity, Lab	Copper	Copper	Dimethylseleneoxide
Fraction		N	D	D	T	T	T	D	T	D	D	T	D	D	T	T	N	N	N	D	T	D
Unit		mg/l	mg/l	ug/l	mg/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	mg/l	ug/l	us/cm	uS/cm at 25 C	us/cm	mg/l	mg/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-12-23	FR_FRABCH																					
2022-12-23	FR_SCOUTDS																					
2022-12-23	FS_BPO																					
2022-12-23	FS_INF-K																					
2022-12-23	FS_INF-S																					
2022-12-23	FR_SCOUTDS																					
2022-12-23	FS_INF-K																					
2022-12-23	FS_INF-S																					
2022-12-23	FS_INF-K																					
2022-12-23	FS_INF-S																					
2022-12-23	FS_INF-K																					
2022-12-23	FS_INF-S																					
2022-12-24	FS_INF-K																					
2022-12-24	FS_INF-S																					
2022-12-24	FS_INF-K																					
2022-12-24	FS_INF-S																					
2022-12-24	FS_BPO																					
2022-12-24	FS_INF-K																					
2022-12-24	FS_INF-S																					
2022-12-24	FS_INF-K																					
2022-12-24	FS_INF-S																					
2022-12-24	FS_INF-K																					
2022-12-24	FS_INF-S																					
2022-12-24	FS_BPO																					
2022-12-24	FS_INF-K																					
2022-12-24	FS_INF-S																					
2022-12-25	FS_BPO																					
2022-12-25	FS_INF-K																					
2022-12-25	FS_INF-S																					
2022-12-25	FS_INF-K																					
2022-12-25	FS_INF-S																					
2022-12-25	FS_BPO																					0.027
2022-12-25	FS_INF-K																					
2022-12-25	FS_INF-S																					
2022-12-25	FS_INF-K																					
2022-12-25	FS_INF-S																					
2022-12-25	FS_INF-K																					
2022-12-25	FS_INF-S																					
2022-12-25	FS_INF-K																					
2022-12-25	FS_INF-S																					
2022-12-25	FS_INF-K																					
2022-12-25	FS_INF-S																					
2022-12-26	FS_INF-K																					
2022-12-26	FS_INF-S																					
2022-12-26	FS_INF-K																					
2022-12-26	FS_BPO	< 0.250						2.02	2.37	95.9									2960			
2022-12-26	FS_INF-K	< 0.250						< 0.50	< 0.50	2.08									2770			
2022-12-26	FS_INF-S	< 0.250						1.71	1.60	5.32									3140			
2022-12-26	FS_INF-K																					
2022-12-26	FS_INF-S																					
2022-12-26	FS_INF-K																					
2022-12-26	FS_INF-S																					
2022-12-26	FS_INF-K																					
2022-12-26	FS_INF-S																					
2022-12-26	FS_INF-K																					
2022-12-26	FS_INF-S																					
2022-12-26	FS_INF-K																					
2022-12-26	FS_INF-S																					
2022-12-27	FS_INF-K																					
2022-12-27	FS_INF-S																					
2022-12-27	FS_INF-K																					
2022-12-27	FS_INF-S																					
2022-12-27	FS_BPO		0.0252			0.0143	406				< 0.20	< 0.20	0.32			0.32				< 1.00	1.34	0.015
2022-12-27	FS_INF-K		1.77			1.76	450				< 0.20	< 0.20	< 0.20			< 0.20				< 1.00	< 1.00	
2022-12-27	FS_INF-S		0.555			0.560	445				< 0.20	< 0.20	0.39			0.40				1.02	< 1.00	
2022-12-27	FS_INF-K																					
2022-12-27	FS_INF-S																					
2022-12-27	FS_INF-K																					
2022-12-27	FS_INF-S																					
2022-12-27	FS_INF-K																					
2022-12-27	FS_INF-S																					
2022-12-27	FS_INF-K																					
2022-12-27	FS_INF-S																					
2022-12-27	FS_INF-K																					
2022-12-27	FS_INF-S																					
2022-12-28	FS_INF-K																					
2022-12-28	FS_INF-S																					
2022-12-28	FS_INF-K																					
2022-12-28	FS_INF-S																					

	Parameter	Bromide	Cadmium	Cadmium	Cadmium	Cadmium	Calcium	Carbon, Dissolved Organic	Carbon, Total Organic	Chloride	Chromium	Chromium	Cobalt	Cobalt	Cobalt	Cobalt	Conductivity, Field	Conductivity, Field	Conductivity, Lab	Copper	Copper	Dimethylseleneoxide
	Fraction	N	D	D	T	T	T	D	T	D	D	T	D	D	T	T	N	N	N	D	T	D
	Unit	mg/l	mg/l	ug/l	mg/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	mg/l	ug/l	us/cm	uS/cm at 25 C	us/cm	mg/l	mg/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-12-28	FS_BPO																					
2022-12-28	FS_INF-K																					
2022-12-28	FS_INF-S																					
2022-12-28	FS_INF-K																					
2022-12-28	FS_INF-S																					
2022-12-28	FS_INF-K																					
2022-12-28	FS_INF-S																					
2022-12-28	FS_INF-K																					
2022-12-28	FS_INF-S																					
2022-12-28	FS_INF-K																					
2022-12-28	FS_INF-K																					
2022-12-28	FS_INF-S																					
2022-12-29	FS_INF-K																					
2022-12-29	FS_INF-S																					
2022-12-29	FS_INF-K																					
2022-12-29	FS_INF-S																					
2022-12-29	FS_BPO																					0.018
2022-12-29	FS_INF-K																					
2022-12-29	FS_INF-S																					
2022-12-29	FR_SCOUTDS	< 0.250	0.0615			0.0676	213	0.67	0.65	14.9	< 0.10	0.15	< 0.10			< 0.10			1470	< 0.50	0.76	< 0.010
2022-12-29	FS_INF-K																					
2022-12-29	FS_INF-S																					
2022-12-29	FS_INF-K																					
2022-12-29	FS_INF-S																					
2022-12-29	FS_INF-K																					
2022-12-29	FS_INF-S																					
2022-12-29	FS_INF-K																					
2022-12-29	FS_INF-S																					
2022-12-29	FS_INF-K																					
2022-12-29	FS_INF-S																					
2022-12-30	FS_INF-K																					
2022-12-30	FS_INF-S																					
2022-12-30	FS_INF-K																					
2022-12-30	FS_INF-K																					
2022-12-30	FS_INF-S																					
2022-12-30	FS_BPO																					
2022-12-30	FS_INF-K																					
2022-12-30	FS_INF-S																					
2022-12-30	FS_INF-K																					
2022-12-30	FS_INF-S																					
2022-12-30	FS_INF-K																					
2022-12-30	FS_INF-S																					
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2022-12-30	FS_INF-K																					
2022-12-30	FS_INF-S																					
2022-12-30	FS_INF-K																					
2022-12-30	FS_INF-S																					
2022-12-31	FS_INF-K																					
2022-12-31	FS_INF-S																					
2022-12-31	FS_INF-K																					
2022-12-31	FS_INF-S																					
2022-12-31	FS_BPO																					
2022-12-31	FS_INF-K																					
2022-12-31	FS_INF-S																					
2022-12-31	FS_BPO																					
2022-12-31	FS_INF-K																					
2022-12-31	FS_INF-S																					
2022-12-31	FS_INF-K																					
2022-12-31	FS_INF-S																					
2022-12-31	FS_INF-K																					
2022-12-31	FS_INF-S																					
2022-12-31	FS_INF-K																					
2022-12-31	FS_INF-S																					

	Parameter	Dissolved Oxygen, Field	Fluoride	Hardness, Total or Dissolved CaCO3	Hardness, Total or Dissolved CaCO3	Hydrogen Peroxide	Iron	Iron	Lead	Lead	Lithium	Lithium	Magnesium	Manganese	Manganese	Mercury	Mercury	Mercury	Mercury	MeSe(IV) – methylseleninic acid CH3SeO2H	Methaneselenonic Acid	Molybdenum
	Fraction	N	N	D	T	N	D	T	D	T	D	T	T	D	T	D	T	T	T	D	D	D
	Unit	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ng/l	ug/l	ug/l	ug/l	ug/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-01-01	FS_BPO	12.72																				
2022-01-01	FS_BPO	13.34																				
2022-01-01	FS_BPO	13.54				0.023														0.048	0.023	
2022-01-01	FS_INF-S	14.97																				
2022-01-01	FS_BPO	11.36																				
2022-01-01	FS_BPO	13.1																				
2022-01-01	FS_BPO	13.34																				
2022-01-01	FS_BPO	15.16																				
2022-01-01	FS_BPO	13.32																				
2022-01-01	FS_INF-S	12.72																				
2022-01-02	FS_BPO	15.83				0.018														0.047	0.022	
2022-01-02	FS_INF-S	14.27																				
2022-01-02	FS_BPO	12.36 16.4																				
2022-01-02	FS_BPO	15.64																				
2022-01-02	FS_BPO	14.51																				
2022-01-02	FS_INF-S	13.59																				
2022-01-03	FS_BPO	14.05	0.130	1740		< 0.015										< 0.0050		< 0.00050		0.041	0.033	
2022-01-03	FS_INF-S	14.06	0.154	2200																		
2022-01-03	FS_BPO																					
2022-01-03	FS_BPO																					
2022-01-03	FS_INF-S	12.95																				
2022-01-04	FS_BPO	13.06		1890	1820	0.064	< 0.020	0.400	< 0.100	< 0.100	0.0792	0.0789	259	0.00372	0.00401					0.041	0.028	0.0461
2022-01-04	FS_INF-S	13.28																		0.020	< 0.010	
2022-01-04	FS_BPO																					
2022-01-04	FS_INF-S	12.59																				
2022-01-05	FS_BPO	11.65				< 0.015														0.035	0.029	
2022-01-05	FS_INF-S	11.38																				
2022-01-05	FS_BPO																					
2022-01-05	FS_INF-S	11.31																				
2022-01-06	FR_SCOUTDS																			< 0.010	< 0.010	
2022-01-06	FS_BPO	11.39				< 0.015														0.034	0.030	
2022-01-06	FS_INF-S	11																				
2022-01-06	FS_BPO																					
2022-01-06	FR_FRABCH																					
2022-01-06	FR_SCOUTDS	12.3	0.124	967		< 0.015	< 0.010	0.036	< 0.050	< 0.050	0.0855	0.0830	110	0.0103	0.00990	< 0.0050		< 0.00050				0.00781
2022-01-06	FR_FRABCH	11.4	0.141	674			0.015	0.054	< 0.050	0.140	0.0477	0.0498	73.4	0.00817	0.00925	< 0.0050		< 0.00050				0.00106
2022-01-06	FR_SCOUTDS	11.88																				
2022-01-06	FS_INF-S	11.3																				
2022-01-07	FS_BPO	12.14				< 0.015														0.036	0.030	
2022-01-07	FS_INF-S	11.91																				
2022-01-07	FS_BPO																					
2022-01-07	FS_INF-S	12.34																				
2022-01-08	FS_BPO	12.77				< 0.015														0.033	0.032	
2022-01-08	FS_INF-S	12.43																				
2022-01-08	FS_BPO																					
2022-01-08	FS_INF-S	12.6																				
2022-01-09	FS_BPO	12.96				< 0.015														0.025	0.029	
2022-01-09	FS_INF-S	12.62																				
2022-01-09	FS_BPO																					
2022-01-09	FS_INF-S	12.89																				
2022-01-10	FS_BPO	12.8	0.115	2010		< 0.015										< 0.0050		0.0102		0.028	0.029	
2022-01-10	FS_INF-S	12.71	0.123	2190												< 0.0050		0.00060				
2022-01-10	FS_BPO																					
2022-01-10	FS_INF-S																					
2022-01-10	FS_BPO																					
2022-01-10	FS_INF-S	12.42																				
2022-01-11	FS_BPO	14.21				< 0.015														0.025	0.026	
2022-01-11	FS_INF-S	12.32			2130															0.023	< 0.010	
2022-01-11	FS_BPO																					
2022-01-11	FS_INF-S	12.64																				
2022-01-12	FS_BPO	12.75				0.062														0.022	0.027	
2022-01-12	FS_INF-S	12.13																				
2022-01-12	FS_BPO																					
2022-01-12	FS_INF-S	12.24																				
2022-01-13	FR_SCOUTDS																			< 0.010	< 0.010	
2022-01-13	FS_BPO	12.74 12.96				< 0.015														0.023	0.021	
2022-01-13	FS_INF-S	12.85		2250	2210		< 0.020	< 0.020	< 0.100	< 0.100	0.0847	0.0779	306	0.00460	0.00458							0.00525
2022-01-13	FS_BPO																					
2022-01-13	FR_SCOUTDS	13.34	0.169	844		< 0.015	0.014	0.036	< 0.050	< 0.050	0.0772	0.0775	100	0.0111	0.0118	< 0.0050			< 0.00050			0.00612
2022-01-13	FS_INF-S	12.91																				
2022-01-14	FS_BPO	13.61				< 0.015														0.018	0.021	

Parameter		Dissolved Oxygen, Field	Fluoride	Hardness, Total or Dissolved CaCO3	Hardness, Total or Dissolved CaCO3	Hydrogen Peroxide	Iron	Iron	Lead	Lead	Lithium	Lithium	Magnesium	Manganese	Manganese	Mercury	Mercury	Mercury	Mercury	MeSe(IV) – methylseleninic acid CH3SeO2H	Methaneselenonic Acid	Molybdenum
Fraction		N	N	D	T	N	D	T	D	T	D	T	T	D	T	D	T	T	T	D	D	D
Unit		mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ng/l	ug/l	ug/l	ug/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-01-14	FS_INF-S	12.59																				
2022-01-14	FS_BPO																					
2022-01-14	FS_INF-S	12.97																				
2022-01-15	FS_BPO	13.36				< 0.015														0.021	0.032	
2022-01-15	FS_INF-S	12.75																				
2022-01-15	FS_BPO																					
2022-01-15	FS_INF-S	12.88																				
2022-01-16	FS_BPO	11.43				0.075														0.016	0.027	
2022-01-16	FS_INF-S	11.32																				
2022-01-16	FS_BPO																					
2022-01-16	FS_INF-S	12.91																				
2022-01-17	FS_BPO	11.42 10.77	0.116	2140		< 0.015										< 0.0050		< 0.00050		0.016	0.021	
2022-01-17	FS_INF-S	12.35	0.129	2220												< 0.0050			0.00062			
2022-01-17	FS_BPO																					
2022-01-17	FS_BPO																					
2022-01-17	FS_BPO	11.24																				
2022-01-17	FR_FRABCH	7.04	0.109	701			0.011	0.030	< 0.050	< 0.050	0.0496	0.0483	75.7	0.00448	0.00479	< 0.0050			< 0.00050			0.000852
2022-01-17	FS_BPO	11.76																				
2022-01-17	FS_INF-S	12.22																				
2022-01-18	FS_BPO	11.47		2030	2200	< 0.015	0.035	0.049	< 0.100	< 0.100	0.0745	0.0775	308	0.00536	0.00553					0.021	0.023	0.0456
2022-01-18	FS_INF-S	12.57		2300	2220		< 0.050	< 0.020	< 0.250	< 0.100	0.0756	0.0780	293	0.00570	0.00555					0.027	< 0.010	0.00490
2022-01-18	FS_BPO																					
2022-01-18	FS_INF-S	12.43																				
2022-01-19	FS_BPO	12.11				< 0.015														0.015	0.018	
2022-01-19	FS_INF-S	12.51																				
2022-01-19	FS_BPO																					
2022-01-19	FS_INF-S	12.82																				
2022-01-20	FR_SCOUTDS																			0.011	< 0.010	
2022-01-20	FS_BPO	12.67				< 0.015														0.019	0.018	
2022-01-20	FS_INF-S	12.86																				
2022-01-20	FS_BPO																					
2022-01-20	FR_SCOUTDS	13.61	0.129	974		< 0.015	< 0.010	0.023	< 0.050	0.077	0.0803	0.0798	108	0.0108	0.0105	< 0.0050		< 0.00050				0.00626
2022-01-20	FS_BPO	10.98																				
2022-01-20	FS_BPO																					
2022-01-21	FS_BPO	13.37				< 0.015																
2022-01-21	FS_INF-S	12.89																				
2022-01-21	FS_BPO																			0.021	0.019	
2022-01-21	FS_INF-S																					
2022-01-21	FS_BPO																					
2022-01-21	FS_BPO	14.26																				
2022-01-21	FS_BPO	12.63				< 0.015																
2022-01-21	FS_INF-S	13.23																				
2022-01-21	FS_INF-S	12.69																				
2022-01-22	FS_BPO	13.08				0.02																
2022-01-22	FS_INF-S	6.8																				
2022-01-22	FS_BPO																			0.021	0.019	
2022-01-22	FS_BPO	14.2																				
2022-01-22	FS_BPO					< 0.015																
2022-01-22	FS_INF-S	12.56																				
2022-01-23	FS_BPO	12.74				< 0.015														0.024	0.022	
2022-01-23	FS_INF-S	12.42																				
2022-01-23	FS_BPO																					
2022-01-23	FS_INF-S	12.8																				
2022-01-24	FS_BPO	10.8	< 0.100	2320		< 0.015										< 0.0050		< 0.00050		0.025	0.021	
2022-01-24	FS_INF-S	11.33	0.129	2350												< 0.0050		0.00093				
2022-01-24	FS_BPO																					
2022-01-24	FS_BPO																					
2022-01-24	FS_BPO	12.87				< 0.015																
2022-01-24	FS_INF-S	12.74																				
2022-01-24	FS_INF-S	12.5																				
2022-01-25	FS_BPO	12.55				< 0.015														0.027	0.021	
2022-01-25	FS_INF-S	12.81		2140	2240		< 0.020	< 0.050	0.154	< 0.250	0.0751	0.0764	310	0.00441	0.00578					0.020	< 0.010	0.00516
2022-01-25	FS_BPO																					
2022-01-25	FS_INF-S	12.51																				
2022-01-26	FS_BPO	12.08				< 0.015														0.020	0.028	
2022-01-26	FS_INF-S	12.58																				
2022-01-26	FS_BPO																					
2022-01-26	FS_INF-S	12.6																				
2022-01-27	FR_SCOUTDS																			< 0.010	< 0.010	
2022-01-27	FS_BPO	12.37				0.044														0.025	0.023	
2022-01-27	FS_INF-S	12.46																				
2022-01-27	FS_BPO																					
2022-01-27	FR_FRABCH	11.12																				
2022-01-27	FR_SCOUTDS	13.75	0.103	928		< 0.015	0.047	0.044		< 0.050	0.0822	0.0768	111	0.0130	0.0131	< 0.0050		< 0.00050				0.00635

	Parameter	Dissolved Oxygen, Field	Fluoride	Hardness, Total or Dissolved CaCO3	Hardness, Total or Dissolved CaCO3	Hydrogen Peroxide	Iron	Iron	Lead	Lead	Lithium	Lithium	Magnesium	Manganese	Manganese	Mercury	Mercury	Mercury	Mercury	MeSe(IV) – methylseleninic acid CH3SeO2H	Methaneselenonic Acid	Molybdenum
	Fraction	N	N	D	T	N	D	T	D	T	D	T	T	D	T	D	T	T	T	D	D	D
	Unit	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ng/l	ug/l	ug/l	ug/l	ug/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-01-27	FR_FRABCH	11.12	< 0.100	711			0.013	0.017	< 0.050	< 0.050	0.0450	0.0458	72.2	0.00552	0.00546	< 0.0050			< 0.00050			0.000966
2022-01-27	FS_BPO																					
2022-01-27	FS_INF-S																					
2022-01-28	FS_BPO	12.38				< 0.015																
2022-01-28	FS_INF-S	12.57																				
2022-01-28	FS_BPO																					
2022-01-29	FS_BPO	12.72				< 0.015														0.034	0.022	
2022-01-29	FS_INF-S	12.54																				
2022-01-29	FS_BPO																					
2022-01-30	FS_BPO	12.9				< 0.015																
2022-01-30	FS_INF-S	12.1																				
2022-01-30	FS_BPO																					
2022-01-31	FS_BPO	12.49	0.108	2290		< 0.015										< 0.0050		< 0.00050				
2022-01-31	FS_INF-S	12.73	0.110	2340												< 0.0050			0.00060			
2022-01-31	FS_BPO																					
2022-01-31	FS_BPO																					
2022-02-01	FS_BPO	12.5				< 0.015														0.036	0.024	
2022-02-01	FS_INF-S	13.13																				
2022-02-01	FS_BPO																					
2022-02-01	FR_FRABCH	10.99	< 0.100	727			0.010	0.021	< 0.050	< 0.050	0.0492	0.0446	76.4	0.00635	0.00665	< 0.0050			< 0.00050			0.000970
2022-02-02	FS_BPO	13.06				< 0.015																
2022-02-02	FS_INF-S	13.4																				
2022-02-02	FS_BPO																					
2022-02-03	FR_SCOUTDS																			0.014	< 0.010	
2022-02-03	FS_BPO	12.2				0.033														0.045	0.024	
2022-02-03	FS_INF-S	12.5																				
2022-02-03	FS_BPO																					
2022-02-03	FR_SCOUTDS	13.43	0.145	959		0.025	< 0.010	0.021	< 0.050	< 0.050	0.0758	0.0784	120	0.0103	0.0110	< 0.0050			< 0.00050			0.00824
2022-02-04	FS_BPO	12.24				< 0.015																
2022-02-04	FS_INF-S	12.4																				
2022-02-04	FS_BPO																					
2022-02-05	FS_BPO	11.55				< 0.015														0.064	0.039	
2022-02-05	FS_INF-S	12.13																				
2022-02-05	FS_BPO																					
2022-02-05	FS_BPO	9.66				< 0.015																
2022-02-06	FS_BPO					< 0.015																
2022-02-06	FS_INF-S																					
2022-02-06	FS_BPO																					
2022-02-06	FS_BPO	8.72				< 0.015																
2022-02-06	FS_INF-S	12.31																				
2022-02-07	FS_BPO	11.83	0.122	2140		0.037										< 0.0050			< 0.00050			
2022-02-07	FS_INF-S	12.08	0.121	2240												< 0.0050			< 0.00050			
2022-02-07	FS_BPO																					
2022-02-07	FS_BPO																					
2022-02-08	FR_SCOUTDS																			0.013	< 0.010	
2022-02-08	FS_BPO	11.55		2190	2350	< 0.015	< 0.020	0.083	< 0.100	< 0.100	0.0784	0.0856	338	0.00431	0.00480					0.052	0.036	0.0455
2022-02-08	FS_INF-S	12.36		2290	2380		< 0.020	< 0.020	< 0.100	< 0.100	0.0795	0.0812	338	0.00548	0.00559					0.023	< 0.010	0.00495
2022-02-08	FS_BPO																					
2022-02-09	FS_BPO	11.41				< 0.015																
2022-02-09	FS_INF-S	12.36																				
2022-02-09	FS_BPO																					
2022-02-09	FR_FRABCH	10.38																				
2022-02-10	FR_SCOUTDS																			0.013	< 0.010	
2022-02-10	FS_BPO	11.19				< 0.015														0.033	0.045	
2022-02-10	FS_INF-S	11.33		2300	2240		< 0.020	< 0.020	< 0.100	< 0.100	0.0858	0.0814	306	0.00604	0.00607							0.00507
2022-02-10	FS_BPO																					
2022-02-10	FR_SCOUTDS	12.93	0.403	852		< 0.015	0.015	0.054	< 0.050	< 0.050	0.0786	0.0829	107	0.0139	0.0172	< 0.0050			0.00069			0.00563
2022-02-11	FS_BPO	12.04				< 0.015																
2022-02-11	FS_INF-S	13.02																				
2022-02-11	FS_BPO																					
2022-02-12	FS_BPO	11.63				0.053														0.053	0.024	
2022-02-12	FS_INF-S	12.79																				
2022-02-12	FS_BPO																					
2022-02-13	FS_BPO	12				< 0.015														0.026	0.050	
2022-02-13	FS_INF-S	13.16																				
2022-02-13	FS_BPO																					
2022-02-14	FS_BPO	11.45	0.118	2210		< 0.015										< 0.0050			< 0.00050			
2022-02-14	FS_INF-S	12.95	0.122	2200												< 0.0050			< 0.00050			

Parameter		Dissolved Oxygen, Field	Fluoride	Hardness, Total or Dissolved CaCO3	Hardness, Total or Dissolved CaCO3	Hydrogen Peroxide	Iron	Iron	Lead	Lead	Lithium	Lithium	Magnesium	Manganese	Manganese	Mercury	Mercury	Mercury	Mercury	MeSe(IV) – methylseleninic acid CH3SeO2H	Methaneselenonic Acid	Molybdenum
Fraction		N	N	D	T	N	D	T	D	T	D	T	T	D	T	D	T	T	T	D	D	D
Unit		mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ng/l	ug/l	ug/l	ug/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-02-14	FS_BPO																					
2022-02-14	FS_BPO																					
2022-02-14	FS_INF-S	13																				
2022-02-15	FS_BPO	11.73			2150	< 0.015		0.089		< 0.250		0.0759	299		0.0151					0.038	0.052	
2022-02-15	FS_INF-S	12.68		2360	2300		< 0.020	< 0.050	< 0.100	< 0.250	0.0761	0.0754	316	0.00631	0.00649							0.00456
2022-02-15	FS_BPO																					
2022-02-15	FR_FRABCH	10.91																				
2022-02-15	FS_BPO																					
2022-02-16	FS_BPO																					
2022-02-16	FS_INF-S																					
2022-02-16	FS_BPO																					
2022-02-16	FS_INF-S																					
2022-02-16	FS_BPO																					
2022-02-16	FR_FRABCH		0.134	793			< 0.010	0.023	< 0.050	< 0.050	0.0483	0.0500	77.9	0.00545	0.00549	< 0.0050	< 0.0050					0.00128
2022-02-16	FS_BPO	11.36																				
2022-02-16	FS_INF-S	12.52																				
2022-02-17	FR_SCOUTDS																			< 0.010	< 0.010	
2022-02-17	FS_BPO	11.2				< 0.015														0.044	0.036	
2022-02-17	FS_INF-S	12.63																				
2022-02-17	FS_BPO																					
2022-02-17	FR_SCOUTDS	13.81	0.168	890 942		< 0.015	0.016	0.039	< 0.050	< 0.050	0.0849	0.0854	104	0.0136	0.0156	< 0.0050			0.00173			0.00579
2022-02-18	FS_BPO	10.61				< 0.015																
2022-02-18	FS_INF-S	11.55																				
2022-02-18	FS_BPO																					
2022-02-19	FS_BPO	10.25				< 0.015																
2022-02-19	FS_INF-S	11.53																				
2022-02-19	FS_BPO																					
2022-02-20	FS_BPO	11.02				< 0.015														0.023	0.038	
2022-02-20	FS_INF-S	12.5																				
2022-02-20	FS_BPO																					
2022-02-21	FS_BPO	11.64 12.07 11.66	0.138	2210		< 0.015										< 0.0050			< 0.00050			
2022-02-21	FS_INF-S	11.22	0.132	2230												< 0.0050			0.00080			
2022-02-21	FS_BPO																					
2022-02-21	FS_BPO																					
2022-02-21	FS_BPO	12.26																				
2022-02-22	FS_BPO	13.18																				
2022-02-22	FS_BPO	12.96				< 0.015														0.028	0.029	
2022-02-22	FS_INF-S	12.11		2420	2450		< 0.020	< 0.020	< 0.100	< 0.100	0.0836	0.0777	339	0.0114	0.0125							0.00487
2022-02-22	FS_BPO																					
2022-02-22	FR_FRABCH	11.43																				
2022-02-22	FS_BPO	12.63																				
2022-02-22	FS_BPO	12.83																				
2022-02-22	FS_INF-S	12.31																				
2022-02-23	FS_BPO	13.9																				
2022-02-23	FS_BPO	12.74				< 0.015																
2022-02-23	FS_INF-S	12.4																				
2022-02-23	FS_BPO																					
2022-02-24	FR_SCOUTDS																			0.011	< 0.010	
2022-02-24	FS_BPO	13.35				< 0.015														0.040	0.031	
2022-02-24	FS_INF-S	11.76																				
2022-02-24	FS_BPO																					
2022-02-24	FR_SCOUTDS	13.65	0.136	948 959		0.019	0.014	0.024	< 0.050	< 0.050	0.0860	0.0800	112	0.0133	0.0130	< 0.0050			< 0.00050			0.00871
2022-02-25	FS_BPO	11.66				< 0.015																
2022-02-25	FS_INF-S	4.68																				
2022-02-25	FS_BPO																					
2022-02-25	FR_SCOUTDS	14.02																				
2022-02-25	FS_INF-K																					
2022-02-25	FS_INF-K																					
2022-02-25	FS_INF-K	10.54																				
2022-02-26	FS_BPO	12.38				< 0.015																
2022-02-26	FS_INF-K	10.54 10.64																				
2022-02-26	FS_INF-S	11.56																				
2022-02-26	FS_BPO																					
2022-02-27	FS_BPO	-0.03 11.75				< 0.015														0.053	0.025	
2022-02-27	FS_INF-K	11.24						< 0.020		< 0.100		0.224	203		0.00078							
2022-02-27	FS_INF-S	13.13																				
2022-02-27	FS_BPO																					
2022-02-28	FS_BPO	18.81	0.124	2240		< 0.015										< 0.0050			< 0.00050			
2022-02-28	FS_INF-K	11.24	0.121	1900			< 0.050		< 0.250		0.213			0.00077		< 0.0050			< 0.00050			0.00108

Parameter		Dissolved Oxygen, Field	Fluoride	Hardness, Total or Dissolved CaCO3	Hardness, Total or Dissolved CaCO3	Hydrogen Peroxide	Iron	Iron	Lead	Lead	Lithium	Lithium	Magnesium	Manganese	Manganese	Mercury	Mercury	Mercury	Mercury	MeSe(IV) – methylseleninic acid CH3SeO2H	Methaneselenonic Acid	Molybdenum
Fraction		N	N	D	T	N	D	T	D	T	D	T	T	D	T	D	T	T	T	D	D	D
Unit		mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ng/l	ug/l	ug/l	ug/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-02-28	FS_INF-S	12.51	0.134	2290												< 0.0050			0.00051			
2022-02-28	FS_BPO																					
2022-02-28	FS_BPO																					
2022-03-01	FS_BPO	12.21		2310	2320	< 0.015	< 0.020	0.061	< 0.100	< 0.100	0.0933	0.0980	327	0.00643	0.00688					0.052	0.025	0.0503
2022-03-01	FS_INF-K	11.83		1980	1960		< 0.020	< 0.020	< 0.100	< 0.100	0.219	0.226	210	0.00079	0.00076					< 0.010	< 0.010	0.00116
2022-03-01	FS_INF-S	12.7		2350	2350		< 0.020	< 0.020	< 0.100	< 0.100	0.0808	0.0898	333	0.00414	0.00414					0.022	< 0.010	0.00522
2022-03-01	FS_BPO																					
2022-03-01	FR_FRABCH	9.85	0.106	702			0.012	0.030	< 0.050	< 0.050	0.0409	0.0505	86.9	0.00646	0.00731	< 0.0050			< 0.00050			0.000775
2022-03-02	FS_BPO	12.63				< 0.015																
2022-03-02	FS_INF-K	11.29																				
2022-03-02	FS_INF-S	12.26																				
2022-03-02	FS_BPO																					
2022-03-02	FR_FRABCH	9.85																				
2022-03-03	FR_SCOUTDS																			0.011	< 0.010	
2022-03-03	FS_BPO	11.72				< 0.015														0.033	0.059	
2022-03-03	FS_INF-K	10.67																				
2022-03-03	FS_INF-S	12.12																				
2022-03-03	FS_BPO																					
2022-03-03	FR_SCOUTDS	12.93	0.111	863 972	822	< 0.015	0.019	0.040	< 0.050	< 0.050	0.0903	0.0850	95.2	0.0143	0.0142	< 0.0050			0.00062			0.00605
2022-03-04	FS_BPO	10.62				< 0.015																
2022-03-04	FS_INF-K	10.36																				
2022-03-04	FS_INF-S	11.42																				
2022-03-04	FS_BPO																					
2022-03-04	FS_BPO																					
2022-03-05	FS_BPO	10.54				< 0.015																
2022-03-05	FS_INF-K	10.8																				
2022-03-05	FS_INF-S	10.6																				
2022-03-05	FS_BPO																					
2022-03-06	FS_BPO	12.43				< 0.015														0.024	0.043	
2022-03-06	FS_INF-K	11.54 11.54																				
2022-03-06	FS_INF-S	13.06																				
2022-03-06	FS_BPO																					
2022-03-07	FS_BPO	9.85	0.118	2020		< 0.015										< 0.0050			< 0.00050			
2022-03-07	FS_INF-K	10.18	0.117	1790												< 0.0050			< 0.00050			
2022-03-07	FS_INF-S	10.79	0.126	2110												< 0.0050			< 0.00050			
2022-03-07	FS_BPO																					
2022-03-07	FS_BPO																					
2022-03-08	FS_BPO	0.02			2010	0.023		0.090		< 0.100		0.109	266		0.0155					0.050	0.042	
2022-03-08	FS_INF-K	10.73		2040	1880		< 0.020	< 0.020	< 0.100	< 0.100	0.218	0.214	194	0.00042	0.00045					< 0.010	< 0.010	0.00128
2022-03-08	FS_INF-S	0.01		2450	2230		< 0.020	< 0.020	< 0.100	< 0.100	0.0786	0.0851	298	0.00379	0.00389					0.028	< 0.010	0.00507
2022-03-08	FS_BPO																					
2022-03-08	FS_INF-S	11.65																				
2022-03-08	FS_BPO	10.35 10.92																				
2022-03-08	FR_FRABCH	11.49	0.162	730			0.015	0.026	< 0.050	< 0.050	0.0489	0.0486	75.4	0.00556	0.00631	< 0.0050			< 0.00050			0.00102
2022-03-08	FS_BPO	10.75																				
2022-03-08	FS_BPO																					
2022-03-09	FS_BPO																					
2022-03-09	FS_BPO	10.93				< 0.015																
2022-03-09	FS_INF-K	11.32																				
2022-03-09	FS_INF-S	11.87																				
2022-03-09	FS_BPO																					
2022-03-10	FR_SCOUTDS																			0.014	< 0.010	
2022-03-10	FS_BPO	11.41				< 0.015														0.048	0.047	
2022-03-10	FS_INF-K	11.18																				
2022-03-10	FS_INF-S	11.73																				
2022-03-10	FS_BPO																					
2022-03-10	FR_SCOUTDS	13.25	0.144	930 969	983	< 0.015	< 0.010	0.059	< 0.050	< 0.050	0.0902	0.0951	115	0.0161	0.0173	< 0.0050			< 0.00050			0.00605
2022-03-11	FS_BPO	12.83				< 0.015																
2022-03-11	FS_INF-K	11.74																				
2022-03-11	FS_INF-S	12.72																				
2022-03-11	FS_BPO																					
2022-03-12	FS_BPO	12.4				< 0.015																
2022-03-12	FS_INF-K	11.64																				
2022-03-12	FS_INF-S	11.99																				
2022-03-12	FS_BPO																					
2022-03-13	FS_BPO	12.25				0.016														0.076	0.065	
2022-03-13	FS_INF-K	11.08																				
2022-03-13	FS_INF-S	12.34																				
2022-03-13	FS_BPO																					

	Parameter	Dissolved Oxygen, Field	Fluoride	Hardness, Total or Dissolved CaCO3	Hardness, Total or Dissolved CaCO3	Hydrogen Peroxide	Iron	Iron	Lead	Lead	Lithium	Lithium	Magnesium	Manganese	Manganese	Mercury	Mercury	Mercury	Mercury	MeSe(IV) – methylseleninic acid CH3SeO2H	Methaneselenonic Acid	Molybdenum
	Fraction	N	N	D	T	N	D	T	D	T	D	T	T	D	T	D	T	T	T	D	D	D
	Unit	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ng/l	ug/l	ug/l	ug/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-03-14	FS_BPO	12.21	0.125	1920		< 0.015										0.0063			< 0.00050			
2022-03-14	FS_INF-K	10.3																				
2022-03-14	FS_INF-S	11.25																				
2022-03-14	FS_BPO																					
2022-03-14	FS_BPO																					
2022-03-15	FS_BPO	11.45			2250	< 0.015		0.096		< 0.100		0.116	293		0.0150					0.077	0.065	
2022-03-15	FS_INF-K	10.88		2040	1910		< 0.020	< 0.020	< 0.100	< 0.100	0.219	0.211	202	0.00055	0.00059					< 0.010	< 0.010	0.00124
2022-03-15	FS_INF-S	12.03		2390	2200		< 0.020	0.065	< 0.100	0.110	0.0801	0.0795	300	0.00454	0.00577					0.028	< 0.010	0.00514
2022-03-15	FS_BPO																					
2022-03-15	FR_FRABCH	10.73	0.100	637			0.012	0.023	< 0.050	< 0.050	0.0372	0.0506	85.0	0.00565	0.00649	< 0.0050			< 0.00050			0.00102
2022-03-16	FS_BPO	11.64				0.018																
2022-03-16	FS_INF-K	10.3																				
2022-03-16	FS_INF-S	11.66																				
2022-03-16	FS_BPO																					
2022-03-17	FR_SCOUTDS																			< 0.010	< 0.010	
2022-03-17	FS_BPO	11.31				< 0.015														0.054	0.075	
2022-03-17	FS_INF-K	10.89																				
2022-03-17	FS_INF-S	11.11																				
2022-03-17	FS_BPO																					
2022-03-17	FR_SCOUTDS	12.36	0.138	869 854	924	< 0.015	< 0.010	0.225	< 0.050	0.213	0.0886	0.0866	108	0.0166	0.0221	< 0.0050			0.00154			0.00322
2022-03-18	FS_BPO	11.21				< 0.015																
2022-03-18	FS_INF-K	10.55																				
2022-03-18	FS_INF-S	11.51																				
2022-03-18	FS_BPO																					
2022-03-19	FS_BPO	11.43 11.74				< 0.015																
2022-03-19	FS_INF-K	9.72																				
2022-03-19	FS_INF-S	11.17																				
2022-03-19	FS_BPO																					
2022-03-20	FS_BPO	11.62				< 0.015														0.062	0.057	
2022-03-20	FS_INF-K	10.37																				
2022-03-20	FS_INF-S	10.87																				
2022-03-20	FS_BPO																					
2022-03-21	FS_BPO	11.83	0.160	2040		< 0.015										< 0.0050			< 0.00050			
2022-03-21	FS_INF-K	10.25	0.160	1960												< 0.0050			< 0.00050			
2022-03-21	FS_INF-S	11.13	0.156	2070												< 0.0050			0.00066			
2022-03-21	FS_BPO																					
2022-03-21	FS_BPO																					
2022-03-22	FS_BPO	11.8		2090	1900	< 0.015	< 0.020	0.119	< 0.100	< 0.100	0.119	0.101	252	0.0156	0.0157					0.048	0.057	0.0469
2022-03-22	FS_INF-K	10.21		2050	1810		< 0.020	< 0.020	< 0.100	< 0.100	0.214	0.180	195	0.00043	0.00043							0.00122
2022-03-22	FS_INF-S	10.88		2200	1990		< 0.020	0.029	< 0.100	< 0.100	0.0740	0.0659	277	0.00425	0.00544							0.00463
2022-03-22	FS_BPO																					
2022-03-23	FS_BPO	12.21				< 0.015																
2022-03-23	FS_INF-K	11.08																				
2022-03-23	FS_INF-S	12.26																				
2022-03-23	FS_BPO																					
2022-03-23	FR_FRABCH	10.38	0.140	715			< 0.010	0.032	< 0.050	< 0.050	0.0484	0.0486	77.4	0.00596	0.00663	< 0.0050			< 0.00050			0.00151
2022-03-23	FR_FRABCH																					
2022-03-24	FR_SCOUTDS																			0.013	< 0.010	
2022-03-24	FS_BPO	11.44				< 0.015														0.049	0.066	
2022-03-24	FS_INF-K	11.4																				
2022-03-24	FS_INF-S	12																				
2022-03-24	FS_BPO																					
2022-03-24	FR_SCOUTDS	11.5	0.168	750 803	810	0.059	< 0.010	0.134	< 0.050	0.108	0.0729	0.0851	90.0	0.0119	0.0179	< 0.0050			0.00094			0.00538
2022-03-25	FS_BPO	12.77				< 0.015																
2022-03-25	FS_INF-K	11.56																				
2022-03-25	FS_INF-S	12.53																				
2022-03-25	FS_BPO																					
2022-03-26	FS_BPO	14				< 0.015																
2022-03-26	FS_INF-K	11.3																				
2022-03-26	FS_INF-S	12.2																				
2022-03-26	FS_BPO																					
2022-03-27	FS_BPO	12.54				< 0.015														0.045	0.048	
2022-03-27	FS_INF-K	10.66																				
2022-03-27	FS_INF-S	11.4																				
2022-03-27	FS_BPO																					
2022-03-28	FS_BPO	12.21	0.146	1930		< 0.015										< 0.0050			< 0.00050			
2022-03-28	FS_INF-K	10.34																				
2022-03-28	FS_INF-S	10.93																				
2022-03-28	FS_BPO																					

	Parameter	Dissolved Oxygen, Field	Fluoride	Hardness, Total or Dissolved CaCO3	Hardness, Total or Dissolved CaCO3	Hydrogen Peroxide	Iron	Iron	Lead	Lead	Lithium	Lithium	Magnesium	Manganese	Manganese	Mercury	Mercury	Mercury	Mercury	MeSe(IV) – methylseleninic acid CH3SeO2H	Methaneselenonic Acid	Molybdenum
	Fraction	N	N	D	T	N	D	T	D	T	D	T	T	D	T	D	T	T	T	D	D	D
	Unit	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ng/l	ug/l	ug/l	ug/l	ug/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-03-28	FS_BPO																					
2022-03-29	FS_BPO	13.38		1830	1790	< 0.015	< 0.020	0.166	< 0.100	0.140	0.106	0.108	233	0.0187	0.0210					0.037	0.040	0.0466
2022-03-29	FS_INF-K	11.7		1960	1890		< 0.020	< 0.020	< 0.100	< 0.100	0.204	0.203	195	0.00065	0.00069					< 0.010	< 0.010	0.00118
2022-03-29	FS_INF-S	11.47		1670	1610		< 0.020	0.107	< 0.100	0.128	0.0559	0.0578	214	0.00665	0.0121					0.032	< 0.010	0.00430
2022-03-29	FS_BPO																					
2022-03-30	FS_BPO	13.21				< 0.015																
2022-03-30	FS_INF-K	10.54																				
2022-03-30	FS_INF-S	12.38																				
2022-03-30	FR_FRABCH	10.65	0.140	703			< 0.010	0.070	< 0.050	0.058	0.0486	0.0490	80.7	0.00787	0.00993	< 0.0050			0.00067			0.00212
2022-03-30	FS_BPO																					
2022-03-30	FS_BPO	13.29																				
2022-03-31	FR_SCOUTDS																			< 0.010	< 0.010	
2022-03-31	FS_BPO	12.19				< 0.015														0.024	0.041	
2022-03-31	FS_INF-K	10.81																				
2022-03-31	FS_INF-S	12.02																				
2022-03-31	FS_BPO																					
2022-03-31	FR_SCOUTDS	13.61	0.167	610 630	636	0.023 0.023	< 0.010	0.089	< 0.050	0.089	0.0580	0.0553	70.9	0.00889	0.0123	< 0.0050			0.00082			0.00570
2022-04-01	FS_BPO	11.83				< 0.015																
2022-04-01	FS_INF-K	10.47																				
2022-04-01	FS_INF-S	11.84																				
2022-04-01	FS_BPO																					
2022-04-01	FR_FRABCH	10.17																				
2022-04-02	FS_BPO	11.42				< 0.015																
2022-04-02	FS_INF-K	10.71																				
2022-04-02	FS_INF-S	11.96																				
2022-04-02	FS_BPO																					
2022-04-02	FS_INF-S	11.64																				
2022-04-03	FS_BPO	11.95				< 0.015														0.026	0.038	
2022-04-03	FS_INF-K	10.99																				
2022-04-03	FS_INF-S	11.52																				
2022-04-03	FS_BPO																					
2022-04-04	FS_BPO	10.2	0.141	1840		< 0.015										< 0.0050			< 0.00050			
2022-04-04	FS_INF-K	9.86	0.163	1950												< 0.0050			0.00156			
2022-04-04	FS_INF-S	10.73	0.159	2040												< 0.0050			0.00160			
2022-04-04	FS_BPO																					
2022-04-04	FS_BPO																					
2022-04-05	FS_BPO	10.71		2070	2160	< 0.015	< 0.020	0.108	< 0.100	< 0.100	0.138	0.148	262	0.0223	0.0250							0.0489
2022-04-05	FS_INF-K	10.07		1910	2180		< 0.020	< 0.020	< 0.100	< 0.100	0.199	0.244	219	0.00053	0.00061							0.00290
2022-04-05	FS_INF-S	10.92		2080	2280		< 0.020	0.031	< 0.100	< 0.100	0.0708	0.0803	293	0.00488	0.00638							0.00483
2022-04-05	FS_BPO																					
2022-04-05	FR_FRABCH	10.61	0.146	693			< 0.010	0.048	< 0.050	< 0.050	0.0497	0.0536	78.5	0.00751	0.00840	< 0.0050			< 0.00050			0.00208
2022-04-06	FS_BPO																			0.038	0.028	
2022-04-06	FS_INF-K																			< 0.010	< 0.010	
2022-04-06	FS_INF-S																			0.034	< 0.010	
2022-04-06	FS_BPO	11.08				< 0.015																
2022-04-06	FS_INF-K	10.36																				
2022-04-06	FS_INF-S	11.04																				
2022-04-06	FS_BPO																					
2022-04-06	FR_FRABCH																					
2022-04-07	FS_BPO	11.22				< 0.015														0.029	0.036	
2022-04-07	FS_INF-K	10.64																				
2022-04-07	FS_INF-S	11.2																				
2022-04-07	FS_BPO																					
2022-04-07	FR_SCOUTDS	11.9	0.184	752 759	738	< 0.015	0.079	0.053	< 0.050	< 0.050	0.0822	0.0770	83.5	0.0114	0.0125	< 0.0050			< 0.00050	< 0.010	< 0.010	0.00703
2022-04-08	FS_BPO	11.15				< 0.015																
2022-04-08	FS_INF-K	10.34																				
2022-04-08	FS_INF-S	10.83																				
2022-04-08	FS_BPO																					
2022-04-09	FS_BPO	11.181				< 0.015																
2022-04-09	FS_INF-K	10.81																				
2022-04-09	FS_INF-S	11.38																				
2022-04-09	FS_BPO																					
2022-04-10	FS_BPO	11.77				< 0.015														0.067	0.058	
2022-04-10	FS_INF-K	11.08																				
2022-04-10	FS_INF-S	11.93																				
2022-04-10	FS_BPO																					
2022-04-11	FS_BPO	11.5	0.152	1870		< 0.015										< 0.0050			< 0.00050			

	Parameter	Dissolved Oxygen, Field	Fluoride	Hardness, Total or Dissolved CaCO3	Hardness, Total or Dissolved CaCO3	Hydrogen Peroxide	Iron	Iron	Lead	Lead	Lithium	Lithium	Magnesium	Manganese	Manganese	Mercury	Mercury	Mercury	Mercury	MeSe(IV) – methylseleninic acid CH3SeO2H	Methaneselenonic Acid	Molybdenum
	Fraction	N	N	D	T	N	D	T	D	T	D	T	T	D	T	D	T	T	T	D	D	D
	Unit	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ng/l	ug/l	ug/l	ug/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-04-11	FS_INF-K	10.9																				
2022-04-11	FS_INF-S	11.66																				
2022-04-11	FS_BPO																					
2022-04-11	FS_BPO																					
2022-04-12	FS_BPO	11.4		1920	1880	< 0.015	< 0.020	0.098	< 0.100	< 0.100	0.148	0.150	233	0.0217	0.0232					0.069	0.068	0.0454
2022-04-12	FS_INF-K	11.06		1890	1830		< 0.020	< 0.020	< 0.100	< 0.100	0.240	0.229	186	0.00050	0.00042					< 0.010	< 0.010	0.00114
2022-04-12	FS_INF-S	11.6		2040	2000		< 0.020	0.023	< 0.100	< 0.100	0.0798	0.0778	265	0.00446	0.00508					0.046	< 0.010	0.00495
2022-04-12	FS_BPO																					
2022-04-12	FR_FRABCH	11.04	0.148	688			< 0.010	0.050	< 0.050	< 0.050	0.0568	0.0615	78.7	0.00887	0.00988	< 0.0050	< 0.0050					0.00234
2022-04-13	FS_BPO	11.54				< 0.015																
2022-04-13	FS_INF-K	10.65																				
2022-04-13	FS_INF-S	11.43																				
2022-04-13	FS_BPO																					
2022-04-14	FS_BPO	11.22				< 0.015														0.042	0.105	
2022-04-14	FS_INF-K	10.55																				
2022-04-14	FS_INF-S	11.11																				
2022-04-14	FS_BPO																					
2022-04-14	FR_SCOUTDS	13.5	0.153	764 764	809	0.047	0.013	0.049	< 0.050	< 0.050	0.0818	0.0908	88.6	0.0118	0.0128	< 0.0050			0.00055	0.021	< 0.010	0.00506
2022-04-15	FS_BPO																					
2022-04-15	FS_BPO																					
2022-04-15	FS_BPO	10.22 10.5 11.65				< 0.015																
2022-04-15	FS_INF-K	10.02																				
2022-04-15	FS_INF-S	11.02																				
2022-04-15	FS_BPO																					
2022-04-15	FS_BPO																					
2022-04-15	FS_BPO																					
2022-04-16	FS_BPO																					
2022-04-16	FS_BPO																					
2022-04-16	FS_BPO	10.64				< 0.015																
2022-04-16	FS_INF-K	10.35																				
2022-04-16	FS_INF-S	11.18																				
2022-04-16	FS_BPO																					
2022-04-16	FS_BPO																					
2022-04-17	FS_BPO	10.43				< 0.015														0.065	0.098	
2022-04-17	FS_INF-K	10.14																				
2022-04-17	FS_INF-S	10.8																				
2022-04-17	FS_BPO																					
2022-04-18	FS_BPO	10.89	0.129	1860		< 0.015										< 0.0050			< 0.00050			
2022-04-18	FS_INF-K	10.06	0.130	1750												< 0.0050			< 0.00050			
2022-04-18	FS_INF-S	10.83	0.142	1980												< 0.0050			0.00086			
2022-04-18	FS_BPO																					
2022-04-18	FS_BPO																					
2022-04-19	FS_BPO	9.92		1820	1970	< 0.015	< 0.020	0.336	< 0.100	< 0.100	0.148	0.156	255	0.0213	0.0243					0.096	0.048	0.0504
2022-04-19	FS_INF-K	9.82		1740	1950		< 0.020	< 0.020	< 0.100	< 0.100	0.259	0.267	206	0.00046	0.00058							0.00117
2022-04-19	FS_INF-S	10.35		2010	2170		< 0.020	< 0.020	< 0.100	< 0.100	0.0806	0.0818	297	0.00308	0.00366							0.00533
2022-04-19	FS_BPO																					
2022-04-20	FS_BPO	7.81																				
2022-04-20	FR_FRABCH	11.02	0.116	702			0.011	0.035	< 0.050	< 0.050	0.0575	0.0569	79.8	0.00874	0.00913	< 0.0050	< 0.0050					0.00156
2022-04-21	FR_SCOUTDS	10.88																				
2022-04-21	FS_INF-K																					
2022-04-21	FR_SCOUTDS		0.147	774 754	739		0.018	0.041	< 0.050	< 0.050	0.0743	0.0733	81.3	0.00799	0.00872	< 0.0050			0.00188	0.021	< 0.010	0.00335
2022-04-21	FS_INF-K	9.87																				
2022-04-22	FS_BPO																					
2022-04-22	FS_INF-S																					
2022-04-22	FR_SCOUTDS	10.44																				
2022-04-22	FS_BPO																					
2022-04-22	FR_FRABCH																					
2022-04-22	FR_FRABCH																					
2022-04-22	FS_BPO	9.63																				
2022-04-22	FS_INF-S																					
2022-04-22	FS_INF-S	10.73																				
2022-04-22	FS_BPO	9.99																				
2022-04-22	FS_BPO	10.63																				
2022-04-22	FS_INF-S	10.64																				
2022-04-22	FS_INF-S																					
2022-04-23	FS_BPO	10.48				< 0.015																
2022-04-23	FS_INF-S	10.54																				
2022-04-23	FS_BPO																					
2022-04-23	FS_INF-S	10.38																				
2022-04-24	FS_BPO	10.76				0.017														0.081	0.078	
2022-04-24	FS_INF-S	10.16																				
2022-04-24	FS_BPO																					

Parameter		Dissolved Oxygen, Field	Fluoride	Hardness, Total or Dissolved CaCO3	Hardness, Total or Dissolved CaCO3	Hydrogen Peroxide	Iron	Iron	Lead	Lead	Lithium	Lithium	Magnesium	Manganese	Manganese	Mercury	Mercury	Mercury	Mercury	MeSe(IV) – methylseleninic acid CH3SeO2H	Methaneselenonic Acid	Molybdenum
Fraction		N	N	D	T	N	D	T	D	T	D	T	T	D	T	D	T	T	T	D	D	D
Unit		mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ng/l	ug/l	ug/l	ug/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-04-24	FS_INF-S	11.73																				
2022-04-25	FS_BPO	10.9	0.120	1770		< 0.015										< 0.0050			< 0.00050			
2022-04-25	FS_INF-S	10.09																				
2022-04-25	FS_BPO																					
2022-04-25	FS_BPO																					
2022-04-26	FS_BPO	10.43				< 0.015														0.081	0.078	
2022-04-26	FS_INF-S	10.06		1940	2020		< 0.020	< 0.020	< 0.100	< 0.100	0.0720	0.0765	271	0.00705	0.00759					0.070	< 0.010	0.00490
2022-04-26	FS_BPO																					
2022-04-27	FS_BPO	11.03				< 0.015																
2022-04-27	FS_INF-S	10.56																				
2022-04-27	FS_BPO																					
2022-04-28	FS_BPO	11.1				< 0.015														0.064	0.057	
2022-04-28	FS_INF-S	10.89																				
2022-04-28	FS_BPO																					
2022-04-28	FR_SCOUTDS	12.07	0.160	560 594	562	0.015	0.010	0.067	< 0.050	< 0.050	0.0492	0.0492	60.8	0.0108	0.0128	< 0.0050			0.00132	0.015	< 0.010	0.00458
2022-04-28	FR_FRABCH																					
2022-04-29	FS_BPO	10.71				< 0.015																
2022-04-29	FS_INF-S	11.16																				
2022-04-29	FS_BPO																					
2022-04-30	FS_BPO	10.43				< 0.015																
2022-04-30	FS_INF-S	11.09																				
2022-04-30	FS_BPO																					
2022-05-01	FS_BPO	9.93				0.246														0.035	0.038	
2022-05-01	FS_INF-K	5.03																				
2022-05-01	FS_INF-S	10.99																				
2022-05-01	FS_BPO																					
2022-05-01	FS_INF-K	10.37																				
2022-05-01	FS_BPO	9.57																				
2022-05-01	FS_BPO					0.023																
2022-05-02	FS_BPO	8.17	0.161	2000												< 0.0050			< 0.00050			
2022-05-02	FS_INF-S		0.161	1970												< 0.0050			0.00071			
2022-05-02	FS_BPO																					
2022-05-02	FS_BPO					< 0.015																
2022-05-02	FS_BPO					< 0.015																
2022-05-02	FS_BPO	10.42				< 0.015																
2022-05-02	FS_INF-S	10.96																				
2022-05-03	FS_BPO	10.05		1980	1940	0.085	< 0.020	0.233	< 0.100	< 0.100	0.0796	0.0778	267	0.0638	0.0790					0.034	0.038	0.0496
2022-05-03	FS_INF-S	11.11		1960	1980		< 0.020	< 0.020	< 0.100	< 0.100	0.0748	0.0750	271	0.00408	0.00476							0.00507
2022-05-03	FS_BPO																					
2022-05-04	FS_BPO	10.86				< 0.015																
2022-05-04	FS_INF-S	12.09																				
2022-05-04	FS_BPO																					
2022-05-05	FS_BPO	9.67				< 0.015														0.048	0.049	
2022-05-05	FS_INF-K	10.63																				
2022-05-05	FS_INF-S	10.71																				
2022-05-05	FS_BPO																					
2022-05-05	FR_SCOUTDS	11.35	< 0.100	464 470	463	0.079	< 0.010	0.068	< 0.050	< 0.050	0.0348	0.0355	48.2	0.00684	0.00985	< 0.0050			0.00105	0.012	< 0.010	0.00244
2022-05-05	FR_FRABCH																					
2022-05-06	FS_BPO	9.69				0.021																
2022-05-06	FS_INF-K	10.33																				
2022-05-06	FS_INF-S	10.98																				
2022-05-06	FS_BPO																					
2022-05-07	FS_BPO	10.83				0.044																
2022-05-07	FS_INF-K	9.93																				
2022-05-07	FS_INF-S	10.5																				
2022-05-07	FS_BPO																					
2022-05-07	FS_INF-S																					
2022-05-08	FS_BPO	9.63				0.016														0.050	0.060	
2022-05-08	FS_INF-K	10.21																				
2022-05-08	FS_INF-S	10.78																				
2022-05-08	FS_BPO																					
2022-05-08	FS_INF-S																					
2022-05-08	FS_BPO																					
2022-05-09	FS_INF-S																					
2022-05-09	FS_INF-S																					
2022-05-09	FS_BPO	10.24	0.141	1620		< 0.015										< 0.0050			< 0.00050			
2022-05-09	FS_INF-K	10.15																				
2022-05-09	FS_INF-S	10.04																				
2022-05-09	FS_BPO																					
2022-05-09	FS_BPO																					
2022-05-10	FS_INF-S																					
2022-05-10	FS_INF-S																					

Parameter		Dissolved Oxygen, Field	Fluoride	Hardness, Total or Dissolved CaCO3	Hardness, Total or Dissolved CaCO3	Hydrogen Peroxide	Iron	Iron	Lead	Lead	Lithium	Lithium	Magnesium	Manganese	Manganese	Mercury	Mercury	Mercury	Mercury	MeSe(IV) – methylseleninic acid CH3SeO2H	Methaneselenonic Acid	Molybdenum
Fraction		N	N	D	T	N	D	T	D	T	D	T	T	D	T	D	T	T	T	D	D	D
Unit		mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ng/l	ug/l	ug/l	ug/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-05-10	FS_BPO	10.2		1590	1540	< 0.015	< 0.020	0.174	< 0.100	< 0.100	0.0922	0.0786	197	0.0347	0.0343					0.058	0.035	0.0493
2022-05-10	FS_INF-K	10.25		1620	1700		< 0.020	< 0.020	< 0.100	< 0.100	0.322	0.297	174	0.00073	0.00059					< 0.010	< 0.010	0.00123
2022-05-10	FS_INF-S	10.8		1510	1550		< 0.020	0.026	< 0.100	< 0.100	0.0646	0.0557	207	0.00368	0.00419					0.048	< 0.010	0.00501
2022-05-10	FS_BPO																					
2022-05-10	FR_FRABCH																					
2022-05-11	FS_BPO	10.21				< 0.015																
2022-05-11	FS_INF-K	10.26																				
2022-05-11	FS_INF-S	11.06																				
2022-05-11	FS_BPO																					
2022-05-12	FS_BPO	10.74				< 0.015														0.058	0.054	
2022-05-12	FS_INF-K	10.4																				
2022-05-12	FS_INF-S	10.95																				
2022-05-12	FS_BPO																					
2022-05-12	FR_SCOUTDS	11.75	0.126	499 564	559	< 0.015	< 0.010	0.033	< 0.050	< 0.050	0.0477	0.0463	58.2	0.00752	0.00779	< 0.0050			0.00074	0.015	< 0.010	0.00336
2022-05-12	FS_INF-K																					
2022-05-12	FS_INF-S																					
2022-05-12	FS_INF-K																					
2022-05-12	FS_INF-S																					
2022-05-12	FS_INF-K																					
2022-05-12	FS_INF-S																					
2022-05-12	FS_INF-K																					
2022-05-12	FS_INF-S																					
2022-05-12	FS_INF-K																					
2022-05-12	FS_INF-S																					
2022-05-13	FS_INF-K																					
2022-05-13	FS_INF-S																					
2022-05-13	FS_INF-K																					
2022-05-13	FS_INF-S																					
2022-05-13	FS_BPO	10.01				< 0.015																
2022-05-13	FS_INF-K	10.15																				
2022-05-13	FS_INF-S	11.02																				
2022-05-13	FS_BPO																					
2022-05-13	FS_INF-K																					
2022-05-13	FS_INF-S																					
2022-05-13	FS_INF-K																					
2022-05-13	FS_INF-S																					
2022-05-13	FS_INF-K																					
2022-05-13	FS_INF-S																					
2022-05-13	FS_INF-K																					
2022-05-13	FS_INF-S																					
2022-05-14	FS_INF-K																					
2022-05-14	FS_INF-S																					
2022-05-14	FS_INF-K																					
2022-05-14	FS_INF-S																					
2022-05-14	FS_BPO	10.39				< 0.015																
2022-05-14	FS_INF-K	11.02																				
2022-05-14	FS_INF-S	11.94																				
2022-05-14	FS_BPO																					
2022-05-14	FS_INF-K																					
2022-05-14	FS_INF-S																					
2022-05-14	FS_INF-K																					
2022-05-14	FS_INF-S																					
2022-05-14	FS_INF-K																					
2022-05-14	FS_INF-S																					
2022-05-14	FS_INF-K																					
2022-05-14	FS_INF-S																					
2022-05-14	FS_INF-K																					
2022-05-14	FS_INF-S																					
2022-05-15	FS_INF-K																					
2022-05-15	FS_INF-S																					
2022-05-15	FS_INF-K																					
2022-05-15	FS_INF-S																					
2022-05-15	FS_BPO	10.16				< 0.015														0.052	0.058	
2022-05-15	FS_INF-K	10.2																				
2022-05-15	FS_INF-S	11.91																				
2022-05-15	FS_BPO																					
2022-05-15	FS_INF-K																					
2022-05-15	FS_INF-S																					
2022-05-15	FS_INF-K																					
2022-05-15	FS_INF-S																					
2022-05-15	FS_INF-K																					
2022-05-15	FS_INF-S																					
2022-05-15	FS_INF-K																					
2022-05-15	FS_INF-S																					
2022-05-16	FS_INF-K																					
2022-05-16	FS_INF-S																					
2022-05-16	FS_INF-K																					
2022-05-16	FS_INF-S																					
2022-05-16	FS_BPO	9.97	0.158	1880		< 0.015										< 0.0050			< 0.00050			

Parameter		Dissolved Oxygen, Field	Fluoride	Hardness, Total or Dissolved CaCO3	Hardness, Total or Dissolved CaCO3	Hydrogen Peroxide	Iron	Iron	Lead	Lead	Lithium	Lithium	Magnesium	Manganese	Manganese	Mercury	Mercury	Mercury	Mercury	MeSe(IV) – methylseleninic acid CH3SeO2H	Methaneselenonic Acid	Molybdenum
Fraction		N	N	D	T	N	D	T	D	T	D	T	T	D	T	D	T	T	T	D	D	D
Unit		mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ng/l	ug/l	ug/l	ug/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-05-16	FS_INF-K	10.87	0.155	1740												< 0.0050			< 0.00050			
2022-05-16	FS_INF-S	11.32	0.158	1890												< 0.0050			0.00077			
2022-05-16	FS_BPO																					
2022-05-16	FS_BPO																					
2022-05-16	FS_INF-K																					
2022-05-16	FS_INF-S																					
2022-05-16	FS_INF-K																					
2022-05-16	FS_INF-S																					
2022-05-16	FS_INF-K																					
2022-05-16	FS_INF-S																					
2022-05-16	FS_INF-K																					
2022-05-16	FS_INF-S																					
2022-05-16	FS_INF-K																					
2022-05-16	FS_INF-S																					
2022-05-17	FS_INF-K																					
2022-05-17	FS_INF-S																					
2022-05-17	FS_INF-K																					
2022-05-17	FS_INF-S																					
2022-05-17	FS_BPO	10.1		1720	1700	< 0.015	0.051	0.271	0.242	3.79	0.114	0.102	225	0.0310	0.0340					0.070	0.042	0.0517
2022-05-17	FS_INF-K	9.56		1720	1580		< 0.020	< 0.020	< 0.100	< 0.100	0.342	0.318	161	0.00072	0.00065							0.00143
2022-05-17	FS_INF-S	11.66		1940	1750		< 0.020	< 0.020	< 0.100	< 0.100	0.0758	0.0708	231	0.00309	0.00370							0.00548
2022-05-17	FS_BPO																					
2022-05-17	FR_FRABCH	10.97	0.143	490			0.017	0.065	< 0.050	< 0.050	0.0384	0.0405	53.8	0.00428	0.00745	< 0.0050	< 0.0050					0.00185
2022-05-17	FS_INF-K																					
2022-05-17	FS_INF-S																					
2022-05-17	FS_INF-K																					
2022-05-17	FS_INF-S																					
2022-05-17	FS_INF-K																					
2022-05-17	FS_INF-S																					
2022-05-17	FS_INF-K																					
2022-05-17	FS_INF-S																					
2022-05-17	FS_INF-K																					
2022-05-17	FS_INF-S																					
2022-05-17	FS_INF-K																					
2022-05-17	FS_INF-S																					
2022-05-18	FS_INF-K																					
2022-05-18	FS_INF-S																					
2022-05-18	FS_INF-K																					
2022-05-18	FS_INF-S																					
2022-05-18	FS_BPO	11.16 10.89				< 0.015																
2022-05-18	FS_INF-K	9.11																				
2022-05-18	FS_INF-S	11.35																				
2022-05-18	FS_BPO																					
2022-05-18	FS_BPO																					
2022-05-18	FS_INF-K																					
2022-05-18	FS_INF-S																					
2022-05-18	FS_INF-K																					
2022-05-18	FS_INF-S																					
2022-05-18	FS_INF-K																					
2022-05-18	FS_INF-S																					
2022-05-19	FS_INF-K																					
2022-05-19	FS_INF-S																					
2022-05-19	FS_INF-K																					
2022-05-19	FS_INF-S																					
2022-05-19	FS_BPO	10.34				< 0.015														0.049	0.061	
2022-05-19	FS_INF-K	9.31																				
2022-05-19	FS_INF-S	11.9																				
2022-05-19	FS_BPO																					
2022-05-19	FR_SCOUTDS	12.66	0.141	423 430	444	0.141	< 0.010	0.025	< 0.050	< 0.050	0.0379	0.0342	47.8	0.00323	0.00434	< 0.0050			0.00081	< 0.010	< 0.010	0.00149
2022-05-19	FS_INF-K																					
2022-05-19	FS_INF-S																					
2022-05-19	FS_INF-K																					
2022-05-19	FS_INF-S																					
2022-05-19	FS_INF-K																					
2022-05-19	FS_INF-S																					
2022-05-19	FS_INF-K																					
2022-05-19	FS_INF-S																					
2022-05-19	FS_INF-K																					
2022-05-19	FS_INF-S																					
2022-05-20	FS_INF-K																					
2022-05-20	FS_INF-S																					
2022-05-20	FS_INF-K																					
2022-05-20	FS_INF-S																					
2022-05-20	FS_BPO	11.39				< 0.015																
2022-05-20	FS_INF-K	9.45																				
2022-05-20	FS_INF-S	12.36																				
2022-05-20	FS_BPO																					
2022-05-20	FS_INF-K																					
2022-05-20	FS_INF-S																					
2022-05-20	FS_INF-K																					
2022-05-20	FS_INF-S																					
2022-05-20	FS_INF-K																					
2022-05-20	FS_INF-S																					

Parameter		Dissolved Oxygen, Field	Fluoride	Hardness, Total or Dissolved CaCO3	Hardness, Total or Dissolved CaCO3	Hydrogen Peroxide	Iron	Iron	Lead	Lead	Lithium	Lithium	Magnesium	Manganese	Manganese	Mercury	Mercury	Mercury	Mercury	MeSe(IV) – methylseleninic acid CH3SeO2H	Methaneselenonic Acid	Molybdenum
Fraction		N	N	D	T	N	D	T	D	T	D	T	T	D	T	D	T	T	T	D	D	D
Unit		mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ng/l	ug/l	ug/l	ug/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-05-20	FS_INF-K																					
2022-05-20	FS_INF-S																					
2022-05-21	FS_INF-K																					
2022-05-21	FS_INF-S																					
2022-05-21	FS_INF-K																					
2022-05-21	FS_INF-S																					
2022-05-21	FS_BPO	11.18				< 0.015																
2022-05-21	FS_INF-K	9.45																				
2022-05-21	FS_INF-S	12.28																				
2022-05-21	FS_BPO																					
2022-05-21	FS_INF-K																					
2022-05-21	FS_INF-S																					
2022-05-21	FS_INF-K																					
2022-05-21	FS_INF-S																					
2022-05-21	FS_INF-K																					
2022-05-21	FS_INF-S																					
2022-05-21	FS_INF-K																					
2022-05-21	FS_INF-S																					
2022-05-22	FS_INF-K																					
2022-05-22	FS_INF-S																					
2022-05-22	FS_INF-K																					
2022-05-22	FS_INF-S																					
2022-05-22	FS_BPO	12.25				< 0.015														0.055	0.043	
2022-05-22	FS_INF-K	9.64																				
2022-05-22	FS_INF-S	12.83																				
2022-05-22	FS_BPO																					
2022-05-22	FS_BPO	11.07																				
2022-05-22	FS_BPO																					
2022-05-22	FS_INF-K																					
2022-05-22	FS_INF-S																					
2022-05-22	FS_INF-K																					
2022-05-22	FS_INF-S																					
2022-05-22	FS_INF-K																					
2022-05-22	FS_INF-S																					
2022-05-23	FS_INF-K																					
2022-05-23	FS_INF-S																					
2022-05-23	FS_INF-K																					
2022-05-23	FS_INF-S																					
2022-05-23	FS_BPO	11.14	0.158	1640		< 0.015										< 0.0050			< 0.00050			
2022-05-23	FS_INF-K	9.01																				
2022-05-23	FS_INF-S	11.74																				
2022-05-23	FS_BPO																					
2022-05-23	FS_BPO																					
2022-05-23	FR_FRABCH																					
2022-05-23	FS_INF-K																					
2022-05-23	FS_INF-S																					
2022-05-23	FS_INF-K																					
2022-05-23	FS_INF-S																					
2022-05-23	FS_INF-K																					
2022-05-23	FS_INF-S																					
2022-05-23	FS_INF-K																					
2022-05-23	FS_INF-S																					
2022-05-23	FS_INF-K																					
2022-05-23	FS_INF-S																					
2022-05-24	FS_INF-K																					
2022-05-24	FS_INF-S																					
2022-05-24	FS_INF-K																					
2022-05-24	FS_INF-S																					
2022-05-24	FS_BPO	10.92		1720	1550	< 0.015	< 0.020	0.120	< 0.100	0.130	0.0994	0.0918	203	0.0292	0.0303					0.040	0.048	0.0481
2022-05-24	FS_INF-K	9.16		1520	1760		< 0.020	0.012	< 0.100	< 0.050	0.294	0.332	198	0.0307	0.00070					0.257	< 0.010	0.00837
2022-05-24	FS_INF-S	11.02		1820	2120		< 0.020	< 0.020	< 0.100	< 0.100	0.0698	0.0687	298	0.00309	0.00400					0.048	< 0.010	0.00481
2022-05-24	FS_BPO																					
2022-05-24	FR_FRABCH	10.89	0.154	575			0.013	0.026	< 0.050	< 0.050	0.0430	0.0461	61.5	0.00530	0.00549	< 0.0050	< 0.0050					0.00203
2022-05-24	FS_INF-K																					
2022-05-24	FS_INF-S																					
2022-05-24	FS_INF-K																					
2022-05-24	FS_INF-S																					
2022-05-24	FS_INF-K																					
2022-05-24	FS_INF-S																					
2022-05-24	FS_INF-K																					
2022-05-24	FS_INF-S																					
2022-05-24	FS_INF-K																					
2022-05-24	FS_INF-S																					
2022-05-25	FS_INF-K																					
2022-05-25	FS_INF-S																					
2022-05-25	FS_INF-K																					
2022-05-25	FS_INF-S																					
2022-05-25	FS_BPO	10.49				< 0.015																
2022-05-25	FS_INF-K	8.74																				
2022-05-25	FS_INF-S	11.04																				
2022-05-25	FS_BPO																					
2022-05-25	FS_INF-K																					
2022-05-25	FS_INF-S																					
2022-05-25	FS_INF-K																					

Parameter		Dissolved Oxygen, Field	Fluoride	Hardness, Total or Dissolved CaCO3	Hardness, Total or Dissolved CaCO3	Hydrogen Peroxide	Iron	Iron	Lead	Lead	Lithium	Lithium	Magnesium	Manganese	Manganese	Mercury	Mercury	Mercury	Mercury	MeSe(IV) – methylseleninic acid CH3SeO2H	Methaneselenonic Acid	Molybdenum
Fraction		N	N	D	T	N	D	T	D	T	D	T	T	D	T	D	T	T	T	D	D	D
Unit		mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ng/l	ug/l	ug/l	ug/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-05-25	FS_INF-S																					
2022-05-25	FS_INF-K																					
2022-05-25	FS_INF-S																					
2022-05-25	FS_INF-K																					
2022-05-25	FS_INF-S																					
2022-05-25	FS_INF-K																					
2022-05-25	FS_INF-S																					
2022-05-26	FS_INF-K																					
2022-05-26	FS_INF-S																					
2022-05-26	FS_INF-K																					
2022-05-26	FS_INF-S																					
2022-05-26	FS_BPO	10.54				< 0.015														0.044	0.052	
2022-05-26	FS_INF-K	8.68																				
2022-05-26	FS_INF-S	11.46																				
2022-05-26	FS_BPO																					
2022-05-26	FR_SCOUTDS	11.91	0.178	375		0.304	< 0.010	0.043	< 0.050	< 0.050	0.0300	0.0288	39.7	0.00296	0.00479	< 0.0050			0.00108	< 0.010	< 0.010	0.00228
2022-05-26	FS_INF-K																					
2022-05-26	FS_INF-S																					
2022-05-26	FS_INF-K																					
2022-05-26	FS_INF-S																					
2022-05-26	FS_INF-K																					
2022-05-26	FS_INF-S																					
2022-05-26	FS_INF-K																					
2022-05-26	FS_INF-S																					
2022-05-26	FS_INF-K																					
2022-05-26	FS_INF-S																					
2022-05-27	FS_INF-K																					
2022-05-27	FS_INF-S																					
2022-05-27	FS_INF-K																					
2022-05-27	FS_INF-S																					
2022-05-27	FS_BPO	10.35				< 0.015																
2022-05-27	FS_INF-K	8.68																				
2022-05-27	FS_INF-S	11.18																				
2022-05-27	FS_INF-K																					
2022-05-27	FS_INF-S																					
2022-05-27	FS_INF-K																					
2022-05-27	FS_INF-K																					
2022-05-27	FS_INF-S																					
2022-05-27	FS_INF-K																					
2022-05-27	FS_INF-S																					
2022-05-28	FS_INF-K																					
2022-05-28	FS_INF-S																					
2022-05-28	FS_INF-K																					
2022-05-28	FS_INF-S																					
2022-05-28	FS_BPO	11.03				< 0.015																
2022-05-28	FS_INF-K	8.88																				
2022-05-28	FS_INF-S	10.83																				
2022-05-28	FS_INF-K																					
2022-05-28	FS_INF-S																					
2022-05-28	FS_INF-K																					
2022-05-28	FS_INF-S																					
2022-05-28	FS_INF-K																					
2022-05-28	FS_INF-S																					
2022-05-28	FS_INF-K																					
2022-05-28	FS_INF-S																					
2022-05-29	FS_INF-K																					
2022-05-29	FS_INF-S																					
2022-05-29	FS_INF-K																					
2022-05-29	FS_INF-S																					
2022-05-29	FS_BPO	9.69				< 0.015														0.083	0.055	
2022-05-29	FS_INF-K	8.76																				
2022-05-29	FS_INF-S	10.93																				
2022-05-29	FS_BPO	10.94																				
2022-05-29	FS_INF-K																					
2022-05-29	FS_INF-S																					
2022-05-29	FS_INF-K																					
2022-05-29	FS_INF-S																					
2022-05-29	FS_INF-K																					
2022-05-29	FS_INF-S																					
2022-05-29	FS_INF-K																					
2022-05-29	FS_INF-S																					
2022-05-30	FS_INF-K																					
2022-05-30	FS_INF-S																					
2022-05-30	FS_BPO	10.81	0.146	1640		0.036										< 0.0050			0.00081			
2022-05-30	FS_INF-K	8.22 6.55	0.157	1450												< 0.0050			< 0.00050			

Parameter		Dissolved Oxygen, Field	Fluoride	Hardness, Total or Dissolved CaCO3	Hardness, Total or Dissolved CaCO3	Hydrogen Peroxide	Iron	Iron	Lead	Lead	Lithium	Lithium	Magnesium	Manganese	Manganese	Mercury	Mercury	Mercury	Mercury	MeSe(IV) – methylseleninic acid CH3SeO2H	Methaneselenonic Acid	Molybdenum
Fraction		N	N	D	T	N	D	T	D	T	D	T	T	D	T	D	T	T	T	D	D	D
Unit		mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ng/l	ug/l	ug/l	ug/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-05-30	FS_INF-S	11.26	0.142	1760												< 0.0050			0.00098			
2022-05-30	FS_BPO																					
2022-05-30	FS_INF-K																					
2022-05-30	FS_INF-S																					
2022-05-30	FS_INF-K																					
2022-05-30	FS_INF-S																					
2022-05-30	FS_INF-K																					
2022-05-30	FS_INF-S																					
2022-05-30	FS_INF-K																					
2022-05-30	FS_INF-S																					
2022-05-30	FS_INF-K																					
2022-05-30	FS_INF-S																					
2022-05-31	FS_INF-K																					
2022-05-31	FS_INF-S																					
2022-05-31	FS_INF-K																					
2022-05-31	FS_INF-S																					
2022-05-31	FS_BPO	11.62				0.02	< 0.020	0.233	0.136	3.44	0.110	0.100	230	0.0149	0.0155					0.094	0.045	0.0515
2022-05-31	FS_INF-K	9.67		1500			< 0.010	< 0.020	< 0.050	< 0.100	0.268	0.253	159	0.00070	0.00068							0.00156
2022-05-31	FS_INF-S	11.94		1850			< 0.020	< 0.020	< 0.100	< 0.100	0.0698	0.0647	253	0.00463	0.00486							0.00492
2022-05-31	FR_FRABCH	10.79	0.137	378			< 0.010	0.125	< 0.050	0.102	0.0320	0.0267	39.7	0.00314	0.00990	< 0.0050	< 0.0050					0.00141
2022-05-31	FR_FRABCH																					
2022-05-31	FS_INF-K																					
2022-05-31	FS_INF-S																					
2022-05-31	FS_INF-K																					
2022-05-31	FS_INF-S																					
2022-05-31	FS_INF-K																					
2022-05-31	FS_INF-S																					
2022-05-31	FS_INF-K																					
2022-05-31	FS_INF-S																					
2022-06-01	FS_INF-K																					
2022-06-01	FS_INF-S																					
2022-06-01	FS_BPO	11				0.034																
2022-06-01	FS_INF-K	9.49																				
2022-06-01	FS_INF-S	11.75																				
2022-06-01	FS_INF-K																					
2022-06-01	FS_INF-S																					
2022-06-01	FS_INF-K																					
2022-06-01	FS_INF-S																					
2022-06-01	FS_INF-K																					
2022-06-01	FS_INF-S																					
2022-06-01	FS_INF-K																					
2022-06-01	FS_INF-S																					
2022-06-02	FS_INF-K																					
2022-06-02	FS_INF-S																					
2022-06-02	FS_INF-K																					
2022-06-02	FS_INF-S																					
2022-06-02	FS_BPO	10.25				< 0.015														0.072	0.064	
2022-06-02	FS_INF-K	9.58																				
2022-06-02	FS_INF-S	11.17																				
2022-06-02	FR_SCOUTDS	11.5	0.161	271		< 0.015	< 0.010	0.021	< 0.050	< 0.050	0.0178	0.0189	30.0	0.00195	0.00295	< 0.0050			0.00054	0.014	< 0.010	0.00186
2022-06-02	FS_INF-K																					
2022-06-02	FS_INF-S																					
2022-06-02	FS_INF-K																					
2022-06-02	FS_INF-S																					
2022-06-02	FS_INF-K																					
2022-06-02	FS_INF-S																					
2022-06-02	FS_BPO	10.53																				
2022-06-02	FS_INF-K																					
2022-06-02	FS_INF-S																					
2022-06-02	FS_INF-K																					
2022-06-02	FS_INF-S																					
2022-06-03	FS_INF-K																					
2022-06-03	FS_INF-S																					
2022-06-03	FS_INF-K																					
2022-06-03	FS_INF-S																					
2022-06-03	FS_BPO	10.71				< 0.015																
2022-06-03	FS_INF-K	11.81																				
2022-06-03	FS_INF-S	9.94																				
2022-06-03	FS_INF-K																					
2022-06-03	FS_INF-S																					
2022-06-03	FS_INF-K																					
2022-06-03	FS_INF-S																					
2022-06-03	FS_INF-K																					
2022-06-03	FS_INF-S																					
2022-06-03	FS_INF-K																					
2022-06-03	FS_INF-S																					
2022-06-04	FS_INF-K																					
2022-06-04	FS_INF-S																					
2022-06-04	FS_INF-K																					
2022-06-04	FS_INF-S																					
2022-06-04	FS_BPO	10.53				< 0.015																

	Parameter	Dissolved Oxygen, Field	Fluoride	Hardness, Total or Dissolved CaCO3	Hardness, Total or Dissolved CaCO3	Hydrogen Peroxide	Iron	Iron	Lead	Lead	Lithium	Lithium	Magnesium	Manganese	Manganese	Mercury	Mercury	Mercury	Mercury	MeSe(IV) – methylseleninic acid CH3SeO2H	Methaneselenonic Acid	Molybdenum
	Fraction	N	N	D	T	N	D	T	D	T	D	T	T	D	T	D	T	T	T	D	D	D
	Unit	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ng/l	ug/l	ug/l	ug/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-06-04	FS_INF-K	10.43																				
2022-06-04	FS_INF-S	11.4																				
2022-06-04	FS_INF-K																					
2022-06-04	FS_INF-S																					
2022-06-04	FS_INF-K																					
2022-06-04	FS_INF-S																					
2022-06-04	FS_INF-K																					
2022-06-04	FS_INF-S																					
2022-06-04	FS_INF-K																					
2022-06-04	FS_INF-S																					
2022-06-04	FS_INF-K																					
2022-06-04	FS_INF-S																					
2022-06-05	FS_INF-K																					
2022-06-05	FS_INF-S																					
2022-06-05	FS_INF-K																					
2022-06-05	FS_INF-S																					
2022-06-05	FS_BPO	10.42				< 0.015														0.083	0.049	
2022-06-05	FS_INF-K	9.8																				
2022-06-05	FS_INF-S	10.76																				
2022-06-05	FS_INF-K																					
2022-06-05	FS_INF-S																					
2022-06-05	FS_INF-K																					
2022-06-05	FS_INF-S																					
2022-06-05	FS_INF-K																					
2022-06-05	FS_INF-S																					
2022-06-05	FS_INF-K																					
2022-06-05	FS_INF-S																					
2022-06-05	FS_INF-K																					
2022-06-05	FS_INF-S																					
2022-06-06	FS_INF-K																					
2022-06-06	FS_INF-S																					
2022-06-06	FS_INF-K																					
2022-06-06	FS_INF-S																					
2022-06-06	FS_BPO	11.32	0.194	1890		< 0.015										< 0.0050			< 0.00050			
2022-06-06	FS_INF-K	9.99																				
2022-06-06	FS_INF-S	11.26																				
2022-06-06	FS_BPO																					
2022-06-06	FS_INF-K																					
2022-06-06	FS_INF-S																					
2022-06-06	FS_INF-K																					
2022-06-06	FS_INF-S																					
2022-06-06	FS_INF-K																					
2022-06-06	FS_INF-S																					
2022-06-06	FS_INF-K																					
2022-06-06	FS_INF-S																					
2022-06-07	FS_INF-K																					
2022-06-07	FS_INF-S																					
2022-06-07	FS_INF-K																					
2022-06-07	FS_INF-S																					
2022-06-07	FS_BPO	10.14				< 0.015	0.016	0.296	< 0.050	< 0.100	0.0910	0.0874	221	0.0207	0.0244					0.107	0.037	0.0470
2022-06-07	FS_INF-K	10.21		1290			< 0.010	< 0.010	< 0.050	< 0.050	0.184	0.174	134	0.00071	0.00079					< 0.010	< 0.010	0.00174
2022-06-07	FS_INF-S	11.11		1760			< 0.020	0.021	< 0.100	< 0.100	0.0584	0.0523	239	0.00489	0.00570					0.036	< 0.010	0.00445
2022-06-07	FR_FRABCH	10.52	0.146	304			< 0.010	0.390	< 0.050	0.269	0.0226	0.0235	33.9	0.00486	0.0244	< 0.0050	< 0.0050			< 0.010	< 0.010	0.00110
2022-06-07	FS_INF-K																					
2022-06-07	FS_INF-S																					
2022-06-07	FS_INF-K																					
2022-06-07	FS_INF-S																					
2022-06-07	FS_INF-K																					
2022-06-07	FS_INF-S																					
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2022-06-07	FS_INF-S																					
2022-06-07	FS_INF-K																					
2022-06-07	FS_INF-S																					
2022-06-08	FS_INF-K																					
2022-06-08	FS_INF-S																					
2022-06-08	FS_INF-K																					
2022-06-08	FS_INF-S																					
2022-06-08	FS_BPO	11.75				< 0.015																
2022-06-08	FS_INF-K	10.32																				
2022-06-08	FS_INF-S	11.6																				
2022-06-08	FS_INF-K																					
2022-06-08	FS_INF-S																					
2022-06-08	FS_INF-K																					
2022-06-08	FS_INF-S																					
2022-06-08	FS_INF-K																					
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2022-06-08	FS_INF-S																					
2022-06-09	FS_INF-K																					
2022-06-09	FS_INF-S																					
2022-06-09	FS_INF-K																					
2022-06-09	FS_INF-S																					

Parameter		Dissolved Oxygen, Field	Fluoride	Hardness, Total or Dissolved CaCO3	Hardness, Total or Dissolved CaCO3	Hydrogen Peroxide	Iron	Iron	Lead	Lead	Lithium	Lithium	Magnesium	Manganese	Manganese	Mercury	Mercury	Mercury	Mercury	MeSe(IV) – methylseleninic acid CH3SeO2H	Methaneselenonic Acid	Molybdenum
Fraction		N	N	D	T	N	D	T	D	T	D	T	T	D	T	D	T	T	T	D	D	D
Unit		mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ng/l	ug/l	ug/l	ug/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-06-09	FS_BPO	9.27				0.023														0.129	0.047	
2022-06-09	FS_INF-K	9.65																				
2022-06-09	FS_INF-S	10.63																				
2022-06-09	FR_SCOUTDS	11.11	0.061	208		< 0.015	< 0.010	0.115	< 0.050	0.088	0.0150	0.0153	21.3	0.00159	0.0399	< 0.0050			0.00167	0.012	< 0.010	0.00128
2022-06-09	FS_INF-K																					
2022-06-09	FS_INF-S																					
2022-06-09	FR_FRABCH																					
2022-06-09	FS_INF-K																					
2022-06-09	FS_INF-S																					
2022-06-09	FS_INF-K																					
2022-06-09	FS_INF-S																					
2022-06-09	FS_INF-K																					
2022-06-09	FS_INF-S																					
2022-06-09	FS_INF-K																					
2022-06-09	FS_INF-S																					
2022-06-10	FS_INF-K																					
2022-06-10	FS_INF-S																					
2022-06-10	FS_INF-K																					
2022-06-10	FS_INF-S																					
2022-06-10	FS_BPO	8.67				0.033																
2022-06-10	FS_INF-K	8.99																				
2022-06-10	FS_INF-S	9.84																				
2022-06-10	FS_INF-K																					
2022-06-10	FS_INF-S																					
2022-06-10	FS_INF-K																					
2022-06-10	FS_INF-S																					
2022-06-10	FS_INF-K																					
2022-06-10	FS_INF-S																					
2022-06-10	FS_INF-K																					
2022-06-10	FS_INF-S																					
2022-06-10	FS_INF-K																					
2022-06-10	FS_INF-S																					
2022-06-11	FS_INF-K																					
2022-06-11	FS_INF-S																					
2022-06-11	FS_INF-K																					
2022-06-11	FS_INF-S																					
2022-06-11	FS_INF-K																					
2022-06-11	FS_BPO	8.41				< 0.015																
2022-06-11	FS_INF-K	8.47																				
2022-06-11	FS_INF-S	9.53																				
2022-06-11	FS_INF-K																					
2022-06-11	FS_INF-S																					
2022-06-11	FS_INF-K																					
2022-06-11	FS_INF-S																					
2022-06-11	FS_INF-K																					
2022-06-11	FS_INF-S																					
2022-06-11	FS_INF-K																					
2022-06-12	FS_INF-K																					
2022-06-12	FS_INF-S																					
2022-06-12	FS_INF-K																					
2022-06-12	FS_INF-S																					
2022-06-12	FS_BPO	9.31				< 0.015														0.108	0.050	
2022-06-12	FS_INF-K	9.89																				
2022-06-12	FS_INF-S	10.72																				
2022-06-12	FS_INF-K																					
2022-06-12	FS_INF-S																					
2022-06-12	FS_INF-K																					
2022-06-12	FS_INF-S																					
2022-06-12	FS_INF-K																					
2022-06-12	FS_INF-S																					
2022-06-12	FS_INF-K																					
2022-06-12	FS_INF-S																					
2022-06-12	FS_INF-K																					
2022-06-12	FS_INF-S																					
2022-06-13	FS_INF-K																					
2022-06-13	FS_INF-S																					
2022-06-13	FS_INF-K																					
2022-06-13	FS_INF-S																					
2022-06-13	FS_BPO	9.24	0.161	1900		0.022										< 0.0050			0.00078			
2022-06-13	FS_INF-K	9.79	0.186	837												< 0.0050			0.00068			
2022-06-13	FS_INF-S	10.98	0.151	2150												< 0.0050			0.00093			
2022-06-13	FS_BPO																					
2022-06-13	FS_INF-K																					
2022-06-13	FS_INF-S																					
2022-06-13	FS_INF-K																					
2022-06-13	FS_INF-S																					
2022-06-13	FS_INF-K																					
2022-06-13	FS_INF-S																					
2022-06-13	FS_INF-K																					
2022-06-13	FS_INF-S																					

	Parameter	Dissolved Oxygen, Field	Fluoride	Hardness, Total or Dissolved CaCO3	Hardness, Total or Dissolved CaCO3	Hydrogen Peroxide	Iron	Iron	Lead	Lead	Lithium	Lithium	Magnesium	Manganese	Manganese	Mercury	Mercury	Mercury	Mercury	MeSe(IV) – methylseleninic acid CH3SeO2H	Methaneselenonic Acid	Molybdenum
	Fraction	N	N	D	T	N	D	T	D	T	D	T	T	D	T	D	T	T	T	D	D	D
	Unit	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ng/l	ug/l	ug/l	ug/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-06-14	FS_BPO	8.42				0.041																
2022-06-14	FR_FRABCH	10.8	0.131	324			< 0.010	0.409	< 0.050	0.380	0.0276	0.0284	34.4	0.00368	0.0287	< 0.0050	< 0.0050					0.00117
2022-06-14	FS_BPO	5.91																				
2022-06-14	FR_FRABCH																					
2022-06-14	FS_BPO	6.1																				
2022-06-14	FS_BPO	9.25				< 0.015																
2022-06-14	FS_INF-K	9.86																				
2022-06-14	FS_INF-S	10.5																				
2022-06-14	FS_BPO																			0.077	0.026	
2022-06-14	FS_INF-K			784			< 0.020	< 0.020	< 0.100	< 0.100	0.129	0.122	88.0	0.00142	0.00139					< 0.010	< 0.010	0.00262
2022-06-14	FS_INF-S			1950			< 0.020	0.025	< 0.100	< 0.100	0.0837	0.0696	258	0.00689	0.00773					0.038	< 0.010	0.00513
2022-06-15	FS_BPO	9.9																				
2022-06-15	FS_BPO	9.95																				
2022-06-15	FS_INF-K																					
2022-06-15	FS_INF-S																					
2022-06-15	FS_BPO	9.8				< 0.015																
2022-06-15	FS_INF-K	9.27																				
2022-06-15	FS_INF-S	10.64																				
2022-06-15	FS_INF-K																					
2022-06-15	FS_INF-S																					
2022-06-15	FS_BPO	10.04																				
2022-06-15	FS_INF-K																					
2022-06-15	FS_INF-S																					
2022-06-15	FS_INF-K																					
2022-06-15	FS_INF-S																					
2022-06-15	FS_INF-K																					
2022-06-15	FS_INF-S																					
2022-06-15	FS_INF-K																					
2022-06-15	FS_INF-S																					
2022-06-16	FS_INF-K																					
2022-06-16	FS_INF-S																					
2022-06-16	FS_INF-K																					
2022-06-16	FS_INF-S																					
2022-06-16	FS_BPO	11.6				< 0.015														0.166	0.113	
2022-06-16	FS_INF-K	9.78																				
2022-06-16	FS_INF-S	10.64																				
2022-06-16	FR_SCOUTDS	10.72	0.127	250	242		< 0.010	0.064	< 0.050	0.061	0.0174	0.0169	25.1	0.00257	0.00538	< 0.0050			0.00145	< 0.010	< 0.010	0.00159
2022-06-16	FS_INF-K																					
2022-06-16	FS_INF-S																					
2022-06-16	FR_SCOUTDS					0.08																
2022-06-16	FS_INF-K																					
2022-06-16	FS_INF-S																					
2022-06-16	FS_INF-K																					
2022-06-16	FS_INF-S																					
2022-06-16	FS_INF-K																					
2022-06-16	FS_INF-S																					
2022-06-16	FS_INF-K																					
2022-06-16	FS_INF-S																					
2022-06-17	FS_INF-K																					
2022-06-17	FS_INF-S																					
2022-06-17	FS_INF-K																					
2022-06-17	FS_INF-S																					
2022-06-17	FS_BPO	13.61				< 0.015																
2022-06-17	FS_INF-K	9.73																				
2022-06-17	FS_INF-S	10.66																				
2022-06-17	FS_INF-K																					
2022-06-17	FS_INF-S																					
2022-06-17	FS_INF-S																					
2022-06-17	FS_INF-S																					
2022-06-17	FS_INF-S																					
2022-06-18	FS_INF-S																					
2022-06-18	FS_BPO	9.01				< 0.015																
2022-06-18	FS_INF-S	9.72																				
2022-06-18	FS_INF-S																					
2022-06-18	FS_INF-S																					
2022-06-18	FS_INF-S																					
2022-06-18	FS_INF-S																					
2022-06-18	FS_INF-S																					
2022-06-19	FS_INF-S																					
2022-06-19	FS_INF-S																					
2022-06-19	FS_BPO	8.79				< 0.015														0.133	0.065	
2022-06-19	FS_INF-S	9.14																				
2022-06-19	FS_INF-K																					
2022-06-19	FS_INF-S																					
2022-06-19	FS_INF-S																					
2022-06-19	FS_INF-S																					
2022-06-19	FS_INF-S																					
2022-06-20	FS_INF-S																					
2022-06-20	FS_INF-S																					
2022-06-20	FS_BPO	9.79	0.168	1760		< 0.015										< 0.0050			< 0.00050			
2022-06-20	FS_INF-K	4.23																				

Parameter		Dissolved Oxygen, Field	Fluoride	Hardness, Total or Dissolved CaCO3	Hardness, Total or Dissolved CaCO3	Hydrogen Peroxide	Iron	Iron	Lead	Lead	Lithium	Lithium	Magnesium	Manganese	Manganese	Mercury	Mercury	Mercury	Mercury	MeSe(IV) – methylseleninic acid CH3SeO2H	Methaneselenonic Acid	Molybdenum
Fraction		N	N	D	T	N	D	T	D	T	D	T	T	D	T	D	T	T	T	D	D	D
Unit		mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ng/l	ug/l	ug/l	ug/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-06-20	FS_INF-S	10.15																				
2022-06-20	FS_BPO																					
2022-06-20	FS_INF-S																					
2022-06-20	FS_INF-S																					
2022-06-20	FS_INF-S																					
2022-06-20	FS_INF-S																					
2022-06-21	FS_INF-S																					
2022-06-21	FS_INF-S																					
2022-06-21	FS_BPO	9.55				0.036	0.027	0.215	< 0.100	< 0.100	0.0686	0.0680	230	0.0282	0.0301					0.172	0.050	0.0457
2022-06-21	FS_INF-S	10.33			1770		< 0.020	< 0.020	< 0.100	< 0.100	0.0672	0.0698	238	0.00689	0.00779					0.047	< 0.010	0.00551
2022-06-21	FR_FRABCH	10.14	0.130	281			< 0.010	0.530	< 0.050	0.487	0.0204	0.0261	31.4	0.0178	0.0380	< 0.0050	< 0.0050					0.00122
2022-06-21	FS_INF-S																					
2022-06-21	FS_INF-S																					
2022-06-21	FS_INF-S																					
2022-06-21	FS_INF-S																					
2022-06-21	FS_INF-S																					
2022-06-22	FS_INF-S																					
2022-06-22	FS_INF-S																					
2022-06-22	FS_BPO	10.1				< 0.015																
2022-06-22	FS_INF-S	9.77																				
2022-06-22	FS_INF-K	10.06																				
2022-06-22	FS_INF-S																					
2022-06-22	FS_INF-K																					
2022-06-22	FS_INF-S																					
2022-06-22	FS_INF-K																					
2022-06-22	FS_INF-S																					
2022-06-22	FS_INF-K																					
2022-06-22	FS_INF-S																					
2022-06-22	FS_INF-K																					
2022-06-22	FS_INF-S																					
2022-06-23	FS_INF-K																					
2022-06-23	FS_INF-S																					
2022-06-23	FS_INF-K																					
2022-06-23	FS_INF-S																					
2022-06-23	FS_INF-K																					
2022-06-23	FS_INF-S																					
2022-06-23	FS_INF-K																					
2022-06-23	FS_INF-S																					
2022-06-23	FS_INF-K																					
2022-06-23	FS_INF-S																					
2022-06-23	FS_INF-K																					
2022-06-23	FS_INF-S																					
2022-06-23	FS_BPO	10.92				0.034														0.170	0.084	
2022-06-23	FS_INF-K	10.3																				
2022-06-23	FS_INF-S	11.22																				
2022-06-23	FR_SCOUTDS	11.39	0.147	199	214	0.049	< 0.010	0.145	< 0.050	0.077	0.0133	0.0134	20.7	0.00170	0.00756	< 0.0050			0.00106	< 0.010	< 0.010	0.00136
2022-06-23	FS_INF-K																					
2022-06-23	FS_INF-S																					
2022-06-23	FS_INF-K																					
2022-06-23	FS_INF-S																					
2022-06-23	FS_INF-K																					
2022-06-23	FS_INF-S																					
2022-06-23	FS_INF-K																					
2022-06-23	FS_INF-S																					
2022-06-24	FS_INF-K																					
2022-06-24	FS_INF-S																					
2022-06-24	FS_INF-K																					
2022-06-24	FS_INF-S																					
2022-06-24	FS_BPO	11.63 11.71				< 0.015																
2022-06-24	FS_INF-K	9.78 10.06																				
2022-06-24	FS_INF-S	10.76 10.21																				
2022-06-24	FS_INF-K																					
2022-06-24	FS_INF-S																					
2022-06-24	FS_INF-K																					
2022-06-24	FS_INF-S																					
2022-06-24	FS_INF-K																					
2022-06-24	FS_INF-S																					
2022-06-24	FS_INF-K																					
2022-06-24	FS_INF-S																					
2022-06-24	FS_INF-K																					
2022-06-24	FS_INF-S																					
2022-06-25	FS_INF-K																					
2022-06-25	FS_INF-S																					
2022-06-25	FS_INF-K																					
2022-06-25	FS_INF-S																					
2022-06-25	FS_BPO	10.52				< 0.015																
2022-06-25	FS_INF-K	9.8																				
2022-06-25	FS_INF-S	10.61																				
2022-06-25	FS_INF-K																					
2022-06-25	FS_INF-S																					
2022-06-25	FS_INF-K																					
2022-06-25	FS_INF-S																					
2022-06-25	FS_INF-K																					
2022-06-25	FS_INF-S																					
2022-06-25	FS_INF-K																					
2022-06-25	FS_INF-S																					
2022-06-25	FS_INF-K																					
2022-06-25	FS_INF-S																					
2022-06-26	FS_INF-K																					

Parameter		Dissolved Oxygen, Field	Fluoride	Hardness, Total or Dissolved CaCO3	Hardness, Total or Dissolved CaCO3	Hydrogen Peroxide	Iron	Iron	Lead	Lead	Lithium	Lithium	Magnesium	Manganese	Manganese	Mercury	Mercury	Mercury	Mercury	MeSe(IV) – methylseleninic acid CH3SeO2H	Methaneselenonic Acid	Molybdenum
Fraction		N	N	D	T	N	D	T	D	T	D	T	T	D	T	D	T	T	T	D	D	D
Unit		mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ng/l	ug/l	ug/l	ug/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-06-26	FS_INF-S																					
2022-06-26	FS_INF-K																					
2022-06-26	FS_INF-S																					
2022-06-26	FS_BPO	10.38				< 0.015														0.181	0.051	
2022-06-26	FS_INF-K	10.32																				
2022-06-26	FS_INF-S	10.48																				
2022-06-26	FS_INF-K																					
2022-06-26	FS_INF-S																					
2022-06-26	FS_INF-K																					
2022-06-26	FS_INF-S																					
2022-06-26	FS_INF-K																					
2022-06-26	FS_INF-S																					
2022-06-26	FS_INF-K																					
2022-06-26	FS_INF-S																					
2022-06-26	FS_INF-K																					
2022-06-27	FS_INF-K																					
2022-06-27	FS_INF-S																					
2022-06-27	FS_INF-K																					
2022-06-27	FS_INF-S																					
2022-06-27	FS_BPO	10.1	0.151	1660		< 0.015										< 0.0050			< 0.00050			
2022-06-27	FS_INF-K	9.84	0.188	632												< 0.0050			0.00068			
2022-06-27	FS_INF-S	10.61	0.141	1830												< 0.0050			0.00082			
2022-06-27	FS_BPO																					
2022-06-27	FS_INF-K																					
2022-06-27	FS_INF-S																					
2022-06-27	FS_INF-K																					
2022-06-27	FS_INF-S																					
2022-06-27	FS_INF-K																					
2022-06-27	FS_INF-S																					
2022-06-27	FS_INF-K																					
2022-06-27	FS_INF-S																					
2022-06-27	FS_BPO	8.93				< 0.015																
2022-06-27	FS_INF-K																					
2022-06-27	FS_INF-S																					
2022-06-28	FS_BPO	9.91				< 0.015																
2022-06-28	FS_INF-K																					
2022-06-28	FS_INF-S																					
2022-06-28	FS_INF-K																					
2022-06-28	FS_INF-S																					
2022-06-28	FS_BPO	8.41				< 0.015	0.025	0.144	< 0.100	< 0.100	0.0685	0.0679	222	0.0148	0.0168					0.206	0.032	0.0539
2022-06-28	FS_INF-K	9.71		632			< 0.020	< 0.020	< 0.100	< 0.100	0.0830	0.0869	70.4	0.00148	0.00156							0.00279
2022-06-28	FS_INF-S	10.19		1860			< 0.020	< 0.020	< 0.100	< 0.100	0.0658	0.0676	257	0.00750	0.00782							0.00500
2022-06-28	FR_FRABCH	10.14	0.145	304			< 0.010	0.134	0.059	0.142	0.0259	0.0253	31.6	0.00269	0.0104	< 0.0050	< 0.0050					0.00133
2022-06-28	FR_FRABCH																					
2022-06-28	FS_INF-K																					
2022-06-28	FS_INF-S																					
2022-06-28	FS_INF-K																					
2022-06-28	FS_INF-S																					
2022-06-28	FS_INF-K																					
2022-06-28	FS_INF-S																					
2022-06-28	FS_INF-K																					
2022-06-28	FS_INF-S																					
2022-06-28	FS_INF-K																					
2022-06-28	FS_INF-S																					
2022-06-29	FS_INF-K																					
2022-06-29	FS_INF-S																					
2022-06-29	FS_INF-K																					
2022-06-29	FS_INF-S																					
2022-06-29	FS_BPO	8.72				< 0.015																
2022-06-29	FS_INF-K	9.68																				
2022-06-29	FS_INF-S	9.53																				
2022-06-29	FS_INF-K																					
2022-06-29	FS_INF-S																					
2022-06-29	FS_INF-K																					
2022-06-29	FS_INF-S																					
2022-06-29	FS_BPO	8.71																				
2022-06-29	FS_BPO		0.166	1590			0.028	0.219	< 0.100	< 0.100	0.0767	0.0659	232	0.0129	0.0156	< 0.0050			< 0.00050			0.0531
2022-06-29	FS_INF-K																					
2022-06-29	FS_INF-S																					
2022-06-29	FS_INF-K																					
2022-06-29	FS_INF-S																					
2022-06-29	FS_INF-K																					
2022-06-29	FS_INF-S																					
2022-06-30	FS_INF-K																					
2022-06-30	FS_INF-S																					
2022-06-30	FS_INF-K																					
2022-06-30	FS_INF-S																					
2022-06-30	FS_BPO	9.77				< 0.015	< 0.020	0.218	< 0.100	0.108	0.0728	0.0681	227	0.0188	0.0236					0.173	< 0.010	0.0508
2022-06-30	FS_INF-K	9.44																				
2022-06-30	FS_INF-S	10.1																				
2022-06-30	FS_BPO	10.4																				

Parameter		Dissolved Oxygen, Field	Fluoride	Hardness, Total or Dissolved CaCO3	Hardness, Total or Dissolved CaCO3	Hydrogen Peroxide	Iron	Iron	Lead	Lead	Lithium	Lithium	Magnesium	Manganese	Manganese	Mercury	Mercury	Mercury	Mercury	MeSe(IV) – methylseleninic acid CH3SeO2H	Methaneselenonic Acid	Molybdenum
Fraction		N	N	D	T	N	D	T	D	T	D	T	T	D	T	D	T	T	T	D	D	D
Unit		mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ng/l	ug/l	ug/l	ug/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-06-30	FR_SCOUTDS	11.37				< 0.015																
2022-06-30	FR_SCOUTDS		0.143	254			< 0.010	0.052	< 0.050	< 0.050	0.0205	0.0181	25.8	0.00193	0.00424	< 0.0050			0.00102	< 0.010	< 0.010	0.00163
2022-06-30	FS_INF-K																					
2022-06-30	FS_INF-S																					
2022-06-30	FS_INF-K																					
2022-06-30	FS_INF-S																					
2022-06-30	FS_INF-K																					
2022-06-30	FS_INF-S																					
2022-06-30	FS_INF-K																					
2022-06-30	FS_INF-S																					
2022-06-30	FS_INF-K																					
2022-06-30	FS_INF-S																					
2022-07-01	FS_INF-K																					
2022-07-01	FS_INF-S																					
2022-07-01	FS_INF-K																					
2022-07-01	FS_INF-S																					
2022-07-01	FS_BPO	8.61				< 0.015																
2022-07-01	FS_INF-K	9.02																				
2022-07-01	FS_INF-S	10.03																				
2022-07-01	FS_INF-K																					
2022-07-01	FS_INF-S																					
2022-07-01	FS_INF-K																					
2022-07-01	FS_INF-S																					
2022-07-01	FS_INF-K																					
2022-07-01	FS_INF-S																					
2022-07-02	FS_BPO	9.27				< 0.015																
2022-07-02	FS_BPO	5.38																				
2022-07-02	FR_SCOUTDS																					
2022-07-02	FR_FRABCH																					
2022-07-02	FS_BPO																					
2022-07-02	FS_INF-K																					
2022-07-02	FS_INF-S																					
2022-07-02	FS_BPO	8.36				< 0.015																
2022-07-02	FS_INF-K	9.45																				
2022-07-02	FS_INF-S	10.84																				
2022-07-03	FS_INF-K																					
2022-07-03	FS_INF-S																					
2022-07-03	FS_INF-K																					
2022-07-03	FS_INF-S																					
2022-07-03	FS_BPO	8.6				0.016														0.310	0.055	
2022-07-03	FS_INF-K	9.5																				
2022-07-03	FS_INF-S	9.96																				
2022-07-03	FS_INF-K																					
2022-07-03	FS_INF-S																					
2022-07-03	FR_FRABCH																					
2022-07-03	FS_INF-K																					
2022-07-03	FS_INF-S																					
2022-07-03	FS_INF-K																					
2022-07-03	FS_INF-S																					
2022-07-03	FS_INF-K																					
2022-07-03	FS_INF-S																					
2022-07-03	FS_INF-K																					
2022-07-03	FS_INF-S																					
2022-07-04	FS_INF-K																					
2022-07-04	FS_INF-S																					
2022-07-04	FS_INF-K																					
2022-07-04	FS_INF-S																					
2022-07-04	FS_BPO	8.63	0.151	1600		< 0.015										< 0.0050			0.00055			
2022-07-04	FS_INF-K	9.26																				
2022-07-04	FS_INF-S	10.26																				
2022-07-04	FS_BPO																					
2022-07-04	FS_INF-K																					
2022-07-04	FS_INF-S																					
2022-07-04	FS_INF-K																					
2022-07-04	FS_INF-S																					
2022-07-04	FS_INF-K																					
2022-07-04	FS_INF-S																					
2022-07-04	FS_INF-K																					
2022-07-04	FS_INF-S																					
2022-07-04	FS_INF-K																					
2022-07-04	FS_INF-S																					
2022-07-05	FS_INF-K																					
2022-07-05	FS_INF-S																					
2022-07-05	FS_INF-K																					
2022-07-05	FS_INF-S																					
2022-07-05	FS_BPO	8.38				< 0.015	< 0.020	0.138	< 0.100	< 0.100	0.0774	0.0744	210	0.0151	0.0157					0.195	< 0.010	0.0498
2022-07-05	FS_INF-K	9.08			756		< 0.020	< 0.020	< 0.100	< 0.100	0.101	0.0945	78.8	0.00053	0.00042					< 0.010	< 0.010	0.00245
2022-07-05	FS_INF-S	9.7			1780		< 0.020	0.040	< 0.100	< 0.100	0.0786	0.0743	239	0.00887	0.0110					0.042	< 0.010	0.00487
2022-07-05	FR_FRABCH																					
2022-07-05	FS_INF-K																					
2022-07-05	FS_INF-S																					
2022-07-05	FS_INF-K																					
2022-07-05	FS_INF-S																					
2022-07-05	FR_SCOUTDS	10.03	0.144	261			< 0.010	0.046	< 0.050	0.051	0.0184	0.0189	24.2	0.00200	0.00489	< 0.0050	< 0.0050					0.00172
2022-07-05	FS_INF-K																					

	Parameter	Dissolved Oxygen, Field	Fluoride	Hardness, Total or Dissolved CaCO3	Hardness, Total or Dissolved CaCO3	Hydrogen Peroxide	Iron	Iron	Lead	Lead	Lithium	Lithium	Magnesium	Manganese	Manganese	Mercury	Mercury	Mercury	Mercury	MeSe(IV) – methylseleninic acid CH3SeO2H	Methaneselenonic Acid	Molybdenum
	Fraction	N	N	D	T	N	D	T	D	T	D	T	T	D	T	D	T	T	T	D	D	D
	Unit	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ng/l	ug/l	ug/l	ug/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-07-05	FS_INF-S																					
2022-07-05	FS_INF-K																					
2022-07-05	FS_INF-S																					
2022-07-05	FS_INF-K																					
2022-07-05	FS_INF-S																					
2022-07-06	FS_INF-K																					
2022-07-06	FS_INF-S																					
2022-07-06	FS_INF-K																					
2022-07-06	FS_INF-S																					
2022-07-06	FS_BPO	4.55 8.88 7.21				< 0.015																
2022-07-06	FS_INF-K	6.93																				
2022-07-06	FS_INF-S	7.18																				
2022-07-06	FR_SCOUTDS	10.56	0.145	274			< 0.010	0.031	< 0.050	< 0.050	0.0207	0.0195	25.6	0.00227	0.00386	< 0.0050	< 0.0050					0.00194
2022-07-06	FS_INF-K																					
2022-07-06	FS_INF-S																					
2022-07-06	FS_INF-K																					
2022-07-06	FS_INF-S																					
2022-07-06	FS_INF-K																					
2022-07-06	FS_INF-S																					
2022-07-06	FS_INF-K																					
2022-07-06	FS_INF-S																					
2022-07-06	FS_INF-K																					
2022-07-06	FS_INF-S																					
2022-07-07	FS_INF-K																					
2022-07-07	FS_INF-S																					
2022-07-07	FS_INF-K																					
2022-07-07	FS_INF-S																					
2022-07-07	FS_BPO	8.87				< 0.015															0.205	0.065	
2022-07-07	FS_INF-K	8.86																				
2022-07-07	FS_INF-S	10.11																				
2022-07-07	FR_SCOUTDS	10.52	0.174	253		0.048	< 0.010	0.058	< 0.050	< 0.050	0.0209	0.0213	25.2	0.00185	0.00450	< 0.0050			0.00111	0.011	< 0.010	0.00172
2022-07-07	FR_SCOUTDS	9.50	0.166	265			< 0.010	0.023	< 0.050	0.069	0.0214	0.0212	27.0	0.00217	0.00301	< 0.0050	< 0.0050					0.00202
2022-07-07	FS_INF-K																					
2022-07-07	FS_INF-S																					
2022-07-07	FS_INF-K																					
2022-07-07	FS_INF-S																					
2022-07-07	FS_BPO	8.74				< 0.015																
2022-07-07	FS_INF-K																					
2022-07-07	FS_INF-S																					
2022-07-07	FS_BPO	8.69				< 0.015																
2022-07-07	FS_INF-K																					
2022-07-07	FS_INF-S																					
2022-07-08	FS_BPO	8.43				< 0.015																
2022-07-08	FS_INF-K																					
2022-07-08	FS_INF-S																					
2022-07-08	FS_BPO	8.58				< 0.015																
2022-07-08	FS_INF-K																					
2022-07-08	FS_INF-S																					
2022-07-08	FS_BPO	8.8				< 0.015																
2022-07-08	FS_INF-K	10.18																				
2022-07-08	FS_INF-S	9.53																				
2022-07-08	FR_SCOUTDS	8.00	0.164	244			< 0.010	0.026	< 0.050	< 0.050	0.0195	0.0194	25.6	0.00182	0.00296	< 0.0050	< 0.0050					0.00150
2022-07-08	FS_BPO																					
2022-07-08	FS_BPO	8.14				< 0.015																
2022-07-08	FS_INF-K																					
2022-07-08	FS_INF-S																					
2022-07-08	FS_BPO	8.63				< 0.015																
2022-07-08	FS_INF-K																					
2022-07-08	FS_INF-S																					
2022-07-08	FS_BPO	10.8				< 0.015																
2022-07-08	FS_INF-K																					
2022-07-08	FS_INF-S																					
2022-07-08	FS_INF-K																					
2022-07-08	FS_INF-S																					
2022-07-08	FS_INF-K																					
2022-07-08	FS_INF-S																					
2022-07-09	FS_INF-K																					
2022-07-09	FS_INF-S																					
2022-07-09	FS_INF-K																					
2022-07-09	FS_INF-S																					
2022-07-09	FS_BPO	8.84				< 0.015																
2022-07-09	FS_INF-K	10.16																				
2022-07-09	FS_INF-S	9.36																				
2022-07-09	FR_SCOUTDS	9.99	0.155	290			< 0.010	0.022	< 0.050	< 0.050	0.0230	0.0222	29.1	0.00225	0.00373	< 0.0050	< 0.0050					0.00150
2022-07-09	FS_BPO	8.26				< 0.015																
2022-07-10	FS_BPO					< 0.015																
2022-07-10	FS_INF-K																					
2022-07-10	FS_INF-S																					
2022-07-10	FS_INF-K																					
2022-07-10	FS_INF-S																					
2022-07-10	FS_BPO	8.03				< 0.015															0.169	0.065	
2022-07-10	FS_INF-K	10.34																				
2022-07-10	FS_INF-S	9.24																				

	Parameter	Dissolved Oxygen, Field	Fluoride	Hardness, Total or Dissolved CaCO3	Hardness, Total or Dissolved CaCO3	Hydrogen Peroxide	Iron	Iron	Lead	Lead	Lithium	Lithium	Magnesium	Manganese	Manganese	Mercury	Mercury	Mercury	Mercury	MeSe(IV) – methylseleninic acid CH3SeO2H	Methaneselenonic Acid	Molybdenum
	Fraction	N	N	D	T	N	D	T	D	T	D	T	T	D	T	D	T	T	T	D	D	D
	Unit	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ng/l	ug/l	ug/l	ug/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-07-10	FS_INF-K																					
2022-07-10	FS_INF-S																					
2022-07-10	FS_INF-K																					
2022-07-10	FS_INF-S																					
2022-07-10	FS_INF-K																					
2022-07-10	FS_INF-S																					
2022-07-10	FS_INF-K																					
2022-07-10	FS_INF-S																					
2022-07-10	FS_INF-K																					
2022-07-10	FS_INF-S																					
2022-07-11	FS_INF-K																					
2022-07-11	FS_INF-S																					
2022-07-11	FS_INF-K																					
2022-07-11	FS_INF-S																					
2022-07-11	FS_BPO	8.17	0.162	1700		< 0.015										< 0.0050			< 0.00050			
2022-07-11	FS_INF-K	9.87	0.155	843												< 0.0050			< 0.00050			
2022-07-11	FS_INF-S	9.64	0.141	1890												< 0.0050			0.00082			
2022-07-11	FS_BPO																					
2022-07-11	FS_INF-K																					
2022-07-11	FS_INF-S																					
2022-07-11	FS_INF-K																					
2022-07-11	FS_INF-S																					
2022-07-11	FS_INF-K																					
2022-07-11	FS_INF-S																					
2022-07-11	FS_INF-K																					
2022-07-11	FS_INF-S																					
2022-07-11	FS_INF-K																					
2022-07-11	FS_INF-S																					
2022-07-12	FS_INF-K																					
2022-07-12	FS_INF-S																					
2022-07-12	FS_INF-K																					
2022-07-12	FS_INF-S																					
2022-07-12	FS_BPO	8.17				0.03	0.031	0.220	< 0.100	< 0.100	0.0804	0.0798	234	0.0135	0.0156					0.192	0.062	0.0500
2022-07-12	FS_INF-K	10.29		958			< 0.020	< 0.020	< 0.100	< 0.100	0.107	0.0999	95.9	0.00040	0.00039							0.00206
2022-07-12	FS_INF-S	9.33		2260			< 0.020	< 0.020	< 0.100	< 0.100	0.0814	0.0760	270	0.00974	0.00917							0.00510
2022-07-12	FS_INF-K																					
2022-07-12	FS_INF-S																					
2022-07-12	FS_BPO																					
2022-07-12	FS_INF-K																					
2022-07-12	FS_INF-S																					
2022-07-12	FS_INF-K																					
2022-07-12	FS_INF-S																					
2022-07-12	FS_INF-K																					
2022-07-12	FS_INF-S																					
2022-07-12	FS_INF-K																					
2022-07-12	FS_INF-S																					
2022-07-13	FS_INF-K																					
2022-07-13	FS_INF-S																					
2022-07-13	FS_INF-K																					
2022-07-13	FS_INF-S																					
2022-07-13	FS_BPO	7.67				< 0.015																
2022-07-13	FS_INF-K	9.68		884			< 0.020	< 0.020	< 0.100	< 0.100	0.101	0.102	95.1	0.00038	0.00038							0.00215
2022-07-13	FS_INF-S	9.06		1980			< 0.020	< 0.020	< 0.100	< 0.100	0.0791	0.0787	275	0.00906	0.00957							0.00616
2022-07-13	FS_BPO	7.54																				
2022-07-13	FS_INF-K																					
2022-07-13	FS_INF-S																					
2022-07-13	FR_FRABCH																					
2022-07-13	FS_INF-K																					
2022-07-13	FS_INF-S																					
2022-07-13	FS_INF-K																					
2022-07-13	FS_INF-S																					
2022-07-13	FS_INF-K																					
2022-07-13	FS_INF-S																					
2022-07-13	FS_INF-K																					
2022-07-13	FS_INF-S																					
2022-07-14	FS_INF-K																					
2022-07-14	FS_INF-S																					
2022-07-14	FS_INF-K																					
2022-07-14	FS_INF-S																					
2022-07-14	FS_BPO	8.17				< 0.015														0.144	0.097	
2022-07-14	FS_INF-K	10.27																				
2022-07-14	FS_INF-S	9.41																				
2022-07-14	FR_SCOUTDS	10.56	0.162	307		< 0.015	< 0.010	0.047	< 0.050	< 0.050	0.0252	0.0204	31.3	0.00225	0.00368	< 0.0050			0.00094	0.014	< 0.010	0.00201
2022-07-14	FS_INF-K																					
2022-07-14	FS_INF-S																					
2022-07-14	FS_INF-K																					
2022-07-14	FS_INF-S																					
2022-07-14	FS_INF-K																					
2022-07-14	FS_INF-S																					
2022-07-14	FS_INF-K																					
2022-07-14	FS_INF-S																					
2022-07-14	FS_INF-K																					
2022-07-14	FS_INF-S																					

Parameter		Dissolved Oxygen, Field	Fluoride	Hardness, Total or Dissolved CaCO3	Hardness, Total or Dissolved CaCO3	Hydrogen Peroxide	Iron	Iron	Lead	Lead	Lithium	Lithium	Magnesium	Manganese	Manganese	Mercury	Mercury	Mercury	Mercury	MeSe(IV) – methylseleninic acid CH3SeO2H	Methaneselenonic Acid	Molybdenum
Fraction		N	N	D	T	N	D	T	D	T	D	T	T	D	T	D	T	T	T	D	D	D
Unit		mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ng/l	ug/l	ug/l	ug/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-07-15	FS_INF-K																					
2022-07-15	FS_INF-S																					
2022-07-15	FS_INF-K																					
2022-07-15	FS_INF-S																					
2022-07-15	FS_BPO	8.49				< 0.015																
2022-07-15	FS_INF-K	9.93																				
2022-07-15	FS_INF-S	9.03																				
2022-07-15	FS_INF-K																					
2022-07-15	FS_INF-S																					
2022-07-15	FS_INF-K																					
2022-07-15	FS_INF-S																					
2022-07-15	FS_INF-K																					
2022-07-15	FS_INF-S																					
2022-07-15	FS_INF-K																					
2022-07-15	FS_INF-S																					
2022-07-16	FS_INF-K																					
2022-07-16	FS_INF-S																					
2022-07-16	FS_INF-K																					
2022-07-16	FS_INF-S																					
2022-07-16	FS_BPO	8.74				< 0.015																
2022-07-16	FS_INF-K	10.36																				
2022-07-16	FS_INF-S	9.14																				
2022-07-16	FS_INF-K																					
2022-07-16	FS_INF-S																					
2022-07-16	FS_INF-K																					
2022-07-16	FS_INF-S																					
2022-07-16	FS_INF-K																					
2022-07-16	FS_INF-K																					
2022-07-16	FS_INF-K																					
2022-07-17	FS_INF-K																					
2022-07-17	FS_INF-K																					
2022-07-17	FS_BPO	10.73				< 0.015														0.155	0.019	
2022-07-17	FS_INF-K	9.82																				
2022-07-17	FS_INF-K																					
2022-07-17	FS_INF-K																					
2022-07-17	FS_INF-K																					
2022-07-17	FS_INF-K																					
2022-07-17	FS_INF-K																					
2022-07-18	FS_INF-K																					
2022-07-18	FS_BPO	10.63	0.202	1160		< 0.015										< 0.0050			< 0.00050			
2022-07-18	FS_INF-K	9.87	0.188	923												< 0.0050			< 0.00050			
2022-07-18	FS_INF-S																					
2022-07-18	FS_INF-S	10.1																				
2022-07-18	FS_BPO																					
2022-07-18	FS_INF-S		0.164	2030												< 0.0050			0.00092			
2022-07-18	FS_INF-K																					
2022-07-18	FS_INF-K																					
2022-07-18	FS_INF-K																					
2022-07-18	FS_INF-K																					
2022-07-18	FS_INF-K																					
2022-07-19	FS_INF-K																					
2022-07-19	FS_INF-K																					
2022-07-19	FS_BPO	10.83				< 0.015	< 0.020	0.144	< 0.100	< 0.100	0.0967	0.105	133	0.00762	0.00936					0.133	0.024	0.0442
2022-07-19	FS_INF-K	10.19		991			< 0.020	< 0.020	< 0.100	< 0.100	0.111	0.131	123	0.00031	0.00038					< 0.010	< 0.010	0.00184
2022-07-19	FS_INF-S	10.14		2160			< 0.020	< 0.020	< 0.100	< 0.100	0.0844	0.0876	292	0.00948	0.00971					0.078	< 0.010	0.00520
2022-07-19	FS_INF-S																					
2022-07-19	FS_INF-K																					
2022-07-19	FS_INF-K																					
2022-07-19	FS_INF-K																					
2022-07-19	FS_INF-K																					
2022-07-19	FS_INF-K																					
2022-07-20	FS_INF-K																					
2022-07-20	FS_INF-K																					
2022-07-20	FS_BPO	9.04				< 0.015																
2022-07-20	FS_INF-K	10.45																				
2022-07-20	FS_INF-S	9.97																				
2022-07-20	FS_INF-K																					
2022-07-20	FS_INF-S																					
2022-07-20	FS_INF-K																					
2022-07-20	FS_INF-K																					
2022-07-20	FS_INF-K																					
2022-07-20	FS_INF-K																					
2022-07-21	FS_INF-K																					
2022-07-21	FS_INF-K																					
2022-07-21	FS_BPO	9.57				< 0.015														0.175	0.044	
2022-07-21	FS_INF-K	10.57																				
2022-07-21	FS_INF-S																					
2022-07-21	FR_SCOUTDS	10.23	0.177	372		0.038	< 0.010	0.011	< 0.050	< 0.050	0.0303	0.0302	36.9	0.00354	0.00377	< 0.0050			< 0.00050	0.012	< 0.010	0.00174
2022-07-21	FS_INF-K																					
2022-07-21	FS_INF-K																					
2022-07-21	FS_INF-K																					

	Parameter	Dissolved Oxygen, Field	Fluoride	Hardness, Total or Dissolved CaCO3	Hardness, Total or Dissolved CaCO3	Hydrogen Peroxide	Iron	Iron	Lead	Lead	Lithium	Lithium	Magnesium	Manganese	Manganese	Mercury	Mercury	Mercury	Mercury	MeSe(IV) – methylseleninic acid CH3SeO2H	Methaneselenonic Acid	Molybdenum
	Fraction	N	N	D	T	N	D	T	D	T	D	T	T	D	T	D	T	T	T	D	D	D
	Unit	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ng/l	ug/l	ug/l	ug/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-07-21	FS_INF-K																					
2022-07-21	FS_INF-K																					
2022-07-22	FS_BPO	10.69				< 0.015																
2022-07-22	FS_INF-K																					
2022-07-22	FS_INF-K																					
2022-07-22	FS_INF-K	7.12																				
2022-07-22	FS_INF-K	7.11																				
2022-07-22	FS_BPO																					
2022-07-22	FS_INF-K																					
2022-07-22	FS_INF-S																					
2022-07-22	FS_INF-K	10.39 10.41																				
2022-07-22	FR_FRABCH																					
2022-07-22	FR_SCOUTDS	10.35																				
2022-07-22	FS_INF-S	10.13																				
2022-07-22	FR_FRABCH	10.64																				
2022-07-22	FS_BPO	7.7				0.016																
2022-07-22	FS_INF-S																					
2022-07-23	FS_BPO	11.12				< 0.015																
2022-07-23	FS_INF-K	10.6																				
2022-07-23	FS_INF-K																					
2022-07-23	FS_INF-S																					
2022-07-23	FS_BPO					< 0.015																
2022-07-23	FR_SCOUTDS	9.89																				
2022-07-23	FS_BPO	8.99																				
2022-07-23	FS_INF-S	7.94																				
2022-07-23	FR_SCOUTDS					< 0.015																
2022-07-23	FR_FRABCH	8.46																				
2022-07-24	FR_SCOUTDS																					
2022-07-24	FR_FRABCH	10.15																				
2022-07-24	FR_SCOUTDS	9.87																				
2022-07-24	FS_INF-S	10.87																				
2022-07-24	FS_BPO	11.19				0.115															0.152	0.017
2022-07-24	FS_INF-K	10.4																				
2022-07-24	FS_INF-S																					
2022-07-24	FS_INF-K																					
2022-07-24	FS_INF-K																					
2022-07-25	FS_BPO	9.39																				
2022-07-25	FS_INF-K																					
2022-07-25	FS_INF-K																					
2022-07-25	FS_BPO	10.29	0.198	941		0.027										< 0.0050			0.00092			
2022-07-25	FS_INF-K	10.22	0.202	1010												< 0.0050			0.00059			
2022-07-25	FS_INF-S		0.179	2130												< 0.0050			0.00140			
2022-07-25	FR_FRABCH		0.185	456			< 0.010	0.016	< 0.050	< 0.050	0.0404	0.0378	47.1	0.00419	0.00479	< 0.0050	< 0.0050					0.00141
2022-07-25	FS_INF-S	10.51																				
2022-07-25	FS_BPO																					
2022-07-25	FS_INF-K																					
2022-07-25	FS_INF-K																					
2022-07-25	FS_INF-K																					
2022-07-25	FS_INF-K																					
2022-07-25	FS_INF-K																					
2022-07-26	FS_INF-K																					
2022-07-26	FS_INF-K																					
2022-07-26	FS_BPO	10.16				< 0.015	0.023	0.077	< 0.050	< 0.100	0.112	0.111	106	0.0121	0.0136					0.177	0.024	0.0444
2022-07-26	FS_INF-K	10.64		1220			< 0.010	< 0.010	< 0.050	< 0.050	0.121	0.113	116	0.00026	0.00030							0.00181
2022-07-26	FS_INF-S			2400			< 0.010	0.024	< 0.050	< 0.050	0.0808	0.0865	324	0.00974	0.0124							0.0147
2022-07-26	FR_FRABCH	10.35																				
2022-07-26	FS_INF-K																					
2022-07-26	FS_INF-K																					
2022-07-26	FS_BPO																					
2022-07-26	FS_INF-K																					
2022-07-26	FS_INF-K																					
2022-07-26	FS_INF-K																					
2022-07-27	FS_INF-K																					
2022-07-27	FS_INF-K																					
2022-07-27	FS_BPO	11.17				< 0.015																
2022-07-27	FS_INF-K	10.7																				
2022-07-27	FS_INF-S	9.89																				
2022-07-27	FS_INF-K																					
2022-07-27	FS_INF-K																					
2022-07-27	FS_INF-K																					
2022-07-27	FS_INF-K																					
2022-07-27	FS_INF-K																					
2022-07-28	FS_INF-K																					
2022-07-28	FS_INF-K																					
2022-07-28	FS_BPO	9.68				< 0.015															0.260	0.039
2022-07-28	FS_INF-K	9.78																				
2022-07-28	FS_INF-S	9.65																				

	Parameter	Dissolved Oxygen, Field	Fluoride	Hardness, Total or Dissolved CaCO3	Hardness, Total or Dissolved CaCO3	Hydrogen Peroxide	Iron	Iron	Lead	Lead	Lithium	Lithium	Magnesium	Manganese	Manganese	Mercury	Mercury	Mercury	Mercury	MeSe(IV) – methylseleninic acid CH3SeO2H	Methaneselenonic Acid	Molybdenum
	Fraction	N	N	D	T	N	D	T	D	T	D	T	T	D	T	D	T	T	T	D	D	D
	Unit	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ng/l	ug/l	ug/l	ug/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-07-28	FR_SCOUTDS	9.24	0.202	435		< 0.015	< 0.010	0.015	< 0.050	< 0.050	0.0406	0.0401	47.3	0.00442	0.00445	< 0.0050			0.00055	0.015	< 0.010	0.00194
2022-07-28	FS_INF-K																					
2022-07-28	FS_INF-K																					
2022-07-28	FS_INF-K																					
2022-07-28	FS_INF-S	9.37																				
2022-07-28	FS_INF-K																					
2022-07-28	FS_INF-S																					
2022-07-28	FS_INF-K																					
2022-07-29	FS_INF-K																					
2022-07-29	FS_INF-K																					
2022-07-29	FS_BPO	11.4				< 0.015																
2022-07-29	FS_INF-K	9.67																				
2022-07-29	FS_INF-S	9.17																				
2022-07-29	FS_INF-K																					
2022-07-29	FS_INF-K																					
2022-07-29	FS_INF-K																					
2022-07-29	FS_INF-K																					
2022-07-29	FS_INF-K																					
2022-07-30	FS_INF-K																					
2022-07-30	FS_INF-K																					
2022-07-30	FS_BPO	11.56				< 0.015																
2022-07-30	FS_INF-K	10.35																				
2022-07-30	FS_INF-S	10.25																				
2022-07-30	FS_INF-K																					
2022-07-30	FS_INF-S																					
2022-07-30	FS_INF-K																					
2022-07-30	FS_INF-K																					
2022-07-30	FS_INF-K																					
2022-07-30	FS_INF-K																					
2022-07-31	FS_INF-K																					
2022-07-31	FS_INF-K																					
2022-07-31	FS_BPO	12.32				< 0.015															0.105	0.099	
2022-07-31	FS_INF-K	10.51																				
2022-07-31	FS_INF-S	10.04																				
2022-07-31	FS_INF-K																					
2022-07-31	FS_INF-S																					
2022-07-31	FS_INF-K																					
2022-07-31	FS_INF-K																					
2022-07-31	FS_INF-K																					
2022-08-01	FS_INF-K																					
2022-08-01	FS_INF-K																					
2022-08-01	FS_BPO	12.24	0.177	1050		< 0.015										< 0.0050			< 0.00050			
2022-08-01	FS_INF-K	9.66	0.182	1120												< 0.0050			< 0.00050			
2022-08-01	FS_INF-S	10.23	0.165	2140												< 0.0050			0.00076			
2022-08-01	FS_INF-S																					
2022-08-01	FS_BPO																					
2022-08-01	FS_INF-K																					
2022-08-01	FS_INF-K																					
2022-08-01	FS_INF-K																					
2022-08-01	FS_INF-K																					
2022-08-01	FS_INF-K																					
2022-08-02	FS_INF-K																					
2022-08-02	FS_INF-K																					
2022-08-02	FS_BPO	10.99				< 0.015	< 0.020	0.099	< 0.100	< 0.100	0.132	0.140	112	0.00661	0.00922					0.149	0.024	0.0701
2022-08-02	FS_INF-K	10.38			1160		< 0.020	< 0.020	< 0.100	< 0.100	0.136	0.144	123	0.00038	0.00026					< 0.010	< 0.010	0.00160
2022-08-02	FS_INF-S	9.6			2080		< 0.020	< 0.020	< 0.100	< 0.100	0.0916	0.0961	276	0.00858	0.00873					0.090	< 0.010	0.00506
2022-08-02	FS_INF-K																					
2022-08-02	FS_INF-S																					
2022-08-02	FS_BPO	6.39																				
2022-08-03	FS_BPO	9.84																				
2022-08-03	FS_BPO	9.65																				
2022-08-03	FS_BPO	15.43				< 0.015																
2022-08-03	FS_INF-K	10.38																				
2022-08-03	FS_INF-S	9.54 9.75																				
2022-08-03	FS_INF-S																					
2022-08-03	FS_INF-K																					
2022-08-03	FS_INF-K																					
2022-08-03	FS_BPO	11.21																				
2022-08-03	FS_INF-K																					
2022-08-04	FS_INF-K																					
2022-08-04	FS_BPO	11.09				< 0.015															0.142	0.018	
2022-08-04	FS_INF-K	10.36																				
2022-08-04	FS_INF-S	7.6																				
2022-08-04	FR_SCOUTDS	9.19	0.203	536		< 0.015	< 0.010	0.019	< 0.050	< 0.050	0.0516	0.0456	56.2	0.00521	0.00556	< 0.0050			0.00069	0.019	< 0.010	0.00234
2022-08-04	FS_INF-K																					
2022-08-04	FS_INF-K																					
2022-08-04	FS_BPO	9.21																				
2022-08-05	FS_BPO	8.32																				
2022-08-05	FS_BPO	8.66				< 0.015																

	Parameter	Dissolved Oxygen, Field	Fluoride	Hardness, Total or Dissolved CaCO3	Hardness, Total or Dissolved CaCO3	Hydrogen Peroxide	Iron	Iron	Lead	Lead	Lithium	Lithium	Magnesium	Manganese	Manganese	Mercury	Mercury	Mercury	Mercury	MeSe(IV) – methylseleninic acid CH3SeO2H	Methaneselenonic Acid	Molybdenum
	Fraction	N	N	D	T	N	D	T	D	T	D	T	T	D	T	D	T	T	T	D	D	D
	Unit	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ng/l	ug/l	ug/l	ug/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-08-05	FS_BPO	10.08				< 0.015																
2022-08-05	FS_INF-K	10.36																				
2022-08-05	FS_INF-S	9.4																				
2022-08-05	FS_INF-K																					
2022-08-05	FS_INF-S																					
2022-08-05	FS_INF-K																					
2022-08-05	FS_INF-K																					
2022-08-05	FS_INF-K																					
2022-08-05	FS_INF-K																					
2022-08-06	FS_INF-K																					
2022-08-06	FS_INF-K																					
2022-08-06	FS_BPO	8.97				< 0.015																
2022-08-06	FS_INF-K	10.46																				
2022-08-06	FS_INF-S	10.08																				
2022-08-06	FS_INF-K																					
2022-08-06	FS_INF-K																					
2022-08-06	FS_INF-S																					
2022-08-06	FS_INF-K																					
2022-08-06	FS_INF-K																					
2022-08-06	FS_INF-K																					
2022-08-07	FS_INF-K																					
2022-08-07	FS_INF-K																					
2022-08-07	FS_BPO	8.53				< 0.015															0.110	0.026
2022-08-07	FS_INF-K	7.59																				
2022-08-07	FS_INF-S	8.49																				
2022-08-07	FS_INF-K																					
2022-08-07	FS_INF-K																					
2022-08-07	FS_INF-K																					
2022-08-07	FS_INF-K																					
2022-08-07	FS_INF-K																					
2022-08-08	FS_INF-K																					
2022-08-08	FS_INF-K																					
2022-08-08	FS_BPO	8.4	< 0.100	1090		< 0.015										< 0.0050			< 0.00050			
2022-08-08	FS_INF-K	10.44	0.143	1240												< 0.0050			< 0.00050			
2022-08-08	FS_INF-S	9.58	0.141	2180												< 0.0050			0.00070			
2022-08-08	FS_BPO																					
2022-08-08	FS_INF-K																					
2022-08-08	FS_INF-S																					
2022-08-08	FS_INF-K																					
2022-08-08	FS_INF-K																					
2022-08-08	FS_INF-K																					
2022-08-08	FS_INF-K																					
2022-08-09	FS_INF-K																					
2022-08-09	FS_INF-K																					
2022-08-09	FS_BPO	8.46				< 0.015	0.018	0.104	< 0.050	< 0.050	0.138	0.159	145	0.00597	0.00902					0.100	0.028	0.0494
2022-08-09	FS_INF-K	10.638			1280		< 0.010	< 0.010	< 0.050	< 0.050	0.148	0.163	134	0.00025	0.00032					< 0.010	< 0.010	0.00147
2022-08-09	FS_INF-S	9.87			2580		< 0.010	0.010	< 0.050	< 0.050	0.0819	0.102	354	0.00759	0.00880					0.083	< 0.010	0.00419
2022-08-09	FS_INF-K																					
2022-08-09	FS_INF-K																					
2022-08-09	FS_INF-S																					
2022-08-09	FS_INF-K																					
2022-08-09	FS_INF-S																					
2022-08-09	FS_INF-K																					
2022-08-09	FS_INF-S																					
2022-08-10	FS_INF-K																					
2022-08-10	FS_INF-S																					
2022-08-10	FS_INF-K																					
2022-08-10	FS_INF-S																					
2022-08-10	FS_BPO	8.13				< 0.015																
2022-08-10	FS_INF-K	10.28																				
2022-08-10	FS_INF-S	9.22																				
2022-08-10	FS_BPO																					
2022-08-10	FS_INF-K																					
2022-08-10	FS_INF-S																					
2022-08-10	FS_INF-K																					
2022-08-10	FS_INF-S																					
2022-08-10	FS_INF-K																					
2022-08-10	FS_INF-S																					
2022-08-10	FS_INF-K																					
2022-08-10	FS_INF-S																					
2022-08-11	FS_INF-K																					
2022-08-11	FS_INF-S																					
2022-08-11	FS_INF-K																					
2022-08-11	FS_INF-S																					
2022-08-11	FS_BPO	7.76				< 0.015															0.138	0.057
2022-08-11	FS_INF-K	10.16																				
2022-08-11	FS_INF-S	9.2																				
2022-08-11	FR_SCOUTDS	9.1	0.161	528	506	< 0.015	< 0.010	0.028	< 0.050	< 0.050	0.0533	0.0519	54.5	0.00645	0.00727	< 0.0050			0.00051	0.021	< 0.010	0.00405
2022-08-11	FS_INF-K																					
2022-08-11	FS_INF-S																					
2022-08-11	FS_INF-K																					

Parameter		Dissolved Oxygen, Field	Fluoride	Hardness, Total or Dissolved CaCO3	Hardness, Total or Dissolved CaCO3	Hydrogen Peroxide	Iron	Iron	Lead	Lead	Lithium	Lithium	Magnesium	Manganese	Manganese	Mercury	Mercury	Mercury	Mercury	MeSe(IV) – methylseleninic acid CH3SeO2H	Methaneselenonic Acid	Molybdenum
Fraction		N	N	D	T	N	D	T	D	T	D	T	T	D	T	D	T	T	T	D	D	D
Unit		mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ng/l	ug/l	ug/l	ug/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-08-11	FS_INF-S																					
2022-08-11	FS_INF-K																					
2022-08-11	FS_INF-S																					
2022-08-11	FS_INF-K																					
2022-08-11	FS_INF-S																					
2022-08-12	FS_INF-K																					
2022-08-12	FS_INF-S																					
2022-08-12	FS_INF-K																					
2022-08-12	FS_INF-S																					
2022-08-12	FS_BPO	7.53				< 0.015																
2022-08-12	FS_INF-K	10.36																				
2022-08-12	FS_INF-S	9.28																				
2022-08-12	FS_INF-K																					
2022-08-12	FS_INF-S																					
2022-08-12	FS_INF-K																					
2022-08-12	FS_INF-S																					
2022-08-12	FS_INF-K																					
2022-08-12	FS_INF-S																					
2022-08-12	FS_INF-K																					
2022-08-12	FS_INF-S																					
2022-08-13	FS_INF-K																					
2022-08-13	FS_INF-S																					
2022-08-13	FS_INF-K																					
2022-08-13	FS_INF-S																					
2022-08-13	FS_BPO	8.17				0.08																
2022-08-13	FS_INF-K	10.35																				
2022-08-13	FS_INF-S	9.39																				
2022-08-13	FS_INF-K																					
2022-08-13	FS_INF-S																					
2022-08-13	FS_INF-K																					
2022-08-13	FS_INF-S																					
2022-08-13	FS_INF-K																					
2022-08-13	FS_INF-S																					
2022-08-14	FS_INF-K																					
2022-08-14	FS_INF-S																					
2022-08-14	FS_INF-K																					
2022-08-14	FS_INF-S																					
2022-08-14	FS_BPO	7.88				< 0.015															0.135	0.045
2022-08-14	FS_INF-K	10.36																				
2022-08-14	FS_INF-S	9.41																				
2022-08-14	FS_INF-K																					
2022-08-14	FS_INF-S																					
2022-08-14	FS_INF-K																					
2022-08-14	FS_INF-S																					
2022-08-14	FS_INF-K																					
2022-08-14	FS_INF-S																					
2022-08-14	FS_INF-K																					
2022-08-14	FS_INF-S																					
2022-08-15	FS_INF-K																					
2022-08-15	FS_INF-S																					
2022-08-15	FS_INF-K																					
2022-08-15	FS_INF-S																					
2022-08-15	FS_BPO	7.4	0.182	2080		< 0.015										< 0.0050			< 0.00050			
2022-08-15	FS_INF-K	10.09	0.174	1220												< 0.0050			< 0.00050			
2022-08-15	FS_INF-S	9.88	0.164	2300												0.0071			0.00062			
2022-08-15	FS_BPO																					
2022-08-15	FS_INF-K																					
2022-08-15	FS_INF-S																					
2022-08-15	FS_INF-K																					
2022-08-15	FS_INF-S																					
2022-08-15	FS_INF-K																					
2022-08-15	FS_INF-S																					
2022-08-15	FS_INF-K																					
2022-08-15	FS_INF-S																					
2022-08-15	FS_INF-K																					
2022-08-15	FS_INF-S																					
2022-08-16	FS_INF-K																					
2022-08-16	FS_INF-S																					
2022-08-16	FS_BPO	8.04				< 0.015	< 0.020	0.150	< 0.100	< 0.050	0.0987	0.0954	280	0.00945	0.0123					0.098	0.027	0.0485
2022-08-16	FS_INF-K	10.79			1380		< 0.020	< 0.010	< 0.100	< 0.050	0.165	0.162	152	0.00036	0.00029					< 0.010	< 0.010	0.00143
2022-08-16	FS_INF-S	9.36			2500		< 0.020	< 0.010	< 0.100	< 0.050	0.0894	0.0817	353	0.00838	0.00855					0.068	< 0.010	0.00422
2022-08-16	FR_FRABCH	8.69	0.130	570			0.020	0.041	< 0.050	< 0.050	0.0493	0.0467	66.9	0.0129	0.0141	< 0.0050	< 0.0050					0.00197
2022-08-16	FS_INF-K																					

Parameter		Dissolved Oxygen, Field	Fluoride	Hardness, Total or Dissolved CaCO3	Hardness, Total or Dissolved CaCO3	Hydrogen Peroxide	Iron	Iron	Lead	Lead	Lithium	Lithium	Magnesium	Manganese	Manganese	Mercury	Mercury	Mercury	Mercury	MeSe(IV) – methylseleninic acid CH3SeO2H	Methaneselenonic Acid	Molybdenum
Fraction		N	N	D	T	N	D	T	D	T	D	T	T	D	T	D	T	T	T	D	D	D
Unit		mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ng/l	ug/l	ug/l	ug/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-08-16	FS_INF-S																					
2022-08-16	FS_INF-K																					
2022-08-16	FS_INF-S																					
2022-08-16	FS_INF-K																					
2022-08-16	FS_INF-S																					
2022-08-16	FS_INF-K																					
2022-08-16	FS_INF-S																					
2022-08-17	FS_INF-K																					
2022-08-17	FS_INF-S																					
2022-08-17	FS_INF-K																					
2022-08-17	FS_INF-S																					
2022-08-17	FS_BPO	7.98				< 0.015																
2022-08-17	FS_INF-K	10.52																				
2022-08-17	FS_INF-S	9.31																				
2022-08-17	FR_FRABCH	8.29	0.168	565			0.011	0.032	0.256	0.327	0.0483	0.0494	63.3	0.0128	0.0141							0.00176
2022-08-17	FS_INF-K																					
2022-08-17	FS_INF-S																					
2022-08-17	FS_INF-K																					
2022-08-17	FS_INF-S																					
2022-08-17	FS_INF-K																					
2022-08-17	FS_INF-S																					
2022-08-17	FS_INF-K																					
2022-08-17	FS_INF-S																					
2022-08-17	FS_INF-K																					
2022-08-17	FS_INF-S																					
2022-08-18	FS_INF-K																					
2022-08-18	FS_INF-S																					
2022-08-18	FS_INF-K																					
2022-08-18	FS_INF-S																					
2022-08-18	FS_BPO	10.02				< 0.015														0.120	0.039	
2022-08-18	FS_INF-K	10.78																				
2022-08-18	FS_INF-S	9.39																				
2022-08-18	FR_SCOUTDS	9.01	0.154	631	606	< 0.015	0.026	0.022	< 0.050	< 0.050	0.0602	0.0572	68.4	0.00736	0.00718	< 0.0050			< 0.00050	0.022	< 0.010	0.00589
2022-08-18	FS_INF-K																					
2022-08-18	FS_INF-S																					
2022-08-18	FS_INF-K																					
2022-08-18	FS_INF-S																					
2022-08-18	FS_INF-K																					
2022-08-18	FS_INF-S																					
2022-08-18	FS_INF-K																					
2022-08-18	FS_INF-S																					
2022-08-19	FS_INF-K																					
2022-08-19	FS_INF-S																					
2022-08-19	FS_INF-K																					
2022-08-19	FS_INF-S																					
2022-08-19	FS_BPO	10.66	0.168	1880		< 0.015	0.074	0.023	< 0.100	< 0.100	0.108	0.121	270	0.00910	0.0105	< 0.0050			< 0.00050	0.013	0.495	0.0479
2022-08-19	FS_INF-K	12.46																				
2022-08-19	FS_INF-S	10.56																				
2022-08-19	FS_INF-K																					
2022-08-19	FS_INF-S																					
2022-08-19	FS_INF-K																					
2022-08-19	FS_INF-S																					
2022-08-19	FS_INF-K																					
2022-08-19	FS_INF-S																					
2022-08-19	FS_INF-K																					
2022-08-19	FS_INF-S																					
2022-08-19	FS_INF-K																					
2022-08-20	FS_INF-S																					
2022-08-20	FS_INF-K																					
2022-08-20	FS_INF-S																					
2022-08-20	FS_BPO	8.86				< 0.015																
2022-08-20	FS_INF-K	10.85																				
2022-08-20	FS_INF-S	9.51																				
2022-08-20	FS_INF-K																					
2022-08-20	FS_INF-S																					
2022-08-20	FS_INF-K																					
2022-08-20	FS_INF-S																					
2022-08-20	FS_INF-K																					
2022-08-20	FS_INF-S																					
2022-08-20	FS_INF-K																					
2022-08-20	FS_INF-S																					
2022-08-20	FS_INF-K																					
2022-08-20	FS_INF-S																					
2022-08-21	FS_INF-K																					
2022-08-21	FS_INF-S																					
2022-08-21	FS_INF-K																					
2022-08-21	FS_INF-S																					
2022-08-21	FS_BPO	10.08				< 0.015														0.079	< 0.010	

Parameter		Dissolved Oxygen, Field	Fluoride	Hardness, Total or Dissolved CaCO3	Hardness, Total or Dissolved CaCO3	Hydrogen Peroxide	Iron	Iron	Lead	Lead	Lithium	Lithium	Magnesium	Manganese	Manganese	Mercury	Mercury	Mercury	Mercury	MeSe(IV) – methylseleninic acid CH3SeO2H	Methaneselenonic Acid	Molybdenum
Fraction		N	N	D	T	N	D	T	D	T	D	T	T	D	T	D	T	T	T	D	D	D
Unit		mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ng/l	ug/l	ug/l	ug/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-08-21	FS_INF-K	10.66																				
2022-08-21	FS_INF-S	9.49																				
2022-08-21	FS_INF-K																					
2022-08-21	FS_INF-S																					
2022-08-21	FS_INF-K																					
2022-08-21	FS_INF-S																					
2022-08-21	FS_INF-K																					
2022-08-21	FS_INF-S																					
2022-08-21	FS_INF-K																					
2022-08-21	FS_INF-S																					
2022-08-21	FS_INF-K																					
2022-08-21	FS_INF-S																					
2022-08-22	FS_INF-K																					
2022-08-22	FS_INF-S																					
2022-08-22	FS_INF-K																					
2022-08-22	FS_INF-S																					
2022-08-22	FS_BPO	9.99	0.162	1910		< 0.015										< 0.0050			0.00050			
2022-08-22	FS_INF-K	11.38	0.226	1240												< 0.0050			0.00166			
2022-08-22	FS_INF-S	10.1	0.168	2260												< 0.0050			0.00103			
2022-08-22	FS_BPO																					
2022-08-22	FS_INF-K																					
2022-08-22	FS_INF-S																					
2022-08-22	FS_INF-K																					
2022-08-22	FS_INF-S																					
2022-08-22	FS_INF-K																					
2022-08-22	FS_INF-S																					
2022-08-22	FS_INF-K																					
2022-08-22	FS_INF-S																					
2022-08-23	FS_INF-K																					
2022-08-23	FS_INF-S																					
2022-08-23	FS_INF-K																					
2022-08-23	FS_INF-S																					
2022-08-23	FS_BPO	9.51				< 0.015	0.027	0.116	< 0.100	< 0.050	0.115	0.118	269	0.00955	0.0121					0.080	0.037	0.0484
2022-08-23	FS_INF-K	10.06			1370		0.039	< 0.020	< 0.100	< 0.100	0.182	0.183	139	0.00032	0.00029							0.00142
2022-08-23	FS_INF-S	11.87			2470		< 0.020	0.027	< 0.100	< 0.100	0.0866	0.0886	323	0.00854	0.0103							0.00427
2022-08-23	FR_FRABCH	8.98	0.162	571			< 0.010	0.098	< 0.050	0.099	0.0488	0.0483	68.1	0.00966	0.0159	< 0.0050	< 0.0050					0.00186
2022-08-23	FS_BPO	8.22																				
2022-08-23	FS_BPO	7.7				< 0.015																
2022-08-24	FS_INF-K																					
2022-08-24	FS_INF-S																					
2022-08-24	FS_BPO	8.59				< 0.015																
2022-08-24	FS_INF-K	11.82																				
2022-08-24	FS_INF-S	10.43																				
2022-08-24	FS_INF-K																					
2022-08-24	FS_INF-S																					
2022-08-24	FR_FRABCH	9.47																				
2022-08-24	FR_SCOUTDS	9.99																				
2022-08-24	FS_INF-K																					
2022-08-24	FS_INF-S																					
2022-08-24	FS_INF-K																					
2022-08-24	FS_INF-S																					
2022-08-24	FS_INF-K																					
2022-08-24	FS_INF-S																					
2022-08-24	FS_INF-K																					
2022-08-24	FS_INF-S																					
2022-08-25	FS_INF-K																					
2022-08-25	FS_INF-S																					
2022-08-25	FS_INF-K																					
2022-08-25	FS_INF-S																					
2022-08-25	FS_BPO	9.09				< 0.015															0.137	0.066	
2022-08-25	FS_INF-K	9.11																				
2022-08-25	FS_INF-S	10.58																				
2022-08-25	FR_SCOUTDS	11.3	0.203	602	626	0.031	< 0.010	0.027	< 0.050	< 0.050	0.0618	0.0544	72.7	0.00672	0.00796	< 0.0050			< 0.00050	0.019	< 0.010	0.00387
2022-08-25	FS_INF-K																					
2022-08-25	FS_INF-S																					
2022-08-25	FS_INF-K																					
2022-08-25	FS_INF-S																					
2022-08-25	FS_INF-K																					
2022-08-25	FS_INF-S																					
2022-08-25	FS_INF-K																					
2022-08-25	FS_INF-S																					
2022-08-25	FS_INF-K																					
2022-08-25	FS_INF-S																					
2022-08-26	FS_INF-K																					
2022-08-26	FS_INF-S																					
2022-08-26	FS_INF-K																					
2022-08-26	FS_INF-S																					
2022-08-26	FS_BPO	7.91				< 0.015																
2022-08-26	FS_INF-K	10.69																				
2022-08-26	FS_INF-S	9.82																				
2022-08-26	FS_INF-K																					

Parameter		Dissolved Oxygen, Field	Fluoride	Hardness, Total or Dissolved CaCO3	Hardness, Total or Dissolved CaCO3	Hydrogen Peroxide	Iron	Iron	Lead	Lead	Lithium	Lithium	Magnesium	Manganese	Manganese	Mercury	Mercury	Mercury	Mercury	MeSe(IV) – methylseleninic acid CH3SeO2H	Methaneselenonic Acid	Molybdenum
Fraction		N	N	D	T	N	D	T	D	T	D	T	T	D	T	D	T	T	T	D	D	D
Unit		mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ng/l	ug/l	ug/l	ug/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-08-26	FS_INF-S																					
2022-08-26	FS_INF-K																					
2022-08-26	FS_INF-S																					
2022-08-26	FS_INF-K																					
2022-08-26	FS_INF-S																					
2022-08-26	FS_INF-K																					
2022-08-26	FS_INF-S																					
2022-08-26	FS_INF-K																					
2022-08-26	FS_INF-S																					
2022-08-27	FS_INF-K																					
2022-08-27	FS_INF-S																					
2022-08-27	FS_INF-K																					
2022-08-27	FS_INF-S																					
2022-08-27	FS_BPO	8.71				< 0.015																
2022-08-27	FS_INF-K	10.26																				
2022-08-27	FS_INF-S	9.3																				
2022-08-27	FS_INF-K																					
2022-08-27	FS_INF-S																					
2022-08-27	FS_INF-K																					
2022-08-27	FS_INF-S																					
2022-08-27	FS_INF-K																					
2022-08-27	FS_INF-S																					
2022-08-27	FS_INF-K																					
2022-08-27	FS_INF-S																					
2022-08-28	FS_BPO	8.38				< 0.015														0.102	0.048	
2022-08-28	FS_INF-K	9.75																				
2022-08-28	FS_INF-S	11.02																				
2022-08-28	FR_FRABCH																					
2022-08-28	FR_FRABCH																					
2022-08-28	FR_SCOUTDS																					
2022-08-28	FS_INF-K																					
2022-08-28	FS_INF-S																					
2022-08-29	FS_BPO					< 0.015																
2022-08-29	FS_BPO	7.51																				
2022-08-29	FS_INF-K	9.95																				
2022-08-29	FS_INF-S	10.66																				
2022-08-29	FR_FRABCH																					
2022-08-29	FR_SCOUTDS																					
2022-08-29	FS_INF-K																					
2022-08-29	FS_INF-S																					
2022-08-29	FS_BPO	6.18																				
2022-08-29	FS_BPO	11.57	0.140	2180												< 0.0050			0.00056			
2022-08-29	FS_INF-K	4.19	0.166	1460												< 0.0050			< 0.00050			
2022-08-29	FS_INF-S	11.37	< 0.200	2460												< 0.0050			0.00094			
2022-08-29	FS_INF-S																					
2022-08-30	FS_INF-S																					
2022-08-30	FS_INF-S																					
2022-08-30	FS_BPO	8.59				< 0.015	0.011	0.070	< 0.050	< 0.100	0.103	0.0961	284	0.0159	0.0189					0.141	0.059	0.0475
2022-08-30	FS_INF-K	10.14					< 0.020	< 0.020	< 0.100	< 0.100	0.202	0.212	153	0.00022	0.00026					< 0.010	< 0.010	0.00135
2022-08-30	FS_INF-S	10.58					< 0.020	0.034	< 0.100	< 0.100	0.0886	0.0875	338	0.00815	0.0119					0.063	< 0.010	0.00417
2022-08-30	FR_FRABCH	9.12	0.160	577			< 0.010	0.021	< 0.050	< 0.050	0.0508	0.0498	64.1	0.00357	0.00416	< 0.0050	< 0.0050					0.00195
2022-08-30	FS_INF-K																					
2022-08-30	FS_INF-S																					
2022-08-30	FS_INF-S																					
2022-08-30	FS_INF-S																					
2022-08-30	FS_INF-S																					
2022-08-30	FS_INF-S																					
2022-08-31	FS_INF-S																					
2022-08-31	FS_INF-S																					
2022-08-31	FS_BPO	10.91				< 0.015																
2022-08-31	FS_INF-K	11.42																				
2022-08-31	FS_INF-S	10.42																				
2022-08-31	FS_INF-K																					
2022-08-31	FS_INF-S																					
2022-08-31	FS_INF-K																					
2022-08-31	FS_INF-S																					
2022-08-31	FS_INF-K																					
2022-08-31	FS_INF-S																					
2022-08-31	FS_INF-K																					
2022-08-31	FS_INF-S																					
2022-09-01	FS_INF-K																					
2022-09-01	FS_INF-S																					
2022-09-01	FS_INF-K																					
2022-09-01	FS_INF-S																					
2022-09-01	FS_BPO	8.49				< 0.015														0.110	0.049	
2022-09-01	FS_INF-K	11.48																				
2022-09-01	FS_INF-S	10.27																				
2022-09-01	FR_SCOUTDS	9.49	0.200	617		< 0.015	0.029	0.028	< 0.050	< 0.050	0.0471	0.0517	70.0	0.00694	0.00755	< 0.0050			0.00060	0.021	< 0.010	0.00461
2022-09-01	FS_INF-K																					
2022-09-01	FS_INF-S																					
2022-09-01	FS_INF-K																					
2022-09-01	FS_INF-S																					

Parameter		Dissolved Oxygen, Field	Fluoride	Hardness, Total or Dissolved CaCO3	Hardness, Total or Dissolved CaCO3	Hydrogen Peroxide	Iron	Iron	Lead	Lead	Lithium	Lithium	Magnesium	Manganese	Manganese	Mercury	Mercury	Mercury	Mercury	MeSe(IV) – methylseleninic acid CH3SeO2H	Methaneselenonic Acid	Molybdenum
Fraction		N	N	D	T	N	D	T	D	T	D	T	T	D	T	D	T	T	T	D	D	D
Unit		mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ng/l	ug/l	ug/l	ug/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-09-01	FS_INF-K																					
2022-09-01	FS_INF-S																					
2022-09-01	FS_INF-K																					
2022-09-01	FS_INF-S																					
2022-09-01	FS_INF-K																					
2022-09-01	FS_INF-S																					
2022-09-02	FS_INF-K																					
2022-09-02	FS_INF-S																					
2022-09-02	FS_INF-K																					
2022-09-02	FS_INF-S																					
2022-09-02	FS_BPO	7.81				< 0.015																
2022-09-02	FS_INF-K	10.66																				
2022-09-02	FS_INF-S	9.52																				
2022-09-02	FS_BPO	12.85																				
2022-09-02	FS_INF-K																					
2022-09-02	FS_INF-S																					
2022-09-02	FS_INF-K																					
2022-09-02	FS_INF-S																					
2022-09-02	FS_INF-K																					
2022-09-02	FS_INF-S																					
2022-09-02	FS_INF-K																					
2022-09-02	FS_INF-S																					
2022-09-03	FS_INF-K																					
2022-09-03	FS_INF-K																					
2022-09-03	FS_BPO	7.39				< 0.015																
2022-09-03	FS_INF-K	10.9																				
2022-09-03	FS_INF-S	10.55																				
2022-09-03	FS_INF-K																					
2022-09-03	FS_INF-K																					
2022-09-03	FS_INF-K																					
2022-09-03	FS_INF-K																					
2022-09-03	FS_INF-K																					
2022-09-04	FS_INF-K																					
2022-09-04	FS_INF-K																					
2022-09-04	FS_BPO	7.52				< 0.015															0.092	0.051	
2022-09-04	FS_INF-K	11.25																				
2022-09-04	FS_INF-S	7.7																				
2022-09-04	FS_INF-K																					
2022-09-04	FS_INF-K																					
2022-09-04	FS_INF-K																					
2022-09-04	FS_INF-K																					
2022-09-04	FS_INF-K																					
2022-09-05	FS_INF-K																					
2022-09-05	FS_INF-K																					
2022-09-05	FS_BPO	7.12	0.132	1540		0.03										< 0.0050			< 0.00050			
2022-09-05	FS_INF-K	10.66	0.164	1360												< 0.0050			< 0.00050			
2022-09-05	FS_INF-S	9.54	0.161	2270												< 0.0050			0.00076			
2022-09-05	FS_BPO																					
2022-09-05	FS_INF-K																					
2022-09-05	FS_INF-K																					
2022-09-05	FS_INF-K																					
2022-09-05	FS_INF-K																					
2022-09-05	FS_INF-K																					
2022-09-06	FS_INF-K																					
2022-09-06	FS_BPO	7.25				0.031	< 0.010	0.032	< 0.050	< 0.050	0.169	0.200	188	0.00484	0.00731					0.112	0.060	0.0415
2022-09-06	FS_INF-K	10.8			1430		< 0.020	< 0.020	< 0.100	< 0.100	0.262	0.234	153	0.00035	0.00028							0.00150
2022-09-06	FS_INF-S	9.12			2380		< 0.020	< 0.020	< 0.100	< 0.100	0.0946	0.0917	330	0.00782	0.00803							0.00441
2022-09-06	FR_FRABCH	9.58	0.166	650			< 0.010	0.017	< 0.050	< 0.050	0.0552	0.0488	64.8	0.00351	0.00403	< 0.0050	< 0.0050					0.00153
2022-09-06	FS_INF-K																					
2022-09-06	FS_INF-K																					
2022-09-06	FR_FRABCH																					
2022-09-06	FS_INF-K																					
2022-09-06	FS_INF-K																					
2022-09-06	FS_INF-K																					
2022-09-07	FS_INF-K																					
2022-09-07	FS_INF-K																					
2022-09-07	FS_BPO	7.87				0.015																
2022-09-07	FS_INF-K	10.85																				
2022-09-07	FS_INF-S	10.21																				
2022-09-07	FS_INF-K																					
2022-09-07	FS_INF-K																					
2022-09-07	FS_INF-K																					
2022-09-07	FS_BPO	6.96				0.031																
2022-09-07	FS_INF-K																					
2022-09-07	FS_INF-K																					
2022-09-08	FS_INF-K																					
2022-09-08	FS_INF-S																					
2022-09-08	FS_INF-K																					
2022-09-08	FS_INF-S																					
2022-09-08	FS_BPO	8.05				< 0.015															0.140	0.084	

Parameter		Dissolved Oxygen, Field	Fluoride	Hardness, Total or Dissolved CaCO3	Hardness, Total or Dissolved CaCO3	Hydrogen Peroxide	Iron	Iron	Lead	Lead	Lithium	Lithium	Magnesium	Manganese	Manganese	Mercury	Mercury	Mercury	Mercury	MeSe(IV) – methylseleninic acid CH3SeO2H	Methaneselenonic Acid	Molybdenum
Fraction		N	N	D	T	N	D	T	D	T	D	T	T	D	T	D	T	T	T	D	D	D
Unit		mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ng/l	ug/l	ug/l	ug/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-09-08	FS_INF-K	11.48																				
2022-09-08	FS_INF-S	10.26																				
2022-09-08	FR_SCOUTDS	10.05	0.186	718		< 0.015	< 0.010	0.028	< 0.050	< 0.050	0.0639	0.0647	92.0	0.00650	0.00813	< 0.0050			< 0.00050	0.021	< 0.010	0.00176
2022-09-08	FS_INF-K																					
2022-09-08	FS_INF-S																					
2022-09-08	FS_INF-K																					
2022-09-08	FS_INF-S																					
2022-09-08	FS_INF-K																					
2022-09-08	FS_INF-S																					
2022-09-08	FS_INF-K																					
2022-09-08	FS_INF-S																					
2022-09-08	FS_INF-K																					
2022-09-08	FS_INF-S																					
2022-09-09	FS_INF-K																					
2022-09-09	FS_INF-S																					
2022-09-09	FS_BPO	10.72				< 0.015																
2022-09-09	FS_INF-K	11.54																				
2022-09-09	FS_INF-S	10.7																				
2022-09-09	FS_INF-K																					
2022-09-09	FS_INF-S																					
2022-09-09	FS_INF-K																					
2022-09-09	FS_INF-S																					
2022-09-09	FS_INF-K																					
2022-09-09	FS_INF-S																					
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2022-09-09	FS_INF-K																					
2022-09-09	FS_INF-S																					
2022-09-10	FS_INF-K																					
2022-09-10	FS_INF-S																					
2022-09-10	FS_INF-K																					
2022-09-10	FS_INF-S																					
2022-09-10	FS_BPO	8.6				< 0.015																
2022-09-10	FS_INF-K	11.36																				
2022-09-10	FS_INF-S	10.78																				
2022-09-10	FS_INF-K																					
2022-09-10	FS_INF-S																					
2022-09-10	FS_INF-K																					
2022-09-10	FS_INF-S																					
2022-09-10	FS_INF-K																					
2022-09-10	FS_INF-S																					
2022-09-10	FS_INF-K																					
2022-09-10	FS_INF-S																					
2022-09-11	FS_INF-K																					
2022-09-11	FS_INF-S																					
2022-09-11	FS_INF-K																					
2022-09-11	FS_INF-S																					
2022-09-11	FS_BPO	8.24				< 0.015														0.146	0.058	
2022-09-11	FS_INF-K	11.31																				
2022-09-11	FS_INF-S	10.5																				
2022-09-11	FS_INF-K																					
2022-09-11	FS_INF-S																					
2022-09-11	FS_INF-K																					
2022-09-11	FS_INF-S																					
2022-09-11	FS_INF-K																					
2022-09-11	FS_INF-S																					
2022-09-11	FS_INF-K																					
2022-09-11	FS_INF-S																					
2022-09-12	FS_INF-K																					
2022-09-12	FS_INF-S																					
2022-09-12	FS_INF-K																					
2022-09-12	FS_INF-S																					
2022-09-12	FS_BPO	7.85	0.167	1960		< 0.015										< 0.0050			< 0.00050			
2022-09-12	FS_INF-K	11.32	0.162	1380												< 0.0050			< 0.00050			
2022-09-12	FS_INF-S	10.63	0.158	2100												< 0.0050			0.00060			
2022-09-12	FS_BPO																					
2022-09-12	FS_INF-K																					
2022-09-12	FS_INF-S																					
2022-09-12	FS_INF-K																					
2022-09-12	FS_INF-S																					
2022-09-12	FS_INF-K																					
2022-09-12	FS_INF-S																					
2022-09-12	FS_INF-K																					
2022-09-12	FS_INF-S																					
2022-09-12	FS_INF-K																					
2022-09-12	FS_INF-S																					
2022-09-13	FS_INF-K																					
2022-09-13	FS_INF-S																					
2022-09-13	FS_INF-K																					
2022-09-13	FS_INF-S																					
2022-09-13	FS_BPO	8.22				< 0.015	< 0.020	0.101	< 0.100	< 0.050	0.151	0.168	274	0.0233	0.0276					0.150	0.084	0.0507
2022-09-13	FS_INF-K	11.33			1580		< 0.010	< 0.020	< 0.050	< 0.100	0.221	0.306	164	0.00034	< 0.00020					< 0.010	< 0.010	0.00126

	Parameter	Dissolved Oxygen, Field	Fluoride	Hardness, Total or Dissolved CaCO3	Hardness, Total or Dissolved CaCO3	Hydrogen Peroxide	Iron	Iron	Lead	Lead	Lithium	Lithium	Magnesium	Manganese	Manganese	Mercury	Mercury	Mercury	Mercury	MeSe(IV) – methylseleninic acid CH3SeO2H	Methaneselenonic Acid	Molybdenum
	Fraction	N	N	D	T	N	D	T	D	T	D	T	T	D	T	D	T	T	T	D	D	D
	Unit	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ng/l	ug/l	ug/l	ug/l	ug/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-09-13	FS_INF-S	10.51			2670		< 0.010	< 0.020	< 0.050	< 0.100	0.0854	0.0883	359	0.00611	0.00630					0.055	< 0.010	0.00420
2022-09-13	FR_FRABCH	9.11 9.4	0.144	684			< 0.010	0.013	< 0.050	< 0.050	0.0617	0.0514	71.6	0.00466	0.00439	< 0.0050	< 0.0050					0.00194
2022-09-13	FS_INF-K																					
2022-09-13	FS_INF-S																					
2022-09-13	FS_INF-K																					
2022-09-13	FS_INF-S																					
2022-09-13	FS_INF-K																					
2022-09-13	FS_INF-S																					
2022-09-13	FR_FRABCH	9.40	0.162	612			< 0.010	0.015	< 0.050	< 0.050	0.0499	0.0510	75.9	0.00488	0.00605	< 0.0050	0.0057					0.00196
2022-09-13	FS_INF-K																					
2022-09-13	FS_INF-S																					
2022-09-13	FS_INF-K																					
2022-09-13	FS_INF-S																					
2022-09-14	FS_INF-K																					
2022-09-14	FS_INF-S																					
2022-09-14	FS_INF-K																					
2022-09-14	FS_INF-S																					
2022-09-14	FS_BPO	8.31																				
2022-09-14	FS_INF-K	11.31																				
2022-09-14	FS_INF-S	10.48																				
2022-09-14	FS_BPO					< 0.015																
2022-09-14	FS_INF-K																					
2022-09-14	FS_INF-S																					
2022-09-14	FS_INF-K																					
2022-09-14	FS_INF-S																					
2022-09-14	FS_INF-K																					
2022-09-14	FS_INF-S																					
2022-09-14	FS_INF-K																					
2022-09-14	FS_INF-S																					
2022-09-15	FS_INF-K																					
2022-09-15	FS_INF-S																					
2022-09-15	FS_INF-K																					
2022-09-15	FS_INF-S																					
2022-09-15	FS_INF-K																					
2022-09-15	FS_INF-S																					
2022-09-15	FS_BPO	10.56				< 0.015															0.276	0.129	
2022-09-15	FS_INF-K	10.98																				
2022-09-15	FS_INF-S	11.9																				
2022-09-15	FR_SCOUTDS	10.4	0.188	660	797	< 0.015	< 0.010	0.035	< 0.050	< 0.050	0.0759	0.0789	91.6	0.00842	0.00924	< 0.0050			0.00054	0.033	< 0.010	0.00489
2022-09-15	FS_INF-K																					
2022-09-15	FS_INF-S																					
2022-09-15	FS_INF-K																					
2022-09-15	FS_INF-S																					
2022-09-15	FS_INF-K																					
2022-09-15	FS_INF-S																					
2022-09-15	FS_INF-K																					
2022-09-15	FS_INF-S																					
2022-09-16	FS_INF-K																					
2022-09-16	FS_INF-S																					
2022-09-16	FS_INF-K																					
2022-09-16	FS_INF-S																					
2022-09-16	FS_BPO	9.33				< 0.015																
2022-09-16	FS_INF-K	10.6																				
2022-09-16	FS_INF-S	10.16																				
2022-09-16	FS_INF-K																					
2022-09-16	FS_INF-S																					
2022-09-16	FS_INF-K																					
2022-09-16	FS_INF-S																					
2022-09-16	FS_INF-K																					
2022-09-16	FS_INF-S																					
2022-09-16	FS_INF-K																					
2022-09-16	FS_INF-S																					
2022-09-17	FS_INF-K																					
2022-09-17	FS_INF-S																					
2022-09-17	FS_INF-K																					
2022-09-17	FS_INF-S																					
2022-09-17	FS_BPO	8.44				< 0.015																
2022-09-17	FS_INF-K	10.66																				
2022-09-17	FS_INF-S	9.67																				
2022-09-17	FS_INF-K																					
2022-09-17	FS_INF-S																					
2022-09-17	FS_INF-K																					
2022-09-17	FS_INF-S																					
2022-09-17	FS_INF-K																					
2022-09-17	FS_INF-S																					
2022-09-17	FS_INF-K																					
2022-09-17	FS_INF-S																					
2022-09-17	FS_INF-K																					
2022-09-17	FS_INF-S																					
2022-09-18	FS_INF-K																					
2022-09-18	FS_INF-S																					
2022-09-18	FS_INF-K																					

	Parameter	Dissolved Oxygen, Field	Fluoride	Hardness, Total or Dissolved CaCO3	Hardness, Total or Dissolved CaCO3	Hydrogen Peroxide	Iron	Iron	Lead	Lead	Lithium	Lithium	Magnesium	Manganese	Manganese	Mercury	Mercury	Mercury	Mercury	MeSe(IV) – methylseleninic acid CH3SeO2H	Methaneselenonic Acid	Molybdenum
	Fraction	N	N	D	T	N	D	T	D	T	D	T	T	D	T	D	T	T	T	D	D	D
	Unit	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ng/l	ug/l	ug/l	ug/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-09-18	FS_INF-S																					
2022-09-18	FS_BPO	10.78				< 0.015														0.212	0.093	
2022-09-18	FS_INF-K	11.36																				
2022-09-18	FS_INF-S	10.44																				
2022-09-18	FS_INF-K																					
2022-09-18	FS_INF-S																					
2022-09-18	FS_INF-K																					
2022-09-18	FS_INF-S																					
2022-09-18	FS_INF-K																					
2022-09-18	FS_INF-S																					
2022-09-18	FS_INF-K																					
2022-09-18	FS_INF-K																					
2022-09-18	FS_INF-S																					
2022-09-19	FS_INF-K																					
2022-09-19	FS_INF-S																					
2022-09-19	FS_INF-K																					
2022-09-19	FS_INF-S																					
2022-09-19	FS_BPO	8.27	0.205	1780		< 0.015										< 0.0050			< 0.00050			
2022-09-19	FS_INF-K	11.41	0.178	1370												< 0.0050			< 0.00050			
2022-09-19	FS_INF-S	10.36	0.175	2230												< 0.0050			0.00068			
2022-09-19	FS_BPO																					
2022-09-19	FS_INF-K																					
2022-09-19	FS_INF-S																					
2022-09-19	FS_INF-K																					
2022-09-19	FS_INF-S																					
2022-09-19	FS_INF-K																					
2022-09-19	FS_INF-S																					
2022-09-19	FS_INF-K																					
2022-09-19	FS_INF-S																					
2022-09-19	FS_BPO	10.4				0.04																
2022-09-19	FS_INF-K																					
2022-09-19	FS_INF-S																					
2022-09-20	FS_INF-K																					
2022-09-20	FS_INF-S																					
2022-09-20	FS_INF-K																					
2022-09-20	FS_INF-S																					
2022-09-20	FS_BPO	9.57				< 0.015	0.157	< 0.020	< 0.100	< 0.100	0.190	0.203	258	0.0286	0.0165					0.266	0.127	0.0493
2022-09-20	FS_INF-K	11.45		1490			< 0.010	< 0.020	< 0.050	< 0.100	0.253	0.275	157	0.00029	0.00032							0.00130
2022-09-20	FS_INF-S	11.52		2310			< 0.020	< 0.020	< 0.100	< 0.100	0.102	0.0755	285	0.00600	0.00546							0.00381
2022-09-20	FS_BPO	11.01																				
2022-09-20	FS_INF-K																					
2022-09-20	FS_INF-S																					
2022-09-20	FS_BPO	12.49																				
2022-09-20	FS_INF-K																					
2022-09-20	FS_INF-S																					
2022-09-20	FS_BPO	10.42																				
2022-09-20	FS_INF-K																					
2022-09-20	FS_INF-S																					
2022-09-20	FS_BPO	9.72																				
2022-09-20	FS_INF-K																					
2022-09-20	FS_INF-S																					
2022-09-21	FS_BPO	8.29																				
2022-09-21	FS_INF-K																					
2022-09-21	FS_INF-S																					
2022-09-21	FS_BPO	8.82																				
2022-09-21	FS_INF-K																					
2022-09-21	FS_INF-S																					
2022-09-21	FS_BPO	8.9				< 0.015																
2022-09-21	FS_INF-K	10.52																				
2022-09-21	FS_INF-S	9.88																				
2022-09-21	FS_BPO																					
2022-09-21	FS_BPO	11.06																				
2022-09-21	FS_INF-K																					
2022-09-21	FS_INF-S																					
2022-09-21	FS_BPO	10.79																				
2022-09-21	FS_INF-K																					
2022-09-21	FS_INF-S																					
2022-09-21	FS_BPO	10.91																				
2022-09-21	FS_INF-K																					
2022-09-21	FS_INF-S																					
2022-09-21	FS_INF-K																					
2022-09-21	FS_INF-S																					
2022-09-22	FS_INF-K																					
2022-09-22	FS_INF-S																					
2022-09-22	FS_INF-K																					
2022-09-22	FS_INF-S																					
2022-09-22	FS_BPO	8.64				< 0.015														0.192	0.100	
2022-09-22	FS_INF-K	10.15																				
2022-09-22	FS_INF-S	10.21																				
2022-09-22	FR_SCOUTDS					< 0.015																
2022-09-22	FS_INF-K																					

Parameter		Dissolved Oxygen, Field	Fluoride	Hardness, Total or Dissolved CaCO3	Hardness, Total or Dissolved CaCO3	Hydrogen Peroxide	Iron	Iron	Lead	Lead	Lithium	Lithium	Magnesium	Manganese	Manganese	Mercury	Mercury	Mercury	Mercury	MeSe(IV) – methylseleninic acid CH3SeO2H	Methaneselenonic Acid	Molybdenum
Fraction		N	N	D	T	N	D	T	D	T	D	T	T	D	T	D	T	T	T	D	D	D
Unit		mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ng/l	ug/l	ug/l	ug/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-09-22	FS_INF-S																					
2022-09-22	FS_INF-K																					
2022-09-22	FS_INF-S																					
2022-09-22	FS_INF-K																					
2022-09-22	FS_INF-S																					
2022-09-22	FS_INF-K																					
2022-09-22	FS_INF-S																					
2022-09-22	FS_INF-K																					
2022-09-22	FS_INF-S																					
2022-09-23	FR_SCOUTDS	10.3	0.179	745			0.034	0.032	< 0.050	< 0.050	0.0811	0.0827	91.6	0.00818	0.00829	< 0.0050			< 0.00050	0.016	< 0.010	0.00480
2022-09-23	FS_INF-K																					
2022-09-23	FS_INF-S																					
2022-09-23	FS_INF-K																					
2022-09-23	FS_INF-S																					
2022-09-23	FS_BPO	11.37				< 0.015																
2022-09-23	FS_INF-K	10.52																				
2022-09-23	FS_INF-S	10.18																				
2022-09-23	FS_INF-K																					
2022-09-23	FS_INF-S																					
2022-09-23	FS_INF-K																					
2022-09-23	FS_INF-S																					
2022-09-23	FS_INF-K																					
2022-09-23	FS_INF-S																					
2022-09-23	FS_INF-K																					
2022-09-23	FS_INF-S																					
2022-09-23	FS_INF-K																					
2022-09-23	FS_INF-S																					
2022-09-24	FS_INF-K																					
2022-09-24	FS_INF-S																					
2022-09-24	FS_INF-K																					
2022-09-24	FS_INF-S																					
2022-09-24	FS_BPO	16.74				< 0.015																
2022-09-24	FS_INF-K	9.85																				
2022-09-24	FS_INF-S	9.98																				
2022-09-24	FS_INF-K																					
2022-09-24	FS_INF-S																					
2022-09-24	FS_INF-K																					
2022-09-24	FS_INF-S																					
2022-09-24	FS_INF-K																					
2022-09-24	FS_INF-S																					
2022-09-24	FS_INF-K																					
2022-09-24	FS_INF-S																					
2022-09-25	FS_INF-K																					
2022-09-25	FS_INF-S																					
2022-09-25	FS_INF-K																					
2022-09-25	FS_INF-S																					
2022-09-25	FS_BPO	17.73				< 0.015														0.302	0.092	
2022-09-25	FS_INF-K	9.67																				
2022-09-25	FS_INF-S	9.64																				
2022-09-25	FS_INF-K																					
2022-09-25	FS_INF-S																					
2022-09-25	FS_INF-K																					
2022-09-25	FS_INF-S																					
2022-09-25	FS_INF-K																					
2022-09-25	FS_INF-S																					
2022-09-25	FS_INF-K																					
2022-09-25	FS_INF-S																					
2022-09-25	FS_INF-K																					
2022-09-25	FS_INF-S																					
2022-09-26	FS_INF-K																					
2022-09-26	FS_INF-S																					
2022-09-26	FS_INF-K																					
2022-09-26	FS_INF-S																					
2022-09-26	FS_BPO	8.42	0.156	2020		< 0.015										< 0.0050			< 0.00050			
2022-09-26	FS_INF-K	9.97	0.153	1550												< 0.0050			< 0.00050			
2022-09-26	FS_INF-S	9.58	0.154	2620												< 0.0050			0.00075			
2022-09-26	FS_BPO																					
2022-09-26	FS_INF-K																					
2022-09-26	FS_INF-S																					
2022-09-26	FS_INF-K																					
2022-09-26	FS_INF-S																					
2022-09-26	FS_INF-K																					
2022-09-26	FS_INF-S																					
2022-09-26	FS_INF-K																					
2022-09-26	FS_INF-S																					
2022-09-27	FS_INF-K																					
2022-09-27	FS_INF-S																					
2022-09-27	FS_INF-K																					
2022-09-27	FS_INF-S																					

	Parameter	Dissolved Oxygen, Field	Fluoride	Hardness, Total or Dissolved CaCO3	Hardness, Total or Dissolved CaCO3	Hydrogen Peroxide	Iron	Iron	Lead	Lead	Lithium	Lithium	Magnesium	Manganese	Manganese	Mercury	Mercury	Mercury	Mercury	MeSe(IV) – methylseleninic acid CH3SeO2H	Methaneselenonic Acid	Molybdenum
	Fraction	N	N	D	T	N	D	T	D	T	D	T	T	D	T	D	T	T	T	D	D	D
	Unit	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ng/l	ug/l	ug/l	ug/l	ug/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-09-27	FS_BPO	12.78				< 0.015	0.011	0.594	< 0.050	< 0.100	0.182	0.185	253	0.0263	0.0509					0.236	0.116	0.0453
2022-09-27	FS_INF-K	11.05			1460		< 0.020	< 0.020	< 0.100	< 0.100	0.279	0.250	157	0.00035	0.00039					< 0.010	< 0.010	0.00134
2022-09-27	FS_INF-S	9.98			2670		< 0.020	< 0.020	< 0.100	< 0.100	0.0791	0.0950	376	0.00564	0.00696					0.046	< 0.010	0.00366
2022-09-27	FS_INF-K																					
2022-09-27	FS_INF-S																					
2022-09-27	FS_INF-K																					
2022-09-27	FS_INF-S																					
2022-09-27	FS_INF-K																					
2022-09-27	FS_INF-S																					
2022-09-27	FS_INF-K																					
2022-09-27	FS_INF-S																					
2022-09-27	FS_INF-K																					
2022-09-27	FS_INF-S																					
2022-09-28	FS_INF-K																					
2022-09-28	FS_INF-S																					
2022-09-28	FS_BPO	7.28				< 0.015																
2022-09-28	FS_INF-K	10.017																				
2022-09-28	FS_INF-S	9.46																				
2022-09-28	FS_INF-K																					
2022-09-28	FS_INF-S																					
2022-09-28	FS_INF-K																					
2022-09-28	FS_INF-S																					
2022-09-28	FS_INF-K																					
2022-09-28	FS_INF-S																					
2022-09-28	FS_INF-K																					
2022-09-28	FS_INF-S																					
2022-09-29	FS_INF-K																					
2022-09-29	FS_INF-S																					
2022-09-29	FS_INF-K																					
2022-09-29	FS_INF-S																					
2022-09-29	FS_BPO	6.34				< 0.015														0.186	0.098	
2022-09-29	FS_INF-K	9.6																				
2022-09-29	FS_INF-S	9.16																				
2022-09-29	FR_SCOUTDS	4.1	0.173	882	892	< 0.015	0.014	0.024	< 0.050	< 0.050	0.110	0.0938	105	0.00666	0.00690	< 0.0050			0.00055	0.014	< 0.010	0.00307
2022-09-29	FS_BPO	7.35																				
2022-09-29	FS_BPO	6.56																				
2022-09-29	FS_INF-K																					
2022-09-29	FS_INF-S																					
2022-09-29	FS_BPO	7.78																				
2022-09-29	FS_INF-K																					
2022-09-29	FS_INF-S																					
2022-09-29	FS_INF-K																					
2022-09-29	FS_INF-S																					
2022-09-29	FS_BPO	6.84																				
2022-09-29	FS_INF-K																					
2022-09-29	FS_INF-S																					
2022-09-29	FS_INF-K																					
2022-09-29	FS_INF-S																					
2022-09-30	FS_BPO	6.97 7.32																				
2022-09-30	FS_INF-K																					
2022-09-30	FS_INF-S																					
2022-09-30	FS_INF-K																					
2022-09-30	FS_INF-S																					
2022-09-30	FS_BPO	6.88				< 0.015																
2022-09-30	FS_INF-K	9.53																				
2022-09-30	FS_INF-S	9.1																				
2022-09-30	FS_INF-K																					
2022-09-30	FS_INF-S																					
2022-09-30	FS_INF-K																					
2022-09-30	FS_INF-S																					
2022-09-30	FS_INF-K																					
2022-09-30	FS_INF-S																					
2022-09-30	FS_INF-K																					
2022-09-30	FS_INF-S																					
2022-09-30	FS_INF-K																					
2022-09-30	FS_INF-S																					
2022-10-01	FS_INF-K																					
2022-10-01	FS_INF-S																					
2022-10-01	FS_INF-K																					
2022-10-01	FS_INF-S																					
2022-10-01	FS_BPO	7.44				< 0.015																
2022-10-01	FS_INF-K	10.36																				
2022-10-01	FS_INF-S	9.65																				
2022-10-01	FS_INF-K																					
2022-10-01	FS_INF-S																					
2022-10-01	FS_INF-K																					
2022-10-01	FS_INF-S																					
2022-10-01	FS_INF-K																					
2022-10-01	FS_INF-S																					
2022-10-01	FS_INF-K																					
2022-10-01	FS_INF-S																					

	Parameter	Dissolved Oxygen, Field	Fluoride	Hardness, Total or Dissolved CaCO3	Hardness, Total or Dissolved CaCO3	Hydrogen Peroxide	Iron	Iron	Lead	Lead	Lithium	Lithium	Magnesium	Manganese	Manganese	Mercury	Mercury	Mercury	Mercury	MeSe(IV) – methylseleninic acid CH3SeO2H	Methaneselenonic Acid	Molybdenum
	Fraction	N	N	D	T	N	D	T	D	T	D	T	T	D	T	D	T	T	T	D	D	D
	Unit	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ng/l	ug/l	ug/l	ug/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-10-02	FS_INF-K																					
2022-10-02	FS_INF-S																					
2022-10-02	FS_INF-K																					
2022-10-02	FS_INF-S																					
2022-10-02	FS_BPO	7.84				< 0.015														0.207	0.105	
2022-10-02	FS_INF-K	11.32																				
2022-10-02	FS_INF-S	10																				
2022-10-02	FS_INF-K																					
2022-10-02	FS_INF-S																					
2022-10-02	FS_INF-K																					
2022-10-02	FS_INF-S																					
2022-10-02	FS_INF-K																					
2022-10-02	FS_INF-S																					
2022-10-02	FS_INF-K																					
2022-10-02	FS_INF-S																					
2022-10-02	FS_INF-K																					
2022-10-02	FS_INF-S																					
2022-10-03	FS_INF-K																					
2022-10-03	FS_INF-S																					
2022-10-03	FS_INF-K																					
2022-10-03	FS_INF-S																					
2022-10-03	FS_BPO	7.56	0.160	2150		< 0.015										< 0.0050			< 0.00050			
2022-10-03	FS_INF-K	9.48	0.166	1550												< 0.0050			< 0.00050			
2022-10-03	FS_INF-S	9.9	0.167	2370												< 0.0050			0.00078			
2022-10-03	FS_BPO																					
2022-10-03	FS_INF-K																					
2022-10-03	FS_INF-S																					
2022-10-03	FS_INF-K																					
2022-10-03	FS_INF-S																					
2022-10-03	FS_INF-K																					
2022-10-03	FS_INF-S																					
2022-10-03	FS_INF-K																					
2022-10-03	FS_INF-S																					
2022-10-03	FS_INF-K																					
2022-10-03	FS_INF-S																					
2022-10-04	FS_INF-K																					
2022-10-04	FS_INF-S																					
2022-10-04	FS_INF-K																					
2022-10-04	FS_INF-S																					
2022-10-04	FS_BPO	7.54				< 0.015	< 0.020	0.075	< 0.100	< 0.100	0.133	0.0988	307	0.00922	0.0159					0.216	0.086	0.0467
2022-10-04	FS_INF-K	10.91			1560		< 0.020	< 0.020	< 0.100	< 0.100	0.295	0.220	171	0.00035	0.00031					< 0.010	< 0.010	0.00126
2022-10-04	FS_INF-S	10.33			2380		< 0.020	< 0.020	< 0.100	< 0.100	0.109	0.0730	329	0.00699	0.00684					0.055	< 0.010	0.00372
2022-10-04	FS_BPO																					
2022-10-04	FS_INF-K																					
2022-10-04	FS_INF-S																					
2022-10-04	FS_INF-K																					
2022-10-04	FS_INF-S																					
2022-10-04	FS_INF-K																					
2022-10-04	FS_INF-S																					
2022-10-04	FS_INF-K																					
2022-10-04	FS_INF-S																					
2022-10-05	FS_INF-K																					
2022-10-05	FS_INF-S																					
2022-10-05	FS_INF-K																					
2022-10-05	FS_INF-S																					
2022-10-05	FS_BPO	7.49				< 0.015																
2022-10-05	FS_INF-K	10.18																				
2022-10-05	FS_INF-S	10.12																				
2022-10-05	FS_INF-K																					
2022-10-05	FS_INF-S																					
2022-10-05	FS_INF-K																					
2022-10-05	FS_INF-S																					
2022-10-05	FS_INF-K																					
2022-10-05	FS_INF-S																					
2022-10-05	FS_INF-K																					
2022-10-05	FS_INF-S																					
2022-10-05	FS_INF-K																					
2022-10-05	FS_INF-S																					
2022-10-06	FS_INF-K																					
2022-10-06	FS_INF-S																					
2022-10-06	FS_INF-K																					
2022-10-06	FS_INF-S																					
2022-10-06	FS_BPO	7.87				< 0.015														0.221	0.126	
2022-10-06	FS_INF-K	10.68																				
2022-10-06	FS_INF-S	10.22																				
2022-10-06	FR_SCOUTDS	10.48	0.172	914		< 0.015	0.012	0.042	< 0.050	< 0.050	0.0784	0.0756	109	0.00910	0.0113	< 0.0050			< 0.00050	0.037	0.021	0.00722
2022-10-06	FS_INF-K																					
2022-10-06	FS_INF-S																					
2022-10-06	FS_INF-K																					
2022-10-06	FS_INF-S																					
2022-10-06	FS_INF-K																					
2022-10-06	FS_INF-S																					

Parameter		Dissolved Oxygen, Field	Fluoride	Hardness, Total or Dissolved CaCO3	Hardness, Total or Dissolved CaCO3	Hydrogen Peroxide	Iron	Iron	Lead	Lead	Lithium	Lithium	Magnesium	Manganese	Manganese	Mercury	Mercury	Mercury	Mercury	MeSe(IV) – methylseleninic acid CH3SeO2H	Methaneselenonic Acid	Molybdenum
Fraction		N	N	D	T	N	D	T	D	T	D	T	T	D	T	D	T	T	T	D	D	D
Unit		mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ng/l	ug/l	ug/l	ug/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-10-06	FS_INF-K																					
2022-10-06	FS_INF-S																					
2022-10-06	FS_INF-K																					
2022-10-06	FS_INF-S																					
2022-10-07	FS_INF-K																					
2022-10-07	FS_INF-S																					
2022-10-07	FS_INF-K																					
2022-10-07	FS_INF-S																					
2022-10-07	FS_BPO	8.39				< 0.015																
2022-10-07	FS_INF-K	10.54																				
2022-10-07	FS_INF-S	10.22																				
2022-10-07	FS_INF-K																					
2022-10-07	FS_INF-S																					
2022-10-07	FS_INF-K																					
2022-10-07	FS_INF-S																					
2022-10-07	FS_INF-K																					
2022-10-07	FS_INF-S																					
2022-10-07	FS_INF-K																					
2022-10-07	FS_INF-S																					
2022-10-08	FS_INF-K																					
2022-10-08	FS_INF-S																					
2022-10-08	FS_INF-K																					
2022-10-08	FS_INF-S																					
2022-10-08	FS_BPO	9.02				< 0.015																
2022-10-08	FS_INF-K	10.71																				
2022-10-08	FS_INF-S	10.31																				
2022-10-08	FS_INF-K																					
2022-10-08	FS_INF-S																					
2022-10-08	FS_INF-K																					
2022-10-08	FS_INF-S																					
2022-10-08	FS_INF-K																					
2022-10-08	FS_INF-S																					
2022-10-09	FS_INF-K																					
2022-10-09	FS_INF-S																					
2022-10-09	FS_INF-K																					
2022-10-09	FS_INF-S																					
2022-10-09	FS_BPO	8.56				< 0.015														0.214	0.101	
2022-10-09	FS_INF-K	10.68																				
2022-10-09	FS_INF-S	10.33																				
2022-10-09	FS_INF-K																					
2022-10-09	FS_INF-S																					
2022-10-09	FS_INF-K																					
2022-10-09	FS_INF-S																					
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2022-10-09	FS_INF-S																					
2022-10-10	FS_INF-K																					
2022-10-10	FS_INF-S																					
2022-10-10	FS_INF-K																					
2022-10-10	FS_INF-S																					
2022-10-10	FS_BPO	10.17	0.175	1900		< 0.015										< 0.0050			< 0.00050			
2022-10-10	FS_INF-K	10.27	0.178	1550												< 0.0050			< 0.00050			
2022-10-10	FS_INF-S	10.35	0.163	2370												< 0.0050			0.00064			
2022-10-10	FS_BPO																					
2022-10-10	FS_INF-K																					
2022-10-10	FS_INF-S																					
2022-10-10	FS_INF-K																					
2022-10-10	FS_INF-S																					
2022-10-10	FS_INF-K																					
2022-10-10	FS_INF-S																					
2022-10-10	FS_INF-K																					
2022-10-10	FS_INF-S																					
2022-10-10	FS_INF-K																					
2022-10-10	FS_INF-S																					
2022-10-11	FS_INF-K																					
2022-10-11	FS_INF-S																					
2022-10-11	FS_INF-K																					
2022-10-11	FS_INF-S																					
2022-10-11	FS_BPO	9.36				< 0.015	< 0.020	0.126	< 0.100	< 0.100	0.199	0.200	286	0.0210	0.0263					0.183	0.083	0.0546
2022-10-11	FS_INF-K	10.37		1720			< 0.020	< 0.020	< 0.100	< 0.100	0.264	0.254	179	0.00022	0.00021					< 0.010	< 0.010	0.00135
2022-10-11	FS_INF-S	10.35		2810			< 0.020	< 0.020	< 0.100	< 0.100	0.0981	0.0900	369	0.00736	0.00634					0.043	< 0.010	0.00399
2022-10-11	FS_INF-K																					
2022-10-11	FS_INF-S																					
2022-10-11	FR_FRABCH	9.97	0.135	683			0.019	0.030	< 0.050	< 0.050	0.0564	0.0477	67.7	0.0129	0.00834	< 0.0050	< 0.0050					0.00129
2022-10-11	FS_INF-K																					

Parameter		Dissolved Oxygen, Field	Fluoride	Hardness, Total or Dissolved CaCO3	Hardness, Total or Dissolved CaCO3	Hydrogen Peroxide	Iron	Iron	Lead	Lead	Lithium	Lithium	Magnesium	Manganese	Manganese	Mercury	Mercury	Mercury	Mercury	MeSe(IV) – methylseleninic acid CH3SeO2H	Methaneselenonic Acid	Molybdenum
Fraction		N	N	D	T	N	D	T	D	T	D	T	T	D	T	D	T	T	T	D	D	D
Unit		mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ng/l	ug/l	ug/l	ug/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-10-11	FS_INF-S																					
2022-10-11	FR_FRABCH																					
2022-10-11	FS_INF-K																					
2022-10-11	FS_INF-S																					
2022-10-11	FS_INF-K																					
2022-10-11	FS_INF-S																					
2022-10-11	FS_INF-K																					
2022-10-11	FS_INF-S																					
2022-10-12	FS_INF-K																					
2022-10-12	FS_INF-S																					
2022-10-12	FS_INF-K																					
2022-10-12	FS_INF-S																					
2022-10-12	FS_BPO	11.61				< 0.015																
2022-10-12	FS_INF-K	10.88																				
2022-10-12	FS_INF-S	10.34																				
2022-10-12	FS_INF-K																					
2022-10-12	FS_INF-S																					
2022-10-12	FS_INF-K																					
2022-10-12	FS_INF-S																					
2022-10-12	FS_INF-K																					
2022-10-12	FS_INF-S																					
2022-10-12	FS_INF-K																					
2022-10-12	FS_INF-S																					
2022-10-12	FS_INF-K																					
2022-10-12	FS_INF-S																					
2022-10-13	FS_INF-K																					
2022-10-13	FS_INF-S																					
2022-10-13	FS_INF-K																					
2022-10-13	FS_INF-S																					
2022-10-13	FS_BPO	11.55				< 0.015														0.200	0.091	
2022-10-13	FS_INF-K	10.55																				
2022-10-13	FS_INF-S	10.37																				
2022-10-13	FR_SCOUTDS	11.11	0.188	783	815	0.022	0.011	0.027	< 0.050	< 0.050	0.0831	0.0711	97.2	0.00791	0.00784	< 0.0050			< 0.00050	< 0.010	< 0.010	0.00319
2022-10-13	FS_INF-K																					
2022-10-13	FS_INF-S																					
2022-10-13	FS_INF-K																					
2022-10-13	FS_INF-S																					
2022-10-13	FS_INF-K																					
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2022-10-13	FS_INF-K																					
2022-10-13	FS_INF-S																					
2022-10-13	FS_INF-K																					
2022-10-13	FS_INF-S																					
2022-10-14	FS_INF-K																					
2022-10-14	FS_INF-S																					
2022-10-14	FS_INF-K																					
2022-10-14	FS_INF-S																					
2022-10-14	FS_BPO	10.26				< 0.015																
2022-10-14	FS_INF-K	11.04																				
2022-10-14	FS_INF-S	10.93																				
2022-10-14	FS_INF-K																					
2022-10-14	FS_INF-S																					
2022-10-14	FS_INF-K																					
2022-10-14	FS_INF-S																					
2022-10-14	FS_INF-K																					
2022-10-14	FS_INF-S																					
2022-10-14	FS_INF-K																					
2022-10-14	FS_INF-S																					
2022-10-15	FS_INF-K																					
2022-10-15	FS_INF-S																					
2022-10-15	FS_INF-K																					
2022-10-15	FS_INF-S																					
2022-10-15	FS_BPO	10.78				< 0.015																
2022-10-15	FS_INF-K	11.24																				
2022-10-15	FS_INF-S	11.3																				
2022-10-15	FS_INF-K																					
2022-10-15	FS_INF-S																					
2022-10-15	FS_INF-K																					
2022-10-15	FS_INF-S																					
2022-10-15	FS_INF-K																					
2022-10-15	FS_INF-S																					
2022-10-15	FS_INF-K																					
2022-10-15	FS_INF-S																					
2022-10-15	FS_INF-K																					
2022-10-15	FS_INF-S																					
2022-10-16	FS_INF-K																					
2022-10-16	FS_INF-S																					
2022-10-16	FS_INF-K																					
2022-10-16	FS_INF-S																					
2022-10-16	FS_BPO	10.95				< 0.015																
2022-10-16	FS_INF-K	11.11																				
2022-10-16	FS_INF-S	10.99																				

Parameter		Dissolved Oxygen, Field	Fluoride	Hardness, Total or Dissolved CaCO3	Hardness, Total or Dissolved CaCO3	Hydrogen Peroxide	Iron	Iron	Lead	Lead	Lithium	Lithium	Magnesium	Manganese	Manganese	Mercury	Mercury	Mercury	Mercury	MeSe(IV) – methylseleninic acid CH3SeO2H	Methaneselenonic Acid	Molybdenum
Fraction		N	N	D	T	N	D	T	D	T	D	T	T	D	T	D	T	T	T	D	D	D
Unit		mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ng/l	ug/l	ug/l	ug/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-10-16	FS_INF-K																					
2022-10-16	FS_INF-S																					
2022-10-16	FS_INF-K																					
2022-10-16	FS_INF-S																					
2022-10-16	FS_INF-K																					
2022-10-16	FS_INF-S																					
2022-10-16	FS_INF-K																					
2022-10-16	FS_INF-S																					
2022-10-16	FS_INF-K																					
2022-10-16	FS_INF-S																					
2022-10-17	FS_INF-K																					
2022-10-17	FS_INF-S																					
2022-10-17	FS_INF-K																					
2022-10-17	FS_INF-S																					
2022-10-17	FS_BPO	10.24	0.166	2060		< 0.015										< 0.0050			< 0.00050			
2022-10-17	FS_INF-K	10.42	0.162	1690												< 0.0050			< 0.00050			
2022-10-17	FS_INF-S	10.27	0.159	2530												< 0.0050			0.00072			
2022-10-17	FS_BPO																					
2022-10-17	FS_INF-K																					
2022-10-17	FS_INF-S																					
2022-10-17	FS_INF-K																					
2022-10-17	FS_INF-S																					
2022-10-17	FS_INF-K																					
2022-10-17	FS_INF-S																					
2022-10-17	FS_INF-K																					
2022-10-17	FS_INF-S																					
2022-10-17	FS_INF-K																					
2022-10-17	FS_INF-S																					
2022-10-18	FS_INF-K																					
2022-10-18	FS_INF-S																					
2022-10-18	FS_INF-K																					
2022-10-18	FS_INF-S																					
2022-10-18	FS_BPO	9.86				< 0.015	< 0.020	0.146	< 0.100	< 0.100	0.178	0.180	269	0.0162	0.0262					0.178	0.064	0.0508
2022-10-18	FS_INF-K	10.54		1740			0.130	< 0.020	< 0.100	< 0.100	0.293	0.258	200	0.00193	0.00034							0.00144
2022-10-18	FS_INF-S	10.4		2630			< 0.020	< 0.020	< 0.100	< 0.100	0.112	0.0911	364	0.00670	0.00574							0.00361
2022-10-18	FR_FRABCH	10.01	0.154	737			< 0.010	0.017	< 0.050	< 0.050	0.0556	0.0634	81.4	0.00878	0.00893	< 0.0050	< 0.0050					0.00140
2022-10-18	FS_INF-K																					
2022-10-18	FS_INF-S																					
2022-10-18	FS_INF-K																					
2022-10-18	FS_INF-S																					
2022-10-18	FS_INF-K																					
2022-10-18	FS_INF-S																					
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2022-10-18	FS_INF-S																					
2022-10-19	FS_INF-K																					
2022-10-19	FS_INF-S																					
2022-10-19	FS_INF-K																					
2022-10-19	FS_INF-S																					
2022-10-19	FS_BPO	10.13				< 0.015																
2022-10-19	FS_INF-K	10.49																				
2022-10-19	FS_INF-S	10.62																				
2022-10-19	FS_INF-K																					
2022-10-19	FS_INF-S																					
2022-10-19	FS_INF-K																					
2022-10-19	FS_INF-S																					
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2022-10-19	FS_INF-K																					
2022-10-19	FS_INF-S																					
2022-10-20	FS_INF-K																					
2022-10-20	FS_INF-S																					
2022-10-20	FS_BPO	11.63				< 0.015																
2022-10-20	FS_INF-K	11.32																				
2022-10-20	FS_INF-S	11.2																				
2022-10-20	FS_BPO																					
2022-10-20	FR_SCOUTDS	11.13	0.167	897			0.012	0.044	< 0.050	< 0.050	0.0926	0.108	102	0.00906	0.00991	< 0.0050			< 0.00050	0.034	0.014	0.00727
2022-10-20	FS_INF-K																					
2022-10-20	FS_INF-S																					
2022-10-20	FS_INF-K																					
2022-10-20	FS_INF-S																					
2022-10-20	FS_INF-K																					
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2022-10-20	FS_INF-S																					
2022-10-20	FS_INF-K																					
2022-10-20	FS_INF-S																					
2022-10-21	FS_INF-K																					
2022-10-21	FS_INF-S																					
2022-10-21	FS_INF-K																					

Parameter		Dissolved Oxygen, Field	Fluoride	Hardness, Total or Dissolved CaCO3	Hardness, Total or Dissolved CaCO3	Hydrogen Peroxide	Iron	Iron	Lead	Lead	Lithium	Lithium	Magnesium	Manganese	Manganese	Mercury	Mercury	Mercury	Mercury	MeSe(IV) – methylseleninic acid CH3SeO2H	Methaneselenonic Acid	Molybdenum
Fraction		N	N	D	T	N	D	T	D	T	D	T	T	D	T	D	T	T	T	D	D	D
Unit		mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ng/l	ug/l	ug/l	ug/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-10-21	FS_INF-S																					
2022-10-21	FS_BPO	11.53				< 0.015																
2022-10-21	FS_INF-K	9.83																				
2022-10-21	FS_INF-S	10.03																				
2022-10-21	FS_INF-K																					
2022-10-21	FS_INF-S																					
2022-10-21	FS_INF-K																					
2022-10-21	FS_INF-S																					
2022-10-21	FS_INF-K																					
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2022-10-21	FS_INF-S																					
2022-10-22	FS_INF-K																					
2022-10-22	FS_INF-S																					
2022-10-22	FS_INF-K																					
2022-10-22	FS_INF-S																					
2022-10-22	FS_BPO	12.21				< 0.015																
2022-10-22	FS_INF-K	9.96																				
2022-10-22	FS_INF-S	10.03																				
2022-10-22	FS_INF-K																					
2022-10-22	FS_INF-S																					
2022-10-22	FS_INF-K																					
2022-10-22	FS_INF-S																					
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2022-10-22	FS_INF-K																					
2022-10-22	FS_INF-S																					
2022-10-23	FS_INF-K																					
2022-10-23	FS_INF-S																					
2022-10-23	FS_INF-K																					
2022-10-23	FS_INF-S																					
2022-10-23	FS_BPO	9.36				< 0.015															0.210	0.159
2022-10-23	FS_INF-K	10.16																				
2022-10-23	FS_INF-S	10.59																				
2022-10-23	FS_INF-K																					
2022-10-23	FS_INF-S																					
2022-10-23	FS_INF-K																					
2022-10-23	FS_INF-S																					
2022-10-23	FS_INF-K																					
2022-10-23	FS_INF-S																					
2022-10-23	FS_INF-K																					
2022-10-23	FS_INF-S																					
2022-10-24	FS_INF-K																					
2022-10-24	FS_INF-S																					
2022-10-24	FS_INF-K																					
2022-10-24	FS_INF-S																					
2022-10-24	FS_BPO	10.08	0.166	2090		< 0.015										< 0.0050			< 0.00050			
2022-10-24	FS_INF-K	10.11	0.144	1810												< 0.0050			< 0.00050			
2022-10-24	FS_INF-S	10.75	0.166	2050												< 0.0050			0.00071			
2022-10-24	FS_BPO																					
2022-10-24	FS_INF-K																					
2022-10-24	FS_INF-S																					
2022-10-24	FS_INF-K																					
2022-10-24	FS_INF-S																					
2022-10-24	FS_INF-K																					
2022-10-24	FS_INF-S																					
2022-10-24	FS_INF-K																					
2022-10-24	FS_INF-S																					
2022-10-24	FS_INF-K																					
2022-10-24	FS_INF-S																					
2022-10-25	FS_INF-K																					
2022-10-25	FS_INF-S																					
2022-10-25	FS_INF-K																					
2022-10-25	FS_INF-S																					
2022-10-25	FS_BPO	10.15				< 0.015	0.016	0.137	< 0.050	< 0.100	0.236	0.175	282	0.0123	0.0143					0.239	0.100	0.0507
2022-10-25	FS_INF-K	10.24			1850		< 0.020	< 0.020	< 0.100	< 0.100	0.247	0.248	190	0.00026	0.00023					< 0.010	< 0.010	0.00139
2022-10-25	FS_INF-S	11.04			2610		< 0.020	< 0.020	< 0.100	< 0.100	0.0889	0.0913	348	0.00587	0.00528					0.035	< 0.010	0.00378
2022-10-25	FR_FRABCH	10.78	0.155	740			< 0.010	0.046	< 0.050	< 0.050	0.0558	0.0542	70.3	0.00478	0.00550	< 0.0050	< 0.0050					0.00153
2022-10-25	FR_SCOUTDS	11.5																				
2022-10-25	FS_INF-K																					
2022-10-25	FS_INF-S																					
2022-10-25	FS_INF-K																					
2022-10-25	FS_INF-S																					
2022-10-25	FS_INF-K																					
2022-10-25	FS_INF-S																					
2022-10-26	FS_INF-K																					

	Parameter	Dissolved Oxygen, Field	Fluoride	Hardness, Total or Dissolved CaCO3	Hardness, Total or Dissolved CaCO3	Hydrogen Peroxide	Iron	Iron	Lead	Lead	Lithium	Lithium	Magnesium	Manganese	Manganese	Mercury	Mercury	Mercury	Mercury	MeSe(IV) – methylseleninic acid CH3SeO2H	Methaneselenonic Acid	Molybdenum
	Fraction	N	N	D	T	N	D	T	D	T	D	T	T	D	T	D	T	T	T	D	D	D
	Unit	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ng/l	ug/l	ug/l	ug/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-10-26	FS_INF-S																					
2022-10-26	FS_INF-K																					
2022-10-26	FS_INF-S																					
2022-10-26	FS_BPO	8.47				< 0.015																
2022-10-26	FS_INF-K	10.54																				
2022-10-26	FS_INF-S	11.69																				
2022-10-26	FS_INF-K																					
2022-10-26	FS_INF-S																					
2022-10-26	FS_INF-K																					
2022-10-26	FS_INF-S																					
2022-10-26	FS_INF-K																					
2022-10-26	FS_INF-S																					
2022-10-26	FS_INF-K																					
2022-10-26	FS_INF-S																					
2022-10-26	FS_INF-K																					
2022-10-26	FS_INF-S																					
2022-10-27	FS_INF-K																					
2022-10-27	FS_INF-S																					
2022-10-27	FS_INF-K																					
2022-10-27	FS_INF-S																					
2022-10-27	FS_BPO	8.88				< 0.015															0.230	0.138	
2022-10-27	FS_INF-K	10.57																				
2022-10-27	FS_INF-S	11.38																				
2022-10-27	FR_SCOUTDS	11.34	0.184	872	908	< 0.015	0.014	0.044	< 0.050	< 0.050	0.106	0.0939	101	0.00917	0.0105	< 0.0050			< 0.00050	0.031	< 0.010	0.00736
2022-10-27	FS_INF-K																					
2022-10-27	FS_INF-S																					
2022-10-27	FS_INF-K																					
2022-10-27	FS_INF-S																					
2022-10-27	FS_INF-K																					
2022-10-27	FS_INF-S																					
2022-10-27	FS_INF-K																					
2022-10-27	FS_INF-S																					
2022-10-27	FS_INF-K																					
2022-10-27	FS_INF-S																					
2022-10-27	FS_INF-K																					
2022-10-28	FS_INF-S																					
2022-10-28	FS_INF-K																					
2022-10-28	FS_INF-S																					
2022-10-28	FS_INF-K																					
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2022-10-28	FS_INF-K																					
2022-10-28	FS_INF-S																					
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2022-10-28	FS_INF-S																					
2022-10-28	FS_INF-K																					
2022-10-28	FS_INF-S																					
2022-10-29	FS_INF-K																					
2022-10-29	FS_INF-S																					
2022-10-29	FS_INF-K																					
2022-10-29	FS_INF-S																					
2022-10-29	FS_BPO	8.1				< 0.015																
2022-10-29	FS_INF-K	10.86																				
2022-10-29	FS_INF-S	11.61																				
2022-10-29	FS_INF-K																					
2022-10-29	FS_INF-S																					
2022-10-29	FS_INF-K																					
2022-10-29	FS_INF-S																					
2022-10-29	FS_INF-K																					
2022-10-29	FS_INF-S																					
2022-10-29	FS_INF-K																					
2022-10-29	FS_INF-S																					
2022-10-29	FS_INF-K																					
2022-10-29	FS_INF-S																					
2022-10-30	FS_INF-K																					
2022-10-30	FS_INF-S																					
2022-10-30	FS_INF-K																					
2022-10-30	FS_INF-S																					
2022-10-30	FS_BPO	7.85				< 0.015															0.170	0.115	
2022-10-30	FS_INF-K	10.72																				
2022-10-30	FS_INF-S	11.55																				
2022-10-30	FS_BPO	8.63																				
2022-10-30	FS_INF-K																					
2022-10-30	FS_INF-S																					
2022-10-30	FS_INF-K																					
2022-10-30	FS_INF-S																					
2022-10-30	FS_INF-K																					
2022-10-30	FS_INF-S																					
2022-10-30	FS_INF-K																					
2022-10-30	FS_INF-S																					

Parameter		Dissolved Oxygen, Field	Fluoride	Hardness, Total or Dissolved CaCO3	Hardness, Total or Dissolved CaCO3	Hydrogen Peroxide	Iron	Iron	Lead	Lead	Lithium	Lithium	Magnesium	Manganese	Manganese	Mercury	Mercury	Mercury	Mercury	MeSe(IV) – methylseleninic acid CH3SeO2H	Methaneselenonic Acid	Molybdenum
Fraction		N	N	D	T	N	D	T	D	T	D	T	T	D	T	D	T	T	T	D	D	D
Unit		mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ng/l	ug/l	ug/l	ug/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-10-30	FS_INF-K																					
2022-10-30	FS_INF-S																					
2022-10-31	FS_INF-K																					
2022-10-31	FS_INF-S																					
2022-10-31	FS_INF-S																					
2022-10-31	FS_BPO	7.77	0.142	2010		< 0.015										< 0.0050			< 0.00050			
2022-10-31	FS_INF-K	10.5	0.146	1710												< 0.0050			< 0.00050			
2022-10-31	FS_INF-S	10.94	0.152	2350												< 0.0050			0.00063			
2022-10-31	FS_BPO																					
2022-10-31	FS_BPO																					
2022-10-31	FS_INF-K																					
2022-10-31	FS_INF-S																					
2022-10-31	FS_INF-K																					
2022-10-31	FS_INF-S																					
2022-10-31	FS_BPO	7.1																				
2022-11-01	FS_INF-K																					
2022-11-01	FS_INF-S																					
2022-11-01	FS_BPO					< 0.015																
2022-11-01	FS_INF-K	10.38																				
2022-11-01	FS_INF-S	11.19																				
2022-11-01	FS_INF-K																					
2022-11-01	FS_INF-S																					
2022-11-01	FS_BPO	7.94				< 0.015	< 0.020	0.109	< 0.100	< 0.100	0.158	0.162	267	0.0233	0.0273					0.243	0.132	0.0460
2022-11-01	FS_INF-K	10.35			1600		< 0.020	< 0.020	< 0.100	< 0.100	0.263	0.195	178	0.00028	0.00026							0.00130
2022-11-01	FS_INF-S	11.17			2140		< 0.020	< 0.020	< 0.100	< 0.100	0.104	0.0794	303	0.00466	0.00602							0.00414
2022-11-01	FS_INF-K																					
2022-11-01	FS_INF-S																					
2022-11-01	FR_FRABCH	10.35	0.143	686			0.010	0.027	< 0.050	< 0.050	0.0519	0.0491	79.0	0.00611	0.00720	< 0.0050	< 0.0050					0.00131
2022-11-01	FS_INF-K																					
2022-11-01	FS_INF-S																					
2022-11-01	FR_FRABCH																					
2022-11-01	FS_BPO	7.02																				
2022-11-02	FR_FRABCH	9																				
2022-11-02	FR_SCOUTDS	12.08																				
2022-11-02	FR_FRABCH																					
2022-11-02	FR_SCOUTDS																					
2022-11-02	FS_BPO	8.72				< 0.015																
2022-11-02	FS_INF-K	9.89																				
2022-11-02	FS_INF-S	11.49																				
2022-11-02	FS_BPO																					
2022-11-02	FS_INF-K																					
2022-11-02	FS_INF-S																					
2022-11-03	FS_BPO	9.41																				
2022-11-03	FS_INF-K																					
2022-11-03	FS_INF-S																					
2022-11-03	FS_INF-K																					
2022-11-03	FS_INF-S																					
2022-11-03	FS_BPO	8.89				< 0.015														0.248	0.170	
2022-11-03	FS_INF-K	11																				
2022-11-03	FS_INF-S	11.94																				
2022-11-03	FR_SCOUTDS	11.49	0.173	760	825	< 0.015	0.012	0.040	< 0.050	< 0.050	0.0833	0.0709	101	0.0113	0.0118	< 0.0050			< 0.00050	0.032	0.012	0.00640
2022-11-03	FS_INF-K																					
2022-11-03	FS_INF-S																					
2022-11-03	FS_INF-K																					
2022-11-03	FS_INF-S																					
2022-11-03	FS_INF-K																					
2022-11-03	FS_INF-S																					
2022-11-03	FS_INF-K																					
2022-11-03	FS_INF-S																					
2022-11-03	FS_INF-K																					
2022-11-03	FS_INF-S																					
2022-11-04	FS_INF-K																					
2022-11-04	FS_INF-S																					
2022-11-04	FS_INF-K																					
2022-11-04	FS_INF-S																					
2022-11-04	FS_BPO	8.04				< 0.015																
2022-11-04	FS_INF-K	9.97																				
2022-11-04	FS_INF-S	10.56																				
2022-11-04	FS_INF-K																					
2022-11-04	FS_INF-S																					
2022-11-04	FS_INF-K																					
2022-11-04	FS_INF-S																					
2022-11-04	FS_INF-K																					
2022-11-04	FS_INF-S																					
2022-11-04	FS_INF-K																					
2022-11-04	FS_INF-S																					
2022-11-04	FS_INF-K																					
2022-11-04	FS_INF-S																					
2022-11-05	FS_INF-K																					
2022-11-05	FS_INF-S																					
2022-11-05	FS_INF-K																					
2022-11-05	FS_INF-S																					

	Parameter	Dissolved Oxygen, Field	Fluoride	Hardness, Total or Dissolved CaCO3	Hardness, Total or Dissolved CaCO3	Hydrogen Peroxide	Iron	Iron	Lead	Lead	Lithium	Lithium	Magnesium	Manganese	Manganese	Mercury	Mercury	Mercury	Mercury	MeSe(IV) – methylseleninic acid CH3SeO2H	Methaneselenonic Acid	Molybdenum
	Fraction	N	N	D	T	N	D	T	D	T	D	T	T	D	T	D	T	T	T	D	D	D
	Unit	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ng/l	ug/l	ug/l	ug/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-11-05	FS_BPO	7.66				< 0.015																
2022-11-05	FS_INF-K	9.4																				
2022-11-05	FS_INF-S	10.39																				
2022-11-05	FS_INF-K																					
2022-11-05	FS_INF-S																					
2022-11-05	FS_INF-K																					
2022-11-05	FS_INF-S																					
2022-11-05	FS_INF-K																					
2022-11-05	FS_INF-S																					
2022-11-05	FS_INF-K																					
2022-11-05	FS_INF-S																					
2022-11-05	FS_INF-K																					
2022-11-05	FS_INF-S																					
2022-11-06	FS_INF-K																					
2022-11-06	FS_INF-S																					
2022-11-06	FS_INF-K																					
2022-11-06	FS_INF-S																					
2022-11-06	FS_BPO	7.48				< 0.015														0.193	0.096	
2022-11-06	FS_INF-K	10.09																				
2022-11-06	FS_INF-S	10.94																				
2022-11-06	FS_INF-K																					
2022-11-06	FS_INF-S																					
2022-11-06	FS_INF-K																					
2022-11-06	FS_INF-S																					
2022-11-06	FS_INF-K																					
2022-11-06	FS_INF-S																					
2022-11-06	FS_INF-K																					
2022-11-06	FS_INF-S																					
2022-11-06	FS_INF-K																					
2022-11-06	FS_INF-S																					
2022-11-07	FS_INF-K																					
2022-11-07	FS_INF-S																					
2022-11-07	FS_INF-K																					
2022-11-07	FS_INF-S																					
2022-11-07	FS_BPO	8.5	0.153	2150		< 0.015	< 0.020		< 0.100		0.136			0.00994		< 0.0050			< 0.00050			0.0483
2022-11-07	FS_INF-K	10.73	0.153	1820			< 0.020		< 0.100		0.200			0.00028		< 0.0050			< 0.00050			0.00130
2022-11-07	FS_INF-S	10.98	0.106	2580			< 0.020		< 0.100		0.0817			0.00407		< 0.0050			0.00079			0.00411
2022-11-07	FS_INF-K																					
2022-11-07	FS_INF-S																					
2022-11-07	FS_INF-K																					
2022-11-07	FS_INF-S																					
2022-11-07	FS_INF-K																					
2022-11-07	FS_INF-S																					
2022-11-07	FS_INF-K																					
2022-11-07	FS_INF-S																					
2022-11-07	FS_INF-K																					
2022-11-07	FS_INF-S																					
2022-11-08	FS_INF-K																					
2022-11-08	FS_INF-S																					
2022-11-08	FS_INF-K																					
2022-11-08	FS_INF-S																					
2022-11-08	FS_BPO	9.54				< 0.015	0.026	0.093	< 0.100	< 0.100	0.143	0.130	303	0.0116	0.0119					0.189	0.075	0.0490
2022-11-08	FS_INF-K	10.41			1780		< 0.020	< 0.020	< 0.100	< 0.100	0.222	0.244	198	0.00021	< 0.00020					< 0.010	< 0.010	0.00134
2022-11-08	FS_INF-S	10.89			2400		< 0.020	< 0.020	< 0.100	< 0.100	0.100	0.0954	337	0.00391	0.00369					0.027	< 0.010	0.00410
2022-11-08	FR_FRABCH	11.13	0.141	626			0.011	0.054	< 0.050	< 0.050	0.0447	0.0446	64.8	0.00776	0.0108	< 0.0050	< 0.0050					0.000894
2022-11-08	FS_INF-K																					
2022-11-08	FS_INF-S																					
2022-11-08	FR_FRABCH																					
2022-11-08	FS_INF-K																					
2022-11-08	FS_INF-S																					
2022-11-08	FS_INF-K																					
2022-11-08	FS_INF-S																					
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2022-11-08	FS_INF-S																					
2022-11-09	FS_INF-K																					
2022-11-09	FS_INF-S																					
2022-11-09	FS_INF-K																					
2022-11-09	FS_INF-S																					
2022-11-09	FS_BPO	12.3				< 0.015																
2022-11-09	FS_INF-K	10.5																				
2022-11-09	FS_INF-S	11.6																				
2022-11-09	FS_INF-K																					
2022-11-09	FS_INF-S																					
2022-11-09	FS_INF-K																					
2022-11-09	FS_INF-S																					
2022-11-10	FS_INF-K																					
2022-11-10	FS_INF-S																					
2022-11-10	FS_INF-K																					
2022-11-10	FS_INF-S																					

Parameter		Dissolved Oxygen, Field	Fluoride	Hardness, Total or Dissolved CaCO3	Hardness, Total or Dissolved CaCO3	Hydrogen Peroxide	Iron	Iron	Lead	Lead	Lithium	Lithium	Magnesium	Manganese	Manganese	Mercury	Mercury	Mercury	Mercury	MeSe(IV) – methylseleninic acid CH3SeO2H	Methaneselenonic Acid	Molybdenum
Fraction		N	N	D	T	N	D	T	D	T	D	T	T	D	T	D	T	T	T	D	D	D
Unit		mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ng/l	ug/l	ug/l	ug/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-11-10	FS_BPO	9.95				< 0.015														0.228	0.193	
2022-11-10	FS_INF-K	10.47																				
2022-11-10	FS_INF-S	11.22																				
2022-11-10	FR_SCOUTDS	12.39				< 0.015																
2022-11-10	FR_SCOUTDS																			0.061	0.018	
2022-11-10	FS_INF-K																					
2022-11-10	FS_INF-S																					
2022-11-10	FS_INF-K																					
2022-11-10	FS_INF-S																					
2022-11-10	FS_INF-K																					
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2022-11-10	FS_INF-K																					
2022-11-10	FS_INF-S																					
2022-11-11	FS_INF-K																					
2022-11-11	FS_INF-S																					
2022-11-11	FS_INF-K																					
2022-11-11	FS_INF-S																					
2022-11-11	FS_BPO	10.91				< 0.015																
2022-11-11	FS_INF-K	10.52																				
2022-11-11	FS_INF-S	10.82																				
2022-11-11	FS_INF-K																					
2022-11-11	FS_INF-S																					
2022-11-11	FS_INF-K																					
2022-11-11	FS_INF-S																					
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2022-11-11	FS_INF-K																					
2022-11-11	FS_INF-S																					
2022-11-12	FS_INF-K																					
2022-11-12	FS_INF-S																					
2022-11-12	FS_INF-K																					
2022-11-12	FS_INF-S																					
2022-11-12	FS_BPO	10.74				< 0.015																
2022-11-12	FS_INF-K	10.14																				
2022-11-12	FS_INF-S	11.44																				
2022-11-12	FS_INF-K																					
2022-11-12	FS_INF-S																					
2022-11-12	FS_INF-K																					
2022-11-12	FS_INF-S																					
2022-11-12	FS_INF-K																					
2022-11-12	FS_INF-S																					
2022-11-13	FS_BPO	12.98				< 0.015														0.196	0.165	
2022-11-13	FS_INF-K	10.65																				
2022-11-13	FS_INF-S	11.34																				
2022-11-13	FS_INF-K																					
2022-11-13	FS_INF-S																					
2022-11-13	FS_INF-K																					
2022-11-13	FS_INF-S																					
2022-11-13	FS_INF-K																					
2022-11-13	FS_INF-S																					
2022-11-13	FS_INF-K																					
2022-11-13	FS_INF-S																					
2022-11-13	FS_INF-K																					
2022-11-13	FS_INF-S																					
2022-11-14	FS_INF-K																					
2022-11-14	FS_INF-S																					
2022-11-14	FS_INF-K																					
2022-11-14	FS_INF-S																					
2022-11-14	FS_BPO	13.01	0.154			< 0.015	< 0.020		< 0.100		0.147			0.0163		< 0.0050			< 0.00050			0.0478
2022-11-14	FS_INF-K	11.19	0.157				< 0.020		< 0.100		0.208			< 0.00020		< 0.0050			< 0.00050			0.00126
2022-11-14	FS_INF-S	12.05	0.167				< 0.020		< 0.100		0.0903			0.00327		< 0.0050			< 0.00050			0.00411
2022-11-14	FS_BPO																					
2022-11-14	FS_INF-K																					
2022-11-14	FS_INF-S																					
2022-11-14	FS_INF-K																					
2022-11-14	FS_INF-S																					
2022-11-14	FS_INF-K																					
2022-11-14	FS_INF-S																					
2022-11-14	FS_INF-K																					
2022-11-14	FS_INF-S																					
2022-11-14	FS_INF-K																					
2022-11-14	FS_INF-S																					
2022-11-15	FS_INF-K																					
2022-11-15	FS_INF-S																					
2022-11-15	FS_INF-K																					
2022-11-15	FS_INF-S																					
2022-11-15	FS_BPO	9.06				< 0.015	< 0.020	0.090	< 0.100	< 0.100	0.147	0.143	278	0.0155	0.0178					0.173	0.106	0.0467

Parameter		Dissolved Oxygen, Field	Fluoride	Hardness, Total or Dissolved CaCO3	Hardness, Total or Dissolved CaCO3	Hydrogen Peroxide	Iron	Iron	Lead	Lead	Lithium	Lithium	Magnesium	Manganese	Manganese	Mercury	Mercury	Mercury	Mercury	MeSe(IV) – methylseleninic acid CH3SeO2H	Methaneselenonic Acid	Molybdenum
Fraction		N	N	D	T	N	D	T	D	T	D	T	T	D	T	D	T	T	T	D	D	D
Unit		mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ng/l	ug/l	ug/l	ug/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-11-15	FS_INF-K	11.65		1910			< 0.020	< 0.020	< 0.100	< 0.100	0.238	0.212	190	0.00031	0.00029							0.00140
2022-11-15	FS_INF-S	12.32		2620			< 0.020	< 0.020	< 0.100	< 0.100	0.103	0.0902	342	0.00373	0.00390							0.00436
2022-11-15	FS_INF-K																					
2022-11-15	FS_INF-S																					
2022-11-16	FR_SCOUTDS	13.28																				
2022-11-16	FR_FRABCH																					
2022-11-16	FR_SCOUTDS																					
2022-11-16	FR_FRABCH	4.77																				
2022-11-16	FS_BPO	9.33				< 0.015																
2022-11-16	FS_INF-K	11.01																				
2022-11-16	FS_INF-S	11.93																				
2022-11-16	FS_INF-K																					
2022-11-16	FS_INF-S																					
2022-11-16	FS_INF-K																					
2022-11-16	FS_INF-S																					
2022-11-16	FS_INF-K																					
2022-11-16	FS_INF-S																					
2022-11-16	FS_INF-K																					
2022-11-16	FS_INF-S																					
2022-11-17	FS_INF-K																					
2022-11-17	FS_INF-S																					
2022-11-17	FS_INF-K																					
2022-11-17	FS_INF-S																					
2022-11-17	FS_BPO	10.22				< 0.015														0.237	0.159	
2022-11-17	FS_INF-K	11.48																				
2022-11-17	FS_INF-S	12.22																				
2022-11-17	FR_SCOUTDS	13.4	0.186	944	944	< 0.015	0.012	0.055	< 0.050	< 0.050	0.110	0.0795	114	0.0120	0.0129	< 0.0050			< 0.00050	0.042	0.018	0.00791
2022-11-17	FS_INF-K																					
2022-11-17	FS_INF-S																					
2022-11-17	FS_INF-K																					
2022-11-17	FS_INF-S																					
2022-11-17	FS_INF-K																					
2022-11-17	FS_INF-S																					
2022-11-18	FS_BPO	10.52				< 0.015																
2022-11-18	FS_INF-K	10.17																				
2022-11-18	FS_INF-S	11.35																				
2022-11-18	FS_INF-K																					
2022-11-18	FS_INF-S																					
2022-11-18	FS_INF-K																					
2022-11-18	FS_INF-S																					
2022-11-18	FS_INF-K																					
2022-11-18	FS_INF-S																					
2022-11-18	FS_INF-K																					
2022-11-18	FS_INF-S																					
2022-11-18	FS_BPO	11.68																				
2022-11-18	FS_INF-K																					
2022-11-18	FS_INF-S																					
2022-11-19	FS_INF-K																					
2022-11-19	FS_INF-S																					
2022-11-19	FS_INF-K																					
2022-11-19	FS_INF-S																					
2022-11-19	FS_BPO	11.4				< 0.015																
2022-11-19	FS_INF-K	10.63																				
2022-11-19	FS_INF-S	11.33																				
2022-11-19	FS_INF-K																					
2022-11-19	FS_INF-S																					
2022-11-19	FS_INF-K																					
2022-11-19	FS_INF-S																					
2022-11-19	FS_INF-K																					
2022-11-19	FS_INF-S																					
2022-11-19	FS_INF-K																					
2022-11-19	FS_INF-S																					
2022-11-19	FS_INF-K																					
2022-11-19	FS_INF-S																					
2022-11-20	FS_INF-K																					
2022-11-20	FS_INF-S																					
2022-11-20	FS_INF-K																					
2022-11-20	FS_INF-S																					
2022-11-20	FS_BPO	11.98				< 0.015														0.146	0.221	
2022-11-20	FS_INF-K	10.76																				
2022-11-20	FS_INF-S	11.53																				
2022-11-20	FS_INF-K																					
2022-11-20	FS_INF-S																					
2022-11-20	FS_INF-K																					
2022-11-20	FS_INF-S																					
2022-11-20	FS_INF-K																					
2022-11-20	FS_INF-S																					
2022-11-20	FS_INF-K																					
2022-11-20	FS_INF-S																					
2022-11-20	FS_INF-K																					
2022-11-20	FS_INF-S																					
2022-11-21	FS_INF-K																					
2022-11-21	FS_INF-S																					
2022-11-21	FS_INF-K																					

Parameter		Dissolved Oxygen, Field	Fluoride	Hardness, Total or Dissolved CaCO3	Hardness, Total or Dissolved CaCO3	Hydrogen Peroxide	Iron	Iron	Lead	Lead	Lithium	Lithium	Magnesium	Manganese	Manganese	Mercury	Mercury	Mercury	Mercury	MeSe(IV) – methylseleninic acid CH3SeO2H	Methaneselenonic Acid	Molybdenum
Fraction		N	N	D	T	N	D	T	D	T	D	T	T	D	T	D	T	T	T	D	D	D
Unit		mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ng/l	ug/l	ug/l	ug/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-11-21	FS_INF-S																					
2022-11-21	FS_BPO	12.26	0.153	2070		< 0.015										< 0.0050			< 0.00050			
2022-11-21	FS_INF-K	10.6	0.162	1930												< 0.0050			< 0.00050			
2022-11-21	FS_INF-S	11.35	0.174	2620												< 0.0050			0.00063			
2022-11-21	FS_INF-K																					
2022-11-21	FS_INF-S																					
2022-11-21	FS_INF-K																					
2022-11-21	FS_INF-S																					
2022-11-21	FS_INF-K																					
2022-11-21	FS_INF-S																					
2022-11-21	FS_INF-K																					
2022-11-21	FS_INF-S																					
2022-11-21	FS_INF-K																					
2022-11-21	FS_INF-S																					
2022-11-22	FS_INF-K																					
2022-11-22	FS_INF-S																					
2022-11-22	FS_INF-K																					
2022-11-22	FS_INF-S																					
2022-11-22	FS_BPO	12.59				< 0.015	< 0.020	0.119	< 0.100	< 0.100	0.164	0.154	275	0.0248	0.0234					0.283	< 0.010	0.0501
2022-11-22	FS_INF-K	10.69			2120		< 0.020	< 0.020	< 0.100	< 0.100	0.210	0.223	228	0.00026	0.00023					< 0.010	< 0.010	0.00126
2022-11-22	FS_INF-S	12.14			2910		< 0.020	0.028	< 0.100	< 0.100	0.0919	0.0932	412	0.00448	0.00479					< 0.010	< 0.010	0.00444
2022-11-22	FS_INF-K																					
2022-11-22	FS_INF-S																					
2022-11-22	FS_INF-K																					
2022-11-22	FS_INF-S																					
2022-11-22	FS_INF-K																					
2022-11-22	FS_INF-S																					
2022-11-22	FS_INF-K																					
2022-11-22	FS_INF-S																					
2022-11-22	FS_INF-K																					
2022-11-22	FS_INF-S																					
2022-11-23	FS_INF-K																					
2022-11-23	FS_INF-S																					
2022-11-23	FS_BPO	12.03				< 0.015																
2022-11-23	FS_INF-K	10.91																				
2022-11-23	FS_INF-S	11.63																				
2022-11-23	FS_INF-K																					
2022-11-23	FS_INF-S																					
2022-11-23	FS_INF-K																					
2022-11-23	FS_INF-S																					
2022-11-23	FS_INF-K																					
2022-11-23	FS_INF-S																					
2022-11-23	FS_INF-K																					
2022-11-23	FS_INF-S																					
2022-11-24	FS_INF-K																					
2022-11-24	FS_INF-S																					
2022-11-24	FS_INF-K																					
2022-11-24	FS_BPO	10.85				0.017														0.095	0.215	
2022-11-24	FS_INF-K	10.8																				
2022-11-24	FS_INF-S	11.8																				
2022-11-24	FR_SCOUTDS	12.53	0.169	897	1050	0.038	0.031	0.044	< 0.100	< 0.050	0.0970	0.0991	120	0.0132	0.0128	< 0.0050			< 0.00050	0.033	0.016	0.00857
2022-11-24	FS_INF-K																					
2022-11-24	FS_INF-S																					
2022-11-24	FS_INF-K																					
2022-11-24	FS_INF-S																					
2022-11-24	FS_INF-K																					
2022-11-24	FS_INF-S																					
2022-11-24	FS_INF-K																					
2022-11-24	FS_INF-S																					
2022-11-24	FS_INF-K																					
2022-11-24	FS_INF-S																					
2022-11-25	FS_INF-K																					
2022-11-25	FS_INF-S																					
2022-11-25	FS_INF-K																					
2022-11-25	FS_INF-S																					
2022-11-25	FS_BPO	10.62				0.017																
2022-11-25	FS_INF-K	10.86																				
2022-11-25	FS_INF-S	11.87																				
2022-11-25	FS_INF-K																					
2022-11-25	FS_INF-S																					
2022-11-25	FS_INF-K																					
2022-11-25	FS_INF-S																					
2022-11-25	FS_INF-K																					
2022-11-25	FS_INF-S																					
2022-11-25	FS_INF-K																					
2022-11-25	FS_INF-S																					
2022-11-25	FS_INF-K																					
2022-11-26	FS_INF-K																					

	Parameter	Dissolved Oxygen, Field	Fluoride	Hardness, Total or Dissolved CaCO3	Hardness, Total or Dissolved CaCO3	Hydrogen Peroxide	Iron	Iron	Lead	Lead	Lithium	Lithium	Magnesium	Manganese	Manganese	Mercury	Mercury	Mercury	Mercury	MeSe(IV) – methylseleninic acid CH3SeO2H	Methaneselenonic Acid	Molybdenum
	Fraction	N	N	D	T	N	D	T	D	T	D	T	T	D	T	D	T	T	T	D	D	D
	Unit	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ng/l	ug/l	ug/l	ug/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-11-26	FS_INF-S																					
2022-11-26	FS_INF-K																					
2022-11-26	FS_INF-S																					
2022-11-26	FS_BPO	8.9 10.46				0.042																
2022-11-26	FS_INF-K	10.8																				
2022-11-26	FS_INF-S	12.03																				
2022-11-26	FS_INF-K																					
2022-11-26	FS_INF-S																					
2022-11-26	FS_INF-K																					
2022-11-26	FS_INF-S																					
2022-11-26	FS_INF-K																					
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2022-11-26	FS_INF-K																					
2022-11-26	FS_INF-S																					
2022-11-27	FS_INF-K																					
2022-11-27	FS_INF-S																					
2022-11-27	FS_INF-K																					
2022-11-27	FS_INF-S																					
2022-11-27	FS_BPO	10.69 9.76				< 0.015														0.077	0.231	
2022-11-27	FS_INF-K	10.55																				
2022-11-27	FS_INF-S	11.21																				
2022-11-27	FS_INF-K																					
2022-11-27	FS_INF-S																					
2022-11-27	FS_INF-K																					
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2022-11-28	FS_INF-K																					
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2022-11-29	FS_INF-K																					
2022-11-29	FS_INF-S																					
2022-11-29	FS_INF-K																					
2022-11-29	FS_INF-S																					
2022-11-29	FS_BPO	11.07				< 0.015	< 0.020	0.142	< 0.100	< 0.100	0.157	0.154	283	0.0391	0.0364					0.091	0.214	0.0503
2022-11-29	FS_INF-K	11.24			1870		< 0.020	< 0.020	< 0.100	< 0.100	0.205	0.205	205	0.00032	0.00021							0.00120
2022-11-29	FS_INF-S	12.12			2500		< 0.020	< 0.020	< 0.100	< 0.100	0.0951	0.0905	343	0.00525	0.00494							0.00420
2022-11-29	FS_INF-K																					
2022-11-29	FS_INF-S																					
2022-11-29	FS_INF-K																					
2022-11-29	FS_INF-S																					
2022-11-29	FS_BPO	11.53																				
2022-11-29	FS_INF-K																					
2022-11-29	FS_INF-S																					
2022-11-29	FS_INF-K																					
2022-11-29	FS_INF-S																					
2022-11-29	FS_BPO	12.6																				
2022-11-29	FS_BPO	12.68 13.83																				
2022-11-29	FS_INF-K																					
2022-11-29	FS_INF-S																					
2022-11-30	FS_INF-K																					
2022-11-30	FS_INF-S																					
2022-11-30	FS_BPO	15.48																				
2022-11-30	FS_INF-K																					
2022-11-30	FS_INF-S																					
2022-11-30	FS_BPO	13.95				0.047																
2022-11-30	FS_INF-K	10.77																				
2022-11-30	FS_INF-S	11.43																				
2022-11-30	FS_INF-K																					
2022-11-30	FS_INF-S																					
2022-11-30	FS_INF-K																					

2022-11-26	FS_INF-S																					
2022-11-26	FS_INF-K																					
2022-11-26	FS_INF-S																					
2022-11-26	FS_BPO	8.9 10.46				0.042																
2022-11-26	FS_INF-K	10.8																				
2022-11-26	FS_INF-S	12.03																				
2022-11-26	FS_INF-K																					
2022-11-26	FS_INF-S																					
2022-11-26	FS_INF-K																					
2022-11-26	FS_INF-S																					
2022-11-26	FS_INF-K																					
2022-11-26	FS_INF-S																					
2022-11-26	FS_INF-K																					
2022-11-26	FS_INF-S																					
2022-11-27	FS_INF-K																					
2022-11-27	FS_INF-S																					
2022-11-27	FS_INF-K																					
2022-11-27	FS_INF-S																					
2022-11-27	FS_BPO	10.69 9.76				< 0.015														0.077	0.231	
2022-11-27	FS_INF-K	10.55																				
2022-11-27	FS_INF-S	11.21																				
2022-11-27	FS_INF-K																					
2022-11-27	FS_INF-S																					
2022-11-27	FS_INF-K																					
2022-11-27	FS_INF-S																					
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2022-11-27	FS_INF-S																					
2022-11-28	FS_INF-K																					
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2022-11-28	FS_INF-S																					
2022-11-29	FS_INF-K																					
2022-11-29	FS_INF-S																					
2022-11-29	FS_INF-K																					
2022-11-29	FS_INF-S																					
2022-11-29	FS_BPO	11.07				< 0.015	< 0.020	0.142	< 0.100	< 0.100	0.157	0.154	283	0.0391	0.0364					0.091	0.214	0.0503
2022-11-29	FS_INF-K	11.24			1870		< 0.020	< 0.020	< 0.100	< 0.100	0.205	0.205	205	0.00032	0.00021							0.00120
2022-11-29	FS_INF-S	12.12			2500		< 0.020	< 0.020	< 0.100	< 0.100	0.0951	0.0905	343	0.00525	0.00494							0.00420
2022-11-29	FS_INF-K																					
2022-11-29	FS_INF-S																					
2022-11-29	FS_INF-K																					
2022-11-29	FS_INF-S																					
2022-11-29	FS_BPO	11.53																				
2022-11-29	FS_INF-K																					
2022-11-29	FS_INF-S																					
2022-11-29	FS_INF-K																					
2022-11-29	FS_INF-S																					
2022-11-29	FS_BPO	12.6																				
2022-11-29	FS_BPO	12.68 13.83																				
2022-11-29	FS_INF-K																					
2022-11-29	FS_INF-S																					
2022-11-30	FS_INF-K																					
2022-11-30	FS_INF-S																					
2022-11-30	FS_BPO	15.48																				
2022-11-30	FS_INF-K																					
2022-11-30	FS_INF-S																					
2022-11-30	FS_BPO	13.95				0.047																
2022-11-30	FS_INF-K	10.77																				
2022-11-30	FS_INF-S	11.43																				
2022-11-30	FS_INF-K																					
2022-11-30	FS_INF-S																					
2022-11-30	FS_INF-K																					

Parameter		Dissolved Oxygen, Field	Fluoride	Hardness, Total or Dissolved CaCO3	Hardness, Total or Dissolved CaCO3	Hydrogen Peroxide	Iron	Iron	Lead	Lead	Lithium	Lithium	Magnesium	Manganese	Manganese	Mercury	Mercury	Mercury	Mercury	MeSe(IV) – methylseleninic acid CH3SeO2H	Methaneselenonic Acid	Molybdenum
Fraction		N	N	D	T	N	D	T	D	T	D	T	T	D	T	D	T	T	T	D	D	D
Unit		mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ng/l	ug/l	ug/l	ug/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-11-30	FS_INF-S																					
2022-11-30	FS_INF-K																					
2022-11-30	FS_INF-S																					
2022-11-30	FS_INF-K																					
2022-11-30	FS_INF-S																					
2022-11-30	FS_INF-K																					
2022-11-30	FS_INF-S																					
2022-12-01	FS_INF-K																					
2022-12-01	FS_INF-S																					
2022-12-01	FS_INF-K																					
2022-12-01	FS_INF-S																					
2022-12-01	FS_BPO	12.2				0.131														0.099	0.227	
2022-12-01	FS_INF-K	10.74																				
2022-12-01	FS_INF-S	11.61																				
2022-12-01	FR_SCOUTDS	12.35	0.188	1110		< 0.015	0.017	0.052	< 0.050	< 0.050	0.102	0.102	127	0.0170	0.0161	< 0.0050			< 0.00050	0.052	0.029	0.0134
2022-12-01	FS_INF-K																					
2022-12-01	FS_INF-S																					
2022-12-01	FS_INF-S																					
2022-12-01	FS_INF-S																					
2022-12-01	FS_INF-S																					
2022-12-01	FS_INF-S																					
2022-12-02	FS_INF-S																					
2022-12-02	FS_INF-S																					
2022-12-02	FS_BPO	11.44				< 0.015																
2022-12-02	FS_INF-S	11.58																				
2022-12-02	FS_INF-S																					
2022-12-02	FS_BPO	12.57																				
2022-12-02	FS_INF-S																					
2022-12-02	FS_INF-S																					
2022-12-02	FS_INF-S																					
2022-12-02	FS_INF-S																					
2022-12-03	FS_INF-S																					
2022-12-03	FS_INF-S																					
2022-12-03	FS_BPO	13.82				< 0.015																
2022-12-03	FS_INF-S	11.63																				
2022-12-03	FS_INF-S																					
2022-12-03	FS_INF-S																					
2022-12-03	FS_INF-S																					
2022-12-03	FS_INF-S																					
2022-12-03	FS_INF-S																					
2022-12-04	FS_INF-S																					
2022-12-04	FS_INF-S																					
2022-12-04	FS_BPO	17.33				< 0.015														0.177	0.296	
2022-12-04	FS_INF-S	11.47																				
2022-12-04	FS_INF-S																					
2022-12-04	FS_INF-S																					
2022-12-04	FS_INF-S																					
2022-12-04	FS_INF-S																					
2022-12-04	FS_INF-S																					
2022-12-05	FS_INF-S																					
2022-12-05	FS_INF-S																					
2022-12-05	FS_BPO	18.17	0.196	2450		< 0.015										< 0.0050			< 0.00050			
2022-12-05	FS_INF-S	12.56	0.197	2600												< 0.0050			0.00059			
2022-12-05	FS_INF-S																					
2022-12-05	FS_INF-S																					
2022-12-05	FS_INF-S																					
2022-12-05	FS_INF-S																					
2022-12-05	FS_INF-S																					
2022-12-06	FS_INF-S																					
2022-12-06	FS_INF-S																					
2022-12-06	FS_BPO	15.12				< 0.015	< 0.020	0.139	< 0.100	< 0.100	0.120	0.117	348	0.0248	0.0223					0.206	0.181	0.0473
2022-12-06	FS_INF-S	12.48			2690		< 0.020	< 0.020	< 0.100	< 0.100	0.0947	0.0981	371	0.00476	0.00467					0.022	< 0.010	0.00400
2022-12-06	FS_INF-S																					
2022-12-06	FS_INF-S																					
2022-12-06	FS_INF-S																					
2022-12-06	FS_INF-S																					
2022-12-06	FS_INF-S																					
2022-12-07	FS_INF-S																					
2022-12-07	FS_INF-S																					
2022-12-07	FS_BPO	12.91				< 0.015																
2022-12-07	FS_INF-K	11.73																				
2022-12-07	FS_INF-S	12.71																				
2022-12-07	FS_INF-S																					
2022-12-07	FS_INF-K																					
2022-12-07	FS_INF-S																					
2022-12-07	FS_INF-K																					
2022-12-07	FS_INF-S																					
2022-12-08	FS_BPO	15.08				< 0.015														0.168	0.181	
2022-12-08	FS_INF-K	11.78																				
2022-12-08	FS_INF-S	12.75																				

	Parameter	Dissolved Oxygen, Field	Fluoride	Hardness, Total or Dissolved CaCO3	Hardness, Total or Dissolved CaCO3	Hydrogen Peroxide	Iron	Iron	Lead	Lead	Lithium	Lithium	Magnesium	Manganese	Manganese	Mercury	Mercury	Mercury	Mercury	MeSe(IV) – methylseleninic acid CH3SeO2H	Methaneselenonic Acid	Molybdenum
	Fraction	N	N	D	T	N	D	T	D	T	D	T	T	D	T	D	T	T	T	D	D	D
	Unit	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ng/l	ug/l	ug/l	ug/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-12-08	FR_SCOUTDS	13.63	0.181	1040	1010	< 0.015	0.015	0.015	< 0.050	< 0.050	0.0918	0.0849	128	0.0124	0.0121	< 0.0050			< 0.00050	0.037	< 0.010	0.00808
2022-12-08	FS_INF-K																					
2022-12-08	FS_INF-S																					
2022-12-08	FS_INF-K																					
2022-12-08	FS_INF-S																					
2022-12-08	FS_BPO																					
2022-12-08	FS_INF-K																					
2022-12-08	FS_INF-S																					
2022-12-08	FS_INF-K																					
2022-12-08	FS_INF-S																					
2022-12-08	FS_INF-K																					
2022-12-08	FS_INF-S																					
2022-12-09	FS_INF-K																					
2022-12-09	FS_INF-S																					
2022-12-09	FS_INF-K																					
2022-12-09	FS_INF-S																					
2022-12-09	FS_BPO	14.08				< 0.015																
2022-12-09	FS_INF-K	10.82																				
2022-12-09	FS_INF-S	11.71																				
2022-12-09	FS_INF-K																					
2022-12-09	FS_INF-S																					
2022-12-09	FS_INF-K																					
2022-12-09	FS_INF-S																					
2022-12-09	FS_INF-K																					
2022-12-09	FS_INF-S																					
2022-12-09	FS_INF-K																					
2022-12-09	FS_INF-S																					
2022-12-09	FS_INF-K																					
2022-12-09	FS_INF-S																					
2022-12-10	FS_INF-K																					
2022-12-10	FS_INF-S																					
2022-12-10	FS_INF-K																					
2022-12-10	FS_INF-S																					
2022-12-10	FS_BPO	15.07				< 0.015																
2022-12-10	FS_INF-K	10.53																				
2022-12-10	FS_INF-S	11.41																				
2022-12-10	FS_INF-K																					
2022-12-10	FS_INF-S																					
2022-12-10	FS_INF-K																					
2022-12-10	FS_INF-S																					
2022-12-10	FS_INF-K																					
2022-12-10	FS_INF-S																					
2022-12-10	FS_INF-K																					
2022-12-10	FS_INF-S																					
2022-12-10	FS_INF-K																					
2022-12-10	FS_INF-S																					
2022-12-11	FS_INF-K																					
2022-12-11	FS_INF-S																					
2022-12-11	FS_INF-K																					
2022-12-11	FS_INF-S																					
2022-12-11	FS_BPO	16.04				< 0.015														0.084	0.200	
2022-12-11	FS_INF-K	10.7																				
2022-12-11	FS_INF-S	11.52																				
2022-12-11	FS_INF-K																					
2022-12-11	FS_INF-S																					
2022-12-11	FS_INF-K																					
2022-12-11	FS_INF-S																					
2022-12-11	FS_INF-K																					
2022-12-11	FS_INF-S																					
2022-12-11	FS_INF-K																					
2022-12-11	FS_INF-S																					
2022-12-11	FS_INF-K																					
2022-12-11	FS_INF-S																					
2022-12-12	FS_INF-K																					
2022-12-12	FS_INF-S																					
2022-12-12	FS_INF-K																					
2022-12-12	FS_INF-S																					
2022-12-12	FS_BPO	16.17	0.168	2310		< 0.015										< 0.0050			< 0.00050			
2022-12-12	FS_INF-K	10.22	0.160	1890												< 0.0050			< 0.00050			
2022-12-12	FS_INF-S	11.33	0.187	2520												< 0.0050			0.00062			
2022-12-12	FS_INF-K																					
2022-12-12	FS_INF-S																					
2022-12-12	FR_FRABCH	11.21																				
2022-12-12	FS_INF-K																					
2022-12-12	FS_INF-S																					
2022-12-12	FS_INF-K																					
2022-12-12	FS_INF-S																					
2022-12-12	FS_INF-K																					
2022-12-12	FS_INF-S																					
2022-12-13	FS_INF-K																					
2022-12-13	FS_INF-S																					
2022-12-13	FS_INF-K																					
2022-12-13	FS_INF-S																					

	Parameter	Dissolved Oxygen, Field	Fluoride	Hardness, Total or Dissolved CaCO3	Hardness, Total or Dissolved CaCO3	Hydrogen Peroxide	Iron	Iron	Lead	Lead	Lithium	Lithium	Magnesium	Manganese	Manganese	Mercury	Mercury	Mercury	Mercury	MeSe(IV) – methylseleninic acid CH3SeO2H	Methaneselenonic Acid	Molybdenum
	Fraction	N	N	D	T	N	D	T	D	T	D	T	T	D	T	D	T	T	T	D	D	D
	Unit	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ng/l	ug/l	ug/l	ug/l	ug/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-12-13	FS_BPO	16.26				< 0.015	< 0.020	0.218	< 0.100	< 0.100	0.147	0.168	296	0.0446	0.0453					0.136	0.205	0.0487
2022-12-13	FS_INF-K	10.78			1940		< 0.020	< 0.020	< 0.100	< 0.100	0.237	0.231	214	0.00032	0.00026					< 0.010	< 0.010	0.00110
2022-12-13	FS_INF-S	11.53			2630		< 0.020	< 0.020	< 0.100	< 0.100	0.0960	0.0846	369	0.00562	0.00506					0.021	< 0.010	0.00424
2022-12-13	FR_SCOUTDS	12.19																				
2022-12-13	FS_INF-K																					
2022-12-13	FS_INF-S																					
2022-12-13	FS_INF-K																					
2022-12-13	FS_INF-S																					
2022-12-13	FS_INF-K																					
2022-12-13	FS_INF-S																					
2022-12-13	FS_INF-K																					
2022-12-13	FS_INF-S																					
2022-12-13	FS_INF-K																					
2022-12-14	FS_INF-K																					
2022-12-14	FS_INF-S																					
2022-12-14	FS_INF-K																					
2022-12-14	FS_INF-S																					
2022-12-14	FS_BPO	16.64				0.026																
2022-12-14	FS_INF-K	11.03																				
2022-12-14	FS_INF-S	11.62																				
2022-12-14	FS_INF-K																					
2022-12-14	FS_INF-S																					
2022-12-14	FS_INF-K																					
2022-12-14	FS_INF-S																					
2022-12-14	FS_INF-K																					
2022-12-14	FS_INF-S																					
2022-12-14	FS_INF-K																					
2022-12-14	FS_INF-S																					
2022-12-14	FS_INF-K																					
2022-12-14	FS_INF-S																					
2022-12-15	FS_INF-K																					
2022-12-15	FS_INF-S																					
2022-12-15	FS_INF-K																					
2022-12-15	FS_INF-S																					
2022-12-15	FS_INF-K																					
2022-12-15	FS_INF-S																					
2022-12-15	FS_BPO	14.81				< 0.015															0.109	0.128	
2022-12-15	FS_INF-K	11.1																				
2022-12-15	FS_INF-S	12																				
2022-12-15	FR_SCOUTDS	13	0.172	933		< 0.015	0.019	0.062	< 0.050	< 0.050	0.0952	0.112	112	0.0159	0.0165	< 0.0050			< 0.00050	0.029	< 0.010	0.00780
2022-12-15	FS_INF-K																					
2022-12-15	FS_INF-S																					
2022-12-15	FS_INF-K																					
2022-12-15	FS_INF-S																					
2022-12-15	FS_INF-K																					
2022-12-15	FS_INF-S																					
2022-12-15	FS_INF-K																					
2022-12-15	FS_INF-S																					
2022-12-15	FS_INF-K																					
2022-12-16	FS_INF-S																					
2022-12-16	FS_INF-K																					
2022-12-16	FS_INF-S																					
2022-12-16	FS_INF-K																					
2022-12-16	FS_INF-S																					
2022-12-16	FS_BPO	11.95				< 0.015																
2022-12-16	FS_INF-K	11.01																				
2022-12-16	FS_INF-S	11.56																				
2022-12-16	FS_INF-K																					
2022-12-16	FS_INF-S																					
2022-12-16	FR_FRABCH	10.67	0.145	794			< 0.010	0.011	< 0.050	< 0.050	0.0539	0.0490	72.6	0.00462	0.00484	< 0.0050	< 0.0050			< 0.010	< 0.010	0.000936
2022-12-16	FS_INF-K																					
2022-12-16	FS_INF-S																					
2022-12-16	FS_INF-K																					
2022-12-16	FS_INF-S																					
2022-12-16	FS_INF-K																					
2022-12-16	FS_INF-S																					
2022-12-16	FS_INF-K																					
2022-12-16	FS_INF-S																					
2022-12-17	FS_INF-K																					
2022-12-17	FS_INF-S																					
2022-12-17	FS_INF-K																					
2022-12-17	FS_INF-S																					
2022-12-17	FS_BPO	12.92				< 0.015																
2022-12-17	FS_INF-K	10.47																				
2022-12-17	FS_INF-S	11.06																				
2022-12-17	FS_INF-K																					
2022-12-17	FS_INF-S																					
2022-12-17	FS_INF-K																					
2022-12-17	FS_INF-S																					
2022-12-17	FS_INF-K																					
2022-12-17	FS_INF-S																					
2022-12-17	FS_INF-K																					
2022-12-17	FS_INF-S																					
2022-12-17	FS_INF-K																					

Parameter		Dissolved Oxygen, Field	Fluoride	Hardness, Total or Dissolved CaCO3	Hardness, Total or Dissolved CaCO3	Hydrogen Peroxide	Iron	Iron	Lead	Lead	Lithium	Lithium	Magnesium	Manganese	Manganese	Mercury	Mercury	Mercury	Mercury	MeSe(IV) – methylseleninic acid CH3SeO2H	Methaneselenonic Acid	Molybdenum
Fraction		N	N	D	T	N	D	T	D	T	D	T	T	D	T	D	T	T	T	D	D	D
Unit		mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ng/l	ug/l	ug/l	ug/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-12-17	FS_INF-S																					
2022-12-18	FS_INF-K																					
2022-12-18	FS_INF-S																					
2022-12-18	FS_INF-K																					
2022-12-18	FS_INF-S																					
2022-12-18	FS_BPO	13.63				< 0.015														0.092	0.164	
2022-12-18	FS_INF-K	10.25																				
2022-12-18	FS_INF-S	11.07																				
2022-12-18	FS_INF-K																					
2022-12-18	FS_INF-S																					
2022-12-18	FS_INF-K																					
2022-12-18	FS_INF-S																					
2022-12-18	FS_INF-K																					
2022-12-18	FS_INF-S																					
2022-12-19	FS_INF-K																					
2022-12-19	FS_INF-S																					
2022-12-19	FS_INF-K																					
2022-12-19	FS_INF-S																					
2022-12-19	FS_BPO	13.26	0.153	2160		< 0.015										< 0.0050			< 0.00050			
2022-12-19	FS_INF-K	11.09	0.151	1930												< 0.0050			< 0.00050			
2022-12-19	FS_INF-S	11.59	0.170	2510												< 0.0050			0.00051			
2022-12-19	FS_INF-K																					
2022-12-19	FS_INF-S																					
2022-12-19	FS_INF-K																					
2022-12-19	FS_INF-S																					
2022-12-19	FS_INF-K																					
2022-12-19	FS_INF-S																					
2022-12-19	FS_INF-K																					
2022-12-19	FS_INF-S																					
2022-12-19	FS_INF-K																					
2022-12-19	FS_INF-S																					
2022-12-20	FS_INF-K																					
2022-12-20	FS_INF-S																					
2022-12-20	FS_BPO	14.8				< 0.015	< 0.020	0.209	< 0.100	< 0.100	0.196	0.198	276	0.0450	0.0505					0.095	0.197	0.0548
2022-12-20	FS_INF-K	11.11			1920		< 0.020	< 0.020	< 0.100	< 0.100	0.264	0.272	205	0.00025	< 0.00020					< 0.010	< 0.010	0.00109
2022-12-20	FS_INF-S	11.58			2560		< 0.020	< 0.020	< 0.100	< 0.100	0.0927	0.0953	352	0.00412	0.00408					0.017	< 0.010	0.00436
2022-12-20	FS_INF-K																					
2022-12-20	FS_INF-S																					
2022-12-20	FS_INF-K																					
2022-12-20	FS_INF-S																					
2022-12-20	FS_INF-K																					
2022-12-20	FS_INF-S																					
2022-12-20	FS_INF-K																					
2022-12-20	FS_INF-S																					
2022-12-20	FS_INF-K																					
2022-12-20	FS_INF-S																					
2022-12-21	FS_INF-K																					
2022-12-21	FS_INF-S																					
2022-12-21	FS_INF-K																					
2022-12-21	FS_INF-S																					
2022-12-21	FS_BPO	14.64				< 0.015																
2022-12-21	FS_INF-K	10.74																				
2022-12-21	FS_INF-S	11.53																				
2022-12-21	FS_INF-K																					
2022-12-21	FS_INF-S																					
2022-12-21	FR_FRABCH	8.83																				
2022-12-21	FR_FRABCH																					
2022-12-21	FS_INF-K																					
2022-12-21	FS_INF-S																					
2022-12-21	FS_INF-K																					
2022-12-21	FS_INF-S																					
2022-12-21	FS_INF-K																					
2022-12-21	FS_INF-S																					
2022-12-21	FS_INF-K																					
2022-12-21	FS_INF-S																					
2022-12-22	FS_INF-K																					
2022-12-22	FS_INF-S																					
2022-12-22	FS_INF-K																					
2022-12-22	FS_INF-S																					
2022-12-22	FS_BPO	17.69				0.017														0.145	0.200	
2022-12-22	FS_INF-K	12																				
2022-12-22	FS_INF-S	12.1																				
2022-12-22	FR_SCOUTDS	6.4	0.172	1180	1280		< 0.010	0.020	< 0.050	< 0.050	0.0904	0.0993	159	0.0103	0.0104	< 0.0050			0.00059	0.020	< 0.010	0.00508
2022-12-22	FR_SCOUTDS																					
2022-12-23	FS_BPO					< 0.015																
2022-12-23	FS_INF-K																					
2022-12-23	FS_INF-S																					
2022-12-23	FS_BPO	7.63																				

	Parameter	Dissolved Oxygen, Field	Fluoride	Hardness, Total or Dissolved CaCO3	Hardness, Total or Dissolved CaCO3	Hydrogen Peroxide	Iron	Iron	Lead	Lead	Lithium	Lithium	Magnesium	Manganese	Manganese	Mercury	Mercury	Mercury	Mercury	MeSe(IV) – methylseleninic acid CH3SeO2H	Methaneselenonic Acid	Molybdenum
	Fraction	N	N	D	T	N	D	T	D	T	D	T	T	D	T	D	T	T	T	D	D	D
	Unit	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ng/l	ug/l	ug/l	ug/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-12-23	FR_FRABCH	11.34																				
2022-12-23	FR_SCOUTDS	14.3																				
2022-12-23	FS_BPO	18.27				< 0.015																
2022-12-23	FS_INF-K	11.32																				
2022-12-23	FS_INF-S	11.81																				
2022-12-23	FR_SCOUTDS																					
2022-12-23	FS_INF-K																					
2022-12-23	FS_INF-S																					
2022-12-23	FS_INF-K																					
2022-12-23	FS_INF-S																					
2022-12-23	FS_INF-K																					
2022-12-23	FS_INF-S																					
2022-12-24	FS_INF-K																					
2022-12-24	FS_INF-S																					
2022-12-24	FS_INF-K																					
2022-12-24	FS_INF-S																					
2022-12-24	FS_BPO	15.67				0.066																
2022-12-24	FS_INF-K	11.15																				
2022-12-24	FS_INF-S	11.55																				
2022-12-24	FS_INF-K																					
2022-12-24	FS_INF-S																					
2022-12-24	FS_INF-K																					
2022-12-24	FS_INF-S																					
2022-12-24	FS_BPO					< 0.015																
2022-12-24	FS_INF-K																					
2022-12-24	FS_INF-S																					
2022-12-25	FS_BPO	15.92																				
2022-12-25	FS_INF-K																					
2022-12-25	FS_INF-S																					
2022-12-25	FS_INF-K																					
2022-12-25	FS_INF-S																					
2022-12-25	FS_BPO	14.32				< 0.015															0.200	0.185	
2022-12-25	FS_INF-K	10.82																				
2022-12-25	FS_INF-S	11.39																				
2022-12-25	FS_INF-K																					
2022-12-25	FS_INF-S																					
2022-12-25	FS_INF-K																					
2022-12-25	FS_INF-S																					
2022-12-25	FS_INF-K																					
2022-12-25	FS_INF-S																					
2022-12-25	FS_INF-K																					
2022-12-25	FS_INF-S																					
2022-12-26	FS_INF-K																					
2022-12-26	FS_INF-S																					
2022-12-26	FS_INF-K																					
2022-12-26	FS_INF-S																					
2022-12-26	FS_BPO	12.9	0.159	2040		< 0.015										< 0.0050			< 0.00050			
2022-12-26	FS_INF-K	11.9	0.161	1880												< 0.0050			< 0.00050			
2022-12-26	FS_INF-S	10.5	0.176	2440												< 0.0050			0.00064			
2022-12-26	FS_INF-K																					
2022-12-26	FS_INF-S																					
2022-12-26	FS_INF-K																					
2022-12-26	FS_INF-S																					
2022-12-26	FS_INF-K																					
2022-12-26	FS_INF-S																					
2022-12-26	FS_INF-K																					
2022-12-26	FS_INF-S																					
2022-12-26	FS_INF-K																					
2022-12-26	FS_INF-S																					
2022-12-27	FS_INF-K																					
2022-12-27	FS_INF-S																					
2022-12-27	FS_INF-K																					
2022-12-27	FS_INF-S																					
2022-12-27	FS_BPO	15.71 15.77 16.28				< 0.015	< 0.020	0.232	< 0.100	< 0.100	0.188	0.198	305	0.0497	0.0502					0.137	0.179	0.0512
2022-12-27	FS_INF-K	11.15			2060		< 0.020	< 0.020	< 0.100	0.135	0.284	0.279	227	0.00032	0.00047							0.00103
2022-12-27	FS_INF-S	12.01			2640		< 0.020	< 0.020	< 0.100	< 0.100	0.0949	0.0825	372	0.00342	0.00402							0.00437
2022-12-27	FS_INF-K																					
2022-12-27	FS_INF-S																					
2022-12-27	FS_INF-K																					
2022-12-27	FS_INF-S																					
2022-12-27	FS_INF-K																					
2022-12-27	FS_INF-S																					
2022-12-27	FS_INF-K																					
2022-12-27	FS_INF-S																					
2022-12-27	FS_INF-K																					
2022-12-27	FS_INF-S																					
2022-12-28	FS_INF-K																					
2022-12-28	FS_INF-S																					
2022-12-28	FS_INF-K																					
2022-12-28	FS_INF-S																					

	Parameter	Dissolved Oxygen, Field	Fluoride	Hardness, Total or Dissolved CaCO3	Hardness, Total or Dissolved CaCO3	Hydrogen Peroxide	Iron	Iron	Lead	Lead	Lithium	Lithium	Magnesium	Manganese	Manganese	Mercury	Mercury	Mercury	Mercury	MeSe(IV) – methylseleninic acid CH3SeO2H	Methaneselenonic Acid	Molybdenum
	Fraction	N	N	D	T	N	D	T	D	T	D	T	T	D	T	D	T	T	T	D	D	D
	Unit	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ng/l	ug/l	ug/l	ug/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-12-28	FS_BPO	16.55				< 0.015																
2022-12-28	FS_INF-K	10.98																				
2022-12-28	FS_INF-S	11.73																				
2022-12-28	FS_INF-K																					
2022-12-28	FS_INF-S																					
2022-12-28	FS_INF-K																					
2022-12-28	FS_INF-S																					
2022-12-28	FS_INF-K																					
2022-12-28	FS_INF-S																					
2022-12-28	FS_INF-K																					
2022-12-28	FS_INF-S																					
2022-12-28	FS_INF-K																					
2022-12-28	FS_INF-S																					
2022-12-29	FS_INF-K																					
2022-12-29	FS_INF-S																					
2022-12-29	FS_INF-K																					
2022-12-29	FS_INF-S																					
2022-12-29	FS_BPO	14.07				< 0.015															0.105	0.155	
2022-12-29	FS_INF-K	10.82																				
2022-12-29	FS_INF-S	11.47																				
2022-12-29	FR_SCOUTDS	12.8	0.160	983		< 0.015	0.012	0.067	< 0.050	< 0.050	0.110	0.120	116	0.0161	0.0170	< 0.0050			< 0.00050	0.025	< 0.010	0.00864
2022-12-29	FS_INF-K																					
2022-12-29	FS_INF-S																					
2022-12-29	FS_INF-K																					
2022-12-29	FS_INF-S																					
2022-12-29	FS_INF-K																					
2022-12-29	FS_INF-S																					
2022-12-29	FS_INF-K																					
2022-12-29	FS_INF-S																					
2022-12-29	FS_INF-K																					
2022-12-29	FS_INF-S																					
2022-12-30	FS_INF-K																					
2022-12-30	FS_INF-S																					
2022-12-30	FS_INF-K																					
2022-12-30	FS_INF-S																					
2022-12-30	FS_BPO	13.46				< 0.015																
2022-12-30	FS_INF-K	11.01																				
2022-12-30	FS_INF-S	11.77																				
2022-12-30	FS_INF-K																					
2022-12-30	FS_INF-S																					
2022-12-30	FS_INF-K																					
2022-12-30	FS_INF-S																					
2022-12-30	FS_INF-K																					
2022-12-30	FS_INF-S																					
2022-12-30	FS_INF-K																					
2022-12-30	FS_INF-S																					
2022-12-30	FS_INF-K																					
2022-12-30	FS_INF-S																					
2022-12-31	FS_INF-K																					
2022-12-31	FS_INF-S																					
2022-12-31	FS_INF-K																					
2022-12-31	FS_INF-S																					
2022-12-31	FS_BPO	17.22				< 0.015																
2022-12-31	FS_INF-K	12.14																				
2022-12-31	FS_INF-S	12.55																				
2022-12-31	FS_BPO																					
2022-12-31	FS_INF-K																					
2022-12-31	FS_INF-S																					
2022-12-31	FS_INF-K																					
2022-12-31	FS_INF-S																					
2022-12-31	FS_INF-K																					
2022-12-31	FS_INF-S																					
2022-12-31	FS_INF-K																					
2022-12-31	FS_INF-S																					
2022-12-31	FS_INF-K																					
2022-12-31	FS_INF-S																					

	Parameter	Molybdenum	Nickel	Nickel	Nitrate Nitrogen (NO3), As N	Nitrite Nitrogen (NO2), As N	Nitrogen, Ammonia (As N)	Ortho-Phosphate	Ozone	Ozone	Ozone	pH, Field	pH, LAB	Phosphorus	Potassium	Se(IV) – selenite SeO3(-2)	Se(VI) – selenate SeO4(-2)	SeCN – selenocyanate SeCN(-1)	Selenium	Selenium	Selenium	Selenium
	Fraction	T	D	T	N	N	T	D	N	R	T	N	N	T	T	D	D	D	D	D	T	T
	Unit	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ph units	ph units	mg/l	mg/l	ug/l	ug/l	ug/l	mg/l	ug/l	mg/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-01-01	FS_BPO											8.32										
2022-01-01	FS_BPO											8.32										
2022-01-01	FS_BPO				10.98752 11.5				< 0.01			8.58				0.310	70.9	< 0.010		67.5		65.2
2022-01-01	FS_INF-S				35.87833							8.12										550
2022-01-01	FS_BPO											8.38										69.6
2022-01-01	FS_BPO											8.33										
2022-01-01	FS_BPO											8.36										
2022-01-01	FS_BPO											8.39										
2022-01-01	FS_BPO											8.3										
2022-01-01	FS_INF-S											8.07										
2022-01-02	FS_BPO				9.54525 9.29						< 0.01	8.45				0.256	59.3	< 0.010		53.4		57.9
2022-01-02	FS_INF-S				35.28149							8.12										
2022-01-02	FS_BPO											8.21 8.37										61.2
2022-01-02	FS_BPO											8.37										
2022-01-02	FS_BPO											8.34										
2022-01-02	FS_INF-S											8.1										
2022-01-03	FS_BPO				7.20889 7.18	0.0231	0.0444	0.227			< 0.01	8.35	8.23	0.281		0.268	51.2	< 0.010		45.9		45.6
2022-01-03	FS_INF-S				36.19171 36.0	0.0115	0.0087	0.0019				8.12	8.05	0.0036								
2022-01-03	FS_BPO																					52.8
2022-01-03	FS_BPO																					
2022-01-03	FS_INF-S											8.14										
2022-01-04	FS_BPO	0.0449	6.96	6.82	5.76083 5.15						< 0.01	8.39		0.247	13.9	0.263	44.1	< 0.010		42.7 41.2		38.2
2022-01-04	FS_INF-S				35.15868							8.13				0.961	543	0.024				
2022-01-04	FS_BPO																					41.9
2022-01-04	FS_INF-S											8.24										
2022-01-05	FS_BPO				2.50 4.32193						< 0.01	8.07				0.180	31.2	< 0.010		34.7		36.2
2022-01-05	FS_INF-S				35.36761							7.8										
2022-01-05	FS_BPO																					37.9
2022-01-05	FS_INF-S											8.26										
2022-01-06	FR_SCOUTDS															0.343	105	< 0.010				
2022-01-06	FS_BPO				3.25526 5.22				< 0.01			8.09				0.144	28.5	< 0.010		30.0		31.1
2022-01-06	FS_INF-S				34.9528							7.83										550
2022-01-06	FS_BPO																					31.3
2022-01-06	FR_FRABCH				22.9455																	
2022-01-06	FR_SCOUTDS	0.00657	10.1	9.66	27.6	0.0146	0.0070	0.0165				8.16	7.92	0.0168	3.20					124		116
2022-01-06	FR_FRABCH	0.000797	0.64	0.71	25.7	0.0081	0.0635	< 0.0010				8.07	7.88	0.0033	2.10					118		96.4
2022-01-06	FR_SCOUTDS											8.13										
2022-01-06	FS_INF-S											7.82										
2022-01-07	FS_BPO				3.92966 2.60						< 0.01	8.04				0.139	24.3	< 0.010		26.2		26.5
2022-01-07	FS_INF-S				35.00705							7.85										
2022-01-07	FS_BPO																					29.3
2022-01-07	FS_INF-S											7.8										
2022-01-08	FS_BPO				2.02389 2.01296 2.07						< 0.01	8.04				0.135	22.0	< 0.010		24.7		23.4
2022-01-08	FS_INF-S				35.00747							7.83										544
2022-01-08	FS_BPO																					25.8
2022-01-08	FS_INF-S											7.87										
2022-01-09	FS_BPO				3.66 1.50219						< 0.01	8.21				0.119	19.4	< 0.010		20.4		20.8
2022-01-09	FS_INF-S				36.44942							7.98										
2022-01-09	FS_BPO																					22.8
2022-01-09	FS_INF-S											8.1										
2022-01-10	FS_BPO				1.1932 1.24	0.0071	0.0219	0.0961			< 0.01	8.04	8.20	0.110		0.095	18.8	< 0.010		19.6		19.6
2022-01-10	FS_INF-S				34.36244 35.6	0.0136	0.0135	0.0014				7.88	8.06	0.0040								
2022-01-10	FS_BPO																					23.3
2022-01-10	FS_INF-S																					
2022-01-10	FS_BPO																					
2022-01-10	FS_INF-S											7.86										
2022-01-11	FS_BPO				0.93564 1.17						< 0.01	8.08				0.088	16.8	< 0.010		20.4		15.8
2022-01-11	FS_INF-S				34.82652							7.96				0.877	483	< 0.010		565		530
2022-01-11	FS_BPO																					19.8
2022-01-11	FS_INF-S											7.97										
2022-01-12	FS_BPO				0.73182 0.736						< 0.01	8.12				0.053	14.5	< 0.010		19.5		16.4
2022-01-12	FS_INF-S				33.97902							8.023										
2022-01-12	FS_BPO																					18.7
2022-01-12	FS_INF-S											7.92										
2022-01-13	FR_SCOUTDS															0.314	84.1	< 0.010				
2022-01-13	FS_BPO				0.72981 0.848						< 0.01	8.9 8.38				0.071	13.3	< 0.010		17.0		14.9
2022-01-13	FS_INF-S	0.00509	46.9	44.1	34.572							8.24		< 0.100	4.81					543		522
2022-01-13	FS_BPO																					15.9
2022-01-13	FR_SCOUTDS	0.00584	7.40	7.90	27.2	0.0073	0.0205	0.0085				8.53	8.47	0.0154	2.73					90.5		94.5
2022-01-13	FS_INF-S											8.02										
2022-01-14	FS_BPO				0.60418 1.41						< 0.01	8.1				0.048	13.2	< 0.010		16.2		15.9

	Parameter	Molybdenum	Nickel	Nickel	Nitrate Nitrogen (NO3), As N	Nitrite Nitrogen (NO2), As N	Nitrogen, Ammonia (As N)	Ortho-Phosphate	Ozone	Ozone	Ozone	pH, Field	pH, LAB	Phosphorus	Potassium	Se(IV) – selenite SeO3(-2)	Se(VI) – selenate SeO4(-2)	SeCN – selenocyanate SeCN(-1)	Selenium	Selenium	Selenium	Selenium
	Fraction	T	D	T	N	N	T	D	N	R	T	N	N	T	T	D	D	D	D	D	T	T
	Unit	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ph units	ph units	mg/l	mg/l	ug/l	ug/l	ug/l	mg/l	ug/l	mg/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-01-14	FS_INF-S				34.83473							7.94										
2022-01-14	FS_BPO																					17.6
2022-01-14	FS_INF-S											8										
2022-01-15	FS_BPO				0.41224 0.461						< 0.01	8.34				0.063	13.8	< 0.010		15.6		16.5
2022-01-15	FS_INF-S				35.08989							8.12										522
2022-01-15	FS_BPO																					18.6
2022-01-15	FS_INF-S											7.91										
2022-01-16	FS_BPO				0.4097 0.607						< 0.01	8.29				0.044	13.2	< 0.010		14.2		15.0
2022-01-16	FS_INF-S				34.92123							8.11										
2022-01-16	FS_BPO																					17.4
2022-01-16	FS_INF-S											7.93										
2022-01-17	FS_BPO				0.3562 0.411	< 0.0050	< 0.0050	0.0377			< 0.01	8.47 8.48	8.31	0.0684		0.060	12.6	< 0.010		13.7		14.7
2022-01-17	FS_INF-S				34.40577 35.0	0.0125	0.0186	0.0015				8.58	8.11	0.0064								
2022-01-17	FS_BPO																					15.7
2022-01-17	FS_BPO																					
2022-01-17	FS_BPO											8.23										
2022-01-17	FR_FRABCH	0.000863	0.65	0.69	26.9	0.0134	0.0070	< 0.0010				6.82	8.03	0.0038	2.12					109		102
2022-01-17	FS_BPO											8.34										
2022-01-17	FS_INF-S											8.01										
2022-01-18	FS_BPO	0.0464	3.75	3.53	0.56673 0.730						< 0.01	8.39		< 0.100	5.24	0.047	15.6	< 0.010		18.4		19.9
2022-01-18	FS_INF-S	0.00578	46.3	45.8	34.48373							8.09		< 0.100	4.56	0.820	459	< 0.010		529		585
2022-01-18	FS_BPO																					21.5
2022-01-18	FS_INF-S											8.04										
2022-01-19	FS_BPO				0.60802 0.930						< 0.01	8.24				0.043	17.4	< 0.010		20.7		19.4
2022-01-19	FS_INF-S				33.03453							8.01										
2022-01-19	FS_BPO																					23.3
2022-01-19	FS_INF-S											8.07										
2022-01-20	FR_SCOUTDS															0.304	102	< 0.010				
2022-01-20	FS_BPO				0.75069 0.992						< 0.01	8.17				0.045	20.2	< 0.010		24.8		22.0
2022-01-20	FS_INF-S				34.07895							8.03										530
2022-01-20	FS_BPO																					25.6
2022-01-20	FR_SCOUTDS	0.00649	8.56	8.47	27.4	0.0076	< 0.0050	0.0029				8.42	8.18	0.0061	2.56					122		111
2022-01-20	FS_BPO											8.19										
2022-01-20	FS_BPO				0.81318																	
2022-01-21	FS_BPO				0.83615							8.2										
2022-01-21	FS_INF-S											8.04										
2022-01-21	FS_BPO				0.937											0.058	20.6	< 0.010		25.9		20.4
2022-01-21	FS_INF-S																					
2022-01-21	FS_BPO																					28.2
2022-01-21	FS_BPO											8.16										
2022-01-21	FS_BPO				0.81004						< 0.01	8.21										
2022-01-21	FS_INF-S				34.54464							8.08										
2022-01-21	FS_INF-S											8.06										
2022-01-22	FS_BPO				0.76703 0.807						< 0.01	8.34										
2022-01-22	FS_INF-S				35.06413							8.08										501
2022-01-22	FS_BPO															0.090	20.5	< 0.010		26.2		25.0 20.8
2022-01-22	FS_BPO											8.28										
2022-01-22	FS_BPO										< 0.01											
2022-01-22	FS_INF-S											8.07										
2022-01-23	FS_BPO				0.48558 1.33						< 0.01	8.17				0.065	18.9	< 0.010		23.1		19.9
2022-01-23	FS_INF-S				34.3712							8.09										
2022-01-23	FS_BPO																					22.9
2022-01-23	FS_INF-S											8.03										
2022-01-24	FS_BPO				0.38627 2.05	< 0.0050	0.0068	0.0382			< 0.01	8.16	8.16	0.0532		0.051	19.1	< 0.010		20.5		19.1
2022-01-24	FS_INF-S				34.60655 35.3	0.0177	0.0166	0.0019				8.06	8.04	0.0038								
2022-01-24	FS_BPO																					22.8
2022-01-24	FS_BPO																					
2022-01-24	FS_BPO				0.33559						< 0.01	8.13										
2022-01-24	FS_INF-S				36.51276							8.08										
2022-01-24	FS_INF-S											8.11										
2022-01-25	FS_BPO				0.31741 0.524						< 0.01	8.18				0.098	17.3	< 0.010		18.5		18.2
2022-01-25	FS_INF-S	0.00470	43.5	44.8	34.9495							8.12		< 0.250	4.65	0.827	467	< 0.010		544		525
2022-01-25	FS_BPO																					20.9
2022-01-25	FS_INF-S											8.15										
2022-01-26	FS_BPO				< 0.23 0.974						< 0.01	7.98				0.072	15.9	< 0.010		19.5		18.7
2022-01-26	FS_INF-S				36.58018							8.1										
2022-01-26	FS_BPO																					20.3
2022-01-26	FS_INF-S											8.1										
2022-01-27	FR_SCOUTDS															0.296	95.2	< 0.010				
2022-01-27	FS_BPO				< 0.23 0.317						< 0.01	8.21				0.090	15.4	< 0.010		18.9		18.6
2022-01-27	FS_INF-S				34.97536							8.12										540
2022-01-27	FS_BPO																					20.2
2022-01-27	FR_FRABCH				26.3493							8.05										
2022-01-27	FR_SCOUTDS	0.00668	8.42	8.66	25.4	0.0079	< 0.0050	0.0040				8.39	8.30	0.0101	2.80					114		118

	Parameter	Molybdenum	Nickel	Nickel	Nitrate Nitrogen (NO3), As N	Nitrite Nitrogen (NO2), As N	Nitrogen, Ammonia (As N)	Ortho-Phosphate	Ozone	Ozone	Ozone	pH, Field	pH, LAB	Phosphorus	Potassium	Se(IV) – selenite SeO3(-2)	Se(VI) – selenate SeO4(-2)	SeCN – selenocyanate SeCN(-1)	Selenium	Selenium	Selenium	Selenium
	Fraction	T	D	T	N	N	T	D	N	R	T	N	N	T	T	D	D	D	D	D	T	T
	Unit	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ph units	ph units	mg/l	mg/l	ug/l	ug/l	ug/l	mg/l	ug/l	mg/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-01-27	FR_FRABCH	0.000946	0.74	0.70	24.5	< 0.0050	0.0183	0.0013				8.05	8.19	0.0026	1.88					105		100
2022-01-27	FS_BPO				< 0.23																	
2022-01-27	FS_INF-S				34.9754																	
2022-01-28	FS_BPO				< 0.23 0.126						< 0.01	8.26								18.3		16.6
2022-01-28	FS_INF-S				34.14799							8.23										
2022-01-28	FS_BPO																					20.7
2022-01-29	FS_BPO				< 0.23 0.923						< 0.01	8.2				0.064	15.9	< 0.010		18.3		17.7
2022-01-29	FS_INF-S				34.24884							8.07										514
2022-01-29	FS_BPO																					21.7
2022-01-30	FS_BPO				< 0.23 0.206						< 0.01	8.3								20.5		19.6
2022-01-30	FS_INF-S				34.31523							8.2										
2022-01-30	FS_BPO																					22.4
2022-01-31	FS_BPO				< 0.23 1.52	< 0.0050	0.104	0.105			< 0.01	8.23	8.15	0.0978						21.4		19.7
2022-01-31	FS_INF-S				32.87153 33.4	0.0084	0.109	0.0012				8.13	8.04	0.126								
2022-01-31	FS_BPO																					23.3
2022-01-31	FS_BPO																					
2022-02-01	FS_BPO				< 0.23 0.246						< 0.01	8.3				0.083	18.4	< 0.010		18.6		22.4
2022-02-01	FS_INF-S				33.35365							8.19										
2022-02-01	FS_BPO																					22.6
2022-02-01	FR_FRABCH	0.00101	0.76	0.77	26.0	0.0068	< 0.0050	0.0014				10.48	8.08	0.0045	2.06					104		103
2022-02-02	FS_BPO				< 0.23 0.603						< 0.01	8.29								16.0		20.0
2022-02-02	FS_INF-S				34.36381							8.15										
2022-02-02	FS_BPO																					19.8
2022-02-03	FR_SCOUTDS															0.305	102	< 0.010				
2022-02-03	FS_BPO				< 0.23 0.221						< 0.01	8.26				0.084	14.9	< 0.010		18.3		16.3
2022-02-03	FS_INF-S				33.62062							8.17										508
2022-02-03	FS_BPO																					19.6
2022-02-03	FR_SCOUTDS	0.00893	8.47	8.93	27.8	0.0067	< 0.0050	0.0120				8.54	8.27	0.0126	4.10					116		115
2022-02-04	FS_BPO				< 0.23 0.157						< 0.01	8.08								19.6		19.4
2022-02-04	FS_INF-S				33.52094							7.96										
2022-02-04	FS_BPO																					23.3
2022-02-05	FS_BPO				< 0.23 0.0606						< 0.01	8.31				0.138	19.1	< 0.010		22.5		20.4
2022-02-05	FS_INF-S				33.59104							8.1										587
2022-02-05	FS_BPO																					23.8
2022-02-05	FS_BPO				< 0.23						< 0.01	8.12										
2022-02-06	FS_BPO				< 0.23 0.0935															22.2		22.2
2022-02-06	FS_INF-S				32.74736																	
2022-02-06	FS_BPO																					24.2
2022-02-06	FS_BPO										< 0.01	8.15										
2022-02-06	FS_INF-S											7.97										
2022-02-07	FS_BPO				< 0.23 0.0695	< 0.0050	0.0117	0.0690			< 0.01	8.1	8.18	0.0939						23.0		23.7
2022-02-07	FS_INF-S				33.57156 34.2	0.0134	0.0191	0.0013				8.01	8.10	0.0041								
2022-02-07	FS_BPO																					24.0
2022-02-07	FS_BPO																					
2022-02-08	FR_SCOUTDS															0.291	92.3	< 0.010				
2022-02-08	FS_BPO	0.0462	5.40	5.75	< 0.23 0.123						< 0.01	8.09		0.110	10.8	0.131	20.4	< 0.010		24.6 24.4		23.8 24.2
2022-02-08	FS_INF-S	0.00499	45.5	45.8	33.36903							8.02		< 0.100	4.89	0.757	486	< 0.010		546		573
2022-02-08	FS_BPO																					28.6
2022-02-09	FS_BPO				< 0.23 0.181						< 0.01	8.06								22.2		21.5
2022-02-09	FS_INF-S				32.85294							7.98										
2022-02-09	FS_BPO																					25.4
2022-02-09	FR_FRABCH											8.04										
2022-02-10	FR_SCOUTDS															0.268	87.3	< 0.010				
2022-02-10	FS_BPO				< 0.23 0.239						< 0.01	8.11				0.110	18.0	< 0.010		24.9		22.1
2022-02-10	FS_INF-S	0.00482	45.9	44.8	31.97353							8.36		< 0.100	4.63					568		588
2022-02-10	FS_BPO																					25.4
2022-02-10	FR_SCOUTDS	0.00606	6.79	7.45	28.0	0.0411	< 0.0050	0.0045				8.75	8.35	0.0081	2.86					98.4		100
2022-02-11	FS_BPO				< 0.23 0.148						< 0.01	8.22								24.0		21.1
2022-02-11	FS_INF-S				32.19509							8.49										
2022-02-11	FS_BPO																					24.1
2022-02-12	FS_BPO				< 0.23 0.265						< 0.01	8.2				0.154	17.1	0.021		23.0		20.8
2022-02-12	FS_INF-S				31.66512							8.08										
2022-02-12	FS_BPO																					22.7
2022-02-13	FS_BPO				< 0.23 0.154						< 0.01	8.23				0.107	17.0	< 0.010		22.6		22.7
2022-02-13	FS_INF-S				33.03931							8.05										580
2022-02-13	FS_BPO																					17.3
2022-02-14	FS_BPO				< 0.23 0.100	< 0.0050	0.0185	0.0524			< 0.01	8.19	8.22	0.0703						22.5		22.9
2022-02-14	FS_INF-S				33.5984 33.6	0.0094	0.0213	< 0.0010				8.34	8.17	0.0043								

	Parameter	Molybdenum	Nickel	Nickel	Nitrate Nitrogen (NO3), As N	Nitrite Nitrogen (NO2), As N	Nitrogen, Ammonia (As N)	Ortho-Phosphate	Ozone	Ozone	Ozone	pH, Field	pH, LAB	Phosphorus	Potassium	Se(IV) – selenite SeO3(-2)	Se(VI) – selenate SeO4(-2)	SeCN – selenocyanate SeCN(-1)	Selenium	Selenium	Selenium	Selenium
	Fraction	T	D	T	N	N	T	D	N	R	T	N	N	T	T	D	D	D	D	D	T	T
	Unit	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ph units	ph units	mg/l	mg/l	ug/l	ug/l	ug/l	mg/l	ug/l	mg/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-02-14	FS_BPO																					17.4
2022-02-14	FS_BPO																					
2022-02-14	FS_INF-S											8.09										
2022-02-15	FS_BPO	0.0479		4.78	< 0.23 0.205							8.37		< 0.250	12.6	0.117	18.9	< 0.010				19.0
2022-02-15	FS_INF-S	0.00503	46.8	50.4	35.6							8.1		< 0.250	4.86					558		532
2022-02-15	FS_BPO																					24.4
2022-02-15	FR_FRABCH				29.3							7.29										
2022-02-15	FS_BPO										< 0.01											
2022-02-16	FS_BPO				< 0.23						< 0.01											
2022-02-16	FS_INF-S				34.95																	
2022-02-16	FS_BPO				0.154															19.8		22.0
2022-02-16	FS_INF-S																					
2022-02-16	FS_BPO																					23.1
2022-02-16	FR_FRABCH	0.00107	0.84	0.96	27.2	0.0069	< 0.0050	< 0.0010					8.31	0.0021	2.12					104		104
2022-02-16	FS_BPO											8.14										
2022-02-16	FS_INF-S											8.14										
2022-02-17	FR_SCOUTDS															0.318	99.7	< 0.010				
2022-02-17	FS_BPO				< 0.23 0.104						< 0.01	8.15				0.178	19.5	< 0.010		20.3		23.1
2022-02-17	FS_INF-S				36.35							8.03										576
2022-02-17	FS_BPO																					21.6
2022-02-17	FR_SCOUTDS	0.00639	7.69	8.52	28.9	0.0178	0.0136	0.0055				8.54	8.36	0.0069 < 0.050	3.57					97.8		108
2022-02-18	FS_BPO				< 0.23 0.202						< 0.01	8.13								22.5		22.0
2022-02-18	FS_INF-S				< 0.23 36.3							8.03										
2022-02-18	FS_BPO																					25.2
2022-02-19	FS_BPO				< 0.23 0.0899						< 0.01	8.28								19.4		26.7
2022-02-19	FS_INF-S				32.20158							8										
2022-02-19	FS_BPO																					18.1
2022-02-20	FS_BPO				< 0.23 0.250						< 0.01	8.3				0.088	18.5	< 0.010		18.9		22.0
2022-02-20	FS_INF-S				31.48052							8.08										625
2022-02-20	FS_BPO																					17.6
2022-02-21	FS_BPO				< 0.23 0.0396	< 0.0050	0.0064	0.0601			< 0.01	8.55 8.49 8.5	8.48	0.0740						18.1		20.7
2022-02-21	FS_INF-S				31.45056 32.7	0.0071	0.0250	0.0014				8.11	8.06	0.0034								
2022-02-21	FS_BPO																					17.3
2022-02-21	FS_BPO																					
2022-02-21	FS_BPO											8.46										
2022-02-22	FS_BPO											8.41										
2022-02-22	FS_BPO				< 0.23 0.791						< 0.01	8.08				0.099	15.1	< 0.010		15.5		17.6
2022-02-22	FS_INF-S	0.00483	46.1	47.5	31.00111							8.04		< 0.100	5.07					513		564
2022-02-22	FS_BPO																					15.0
2022-02-22	FR_FRABCH											7.97										
2022-02-22	FS_BPO											8.3										
2022-02-22	FS_BPO											8.29										
2022-02-22	FS_INF-S											8.11										
2022-02-23	FS_BPO											8.3										
2022-02-23	FS_BPO				< 0.23 0.0572						< 0.01	8.31								16.8		16.8
2022-02-23	FS_INF-S				31.83784							7.89										
2022-02-23	FS_BPO																					16.3
2022-02-24	FR_SCOUTDS															0.219	69.3	< 0.010				
2022-02-24	FS_BPO				< 0.23 0.474						< 0.01	8.18				0.075	17.8	< 0.010		18.5		20.2
2022-02-24	FS_INF-S				30.42049							8.12										532
2022-02-24	FS_BPO																					16.8
2022-02-24	FR_SCOUTDS	0.00860	5.61	5.35	26.3	0.0149	< 0.0050	0.0127				8.31	8.30	0.0140 < 0.050	2.98					81.2		77.8
2022-02-25	FS_BPO				< 0.23 < 0.0250						< 0.01	7.65								19.6		20.5
2022-02-25	FS_INF-S				32.63538							7.89										
2022-02-25	FS_BPO																					21.0
2022-02-25	FR_SCOUTDS											8.58										
2022-02-25	FS_INF-K																					
2022-02-25	FS_INF-K				96.85548																	
2022-02-25	FS_INF-K											7.7										
2022-02-26	FS_BPO				0.45057 0.0430						< 0.01	8.16								26.8		20.2
2022-02-26	FS_INF-K				136.5566							7.7 7.72										425
2022-02-26	FS_INF-S				32.31612							8.1										
2022-02-26	FS_BPO																					19.3
2022-02-27	FS_BPO				< 0.23 1.10						< 0.01	8.08 8.2				0.116	19.7	< 0.010		24.1		23.0
2022-02-27	FS_INF-K	0.00129		75.8	135.3867							7.65		< 0.100	5.74							386
2022-02-27	FS_INF-S				31.55819							8.06										506
2022-02-27	FS_BPO																					20.7
2022-02-28	FS_BPO				< 0.23 < 0.0250	< 0.0050	0.0081	0.0992			< 0.01	8.02	8.19	0.119						25.2		25.5
2022-02-28	FS_INF-K		78.6		127.6095 124	< 0.0050	< 0.0050	< 0.0010				7.59	7.88	< 0.0020					374			

	Parameter	Molybdenum	Nickel	Nickel	Nitrate Nitrogen (NO3), As N	Nitrite Nitrogen (NO2), As N	Nitrogen, Ammonia (As N)	Ortho-Phosphate	Ozone	Ozone	Ozone	pH, Field	pH, LAB	Phosphorus	Potassium	Se(IV) – selenite SeO3(-2)	Se(VI) – selenate SeO4(-2)	SeCN – selenocyanate SeCN(-1)	Selenium	Selenium	Selenium	Selenium
	Fraction	T	D	T	N	N	T	D	N	R	T	N	N	T	T	D	D	D	D	D	T	T
	Unit	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ph units	ph units	mg/l	mg/l	ug/l	ug/l	ug/l	mg/l	ug/l	mg/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-02-28	FS_INF-S				31.63755 32.6	0.0069	0.0114	0.0013				8.04	8.12	0.0033								
2022-02-28	FS_BPO																					26.9
2022-02-28	FS_BPO																					
2022-03-01	FS_BPO	0.0467	4.80	4.75	< 0.23 0.0746						< 0.01	8.1		0.132	5.62	0.135	20.6	< 0.010		23.3		25.6
2022-03-01	FS_INF-K	0.00111	77.6	76.2	133.1613							7.6		< 0.100	6.36	0.086	364	< 0.010		419		428
2022-03-01	FS_INF-S	0.00474	44.0	43.3	31.5753							8		< 0.100	5.09	0.707	469	< 0.010		548		580
2022-03-01	FS_BPO																					20.6
2022-03-01	FR_FRABCH	0.000762	0.65	0.65	27.3	0.0093	0.0067	< 0.0010				8.05	8.29	0.0042	1.92					97.1		105
2022-03-02	FS_BPO				< 0.23 0.264						< 0.01	8.07								26.1		20.7
2022-03-02	FS_INF-K				132.0243							7.58										
2022-03-02	FS_INF-S				31.74413							8.07										
2022-03-02	FS_BPO																					18.6
2022-03-02	FR_FRABCH				25.53726							8.05										
2022-03-03	FR_SCOUTDS															0.224	84.7	< 0.010				
2022-03-03	FS_BPO				< 0.23 0.824						< 0.01	8.19				0.114	17.3	< 0.010		20.9		19.1
2022-03-03	FS_INF-K				132.2036							7.61										449
2022-03-03	FS_INF-S				31.68429							8.07										562
2022-03-03	FS_BPO																					17.2
2022-03-03	FR_SCOUTDS	0.00553	6.78	6.15	23.1	0.0084	< 0.0050	0.0056				8.32	8.19	0.0086 < 0.050	2.92					92.5		96.5
2022-03-04	FS_BPO				< 0.23 0.112						< 0.01	8.25								19.9		18.7
2022-03-04	FS_INF-K				132.9225							7.61										
2022-03-04	FS_INF-S				32.07941							8.08										
2022-03-04	FS_BPO																					20.2
2022-03-04	FS_BPO																					
2022-03-05	FS_BPO				< 0.23 0.0780						< 0.01	8.35								16.8		17.0
2022-03-05	FS_INF-K				118.7869							7.59										
2022-03-05	FS_INF-S				32.39861							8.08										
2022-03-05	FS_BPO																					14.8
2022-03-06	FS_BPO				< 0.23 0.222						< 0.01	8.31				0.101	14.8	< 0.010		18.2		17.1
2022-03-06	FS_INF-K				141.203							7.64 7.64										
2022-03-06	FS_INF-S				31.88206							8.06										559
2022-03-06	FS_BPO																					15.6
2022-03-07	FS_BPO				< 0.23 0.0851	< 0.0050	< 0.0050	0.0825			< 0.01	8.3	8.17	0.0828						17.7		20.0
2022-03-07	FS_INF-K				139.3716 131	< 0.0050	< 0.0050	< 0.0010				7.63	7.67	< 0.0020								
2022-03-07	FS_INF-S				30.86918 33.6	0.0098	0.0099	< 0.0010				8.09	7.98	0.0033								
2022-03-07	FS_BPO																					15.2
2022-03-07	FS_BPO																					
2022-03-08	FS_BPO	0.0440		4.53	< 0.23 0.146						< 0.01	8.4		0.119	7.20	0.139	16.1	< 0.010				19.2
2022-03-08	FS_INF-K	0.00118	76.9	77.9	137.2323							7.71		< 0.100	5.81	0.103	361	< 0.010		411		441
2022-03-08	FS_INF-S	0.00476	45.5	44.4	32.52191							8.13		< 0.100	4.66	0.680	450	< 0.010		562		576
2022-03-08	FS_BPO																					17.2
2022-03-08	FS_INF-S																					
2022-03-08	FS_BPO											8.51 8.42										
2022-03-08	FR_FRABCH	0.00112	0.85	0.75	28.0	< 0.0050	0.0208	< 0.0010				8.37	8.19	0.0061	1.98					100		102
2022-03-08	FS_BPO											8.4										
2022-03-08	FS_BPO											8.35										
2022-03-09	FS_BPO											8.32										
2022-03-09	FS_BPO				< 0.23 0.110						< 0.01	8.33								22.1		21.8
2022-03-09	FS_INF-K				136.4848							7.64										
2022-03-09	FS_INF-S				32.11951							8.12										
2022-03-09	FS_BPO																					20.9
2022-03-10	FR_SCOUTDS															0.247	83.9	< 0.010				
2022-03-10	FS_BPO				< 0.23 0.0295						< 0.01	8.32				0.144	19.8	< 0.010		23.0		24.4
2022-03-10	FS_INF-K				150.0374							7.68										432
2022-03-10	FS_INF-S				33.65284							8.15										579
2022-03-10	FS_BPO																					25.4
2022-03-10	FR_SCOUTDS	0.00648	6.61	7.09	28.0	0.0104	0.0051	0.0038				8.37	8.12	0.0068 < 0.050	3.19					98.2		108
2022-03-11	FS_BPO				< 0.23 0.0469						< 0.01	8.26								25.4		23.1
2022-03-11	FS_INF-K				137.2801							7.55										
2022-03-11	FS_INF-S				32.33695							8.01										
2022-03-11	FS_BPO																					25.8
2022-03-12	FS_BPO				< 0.23 0.0266						< 0.01	8.02								27.0		24.6
2022-03-12	FS_INF-K				135.0184							7.49										
2022-03-12	FS_INF-S				32.22734							7.99										
2022-03-12	FS_BPO																					24.1
2022-03-13	FS_BPO				< 0.23 0.0666						< 0.01	8.15				0.211	23.1	< 0.010		27.4		27.7
2022-03-13	FS_INF-K				137.9445							7.54										421
2022-03-13	FS_INF-S				32.14719							8.2										540
2022-03-13	FS_BPO																					24.8

Parameter		Molybdenum	Nickel	Nickel	Nitrate Nitrogen (NO3), As N	Nitrite Nitrogen (NO2), As N	Nitrogen, Ammonia (As N)	Ortho-Phosphate	Ozone	Ozone	Ozone	pH, Field	pH, LAB	Phosphorus	Potassium	Se(IV) – selenite SeO3(-2)	Se(VI) – selenate SeO4(-2)	SeCN – selenocyanate SeCN(-1)	Selenium	Selenium	Selenium	Selenium
Fraction		T	D	T	N	N	T	D	N	R	T	N	N	T	T	D	D	D	D	D	T	T
Unit		mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ph units	ph units	mg/l	mg/l	ug/l	ug/l	ug/l	mg/l	ug/l	mg/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-03-14	FS_BPO				< 0.23 0.0490	< 0.0050	0.0203	0.104			< 0.01	8	8.12	0.133						28.9		28.7
2022-03-14	FS_INF-K				136.8798							7.42										
2022-03-14	FS_INF-S				32.01745							7.97										
2022-03-14	FS_BPO																					25.2
2022-03-14	FS_BPO																					
2022-03-15	FS_BPO	0.0470		4.72	< 0.23 0.179						< 0.01	8.08		0.195	13.0	0.216	25.9	< 0.010		27.8		30.9
2022-03-15	FS_INF-K	0.00118	81.2	75.7	138.3336							7.41		< 0.100	6.16	0.103	383	< 0.010		422		435
2022-03-15	FS_INF-S	0.00503	47.6	43.5	32.2156							8.03		< 0.100	4.87	0.721	463	< 0.010		543		536
2022-03-15	FS_BPO																					26.0
2022-03-15	FR_FRABCH	0.00108	0.78	0.97	28.5	< 0.0050	< 0.0050	< 0.0010				8.12	8.04	0.0043	2.10					99.0		106
2022-03-16	FS_BPO				< 0.23 0.192						< 0.01	8.14								32.6		33.6
2022-03-16	FS_INF-K				139.0864							7.41										
2022-03-16	FS_INF-S				32.17529							7.97										
2022-03-16	FS_BPO																					36.8
2022-03-17	FR_SCOUTDS															0.271	109	< 0.010				
2022-03-17	FS_BPO				< 0.23 0.769						< 0.01	8.11				0.209	30.0	< 0.010		34.4		33.6
2022-03-17	FS_INF-K				150.9445							7.44										434
2022-03-17	FS_INF-S				33.53127							7.98										550
2022-03-17	FS_BPO																					31.0
2022-03-17	FR_SCOUTDS	0.00311	9.21	9.89	30.0	0.0189	0.0090	< 0.0010				8.28	8.09	< 0.050 0.0193	2.71					124		128
2022-03-18	FS_BPO				< 0.23 0.536						< 0.01	8.08								35.0		36.1
2022-03-18	FS_INF-K				148.8877							7.43										
2022-03-18	FS_INF-S				32.20267							8.01										
2022-03-18	FS_BPO																					35.2
2022-03-19	FS_BPO				< 0.23 0.604						< 0.01	8.1 8.13								35.7		34.0
2022-03-19	FS_INF-K				140.4918							7.46										
2022-03-19	FS_INF-S				32.69559							8.05										
2022-03-19	FS_BPO																					33.3
2022-03-20	FS_BPO				0.59593 0.821						< 0.01	8.08				0.205	25.5	< 0.010		27.4		28.0
2022-03-20	FS_INF-K				136.9467							7.48										428
2022-03-20	FS_INF-S				31.88965							8.02										499
2022-03-20	FS_BPO																					28.7
2022-03-21	FS_BPO				< 0.23 0.183	0.0186	0.0377	0.0848			< 0.01	8.13	8.21	0.0802						22.8		23.8
2022-03-21	FS_INF-K				143.5456 128	0.0097	< 0.0050	< 0.0010				7.51	7.79	< 0.0020								
2022-03-21	FS_INF-S				32.91616 32.3	0.0176	0.0101	0.0010				8.05	7.96	0.0032								
2022-03-21	FS_BPO																					24.1
2022-03-21	FS_BPO																					
2022-03-22	FS_BPO	0.0467	5.34	5.12	< 0.23 1.47						< 0.01	8.13		0.125	7.38	0.184	20.2	< 0.010		23.0		22.4
2022-03-22	FS_INF-K	0.00117	78.0	74.7	149.6315							7.51		< 0.100	5.42					424		401
2022-03-22	FS_INF-S	0.00445	43.4	41.6	32.89108							8.05		< 0.100	4.27					523		493
2022-03-22	FS_BPO																					25.2
2022-03-23	FS_BPO				< 0.23 0.857						< 0.01	8.23								21.5		24.9
2022-03-23	FS_INF-K				140.8284							7.48										
2022-03-23	FS_INF-S				32.24592							8.08										
2022-03-23	FS_BPO																					25.3
2022-03-23	FR_FRABCH	0.00147	1.32	1.42	28.6	0.0070	< 0.0050	< 0.0010				8.07	8.03	0.0034	2.08					101		101
2022-03-23	FR_FRABCH				26.7689																	
2022-03-24	FR_SCOUTDS															0.377	88.9	< 0.010				
2022-03-24	FS_BPO				< 0.23 0.783						< 0.01	8.27				0.247	22.9	< 0.010		26.3		27.6
2022-03-24	FS_INF-K				143.3931							7.61										439
2022-03-24	FS_INF-S				32.09306							8.08										492
2022-03-24	FS_BPO																					28.3
2022-03-24	FR_SCOUTDS	0.00567	8.12	8.65	25.8	0.0296	0.0276	0.0017				8.38	8.25	0.062 0.0103	3.12					91.6		101
2022-03-25	FS_BPO				< 0.23 0.190						< 0.01	8.22								27.8		27.3
2022-03-25	FS_INF-K				151.1313							7.58										
2022-03-25	FS_INF-S				30.94164							8.25										
2022-03-25	FS_BPO																					27.6
2022-03-26	FS_BPO				< 0.23 0.0665						< 0.01	8.25								26.8		28.7
2022-03-26	FS_INF-K				153.3048							7.74										
2022-03-26	FS_INF-S				30.74271							8.13										
2022-03-26	FS_BPO																					26.5
2022-03-27	FS_BPO				< 0.23 0.109						< 0.01	8.29				0.246	22.8	< 0.010		26.9		29.8
2022-03-27	FS_INF-K				153.1991							7.52										425
2022-03-27	FS_INF-S				31.55787							8.16										440
2022-03-27	FS_BPO																					27.5
2022-03-28	FS_BPO				< 0.23 0.144	< 0.0050	0.0099	0.0274			< 0.01	8.2	8.15	0.0521						26.7		27.3
2022-03-28	FS_INF-K				140.7807							7.47										
2022-03-28	FS_INF-S				30.43968							8.04										
2022-03-28	FS_BPO																					33.0 20.6

	Parameter	Molybdenum	Nickel	Nickel	Nitrate Nitrogen (NO3), As N	Nitrite Nitrogen (NO2), As N	Nitrogen, Ammonia (As N)	Ortho-Phosphate	Ozone	Ozone	Ozone	pH, Field	pH, LAB	Phosphorus	Potassium	Se(IV) – selenite SeO3(-2)	Se(VI) – selenate SeO4(-2)	SeCN – selenocyanate SeCN(-1)	Selenium	Selenium	Selenium	Selenium
	Fraction	T	D	T	N	N	T	D	N	R	T	N	N	T	T	D	D	D	D	D	T	T
	Unit	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ph units	ph units	mg/l	mg/l	ug/l	ug/l	ug/l	mg/l	ug/l	mg/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-03-28	FS_BPO																					
2022-03-29	FS_BPO	0.0489	4.88	5.60	< 0.23 0.440						< 0.01	8.35		< 0.100	9.40	0.188	20.6	< 0.010		22.2		23.4
2022-03-29	FS_INF-K	0.00280	76.6	75.2	149.3237							7.53		< 0.100	5.79	0.056	396	< 0.010		420		414
2022-03-29	FS_INF-S	0.00420	33.8	34.3	30.89823							8.04		< 0.100	3.91	0.739	349	< 0.010		392		379
2022-03-29	FS_BPO																					22.0
2022-03-30	FS_BPO				< 0.23 0.621						< 0.01	8.3								20.6		20.8
2022-03-30	FS_INF-K				154.1096							7.54										
2022-03-30	FS_INF-S				31.58719							8.08										
2022-03-30	FR_FRABCH	0.00215	2.74	3.05	24.9 25 25.7 25.4 23.8805	0.0195	0.0345	< 0.0010				8.12	8.14	0.0075	2.25					99.4		96.5
2022-03-30	FS_BPO										< 0.01											
2022-03-30	FS_BPO											8.16										
2022-03-31	FR_SCOUTDS															0.411	70.9	< 0.010				
2022-03-31	FS_BPO				< 0.23 0.430						< 0.01	8.22				0.132	16.5	< 0.010		19.5		19.1
2022-03-31	FS_INF-K				141.373							7.53										416
2022-03-31	FS_INF-S				32.87322							8.1										419
2022-03-31	FS_BPO																					17.8
2022-03-31	FR_SCOUTDS	0.00546	10.4	11.1	21.3	0.0518	0.0640	< 0.0010				8.7	8.26	< 0.050 0.0131	2.44					83.3		83.0
2022-04-01	FS_BPO				< 0.23 0.444						< 0.01	8.25								18.5		20.0
2022-04-01	FS_INF-K				147.3817							8.19										
2022-04-01	FS_INF-S				34.55255							8.38										
2022-04-01	FS_BPO																					21.6
2022-04-01	FR_FRABCH											8.14										
2022-04-02	FS_BPO				< 0.23 0.424						< 0.01	8.23								20.7		20.8
2022-04-02	FS_INF-K				148.7322							7.73										
2022-04-02	FS_INF-S				36.18537							8.52										
2022-04-02	FS_BPO																					17.4
2022-04-02	FS_INF-S											8.28										
2022-04-03	FS_BPO				< 0.23 0.0344						< 0.01	8.11				0.096	16.6	< 0.010		20.0		23.0
2022-04-03	FS_INF-K				142.1557							7.65										519
2022-04-03	FS_INF-S				36.4919							8.29										586
2022-04-03	FS_BPO																					20.4
2022-04-04	FS_BPO				< 0.23 0.0788	< 0.0050	< 0.0050	0.0307			< 0.01	7.97	8.07	0.0546						22.3		22.3
2022-04-04	FS_INF-K				141.2356 135	< 0.0050	< 0.0050	< 0.0010				7.31	7.66	< 0.0020								
2022-04-04	FS_INF-S				37.29479 37.8	0.0196	0.0086	< 0.0010				7.89	8.03	0.0074								
2022-04-04	FS_BPO																					18.8
2022-04-04	FS_BPO																					
2022-04-05	FS_BPO	0.0530	7.64	8.41	< 0.23 0.816						< 0.01	7.97		< 0.100	5.14					20.6		21.4
2022-04-05	FS_INF-K	0.00136	72.8	75.1	141.2629							7.32		< 0.100	6.00					435		447
2022-04-05	FS_INF-S	0.00540	43.4	44.6	37.45221							7.9		< 0.100	4.59					520		533
2022-04-05	FS_BPO																					21.6
2022-04-05	FR_FRABCH	0.00236	3.79	3.93	27.1	0.0258	0.0074	< 0.0010				8.11	8.23	0.0041	2.32					92.5		98.0
2022-04-06	FS_BPO															0.113	16.7	< 0.010				
2022-04-06	FS_INF-K															0.063	401	< 0.010				
2022-04-06	FS_INF-S															0.787	474	< 0.010				
2022-04-06	FS_BPO				< 0.23 < 0.0250						< 0.01	7.95								21.2		19.3
2022-04-06	FS_INF-K				141.6317							7.33										
2022-04-06	FS_INF-S				37.31467							7.89										
2022-04-06	FS_BPO																					18.8
2022-04-06	FR_FRABCH				25.01175																	
2022-04-07	FS_BPO				< 0.23 < 0.0250						< 0.01	7.96				0.095	16.4	< 0.010		17.8		19.3
2022-04-07	FS_INF-K				146.1327							7.36										477
2022-04-07	FS_INF-S				37.03507							7.89										586
2022-04-07	FS_BPO																					18.2
2022-04-07	FR_SCOUTDS	0.00691	14.6	14.4	27.1	0.0755	0.0627	0.0014				8.35	8.29	0.0059 < 0.050	3.04	0.423	88.5	< 0.010		105		107
2022-04-08	FS_BPO				< 0.23 0.134						< 0.01	7.96								18.8		21.0
2022-04-08	FS_INF-K				141.3883							7.34										
2022-04-08	FS_INF-S				38.86824							7.93										
2022-04-08	FS_BPO																					17.9
2022-04-09	FS_BPO				< 0.23 < 0.0250						< 0.01	7.94								23.9		23.4
2022-04-09	FS_INF-K				139.3631							7.3										
2022-04-09	FS_INF-S				38.18695							7.84										
2022-04-09	FS_BPO																					19.4
2022-04-10	FS_BPO				< 0.23 0.0303						< 0.01	7.99				0.213	19.9	< 0.010		24.1		21.9
2022-04-10	FS_INF-K				138.8682							7.47										477
2022-04-10	FS_INF-S				39.58544							8.12										604
2022-04-10	FS_BPO																					20.4
2022-04-11	FS_BPO				< 0.23 < 0.0250	< 0.0050	< 0.0050	0.0256			< 0.01	8.04	8.17	0.0477						24.0		25.9

	Parameter	Molybdenum	Nickel	Nickel	Nitrate Nitrogen (NO3), As N	Nitrite Nitrogen (NO2), As N	Nitrogen, Ammonia (As N)	Ortho-Phosphate	Ozone	Ozone	Ozone	pH, Field	pH, LAB	Phosphorus	Potassium	Se(IV) – selenite SeO3(-2)	Se(VI) – selenate SeO4(-2)	SeCN – selenocyanate SeCN(-1)	Selenium	Selenium	Selenium	Selenium
	Fraction	T	D	T	N	N	T	D	N	R	T	N	N	T	T	D	D	D	D	D	T	T
	Unit	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ph units	ph units	mg/l	mg/l	ug/l	ug/l	ug/l	mg/l	ug/l	mg/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-04-11	FS_INF-K				139.3224							7.42										
2022-04-11	FS_INF-S				38.19423							8.04										
2022-04-11	FS_BPO																					20.3
2022-04-11	FS_BPO																					
2022-04-12	FS_BPO	0.0490	8.94	9.21	< 0.23 < 0.0250						< 0.01	8.07		< 0.100	5.28	0.263	21.6	< 0.010		25.8		24.0
2022-04-12	FS_INF-K	0.00298	68.6	70.0	137.7648							7.37		< 0.100	5.86	0.065	346	< 0.010		431		424
2022-04-12	FS_INF-S	0.00532	43.8	45.1	38.20116							7.91		< 0.100	4.74	0.809	467	< 0.010		552		547
2022-04-12	FS_BPO																					22.0
2022-04-12	FR_FRABCH	0.00517	4.67	5.01	26.8 25.55059	0.0297	< 0.0050	< 0.0010				8.09	8.07	0.0039	2.46					105		112
2022-04-13	FS_BPO				< 0.23 0.0637						< 0.01	8.04								22.1		25.8
2022-04-13	FS_INF-K				159.901							7.35										
2022-04-13	FS_INF-S				40.04576							7.9										
2022-04-13	FS_BPO																					28.6
2022-04-14	FS_BPO				< 0.23 0.0554						< 0.01	8.08				0.206	21.4	< 0.010		21.1		24.0
2022-04-14	FS_INF-K				136.5056							7.398										418
2022-04-14	FS_INF-S				37.91067							7.89										560
2022-04-14	FS_BPO																					19.6
2022-04-14	FR_SCOUTDS	0.00569	13.4	13.9	27.0	0.0184	0.0086	< 0.0010				8.68	8.22	< 0.050 0.0023	2.77	0.415	108	< 0.010		111		116
2022-04-15	FS_BPO										< 0.01											
2022-04-15	FS_BPO										< 0.01											
2022-04-15	FS_BPO				< 0.23 < 0.0250						< 0.01	8.05 7.89 8.49								20.8		22.4 18.4
2022-04-15	FS_INF-K				132.4663							7.42										
2022-04-15	FS_INF-S				36.08243							7.95										
2022-04-15	FS_BPO										< 0.01											
2022-04-15	FS_BPO										< 0.01											
2022-04-15	FS_BPO										< 0.01											
2022-04-16	FS_BPO										< 0.01											
2022-04-16	FS_BPO										< 0.01											
2022-04-16	FS_BPO				< 0.23 < 0.0250						< 0.01	8.16								21.0		22.0
2022-04-16	FS_INF-K				146.1847							7.39										
2022-04-16	FS_INF-S				37.98937							7.97										
2022-04-16	FS_BPO																					20.7
2022-04-16	FS_BPO										< 0.01											
2022-04-17	FS_BPO				< 0.23 < 0.0250						< 0.01	8.21				0.258	25.6	< 0.010		27.5		29.2
2022-04-17	FS_INF-K				141.3531							7.39										388
2022-04-17	FS_INF-S				36.24678							7.95										535
2022-04-17	FS_BPO																					27.5
2022-04-18	FS_BPO				< 0.23 0.994	< 0.0050	< 0.0050	0.122			< 0.01	8.16	8.23	0.226						27.8		30.4
2022-04-18	FS_INF-K				143.2427 123	< 0.0050	< 0.0050	< 0.0010				7.34	7.79	< 0.0020								
2022-04-18	FS_INF-S				38.52772 36.6	0.0224	0.0060	< 0.0010				7.97	8.08	0.0037								
2022-04-18	FS_BPO																					27.3
2022-04-18	FS_BPO																					
2022-04-19	FS_BPO	0.0547	12.6	14.2	< 0.23 0.0397						< 0.01	8.23		0.215	6.89	0.298	29.4	< 0.010		31.5		32.8
2022-04-19	FS_INF-K	0.00140	69.1	75.7	150.4							7.47		< 0.100	6.18					404		446
2022-04-19	FS_INF-S	0.00587	45.6	48.8	43.4							7.96		< 0.100	4.83					541		555
2022-04-19	FS_BPO																					38.8
2022-04-20	FS_BPO											8.38										
2022-04-20	FR_FRABCH	0.00145	3.67	4.06	29.5	< 0.0050	0.0428	< 0.0010				8.15	8.31	0.0033	2.09					107		109
2022-04-21	FR_SCOUTDS				29.7							8.37										132
2022-04-21	FS_INF-K																					393
2022-04-21	FR_SCOUTDS	0.00316	12.4	12.4	31.2	0.0133	< 0.0050	< 0.0010					8.40	0.0074 < 0.050	2.69	0.472	128	< 0.010		132		129
2022-04-21	FS_INF-K				130							7.42										
2022-04-22	FS_BPO				< 0.23 0.129															29.4		31.4
2022-04-22	FS_INF-S																					
2022-04-22	FR_SCOUTDS											8.32										
2022-04-22	FS_BPO																					28.5
2022-04-22	FR_FRABCH				28.6																	105
2022-04-22	FR_FRABCH				29.55																	
2022-04-22	FS_BPO											8.39										
2022-04-22	FS_INF-S				38.7																	516
2022-04-22	FS_INF-S											7.83										
2022-04-22	FS_BPO											8.34										
2022-04-22	FS_BPO											8.33										
2022-04-22	FS_INF-S											7.94										
2022-04-22	FS_INF-S				36.8																	
2022-04-23	FS_BPO				< 0.23 0.492						< 0.01	8.35								31.7		32.6
2022-04-23	FS_INF-S				37.5							8.01										
2022-04-23	FS_BPO																					30.2
2022-04-23	FS_INF-S											7.95										
2022-04-24	FS_BPO				< 0.23 0.0849						< 0.01	8.32				0.409	33.1	< 0.010		33.0		35.5
2022-04-24	FS_INF-S				36.9							7.94										556
2022-04-24	FS_BPO																					31.6

	Parameter	Molybdenum	Nickel	Nickel	Nitrate Nitrogen (NO3), As N	Nitrite Nitrogen (NO2), As N	Nitrogen, Ammonia (As N)	Ortho-Phosphate	Ozone	Ozone	Ozone	pH, Field	pH, LAB	Phosphorus	Potassium	Se(IV) – selenite SeO3(-2)	Se(VI) – selenate SeO4(-2)	SeCN – selenocyanate SeCN(-1)	Selenium	Selenium	Selenium	Selenium
	Fraction	T	D	T	N	N	T	D	N	R	T	N	N	T	T	D	D	D	D	D	T	T
	Unit	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ph units	ph units	mg/l	mg/l	ug/l	ug/l	ug/l	mg/l	ug/l	mg/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-04-24	FS_INF-S											7.78										
2022-04-25	FS_BPO				< 0.23 0.198	0.0062	< 0.0050	0.0069			< 0.01	8.29	8.21	0.0727						36.0		38.4
2022-04-25	FS_INF-S				35.6							7.98										
2022-04-25	FS_BPO																					32.8
2022-04-25	FS_BPO																					
2022-04-26	FS_BPO				< 0.23 0.0723						< 0.01	8.19				0.376	34.3	< 0.010		34.1		33.8
2022-04-26	FS_INF-S	0.00494	44.0	44.8	34.5							7.98		< 0.100	4.53	0.887	461	< 0.010		504		488
2022-04-26	FS_BPO																					30.9
2022-04-27	FS_BPO				< 0.23 < 0.0250						< 0.01	8.14								28.4		29.2
2022-04-27	FS_INF-S				35.4							8.05										
2022-04-27	FS_BPO																					27.9
2022-04-28	FS_BPO				< 0.23 < 0.0250						< 0.01	8.11				0.157	20.2	< 0.010		22.8		21.5
2022-04-28	FS_INF-S				35.7							8.05										449
2022-04-28	FS_BPO																					21.0
2022-04-28	FR_SCOUTDS	0.00337	11.5	12.1	20.3	0.0091	< 0.0050	< 0.0010				8.38	8.36	< 0.050 0.0101	2.24	0.331	68.6	< 0.010		75.8		77.4 62.2
2022-04-28	FR_FRABCH				22.9																	
2022-04-29	FS_BPO				< 0.23 0.0361						< 0.01	8.17								20.1		19.8
2022-04-29	FS_INF-S				35.5							8.09										
2022-04-29	FS_BPO																					19.0
2022-04-30	FS_BPO				< 0.23 0.0477						< 0.01	8.15								17.6		17.5
2022-04-30	FS_INF-S				36							8.08										
2022-04-30	FS_BPO																					17.9
2022-05-01	FS_BPO				< 0.23 0.0565						< 0.01	8.14				0.147	13.0	< 0.010		17.3		16.0
2022-05-01	FS_INF-K											7.6										390
2022-05-01	FS_INF-S				38.8							8.14										508
2022-05-01	FS_BPO																					15.9
2022-05-01	FS_INF-K				130.4							7.43										
2022-05-01	FS_BPO											8.06										
2022-05-01	FS_BPO										< 0.01											
2022-05-02	FS_BPO				0.355	< 0.0050	< 0.0050	0.0590				8.09	8.26	0.175						18.1		17.9
2022-05-02	FS_INF-S				32.6 33.2	0.0186	0.0057	< 0.0010					8.18	0.0049								
2022-05-02	FS_BPO																					15.6
2022-05-02	FS_BPO				< 0.23						< 0.01											
2022-05-02	FS_BPO																					
2022-05-02	FS_BPO				< 0.23						< 0.01	8.1										
2022-05-02	FS_INF-S											8.03										
2022-05-03	FS_BPO	0.0488	8.51	8.60	< 0.23 1.12						< 0.01	8.23		0.189	5.26	0.207	13.9	< 0.010		17.1		17.9
2022-05-03	FS_INF-S	0.00516	44.6	44.7	31.82206							8.07		< 0.100	4.56					510		506
2022-05-03	FS_BPO																					16.0
2022-05-04	FS_BPO				< 0.23 < 0.0250						< 0.01	8.27								15.9		14.7
2022-05-04	FS_INF-S				30.52869							8.08										
2022-05-04	FS_BPO																					14.2
2022-05-05	FS_BPO				< 0.23 < 0.0250						< 0.01	8.29				0.195	13.3	< 0.010		16.4		14.6
2022-05-05	FS_INF-K				135.1296							7.59										402
2022-05-05	FS_INF-S				32.83001							8.07										504
2022-05-05	FS_BPO																					13.5
2022-05-05	FR_SCOUTDS	0.00239	8.27	8.08	7.75	< 0.0050	< 0.0050	< 0.0010				8.61	8.21	< 0.050 0.0115	1.71	0.275	63.3	< 0.010		65.5		62.8
2022-05-05	FR_FRABCH				19.45666																	
2022-05-06	FS_BPO				< 0.23 0.693						< 0.01	8.26								15.3		16.6
2022-05-06	FS_INF-K				127.6467							7.45										
2022-05-06	FS_INF-S				30.09228							8.11										
2022-05-06	FS_BPO																					13.9
2022-05-07	FS_BPO				< 0.23 0.756						< 0.01	8.12								15.6		16.7
2022-05-07	FS_INF-K				127.5336							7.45										
2022-05-07	FS_INF-S				26.0842							8.05										
2022-05-07	FS_BPO																					15.2
2022-05-07	FS_INF-S				27.14346																	
2022-05-08	FS_BPO				< 0.23 0.0688						< 0.01	8.21				0.352	14.6	< 0.010		16.0		16.4
2022-05-08	FS_INF-K				125.6637							7.46										393
2022-05-08	FS_INF-S				24.02691							8.01										395
2022-05-08	FS_BPO																					15.6
2022-05-08	FS_INF-S				23.58648																	
2022-05-08	FS_BPO											8.25										
2022-05-09	FS_INF-S				24.22743																	
2022-05-09	FS_INF-S				24.6547																	
2022-05-09	FS_BPO				< 0.23 0.500	0.0088	< 0.0050	0.0940			< 0.01	8.18	8.20	0.136						14.6		15.4
2022-05-09	FS_INF-K				125.5773							7.39										
2022-05-09	FS_INF-S				24.40727							8.09										
2022-05-09	FS_BPO																					13.6
2022-05-09	FS_BPO																					
2022-05-10	FS_INF-S				25.14618																	
2022-05-10	FS_INF-S				26.13563																	

Parameter		Molybdenum	Nickel	Nickel	Nitrate Nitrogen (NO3), As N	Nitrite Nitrogen (NO2), As N	Nitrogen, Ammonia (As N)	Ortho-Phosphate	Ozone	Ozone	Ozone	pH, Field	pH, LAB	Phosphorus	Potassium	Se(IV) – selenite SeO3(-2)	Se(VI) – selenate SeO4(-2)	SeCN – selenocyanate SeCN(-1)	Selenium	Selenium	Selenium	Selenium
Fraction		T	D	T	N	N	T	D	N	R	T	N	N	T	T	D	D	D	D	D	T	T
Unit		mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ph units	ph units	mg/l	mg/l	ug/l	ug/l	ug/l	mg/l	ug/l	mg/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-05-10	FS_BPO	0.0481	5.12	4.89	< 0.23 < 0.0250						< 0.01	8		0.160	4.20	0.301	13.3	< 0.010		14.6		13.0
2022-05-10	FS_INF-K	0.00186	60.8	59.8	125.6606							7.45		< 0.100	5.39	0.094	339	< 0.010		382		389
2022-05-10	FS_INF-S	0.00499	40.2	38.7	25.53404							7.88		< 0.100	3.72	0.696	370	< 0.010		413		429
2022-05-10	FS_BPO																					13.4
2022-05-10	FR_FRABCH				20.26379																	
2022-05-11	FS_BPO				< 0.23 < 0.0250						< 0.01	8.01								15.2		14.8
2022-05-11	FS_INF-K				138.2							7.22										
2022-05-11	FS_INF-S				27.16273							7.87										
2022-05-11	FS_BPO																					14.1
2022-05-12	FS_BPO				< 0.23 0.0585						< 0.01	7.94				0.330	13.7	< 0.010		19.1		18.8
2022-05-12	FS_INF-K				128.4908							7.19										376
2022-05-12	FS_INF-S				28.56285							7.85										433
2022-05-12	FS_BPO																					15.7
2022-05-12	FR_SCOUTDS	0.00334	9.18	8.98	18.7	0.0128	< 0.0050	0.0108				8.34	8.35	0.0171 < 0.050	2.04	0.267	63.3	< 0.010		72.5		69.1 79.3
2022-05-12	FS_INF-K				123.6921																	
2022-05-12	FS_INF-S				27.35236																	
2022-05-12	FS_INF-K				123.6692																	
2022-05-12	FS_INF-S				27.3493																	
2022-05-12	FS_INF-K				124.331																	
2022-05-12	FS_INF-S				27.49381																	
2022-05-12	FS_INF-K				127.8275																	
2022-05-12	FS_INF-S				26.95732																	
2022-05-12	FS_INF-K				122.3783																	
2022-05-12	FS_INF-S				27.53033																	
2022-05-13	FS_INF-K				124.306																	
2022-05-13	FS_INF-S				27.39788																	
2022-05-13	FS_INF-K				140.1831																	
2022-05-13	FS_INF-S				29.01515																	
2022-05-13	FS_BPO				< 0.23 < 0.0250						< 0.01	8								18.5		16.3
2022-05-13	FS_INF-K				131.1193							7.19										
2022-05-13	FS_INF-S				28.22259							7.86										
2022-05-13	FS_BPO																					20.9
2022-05-13	FS_INF-K				122.5894																	
2022-05-13	FS_INF-S				28.24095																	
2022-05-13	FS_INF-K				124.4069																	
2022-05-13	FS_INF-S				28.3715																	
2022-05-13	FS_INF-K				126.0555																	
2022-05-13	FS_INF-S				28.22745																	
2022-05-13	FS_INF-K				131.66																	
2022-05-13	FS_INF-S				28.92187																	
2022-05-13	FS_INF-K				125.0942																	
2022-05-13	FS_INF-S				28.15823																	
2022-05-14	FS_INF-K				122.329																	
2022-05-14	FS_INF-S				27.71061																	
2022-05-14	FS_INF-K				121.3335																	
2022-05-14	FS_INF-S				27.93331																	
2022-05-14	FS_BPO				< 0.23 0.341						< 0.01	8.05								21.3		19.7
2022-05-14	FS_INF-K				132.194							7.23										
2022-05-14	FS_INF-S				30.09511							7.93										
2022-05-14	FS_BPO																					18.4
2022-05-14	FS_INF-K				123.9926																	
2022-05-14	FS_INF-S				28.02636																	
2022-05-14	FS_INF-K				119.2552																	
2022-05-14	FS_INF-S				27.52353																	
2022-05-14	FS_INF-K				119.8329																	
2022-05-14	FS_INF-S				29.34203																	
2022-05-14	FS_INF-K				128.1621																	
2022-05-14	FS_INF-S				28.65875																	
2022-05-14	FS_INF-K				119.2784																	
2022-05-14	FS_INF-S				27.82938																	
2022-05-15	FS_INF-K				118.9528																	
2022-05-15	FS_INF-S				27.32809																	
2022-05-15	FS_INF-K				137.2741																	
2022-05-15	FS_INF-S				29.46496																	
2022-05-15	FS_BPO				< 0.23 0.0814						< 0.01	8.008				0.381	18.0	< 0.010		22.9		21.7
2022-05-15	FS_INF-K				133.2656							7.23										369
2022-05-15	FS_INF-S				29.62397							7.95										454
2022-05-15	FS_BPO																					18.4
2022-05-15	FS_INF-K				122.3326																	
2022-05-15	FS_INF-S				28.32032																	
2022-05-15	FS_INF-K				29.79926																	
2022-05-15	FS_INF-S				120.9028																	
2022-05-15	FS_INF-K				117.7823																	
2022-05-15	FS_INF-S				27.51609																	
2022-05-15	FS_INF-K				126.1753																	
2022-05-15	FS_INF-S				28.51081																	
2022-05-16	FS_INF-K				118.8171																	
2022-05-16	FS_INF-S				27.72213																	
2022-05-16	FS_INF-K				117.0558																	
2022-05-16	FS_INF-S				27.53047																	
2022-05-16	FS_BPO				< 0.23 < 0.0250	< 0.0050	0.0073	0.151			< 0.01	8.05	8.21	0.204						22.9		20.4

	Parameter	Molybdenum	Nickel	Nickel	Nitrate Nitrogen (NO3), As N	Nitrite Nitrogen (NO2), As N	Nitrogen, Ammonia (As N)	Ortho-Phosphate	Ozone	Ozone	Ozone	pH, Field	pH, LAB	Phosphorus	Potassium	Se(IV) – selenite SeO3(-2)	Se(VI) – selenate SeO4(-2)	SeCN – selenocyanate SeCN(-1)	Selenium	Selenium	Selenium	Selenium
	Fraction	T	D	T	N	N	T	D	N	R	T	N	N	T	T	D	D	D	D	D	T	T
	Unit	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ph units	ph units	mg/l	mg/l	ug/l	ug/l	ug/l	mg/l	ug/l	mg/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-05-16	FS_INF-K				117.3292 113	< 0.0050	< 0.0050	0.0011				7.16	7.50	< 0.0020								
2022-05-16	FS_INF-S				27.44354 28.7	0.0254	< 0.0050	< 0.0010				7.87	8.11	0.0032								
2022-05-16	FS_BPO																					18.7
2022-05-16	FS_BPO																					
2022-05-16	FS_INF-K				116.5993																	
2022-05-16	FS_INF-S				27.31973																	
2022-05-16	FS_INF-K				117.8384																	
2022-05-16	FS_INF-S				27.40517																	
2022-05-16	FS_INF-K				124.5662																	
2022-05-16	FS_INF-S				28.68339																	
2022-05-16	FS_INF-K				115.979																	
2022-05-16	FS_INF-S				27.54999																	
2022-05-16	FS_INF-K				121.9174																	
2022-05-16	FS_INF-S				27.49198																	
2022-05-17	FS_INF-K				116.1932																	
2022-05-17	FS_INF-S				27.66722																	
2022-05-17	FS_INF-K				116.9721																	
2022-05-17	FS_INF-S				27.78558																	
2022-05-17	FS_BPO	0.0506	6.35	6.79	< 0.23 0.273						< 0.01	8.06		0.446	5.58	0.377	18.7	< 0.010		21.2		22.0
2022-05-17	FS_INF-K	0.00128	61.4	57.0	126.2136							7.01		< 0.100	5.90					404		356
2022-05-17	FS_INF-S	0.00507	45.8	43.3	28.24991							7.86		< 0.100	4.60					509		453
2022-05-17	FS_BPO																					20.5
2022-05-17	FR_FRABCH	0.00178	3.58	3.89	18.6 16.98281	< 0.0050	< 0.0050	< 0.0010				7.98	8.12	0.0099	1.68					69.7		68.5
2022-05-17	FS_INF-K				116.3807																	
2022-05-17	FS_INF-S				27.75823																	
2022-05-17	FS_INF-K				115.8053																	
2022-05-17	FS_INF-S				27.79507																	
2022-05-17	FS_INF-K				115.1317																	
2022-05-17	FS_INF-S				27.80354																	
2022-05-17	FS_INF-K				123.7653																	
2022-05-17	FS_INF-S				28.81699																	
2022-05-17	FS_INF-K				112.0027																	
2022-05-17	FS_INF-S				28.17267																	
2022-05-18	FS_INF-K				113.2435																	
2022-05-18	FS_INF-S				27.49633																	
2022-05-18	FS_INF-K				121.1596																	
2022-05-18	FS_INF-S				28.30183																	
2022-05-18	FS_BPO				< 0.23 0.252						0.036344607200000 0	8.02 7.99								22.6		21.0
2022-05-18	FS_INF-K				114.7147							7.26										
2022-05-18	FS_INF-S				27.28804							7.89										
2022-05-18	FS_BPO																					22.0
2022-05-18	FS_BPO										< 0.01											
2022-05-18	FS_INF-K				113.6262																	
2022-05-18	FS_INF-S				27.18563																	
2022-05-18	FS_INF-K				117.9579																	
2022-05-18	FS_INF-S				26.27855																	
2022-05-18	FS_INF-K				111.8074																	
2022-05-18	FS_INF-S				24.86314																	
2022-05-19	FS_INF-K				110.736																	
2022-05-19	FS_INF-S				24.04694																	
2022-05-19	FS_INF-K				111.313																	
2022-05-19	FS_INF-S				24.21926																	
2022-05-19	FS_BPO				< 0.23 0.0366						< 0.01	8.1				0.263	16.8	< 0.010		19.3		20.6
2022-05-19	FS_INF-K				115.8564							7.06										340
2022-05-19	FS_INF-S				24.91541							7.8										383
2022-05-19	FS_BPO																					22.5
2022-05-19	FR_SCOUTDS	0.00158	6.76	6.80	14.3	0.0057	0.0050	< 0.0010				8.42	8.30	< 0.050 0.0038	1.59	0.207	57.0	< 0.010		68.0		62.5
2022-05-19	FS_INF-K				110.2671																	
2022-05-19	FS_INF-S				24.72382																	
2022-05-19	FS_INF-K				112.4628																	
2022-05-19	FS_INF-S				26.20927																	
2022-05-19	FS_INF-K				115.515																	
2022-05-19	FS_INF-S				25.59125																	
2022-05-19	FS_INF-K				109.195																	
2022-05-19	FS_INF-S				25.54636																	
2022-05-19	FS_INF-K				111.1105																	
2022-05-19	FS_INF-S				25.25358																	
2022-05-20	FS_INF-K				109.0417																	
2022-05-20	FS_INF-S				23.6328																	
2022-05-20	FS_INF-K				107.4425																	
2022-05-20	FS_INF-S				23.52224																	
2022-05-20	FS_BPO				< 0.23 0.341						< 0.01	8.11								21.4		20.7
2022-05-20	FS_INF-K				113.0638							7.04										
2022-05-20	FS_INF-S				22.43649							7.83										
2022-05-20	FS_BPO																					22.8
2022-05-20	FS_INF-K				106.7981																	
2022-05-20	FS_INF-S				22.9397																	
2022-05-20	FS_INF-K				108.8331																	
2022-05-20	FS_INF-S				22.5809																	
2022-05-20	FS_INF-K				111.4762																	
2022-05-20	FS_INF-S				24.26507																	

Parameter		Molybdenum	Nickel	Nickel	Nitrate Nitrogen (NO3), As N	Nitrite Nitrogen (NO2), As N	Nitrogen, Ammonia (As N)	Ortho-Phosphate	Ozone	Ozone	Ozone	pH, Field	pH, LAB	Phosphorus	Potassium	Se(IV) – selenite SeO3(-2)	Se(VI) – selenate SeO4(-2)	SeCN – selenocyanate SeCN(-1)	Selenium	Selenium	Selenium	Selenium
Fraction		T	D	T	N	N	T	D	N	R	T	N	N	T	T	D	D	D	D	D	T	T
Unit		mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ph units	ph units	mg/l	mg/l	ug/l	ug/l	ug/l	mg/l	ug/l	mg/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-05-20	FS_INF-K				114.1345																	
2022-05-20	FS_INF-S				24.89281																	
2022-05-21	FS_INF-K				109.7859																	
2022-05-21	FS_INF-S				23.84914																	
2022-05-21	FS_INF-K				108.2478																	
2022-05-21	FS_INF-S				24.14211																	
2022-05-21	FS_BPO				< 0.23 0.105						< 0.01	8.09								20.3		20.8
2022-05-21	FS_INF-K				108.4014							7.04										
2022-05-21	FS_INF-S				24.67673							7.81										
2022-05-21	FS_BPO																					16.5
2022-05-21	FS_INF-K				111.1219																	
2022-05-21	FS_INF-S				26.22738																	
2022-05-21	FS_INF-K				111.0319																	
2022-05-21	FS_INF-S				24.82279																	
2022-05-21	FS_INF-K				105.7667																	
2022-05-21	FS_INF-S				25.0441																	
2022-05-21	FS_INF-K				109.3454																	
2022-05-21	FS_INF-S				24.90586																	
2022-05-22	FS_INF-K				105.6921																	
2022-05-22	FS_INF-S				26.2578																	
2022-05-22	FS_INF-K				109.3012																	
2022-05-22	FS_INF-S				25.97548																	
2022-05-22	FS_BPO				< 0.23 0.132						< 0.01	8.14				0.320	14.1	< 0.010		17.2		16.5
2022-05-22	FS_INF-K				102.6515							7.15										350
2022-05-22	FS_INF-S				25.66844							8.03										426
2022-05-22	FS_BPO																					16.6
2022-05-22	FS_BPO				< 0.23							8.09										
2022-05-22	FS_BPO										< 0.01											
2022-05-22	FS_INF-K				101.1695																	
2022-05-22	FS_INF-S				26.00875																	
2022-05-22	FS_INF-K				102.6705																	
2022-05-22	FS_INF-S				27.28629																	
2022-05-22	FS_INF-K				109.452																	
2022-05-22	FS_INF-S				26.58509																	
2022-05-23	FS_INF-K				101.75																	
2022-05-23	FS_INF-S				25.8212																	
2022-05-23	FS_INF-K				103.1165																	
2022-05-23	FS_INF-S				26.95161																	
2022-05-23	FS_BPO				< 0.23 0.0262	0.0054	0.0806	0.158			< 0.01	8.13	8.27	0.188						17.7		18.4
2022-05-23	FS_INF-K				102.7797							7.05										
2022-05-23	FS_INF-S				26.12838							7.73										
2022-05-23	FS_BPO																					17.5
2022-05-23	FS_BPO																					
2022-05-23	FR_FRABCH				17.9399																	
2022-05-23	FS_INF-K				101.7234																	
2022-05-23	FS_INF-S				25.09966																	
2022-05-23	FS_INF-K				100.32																	
2022-05-23	FS_INF-S				27.41507																	
2022-05-23	FS_INF-K				101.8415																	
2022-05-23	FS_INF-S				26.30933																	
2022-05-23	FS_INF-K				99.17178																	
2022-05-23	FS_INF-S				26.64006																	
2022-05-23	FS_INF-K				100.04																	
2022-05-23	FS_INF-S				27.53362																	
2022-05-24	FS_INF-K				100.3937																	
2022-05-24	FS_INF-S				25.5299																	
2022-05-24	FS_INF-K				100.0233																	
2022-05-24	FS_INF-S				26.3655																	
2022-05-24	FS_BPO	0.0482	5.94	5.31	< 0.23 0.479						< 0.01	8.16		0.199	8.79	0.214	14.7	< 0.010		17.0		16.8
2022-05-24	FS_INF-K	0.00131	39.7	51.1	99.84609							7.07		< 0.050	5.42	9.29	27.6	0.515		274		371
2022-05-24	FS_INF-S	0.00477	43.2	43.3	26.39671							7.8		< 0.100	4.07	0.749	401	< 0.010		441		458
2022-05-24	FS_BPO																					16.3
2022-05-24	FR_FRABCH	0.00192	3.23	3.38	19.1	0.0056	< 0.0050	< 0.0010				8.10	8.28	0.0051	1.89					71.8		77.1
2022-05-24	FS_INF-K				99.79431																	
2022-05-24	FS_INF-S				26.42605																	
2022-05-24	FS_INF-K				98.73721																	
2022-05-24	FS_INF-S				26.86217																	
2022-05-24	FS_INF-K				98.2905																	
2022-05-24	FS_INF-S				26.90753																	
2022-05-24	FS_INF-K				99.26938																	
2022-05-24	FS_INF-S				27.5962																	
2022-05-24	FS_INF-K				97.2855																	
2022-05-24	FS_INF-S				26.57827																	
2022-05-25	FS_INF-K				97.99882																	
2022-05-25	FS_INF-S				27.07322																	
2022-05-25	FS_INF-K				106.6707																	
2022-05-25	FS_INF-S				28.38729																	
2022-05-25	FS_BPO				< 0.23 < 0.0250						< 0.01	8.13								15.8		15.6
2022-05-25	FS_INF-K				99.78837							7.02										
2022-05-25	FS_INF-S				27.26988							7.87										
2022-05-25	FS_BPO																					15.8
2022-05-25	FS_INF-K				103.5976																	
2022-05-25	FS_INF-S				27.56387																	
2022-05-25	FS_INF-K				97.2617																	

Parameter		Molybdenum	Nickel	Nickel	Nitrate Nitrogen (NO3), As N	Nitrite Nitrogen (NO2), As N	Nitrogen, Ammonia (As N)	Ortho-Phosphate	Ozone	Ozone	Ozone	pH, Field	pH, LAB	Phosphorus	Potassium	Se(IV) – selenite SeO3(-2)	Se(VI) – selenate SeO4(-2)	SeCN – selenocyanate SeCN(-1)	Selenium	Selenium	Selenium	Selenium
Fraction		T	D	T	N	N	T	D	N	R	T	N	N	T	T	D	D	D	D	D	T	T
Unit		mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ph units	ph units	mg/l	mg/l	ug/l	ug/l	ug/l	mg/l	ug/l	mg/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-05-25	FS_INF-S				27.56413																	
2022-05-25	FS_INF-K				98.30925																	
2022-05-25	FS_INF-S				27.3886																	
2022-05-25	FS_INF-K				113.752																	
2022-05-25	FS_INF-S				27.49741																	
2022-05-25	FS_INF-K				97.9387																	
2022-05-25	FS_INF-S				27.76881																	
2022-05-26	FS_INF-K				103.0016																	
2022-05-26	FS_INF-S				28.18653																	
2022-05-26	FS_INF-K				109.3505																	
2022-05-26	FS_INF-S				29.26905																	
2022-05-26	FS_BPO				< 0.23 < 0.0250						0.013991283200000	8.12				0.268	14.9	< 0.010		16.8		16.6
2022-05-26	FS_INF-K				105.834							7.01										357
2022-05-26	FS_INF-S				28.96681							7.74										479
2022-05-26	FS_BPO									< 0.01	< 0.01											
2022-05-26	FR_SCOUTDS	0.00223	4.18	4.31	9.85	0.0051	< 0.0050	< 0.0010				8.35	8.40	0.0067	1.38	0.177	39.3	< 0.010	42.0			41.4
2022-05-26	FS_INF-K				96.36325																	
2022-05-26	FS_INF-S				27.78552																	
2022-05-26	FS_INF-K				97.63221																	
2022-05-26	FS_INF-S				27.93803																	
2022-05-26	FS_INF-K				96.79093																	
2022-05-26	FS_INF-S				28.38827																	
2022-05-26	FS_INF-K				96.53079																	
2022-05-26	FS_INF-S				28.06232																	
2022-05-26	FS_INF-K				96.82615																	
2022-05-26	FS_INF-S				27.87471																	
2022-05-27	FS_INF-K				95.58591																	
2022-05-27	FS_INF-S				28.03568																	
2022-05-27	FS_INF-K				95.86898																	
2022-05-27	FS_INF-S				28.98352																	
2022-05-27	FS_BPO				< 0.23 0.112						< 0.01	8.1								18.0		18.3
2022-05-27	FS_INF-K				102.3451							7.01										
2022-05-27	FS_INF-S				25.12106							7.65										
2022-05-27	FS_INF-K				96.86796																	
2022-05-27	FS_INF-S				22.21046																	
2022-05-27	FS_INF-K				95.6679																	
2022-05-27	FS_INF-S				22.20058																	
2022-05-27	FS_INF-K				94.65812																	
2022-05-27	FS_INF-S				23.0413																	
2022-05-27	FS_INF-K				95.20226																	
2022-05-27	FS_INF-S				22.98339																	
2022-05-27	FS_INF-K				93.98748																	
2022-05-27	FS_INF-S				23.70665																	
2022-05-28	FS_INF-K				96.83132																	
2022-05-28	FS_INF-S				24.91559																	
2022-05-28	FS_INF-K				95.7084																	
2022-05-28	FS_INF-S				24.67788																	
2022-05-28	FS_BPO				< 0.23 < 0.0250						< 0.01	8.1								20.9		23.8
2022-05-28	FS_INF-K				99.89327							7.01										
2022-05-28	FS_INF-S				25.50035							7.69										
2022-05-28	FS_INF-K				93.46293																	
2022-05-28	FS_INF-S				24.72952																	
2022-05-28	FS_INF-K				94.06351																	
2022-05-28	FS_INF-S				24.95399																	
2022-05-28	FS_INF-K				94.7713																	
2022-05-28	FS_INF-S				24.68997																	
2022-05-28	FS_INF-K				103.2419																	
2022-05-28	FS_INF-S				27.40964																	
2022-05-28	FS_INF-K				95.98862																	
2022-05-28	FS_INF-S				25.58189																	
2022-05-29	FS_INF-K				99.79132																	
2022-05-29	FS_INF-S				26.49383																	
2022-05-29	FS_INF-K				100.9889																	
2022-05-29	FS_INF-S				26.90185																	
2022-05-29	FS_BPO				< 0.23 0.322						< 0.01	8.13				0.416	17.2	< 0.010		24.0		23.4
2022-05-29	FS_INF-K				95.03853							7.02										340
2022-05-29	FS_INF-S				25.86569							7.66										424
2022-05-29	FS_BPO											8.12										
2022-05-29	FS_INF-K				98.71403																	
2022-05-29	FS_INF-S				26.04595																	
2022-05-29	FS_INF-K				95.04139																	
2022-05-29	FS_INF-S				26.7294																	
2022-05-29	FS_INF-K				95.35775																	
2022-05-29	FS_INF-S				26.99355																	
2022-05-29	FS_INF-K				95.91302																	
2022-05-29	FS_INF-S				27.75822																	
2022-05-29	FS_INF-K				99.5364																	
2022-05-29	FS_INF-S				26.7971																	
2022-05-30	FS_INF-K				96.46712																	
2022-05-30	FS_INF-S				28.19324																	
2022-05-30	FS_BPO				< 0.23 0.0296	< 0.0050	0.0729	0.102			< 0.01	8.09	8.28	0.149						22.2		20.1
2022-05-30	FS_INF-K				91.84344 88.8	< 0.0050	< 0.0050	< 0.0010				7.24 7.01	7.70	< 0.0020								

Parameter		Molybdenum	Nickel	Nickel	Nitrate Nitrogen (NO3), As N	Nitrite Nitrogen (NO2), As N	Nitrogen, Ammonia (As N)	Ortho-Phosphate	Ozone	Ozone	Ozone	pH, Field	pH, LAB	Phosphorus	Potassium	Se(IV) – selenite SeO3(-2)	Se(VI) – selenate SeO4(-2)	SeCN – selenocyanate SeCN(-1)	Selenium	Selenium	Selenium	Selenium
Fraction		T	D	T	N	N	T	D	N	R	T	N	N	T	T	D	D	D	D	D	T	T
Unit		mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ph units	ph units	mg/l	mg/l	ug/l	ug/l	ug/l	mg/l	ug/l	mg/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-05-30	FS_INF-S				26.96131 27.6	0.0162	< 0.0050	0.0010				7.67	7.98	0.0052								
2022-05-30	FS_BPO																					
2022-05-30	FS_INF-K				87.92308																	
2022-05-30	FS_INF-S				26.77363																	
2022-05-30	FS_INF-K				91.23235																	
2022-05-30	FS_INF-S				26.49171																	
2022-05-30	FS_INF-K				96.73872																	
2022-05-30	FS_INF-S				< 0.23																	
2022-05-30	FS_INF-K				94.52862																	
2022-05-30	FS_INF-S				26.48164																	
2022-05-30	FS_INF-K				92.04253																	
2022-05-30	FS_INF-S				26.81091																	
2022-05-31	FS_INF-K				90.41109																	
2022-05-31	FS_INF-S				26.52262																	
2022-05-31	FS_INF-K				90.19796																	
2022-05-31	FS_INF-S				26.5815																	
2022-05-31	FS_BPO	0.0473	5.16	5.37	< 0.23 0.0366						< 0.01	8.12			5.04	0.379	15.3	< 0.010		18.2		17.8
2022-05-31	FS_INF-K	0.00151	47.3	47.6	90.8146							7.02			5.41				400			342
2022-05-31	FS_INF-S	0.00460	47.0	46.5	26.83543							7.55			4.34				500			456
2022-05-31	FR_FRABCH	0.00146	1.96	2.31	11.2	0.0065	< 0.0050	< 0.0010				7.99	8.15	0.0125	1.41					44.4		46.9
2022-05-31	FR_FRABCH				11.32911																	
2022-05-31	FS_INF-K				90.44592																	
2022-05-31	FS_INF-S				26.76405																	
2022-05-31	FS_INF-K				90.13962																	
2022-05-31	FS_INF-S				26.63064																	
2022-05-31	FS_INF-K				91.34834																	
2022-05-31	FS_INF-S				27.71731																	
2022-05-31	FS_INF-K				89.11503																	
2022-05-31	FS_INF-S				27.23942																	
2022-06-01	FS_INF-K				90.59045																	
2022-06-01	FS_INF-S				27.4881																	
2022-06-01	FS_BPO				< 0.23 0.135						< 0.01	8.13								19.3		18.2
2022-06-01	FS_INF-K				91.71994							7.02										
2022-06-01	FS_INF-S				27.70385							7.51										
2022-06-01	FS_INF-K				93.73595																	
2022-06-01	FS_INF-S				27.46924																	
2022-06-01	FS_INF-K				89.59457																	
2022-06-01	FS_INF-S				27.54072																	
2022-06-01	FS_INF-K				92.82227																	
2022-06-01	FS_INF-S				28.75544																	
2022-06-01	FS_INF-K				91.06335																	
2022-06-01	FS_INF-S				30.1772																	
2022-06-01	FS_INF-K				91.46129																	
2022-06-01	FS_INF-S				29.08471																	
2022-06-02	FS_INF-K				96.06297																	
2022-06-02	FS_INF-S				29.01938																	
2022-06-02	FS_INF-K				90.21857																	
2022-06-02	FS_INF-S				29.38038																	
2022-06-02	FS_BPO				< 0.23 0.0489						< 0.01	8.05				0.345	14.6	0.011		19.4		17.3
2022-06-02	FS_INF-K				89.88293							6.98										330
2022-06-02	FS_INF-S				28.92747							7.39										453
2022-06-02	FR_SCOUTDS	0.00173	3.06	2.79	6.18	0.0025	< 0.0050	0.0013				8.23	8.26	0.0097	1.00	0.109	23.7	< 0.010	29.4			24.4
2022-06-02	FS_INF-K				89.94826																	
2022-06-02	FS_INF-S				28.74043																	
2022-06-02	FS_INF-K				89.46214																	
2022-06-02	FS_INF-S				28.7488																	
2022-06-02	FS_INF-K				92.08655																	
2022-06-02	FS_INF-S				28.91356																	
2022-06-02	FS_BPO											8.22										
2022-06-02	FS_INF-K				88.52231																	
2022-06-02	FS_INF-S				29.59265																	
2022-06-02	FS_INF-K				84.28236																	
2022-06-02	FS_INF-S				28.2418																	
2022-06-03	FS_INF-K				84.20269																	
2022-06-03	FS_INF-S				28.4185																	
2022-06-03	FS_INF-K				83.99587																	
2022-06-03	FS_INF-S				28.51289																	
2022-06-03	FS_BPO				< 0.23 0.104						< 0.01	8.12								20.0		18.2
2022-06-03	FS_INF-K				89.003							7.37										
2022-06-03	FS_INF-S				29.17978							6.98										
2022-06-03	FS_INF-K				83.81777																	
2022-06-03	FS_INF-S				28.92222																	
2022-06-03	FS_INF-K				87.48682																	
2022-06-03	FS_INF-S				29.68114																	
2022-06-03	FS_INF-K				84.55279																	
2022-06-03	FS_INF-S				29.18592																	
2022-06-03	FS_INF-K				83.1301																	
2022-06-03	FS_INF-S				29.35192																	
2022-06-04	FS_INF-K				82.88309																	
2022-06-04	FS_INF-S				29.4689																	
2022-06-04	FS_INF-K				82.16175																	
2022-06-04	FS_INF-S				29.36808																	
2022-06-04	FS_BPO				< 0.23 < 0.0250						< 0.01	8.18								8.52		16.4

Parameter		Molybdenum	Nickel	Nickel	Nitrate Nitrogen (NO3), As N	Nitrite Nitrogen (NO2), As N	Nitrogen, Ammonia (As N)	Ortho-Phosphate	Ozone	Ozone	Ozone	pH, Field	pH, LAB	Phosphorus	Potassium	Se(IV) – selenite SeO3(-2)	Se(VI) – selenate SeO4(-2)	SeCN – selenocyanate SeCN(-1)	Selenium	Selenium	Selenium	Selenium
Fraction		T	D	T	N	N	T	D	N	R	T	N	N	T	T	D	D	D	D	D	T	T
Unit		mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ph units	ph units	mg/l	mg/l	ug/l	ug/l	ug/l	mg/l	ug/l	mg/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-06-04	FS_INF-K				82.82635							7.01										
2022-06-04	FS_INF-S				29.76636							7.43										
2022-06-04	FS_INF-K				87.74364																	
2022-06-04	FS_INF-S				30.29323																	
2022-06-04	FS_INF-K				86.55392																	
2022-06-04	FS_INF-S				31.27768																	
2022-06-04	FS_INF-K				83.03057																	
2022-06-04	FS_INF-S				30.21951																	
2022-06-04	FS_INF-K				78.07598																	
2022-06-04	FS_INF-S				29.03672																	
2022-06-04	FS_INF-K				78.41586																	
2022-06-04	FS_INF-S				29.13192																	
2022-06-05	FS_INF-K				77.60132																	
2022-06-05	FS_INF-S				29.11815																	
2022-06-05	FS_INF-K				76.39469																	
2022-06-05	FS_INF-S				29.39733																	
2022-06-05	FS_BPO				< 0.23 0.136						< 0.01	8.07				0.273	13.2	< 0.010		16.1		15.6
2022-06-05	FS_INF-K				80.40147							6.94										288
2022-06-05	FS_INF-S				30.0576							7.4										472
2022-06-05	FS_INF-K				79.66454																	
2022-06-05	FS_INF-S				29.84183																	
2022-06-05	FS_INF-K				78.09767																	
2022-06-05	FS_INF-S				30.22563																	
2022-06-05	FS_INF-K				83.8197																	
2022-06-05	FS_INF-S				30.2242																	
2022-06-05	FS_INF-K				80.45773																	
2022-06-05	FS_INF-S				29.76012																	
2022-06-05	FS_INF-K				74.66801																	
2022-06-05	FS_INF-S				29.66964																	
2022-06-06	FS_INF-K				73.13411																	
2022-06-06	FS_INF-S				29.50463																	
2022-06-06	FS_INF-K				72.77908																	
2022-06-06	FS_INF-S				29.10439																	
2022-06-06	FS_BPO				< 0.23 < 0.0250	< 0.0050	< 0.0050	0.0721			< 0.01	8.07	8.34	0.115						16.4		16.9
2022-06-06	FS_INF-K				74.23601							6.94										
2022-06-06	FS_INF-S				28.19907							7.32										
2022-06-06	FS_BPO																					
2022-06-06	FS_INF-K				72.77816																	
2022-06-06	FS_INF-S				26.72416																	
2022-06-06	FS_INF-K				76.87512																	
2022-06-06	FS_INF-S				26.52117																	
2022-06-06	FS_INF-K				71.19898																	
2022-06-06	FS_INF-S				26.4511																	
2022-06-06	FS_INF-K				70.66015																	
2022-06-06	FS_INF-S				26.05029																	
2022-06-07	FS_INF-K				69.44144																	
2022-06-07	FS_INF-S				26.72471																	
2022-06-07	FS_INF-K				69.57738																	
2022-06-07	FS_INF-S				27.01697																	
2022-06-07	FS_BPO	0.0470	5.49	5.73	< 0.23 < 0.0250						< 0.01	7.9			7.02	0.295	11.9	< 0.010		16.6		13.7
2022-06-07	FS_INF-K	0.00164	36.2	36.2	69.64795							7.91			4.80	0.082	248	< 0.010	303			292
2022-06-07	FS_INF-S	0.00454	44.0	44.0	27.43054							7.96			4.07	0.598	359	< 0.010	447			429
2022-06-07	FR_FRABCH	0.00120	1.54	2.98	9.09	0.0014	< 0.0050	< 0.0010				7.98	8.08	0.0305	1.26	0.079	29.8	< 0.010		33.3 28.6		34.5 28.3
2022-06-07	FS_INF-K				69.11078																	
2022-06-07	FS_INF-S				28.66292																	
2022-06-07	FS_INF-K				69.12847																	
2022-06-07	FS_INF-S				28.2368																	
2022-06-07	FS_INF-K				69.29435																	
2022-06-07	FS_INF-S				28.58508																	
2022-06-07	FS_INF-K				68.99531																	
2022-06-07	FS_INF-S				27.63045																	
2022-06-07	FS_INF-K				69.28448																	
2022-06-07	FS_INF-S				28.84907																	
2022-06-08	FS_INF-K				68.21006																	
2022-06-08	FS_INF-S				29.6319																	
2022-06-08	FS_INF-K				69.15627																	
2022-06-08	FS_INF-S				29.60214																	
2022-06-08	FS_BPO				< 0.23 < 0.0250						< 0.01	7.96								16.6		13.9
2022-06-08	FS_INF-K				69.32155							6.93										
2022-06-08	FS_INF-S				28.65728							7.33										
2022-06-08	FS_INF-K				67.58938																	
2022-06-08	FS_INF-S				29.65229																	
2022-06-08	FS_INF-K				72.84414																	
2022-06-08	FS_INF-S				29.07733																	
2022-06-08	FS_INF-K				68.00623																	
2022-06-08	FS_INF-S				29.52924																	
2022-06-08	FS_INF-K				69.86491																	
2022-06-08	FS_INF-S				30.60545																	
2022-06-08	FS_INF-K				69.35175																	
2022-06-08	FS_INF-S				30.37942																	
2022-06-09	FS_INF-K				72.76929																	
2022-06-09	FS_INF-S				31.19214																	
2022-06-09	FS_INF-K				74.02899																	
2022-06-09	FS_INF-S				32.2134																	

Parameter		Molybdenum	Nickel	Nickel	Nitrate Nitrogen (NO3), As N	Nitrite Nitrogen (NO2), As N	Nitrogen, Ammonia (As N)	Ortho-Phosphate	Ozone	Ozone	Ozone	pH, Field	pH, LAB	Phosphorus	Potassium	Se(IV) – selenite SeO3(-2)	Se(VI) – selenate SeO4(-2)	SeCN – selenocyanate SeCN(-1)	Selenium	Selenium	Selenium	Selenium
Fraction		T	D	T	N	N	T	D	N	R	T	N	N	T	T	D	D	D	D	D	T	T
Unit		mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ph units	ph units	mg/l	mg/l	ug/l	ug/l	ug/l	mg/l	ug/l	mg/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-06-09	FS_BPO				< 0.23 0.0413						< 0.01	8.03				0.358	11.4	< 0.010		14.0		14.1
2022-06-09	FS_INF-K				74.09073							6.97										254
2022-06-09	FS_INF-S				32.02305							7.34										522
2022-06-09	FR_SCOUTDS	0.00131	2.12	2.54	2.00	0.0010	< 0.0050	< 0.0010				8.08	7.97	0.0177	0.890	0.079	15.9	< 0.010	17.6			16.0
2022-06-09	FS_INF-K				69.213																	
2022-06-09	FS_INF-S				31.60929																	
2022-06-09	FR_FRABCH				9.72635																	
2022-06-09	FS_INF-K				69.4542																	
2022-06-09	FS_INF-S				31.19553																	
2022-06-09	FS_INF-K				71.42393																	
2022-06-09	FS_INF-S				32.85076																	
2022-06-09	FS_INF-K				67.86446																	
2022-06-09	FS_INF-S				31.48274																	
2022-06-09	FS_INF-K				69.68816																	
2022-06-09	FS_INF-S				31.8443																	
2022-06-10	FS_INF-K				66.77805																	
2022-06-10	FS_INF-S				32.07505																	
2022-06-10	FS_INF-K				67.22984																	
2022-06-10	FS_INF-S				32.62358																	
2022-06-10	FS_BPO				< 0.23 0.0363						< 0.01	8.32								14.5		13.7
2022-06-10	FS_INF-K				64.76055							7.28										
2022-06-10	FS_INF-S				32.2994							7.71										
2022-06-10	FS_INF-K				66.30658																	
2022-06-10	FS_INF-S				32.69741																	
2022-06-10	FS_INF-K				67.04165																	
2022-06-10	FS_INF-S				34.38004																	
2022-06-10	FS_INF-K				63.49911																	
2022-06-10	FS_INF-S				33.14996																	
2022-06-10	FS_INF-K				61.97525																	
2022-06-10	FS_INF-S				33.16229																	
2022-06-10	FS_INF-K				61.93655																	
2022-06-10	FS_INF-S				33.60699																	
2022-06-11	FS_INF-K				61.13158																	
2022-06-11	FS_INF-S				32.93754																	
2022-06-11	FS_INF-K				64.80333																	
2022-06-11	FS_INF-S				33.58717																	
2022-06-11	FS_BPO				< 0.23 0.128						< 0.01	8.25								15.0		14.4
2022-06-11	FS_INF-K				59.82365							7.23										
2022-06-11	FS_INF-S				33.03405							7.76										
2022-06-11	FS_INF-K				58.50546																	
2022-06-11	FS_INF-S				33.03596																	
2022-06-11	FS_INF-K				57.94973																	
2022-06-11	FS_INF-S				33.16471																	
2022-06-11	FS_INF-K				58.02228																	
2022-06-11	FS_INF-S				33.19419																	
2022-06-11	FS_INF-K				59.80059																	
2022-06-11	FS_INF-S				33.16154																	
2022-06-12	FS_INF-K				55.94876																	
2022-06-12	FS_INF-S				32.64495																	
2022-06-12	FS_INF-K				55.87236																	
2022-06-12	FS_INF-S				32.77249																	
2022-06-12	FS_BPO				< 0.23 0.218						< 0.01	8.31				0.437	14.2	< 0.010		16.8		16.8
2022-06-12	FS_INF-K				56.8349							7.33										179
2022-06-12	FS_INF-S				32.81686							7.6										453
2022-06-12	FS_INF-K				54.13924																	
2022-06-12	FS_INF-S				32.8656																	
2022-06-12	FS_INF-K				53.19287																	
2022-06-12	FS_INF-S				32.9301																	
2022-06-12	FS_INF-K				52.85105																	
2022-06-12	FS_INF-S				33.08497																	
2022-06-12	FS_INF-K				53.40503																	
2022-06-12	FS_INF-S				32.82547																	
2022-06-12	FS_INF-K				51.45401																	
2022-06-12	FS_INF-S				33.07894																	
2022-06-13	FS_INF-K				50.69261																	
2022-06-13	FS_INF-S				32.99793																	
2022-06-13	FS_INF-K				51.51692																	
2022-06-13	FS_INF-S				33.30848																	
2022-06-13	FS_BPO				< 0.23 0.254	< 0.0050	0.0088	0.0713			< 0.01	8.36	8.29	0.122						17.5		16.6
2022-06-13	FS_INF-K				49.93312 49.2	< 0.0050	< 0.0050	< 0.0010				7.31	7.71	0.0024								
2022-06-13	FS_INF-S				33.35495 34.9	0.0225	< 0.0050	< 0.0010				7.58	8.01	0.0055								
2022-06-13	FS_BPO																					
2022-06-13	FS_INF-K				48.21542																	
2022-06-13	FS_INF-S				33.08251																	
2022-06-13	FS_INF-K				48.05264																	
2022-06-13	FS_INF-S				32.89																	
2022-06-13	FS_INF-K				47.18255																	
2022-06-13	FS_INF-S				32.37988																	
2022-06-13	FS_INF-K				45.65037																	
2022-06-13	FS_INF-S				32.2097																	
2022-06-13	FS_INF-K				49.03106																	
2022-06-13	FS_INF-S				31.83194																	

Parameter		Molybdenum	Nickel	Nickel	Nitrate Nitrogen (NO3), As N	Nitrite Nitrogen (NO2), As N	Nitrogen, Ammonia (As N)	Ortho-Phosphate	Ozone	Ozone	Ozone	pH, Field	pH, LAB	Phosphorus	Potassium	Se(IV) – selenite SeO3(-2)	Se(VI) – selenate SeO4(-2)	SeCN – selenocyanate SeCN(-1)	Selenium	Selenium	Selenium	Selenium
Fraction		T	D	T	N	N	T	D	N	R	T	N	N	T	T	D	D	D	D	D	T	T
Unit		mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ph units	ph units	mg/l	mg/l	ug/l	ug/l	ug/l	mg/l	ug/l	mg/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-06-14	FS_BPO				< 0.23						< 0.01	8.39										
2022-06-14	FR_FRABCH	0.00114	2.38	3.99	11.9	0.0024	0.0067	0.0040				7.97	8.11	0.0241	1.35					43.0		48.3
2022-06-14	FS_BPO											8.4										
2022-06-14	FR_FRABCH				10.89644																	
2022-06-14	FS_BPO											8.37										
2022-06-14	FS_BPO				< 0.23						0.042413342800000	8.17										
2022-06-14	FS_INF-K				45.8764							6.97										
2022-06-14	FS_INF-S				32.2482							7.37										
2022-06-14	FS_BPO				0.178											0.471	13.6	< 0.010		18.1		14.0
2022-06-14	FS_INF-K	0.00298	23.3	23.2											3.52	0.112	151	< 0.010		167		168
2022-06-14	FS_INF-S	0.00504	49.2	46.7											4.00	0.612	408	< 0.010		468		426
2022-06-15	FS_BPO											8.47										
2022-06-15	FS_BPO											8.14										
2022-06-15	FS_INF-K				44.0111																	
2022-06-15	FS_INF-S				34.6257																	
2022-06-15	FS_BPO				< 0.23 0.168						< 0.01	8.15								14.6		16.7
2022-06-15	FS_INF-K				42.68029							7.07										
2022-06-15	FS_INF-S				36.0281							7.33										
2022-06-15	FS_INF-K				40.9401																	
2022-06-15	FS_INF-S				35.45299																	
2022-06-15	FS_BPO											8.15										
2022-06-15	FS_INF-K				41.59296																	
2022-06-15	FS_INF-S				34.09901																	
2022-06-15	FS_INF-K				40.32373																	
2022-06-15	FS_INF-S				34.55578																	
2022-06-15	FS_INF-K				40.43317																	
2022-06-15	FS_INF-S				36.95506																	
2022-06-15	FS_INF-K				39.71597																	
2022-06-15	FS_INF-S				37.1304																	
2022-06-16	FS_INF-K				40.96825																	
2022-06-16	FS_INF-S				38.32659																	
2022-06-16	FS_INF-K				39.28104																	
2022-06-16	FS_INF-S				37.85425																	
2022-06-16	FS_BPO				< 0.23 0.469						< 0.01	8.08				0.674	22.1	< 0.010		26.7		29.2
2022-06-16	FS_INF-K				38.32852							7.02										171
2022-06-16	FS_INF-S				38.37658							7.31										462
2022-06-16	FR_SCOUTDS	0.00149	2.96	3.24	5.27	0.0136	0.0106	0.0048				8.19	8.24	0.0133	0.997	0.124	22.1	< 0.010	22.4			23.4
2022-06-16	FS_INF-K				38.46064																	
2022-06-16	FS_INF-S				38.26733																	
2022-06-16	FR_SCOUTDS																					
2022-06-16	FS_INF-K				38.03198																	
2022-06-16	FS_INF-S				37.80723																	
2022-06-16	FS_INF-K				39.65439																	
2022-06-16	FS_INF-S				38.90853																	
2022-06-16	FS_INF-K				37.39013																	
2022-06-16	FS_INF-S				38.52771																	
2022-06-16	FS_INF-K				36.99681																	
2022-06-16	FS_INF-S				40.95683																	
2022-06-17	FS_INF-K				36.75077																	
2022-06-17	FS_INF-S				39.43996																	
2022-06-17	FS_INF-K				36.95412																	
2022-06-17	FS_INF-S				39.47153																	
2022-06-17	FS_BPO				< 0.23 0.130						< 0.01	7.78								19.8		19.8
2022-06-17	FS_INF-K				36.77757							6.99										
2022-06-17	FS_INF-S				38.7095							7.28										
2022-06-17	FS_INF-K				38.20263																	
2022-06-17	FS_INF-S				39.51394																	
2022-06-17	FS_INF-S				38.34039																	
2022-06-17	FS_INF-S				37.74258																	
2022-06-17	FS_INF-S				38.08466																	
2022-06-18	FS_INF-S				38.18739																	
2022-06-18	FS_INF-S				39.03643																	
2022-06-18	FS_BPO				< 0.23 0.0589						< 0.01	7.99								16.8		17.0
2022-06-18	FS_INF-S				38.08637							7.35										
2022-06-18	FS_INF-S				38.45513																	
2022-06-18	FS_INF-S				37.87165																	
2022-06-18	FS_INF-S				38.42644																	
2022-06-18	FS_INF-S				38.12982																	
2022-06-18	FS_INF-S				38.04491																	
2022-06-19	FS_INF-S				37.4925																	
2022-06-19	FS_INF-S				36.3816																	
2022-06-19	FS_BPO				< 0.23 < 0.0250						< 0.01	8.07				0.587	12.6	< 0.010		14.8		14.7
2022-06-19	FS_INF-S				37.3056							7.33										430
2022-06-19	FS_INF-K				32.36849																	
2022-06-19	FS_INF-S				36.84107																	
2022-06-19	FS_INF-S				36.67983																	
2022-06-19	FS_INF-S				35.98884																	
2022-06-19	FS_INF-S				35.36065																	
2022-06-20	FS_INF-S				35.62566																	
2022-06-20	FS_INF-S				35.78662																	
2022-06-20	FS_BPO				< 0.23 0.276	< 0.0050	0.0073	0.0544			< 0.01	8.07	8.23	0.103						15.1		14.8
2022-06-20	FS_INF-K											7.03										

Parameter		Molybdenum	Nickel	Nickel	Nitrate Nitrogen (NO3), As N	Nitrite Nitrogen (NO2), As N	Nitrogen, Ammonia (As N)	Ortho-Phosphate	Ozone	Ozone	Ozone	pH, Field	pH, LAB	Phosphorus	Potassium	Se(IV) – selenite SeO3(-2)	Se(VI) – selenate SeO4(-2)	SeCN – selenocyanate SeCN(-1)	Selenium	Selenium	Selenium	Selenium
Fraction		T	D	T	N	N	T	D	N	R	T	N	N	T	T	D	D	D	D	D	T	T
Unit		mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ph units	ph units	mg/l	mg/l	ug/l	ug/l	ug/l	mg/l	ug/l	mg/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-06-20	FS_INF-S				35.72023							7.35										
2022-06-20	FS_BPO																					
2022-06-20	FS_INF-S				35.76141																	
2022-06-20	FS_INF-S				35.18185																	
2022-06-20	FS_INF-S				35.3431																	
2022-06-20	FS_INF-S				34.89636																	
2022-06-21	FS_INF-S				35.3087																	
2022-06-21	FS_INF-S				34.63838																	
2022-06-21	FS_BPO	0.0454	8.32	8.11	< 0.23 0.196						< 0.01	8.04			4.94	0.462	13.4	< 0.010		15.0		13.6
2022-06-21	FS_INF-S	0.00558	46.4	47.1	34.43119							7.31			4.27	0.678	379	< 0.010		430		411
2022-06-21	FR_FRABCH	0.00122	2.60	4.78	10.2 9.00744	0.0022	0.0086	0.0034				7.83	8.31	0.0314	1.31					30.4		40.6
2022-06-21	FS_INF-S				34.7282																	
2022-06-21	FS_INF-S				35.60625																	
2022-06-21	FS_INF-S				34.45423																	
2022-06-21	FS_INF-S				34.50997																	
2022-06-21	FS_INF-S				35.08783																	
2022-06-22	FS_INF-S				35.28376																	
2022-06-22	FS_INF-S				35.42411																	
2022-06-22	FS_BPO				< 0.23 < 0.0250						< 0.01	8.02								14.5		13.5
2022-06-22	FS_INF-S				35.40973							7.46										
2022-06-22	FS_INF-K				35.47598							7.1										
2022-06-22	FS_INF-S				35.20871																	
2022-06-22	FS_INF-K				35.37332																	
2022-06-22	FS_INF-S				34.986																	
2022-06-22	FS_INF-K				33.29464																	
2022-06-22	FS_INF-S				36.49146																	
2022-06-22	FS_INF-K				35.04669																	
2022-06-22	FS_INF-S				35.86597																	
2022-06-22	FS_INF-K				34.05576																	
2022-06-22	FS_INF-S				36.22422																	
2022-06-23	FS_INF-K				34.79238																	
2022-06-23	FS_INF-S				36.60318																	
2022-06-23	FS_INF-K				33.5359																	
2022-06-23	FS_INF-S				36.12366																	
2022-06-23	FS_BPO				< 0.23 0.0283						< 0.01	8				0.619	10.9	0.016		15.3		13.7
2022-06-23	FS_INF-K				32.25826							7.1										141
2022-06-23	FS_INF-S				35.78758							7.37										427
2022-06-23	FR_SCOUTDS	0.00131	2.35	2.44	3.41	< 0.0010	< 0.0050	0.0046				8.11	8.15	0.0166	0.878	0.096	12.7	< 0.010	13.7			13.7
2022-06-23	FS_INF-K				31.55592																	
2022-06-23	FS_INF-S				36.21818																	
2022-06-23	FS_INF-K				31.47362																	
2022-06-23	FS_INF-S				36.99189																	
2022-06-23	FS_INF-K				29.84015																	
2022-06-23	FS_INF-S				37.81017																	
2022-06-23	FS_INF-K				29.97881																	
2022-06-23	FS_INF-S				37.5086																	
2022-06-24	FS_INF-K				28.82879																	
2022-06-24	FS_INF-S				37.24157																	
2022-06-24	FS_INF-K				28.79204																	
2022-06-24	FS_INF-S				36.82633																	
2022-06-24	FS_BPO				< 0.23 0.132						< 0.01	7.97 7.84								15.0		16.2
2022-06-24	FS_INF-K				29.60882							6.96 7.18										
2022-06-24	FS_INF-S				37.31197							7.42 7.27										
2022-06-24	FS_INF-K				28.90394																	
2022-06-24	FS_INF-S				37.31052																	
2022-06-24	FS_INF-K				27.71241																	
2022-06-24	FS_INF-S				37.2553																	
2022-06-24	FS_INF-K				28.14647																	
2022-06-24	FS_INF-S				37.69832																	
2022-06-24	FS_INF-K				27.0181																	
2022-06-24	FS_INF-S				37.86568																	
2022-06-24	FS_INF-K				26.59139																	
2022-06-24	FS_INF-S				37.59531																	
2022-06-25	FS_INF-K				26.06356																	
2022-06-25	FS_INF-S				38.46043																	
2022-06-25	FS_INF-K				25.5674																	
2022-06-25	FS_INF-S				38.07276																	
2022-06-25	FS_BPO				< 0.23 0.0902						< 0.01	8.01								17.2		17.2
2022-06-25	FS_INF-K				24.68736							7.11										
2022-06-25	FS_INF-S				37.91655							7.39										
2022-06-25	FS_INF-K				25.45037																	
2022-06-25	FS_INF-S				37.64731																	
2022-06-25	FS_INF-K				24.71316																	
2022-06-25	FS_INF-S				38.56818																	
2022-06-25	FS_INF-K				25.4858																	
2022-06-25	FS_INF-S				39.24253																	
2022-06-25	FS_INF-K				24.46405																	
2022-06-25	FS_INF-S				39.26308																	
2022-06-25	FS_INF-K				24.62896																	
2022-06-25	FS_INF-S				39.50048																	
2022-06-26	FS_INF-K				24.26333																	

Parameter		Molybdenum	Nickel	Nickel	Nitrate Nitrogen (NO3), As N	Nitrite Nitrogen (NO2), As N	Nitrogen, Ammonia (As N)	Ortho-Phosphate	Ozone	Ozone	Ozone	pH, Field	pH, LAB	Phosphorus	Potassium	Se(IV) – selenite SeO3(-2)	Se(VI) – selenate SeO4(-2)	SeCN – selenocyanate SeCN(-1)	Selenium	Selenium	Selenium	Selenium
Fraction		T	D	T	N	N	T	D	N	R	T	N	N	T	T	D	D	D	D	D	T	T
Unit		mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ph units	ph units	mg/l	mg/l	ug/l	ug/l	ug/l	mg/l	ug/l	mg/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-06-26	FS_INF-S				39.42709																	
2022-06-26	FS_INF-K				23.99882																	
2022-06-26	FS_INF-S				39.25121																	
2022-06-26	FS_BPO				< 0.23 0.467						< 0.01	8.07				0.767	10.7	0.015		13.2		13.8
2022-06-26	FS_INF-K				24.32827							7.08										98.8
2022-06-26	FS_INF-S				40.29186							7.35										429
2022-06-26	FS_INF-K				23.9041																	
2022-06-26	FS_INF-S				39.66861																	
2022-06-26	FS_INF-K				23.6753																	
2022-06-26	FS_INF-S				39.43471																	
2022-06-26	FS_INF-K				23.83188																	
2022-06-26	FS_INF-S				40.12241																	
2022-06-26	FS_INF-K				23.91297																	
2022-06-26	FS_INF-S				39.67846																	
2022-06-26	FS_INF-K				24.31271																	
2022-06-26	FS_INF-S				40.2759																	
2022-06-27	FS_INF-K				24.25348																	
2022-06-27	FS_INF-S				40.04727																	
2022-06-27	FS_INF-K				24.37729																	
2022-06-27	FS_INF-S				40.06383																	
2022-06-27	FS_BPO				< 0.23 < 0.0250	< 0.0050	0.0082	0.0391			< 0.01	8.08	8.24	0.0810						11.2		10.8
2022-06-27	FS_INF-K				24.78492 26.8	< 0.0050	< 0.0050	< 0.0010				7.01	8.07	0.0230								
2022-06-27	FS_INF-S				40.00232 41.8	0.0357	0.0086	< 0.0010				7.34	7.73	0.0034								
2022-06-27	FS_BPO																					
2022-06-27	FS_INF-K				24.77639																	
2022-06-27	FS_INF-S				40.32114																	
2022-06-27	FS_INF-K				24.86172																	
2022-06-27	FS_INF-S				39.77545																	
2022-06-27	FS_INF-K				25.20577																	
2022-06-27	FS_INF-S				40.37494																	
2022-06-27	FS_INF-K				25.91106																	
2022-06-27	FS_INF-S				40.81591																	
2022-06-27	FS_BPO				< 0.23						< 0.01	8.12										
2022-06-27	FS_INF-K				25.73713																	
2022-06-27	FS_INF-S				40.37361																	
2022-06-28	FS_BPO				< 0.23						< 0.01	8.13										
2022-06-28	FS_INF-K				26.18444																	
2022-06-28	FS_INF-S				40.6815																	
2022-06-28	FS_INF-K				25.59946																	
2022-06-28	FS_INF-S				40.35371																	
2022-06-28	FS_BPO	0.0520	12.3	12.1	< 0.23 0.112						< 0.01	8.09			4.64	0.651	9.39	< 0.010		12.6		11.7
2022-06-28	FS_INF-K	0.00291	18.2	18.6	25.98691							7.01			3.40					107		108
2022-06-28	FS_INF-S	0.00638	47.7	48.3	40.95303							7.33			4.47					423		417
2022-06-28	FR_FRABCH	0.00134	2.42	3.04	8.44	0.0028	< 0.0050	< 0.0010				7.81	8.34	0.0249	1.24					35.2		35.3
2022-06-28	FR_FRABCH				9.98661																	
2022-06-28	FS_INF-K				27.07098																	
2022-06-28	FS_INF-S				40.65716																	
2022-06-28	FS_INF-K				27.10084																	
2022-06-28	FS_INF-S				40.80639																	
2022-06-28	FS_INF-K				27.43978																	
2022-06-28	FS_INF-S				40.34896																	
2022-06-28	FS_INF-K				27.43921																	
2022-06-28	FS_INF-S				40.57977																	
2022-06-28	FS_INF-K				27.14971																	
2022-06-28	FS_INF-S				40.29441																	
2022-06-29	FS_INF-K				27.35029																	
2022-06-29	FS_INF-S				40.60204																	
2022-06-29	FS_INF-K				27.57073																	
2022-06-29	FS_INF-S				40.58461																	
2022-06-29	FS_BPO				< 0.23 0.117						< 0.01	8.11								12.4		12.4
2022-06-29	FS_INF-K				28.3279							7.08										
2022-06-29	FS_INF-S				40.96458							7.54										
2022-06-29	FS_INF-K				29.09142																	
2022-06-29	FS_INF-S				41.37025																	
2022-06-29	FS_INF-K				28.55942																	
2022-06-29	FS_INF-S				41.64863																	
2022-06-29	FS_BPO											8.16										
2022-06-29	FS_BPO	0.0522	10.6	11.7	0.0628	0.0070	0.0216	0.0520					8.22	0.0867	4.73					14.5		13.8
2022-06-29	FS_INF-K				29.29456																	
2022-06-29	FS_INF-S				41.61262																	
2022-06-29	FS_INF-K				28.3095																	
2022-06-29	FS_INF-S				40.89016																	
2022-06-29	FS_INF-K				28.87534																	
2022-06-29	FS_INF-S				40.71134																	
2022-06-30	FS_INF-K				28.79133																	
2022-06-30	FS_INF-S				40.67108																	
2022-06-30	FS_INF-K				29.31024																	
2022-06-30	FS_INF-S				41.16793																	
2022-06-30	FS_BPO	0.0536	11.1	11.1	< 0.23 0.224						0.0158453980000000	8.07			4.59	0.693	10.8	< 0.010		14.2		13.4
2022-06-30	FS_INF-K				29.07508							7.09										130
2022-06-30	FS_INF-S				40.17182							7.44										414
2022-06-30	FS_BPO										< 0.01	7.44										

	Parameter	Molybdenum	Nickel	Nickel	Nitrate Nitrogen (NO3), As N	Nitrite Nitrogen (NO2), As N	Nitrogen, Ammonia (As N)	Ortho-Phosphate	Ozone	Ozone	Ozone	pH, Field	pH, LAB	Phosphorus	Potassium	Se(IV) – selenite SeO3(-2)	Se(VI) – selenate SeO4(-2)	SeCN – selenocyanate SeCN(-1)	Selenium	Selenium	Selenium	Selenium
	Fraction	T	D	T	N	N	T	D	N	R	T	N	N	T	T	D	D	D	D	D	T	T
	Unit	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ph units	ph units	mg/l	mg/l	ug/l	ug/l	ug/l	mg/l	ug/l	mg/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-06-30	FR_SCOUTDS											8.21										
2022-06-30	FR_SCOUTDS	0.00161	2.53	2.85	5.28	0.0015	< 0.0050	0.0018					7.93	0.0085	1.06	0.112	21.4	< 0.010	21.0			22.2
2022-06-30	FS_INF-K				30.69986																	
2022-06-30	FS_INF-S				41.64018																	
2022-06-30	FS_INF-K				29.91248																	
2022-06-30	FS_INF-S				41.06327																	
2022-06-30	FS_INF-K				29.71745																	
2022-06-30	FS_INF-S				42.18606																	
2022-06-30	FS_INF-K				30.48628																	
2022-06-30	FS_INF-S				41.6478																	
2022-06-30	FS_INF-K				30.61888																	
2022-06-30	FS_INF-S				42.1409																	
2022-07-01	FS_INF-K				30.72006																	
2022-07-01	FS_INF-S				41.44407																	
2022-07-01	FS_INF-K				31.13267																	
2022-07-01	FS_INF-S				41.28026																	
2022-07-01	FS_BPO				0.0462 < 0.23						< 0.01	8.1								13.2		12.7
2022-07-01	FS_INF-K				31.48757							7.04										
2022-07-01	FS_INF-S				40.60517							7.41										
2022-07-01	FS_INF-K				32.10395																	
2022-07-01	FS_INF-S				41.09983																	
2022-07-01	FS_INF-K				31.13525																	
2022-07-01	FS_INF-S				40.63931																	
2022-07-01	FS_INF-K				32.22615																	
2022-07-01	FS_INF-S				41.21054																	
2022-07-02	FS_BPO				< 0.23						< 0.01	8.31										
2022-07-02	FS_BPO											8.12										
2022-07-02	FR_SCOUTDS				6.46																	29.7
2022-07-02	FR_FRABCH				10.8																	44.6
2022-07-02	FS_BPO				0.0492															14.0		12.9
2022-07-02	FS_INF-K																					137
2022-07-02	FS_INF-S																					435
2022-07-02	FS_BPO				< 0.23						< 0.01	8.25										
2022-07-02	FS_INF-K				32.1059							7.11										
2022-07-02	FS_INF-S				41.11404							7.36										
2022-07-03	FS_INF-K				34.95333																	
2022-07-03	FS_INF-S				42.94936																	
2022-07-03	FS_INF-K				34.07413																	
2022-07-03	FS_INF-S				42.57143																	
2022-07-03	FS_BPO				< 0.23 0.0454						< 0.01	8.2				1.24	14.4	< 0.010		17.6		17.2
2022-07-03	FS_INF-K				35.37573							7.22										161
2022-07-03	FS_INF-S				42.49738							7.44										438
2022-07-03	FS_INF-K				35.87204																	
2022-07-03	FS_INF-S				42.93389																	
2022-07-03	FR_FRABCH				11.19206																	
2022-07-03	FS_INF-K				35.64726																	
2022-07-03	FS_INF-S				42.70243																	
2022-07-03	FS_INF-K				35.54604																	
2022-07-03	FS_INF-S				43.34571																	
2022-07-03	FS_INF-K				34.92936																	
2022-07-03	FS_INF-S				42.92036																	
2022-07-03	FS_INF-K				34.50145																	
2022-07-03	FS_INF-S				42.70604																	
2022-07-04	FS_INF-K				34.2955																	
2022-07-04	FS_INF-S				42.88781																	
2022-07-04	FS_INF-K				34.20499																	
2022-07-04	FS_INF-S				42.99886																	
2022-07-04	FS_BPO				< 0.23 0.0288	< 0.0050	0.0446	0.0885			< 0.01	8.2	8.34	0.132						19.9		15.6
2022-07-04	FS_INF-K				34.98069							7.07										
2022-07-04	FS_INF-S				43.75287							7.33										
2022-07-04	FS_BPO																					
2022-07-04	FS_INF-K				36.31162																	
2022-07-04	FS_INF-S				43.61487																	
2022-07-04	FS_INF-K				34.55456																	
2022-07-04	FS_INF-S				45.33944																	
2022-07-04	FS_INF-K				33.91315																	
2022-07-04	FS_INF-S				42.79118																	
2022-07-04	FS_INF-K				33.51009																	
2022-07-04	FS_INF-S				43.61477																	
2022-07-04	FS_INF-K				34.27861																	
2022-07-04	FS_INF-S				41.97374																	
2022-07-05	FS_INF-K				33.53578																	
2022-07-05	FS_INF-S				42.31886																	
2022-07-05	FS_INF-K				33.80034																	
2022-07-05	FS_INF-S				42.84252																	
2022-07-05	FS_BPO	0.0478	9.04	8.07	< 0.23 0.0864						< 0.01	8.1			4.94	0.645	9.88	< 0.010		13.5		13.4
2022-07-05	FS_INF-K	0.00237	25.9	23.1	33.7374							7.08			3.45	0.101	173	< 0.010		164		154
2022-07-05	FS_INF-S	0.00469	49.2	46.8	42.64294							7.35			4.14	0.736	390	< 0.010		461		440
2022-07-05	FR_FRABCH				5.36091																	
2022-07-05	FS_INF-K				35.04991																	
2022-07-05	FS_INF-S				42.33654																	
2022-07-05	FS_INF-K				34.25843																	
2022-07-05	FS_INF-S				43.28531																	
2022-07-05	FR_SCOUTDS	0.00174	2.59	2.54	4.80	0.0029	< 0.0050	< 0.0010				8.17	8.27	0.0128	0.988					22.7		19.8
2022-07-05	FS_INF-K				33.74319																	

Parameter		Molybdenum	Nickel	Nickel	Nitrate Nitrogen (NO3), As N	Nitrite Nitrogen (NO2), As N	Nitrogen, Ammonia (As N)	Ortho-Phosphate	Ozone	Ozone	Ozone	pH, Field	pH, LAB	Phosphorus	Potassium	Se(IV) – selenite SeO3(-2)	Se(VI) – selenate SeO4(-2)	SeCN – selenocyanate SeCN(-1)	Selenium	Selenium	Selenium	Selenium
Fraction		T	D	T	N	N	T	D	N	R	T	N	N	T	T	D	D	D	D	D	T	T
Unit		mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ph units	ph units	mg/l	mg/l	ug/l	ug/l	ug/l	mg/l	ug/l	mg/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-07-05	FS_INF-S				44.31751																	
2022-07-05	FS_INF-K				33.48578																	
2022-07-05	FS_INF-S				43.88078																	
2022-07-05	FS_INF-K				33.41776																	
2022-07-05	FS_INF-S				42.99763																	
2022-07-06	FS_INF-K				33.62769																	
2022-07-06	FS_INF-S				44.05576																	
2022-07-06	FS_INF-K				33.30389																	
2022-07-06	FS_INF-S				44.21272																	
2022-07-06	FS_BPO				< 0.23 0.0308						< 0.01	8.18 8.19 8.16								12.9		13.7
2022-07-06	FS_INF-K				33.50607							7.12										
2022-07-06	FS_INF-S				43.93							7.3										
2022-07-06	FR_SCOUTDS	0.00182	2.78	2.64	5.07	0.0045	< 0.0050	0.0037				8.05	8.31	0.0102	1.01					23.0		21.4
2022-07-06	FS_INF-K				34.40137																	
2022-07-06	FS_INF-S				45.72886																	
2022-07-06	FS_INF-K				33.36993																	
2022-07-06	FS_INF-S				45.24957																	
2022-07-06	FS_INF-K				33.18299																	
2022-07-06	FS_INF-S				43.81865																	
2022-07-06	FS_INF-K				32.85216																	
2022-07-06	FS_INF-S				44.39526																	
2022-07-06	FS_INF-K				32.68206																	
2022-07-06	FS_INF-S				44.42579																	
2022-07-07	FS_INF-K				33.12838																	
2022-07-07	FS_INF-S				44.60324																	
2022-07-07	FS_INF-K				32.71271																	
2022-07-07	FS_INF-S				44.01304																	
2022-07-07	FS_BPO				< 0.23 < 0.0250						< 0.01	8.17				0.486	8.68	< 0.010		10.4		9.27
2022-07-07	FS_INF-K				32.49698							7.07										144
2022-07-07	FS_INF-S				43.45783							7.31										400
2022-07-07	FR_SCOUTDS	0.00184	2.64	2.74	6.09	0.0078	< 0.0050	0.0017				8.3	8.37	0.0094	1.01	0.114	19.8	< 0.010	23.2			22.7
2022-07-07	FR_SCOUTDS	0.00207	2.65	2.75	5.54	0.0011	< 0.0050	0.0032				8.20	8.37	0.0082	1.01					23.8		22.5
2022-07-07	FS_INF-K				32.78864																	
2022-07-07	FS_INF-S				43.77266																	
2022-07-07	FS_INF-K				32.62637																	
2022-07-07	FS_INF-S				44.31446																	
2022-07-07	FS_BPO										< 0.01	8.15										
2022-07-07	FS_INF-K				32.70638																	
2022-07-07	FS_INF-S				45.33501																	
2022-07-07	FS_BPO										< 0.01	8.18										
2022-07-07	FS_INF-K				33.1805																	
2022-07-07	FS_INF-S				45.65624																	
2022-07-08	FS_BPO										< 0.01	8.14										
2022-07-08	FS_INF-K				32.9212																	
2022-07-08	FS_INF-S				44.87227																	
2022-07-08	FS_BPO										< 0.01	8.16										
2022-07-08	FS_INF-K				32.70207																	
2022-07-08	FS_INF-S				44.14487																	
2022-07-08	FS_BPO				< 0.23 0.0502						< 0.01	8.14								9.54		9.14
2022-07-08	FS_INF-K				32.80697							7.31										
2022-07-08	FS_INF-S				44.6483							7.61										
2022-07-08	FR_SCOUTDS	0.00162	2.63	2.77	5.27	0.0026	< 0.0050	0.0015				8.30	8.44	0.0066	0.969					23.7		22.9
2022-07-08	FS_BPO										< 0.01											
2022-07-08	FS_BPO										< 0.01											
2022-07-08	FS_INF-K				33.07288																	
2022-07-08	FS_INF-S				44.5103																	
2022-07-08	FS_BPO										< 0.01	8.17										
2022-07-08	FS_INF-K				32.97864																	
2022-07-08	FS_INF-S				44.1498																	
2022-07-08	FS_BPO										< 0.01	8.09										
2022-07-08	FS_INF-K				33.20006																	
2022-07-08	FS_INF-S				43.78954																	
2022-07-08	FS_INF-K				32.47645																	
2022-07-08	FS_INF-S				43.90347																	
2022-07-08	FS_INF-K				32.97032																	
2022-07-08	FS_INF-S				44.20256																	
2022-07-09	FS_INF-K				33.39558																	
2022-07-09	FS_INF-S				44.34977																	
2022-07-09	FS_INF-K				33.74796																	
2022-07-09	FS_INF-S				44.55764																	
2022-07-09	FS_BPO				< 0.23 0.125						< 0.01	8.14								9.44		10.1
2022-07-09	FS_INF-K				33.6558							7.25										
2022-07-09	FS_INF-S				44.5214							7.58										
2022-07-09	FR_SCOUTDS	0.00142	4.17	4.18	7.12	0.0037	< 0.0050	< 0.0010				8.04	7.99	0.0076	1.11					40.1		37.7
2022-07-09	FS_BPO				< 0.23						< 0.01	8.16										
2022-07-10	FS_BPO																					
2022-07-10	FS_INF-K				34.27863																	
2022-07-10	FS_INF-S				44.30081																	
2022-07-10	FS_INF-K				35.07351																	
2022-07-10	FS_INF-S				44.40417																	
2022-07-10	FS_BPO				< 0.23 0.282						< 0.01	8.19				0.542	7.91	< 0.010		11.1		10.9
2022-07-10	FS_INF-K				35.32001							7.33										166
2022-07-10	FS_INF-S				44.98039							7.66										482

Parameter		Molybdenum	Nickel	Nickel	Nitrate Nitrogen (NO3), As N	Nitrite Nitrogen (NO2), As N	Nitrogen, Ammonia (As N)	Ortho-Phosphate	Ozone	Ozone	Ozone	pH, Field	pH, LAB	Phosphorus	Potassium	Se(IV) – selenite SeO3(-2)	Se(VI) – selenate SeO4(-2)	SeCN – selenocyanate SeCN(-1)	Selenium	Selenium	Selenium	Selenium
Fraction		T	D	T	N	N	T	D	N	R	T	N	N	T	T	D	D	D	D	D	T	T
Unit		mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ph units	ph units	mg/l	mg/l	ug/l	ug/l	ug/l	mg/l	ug/l	mg/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-07-10	FS_INF-K				35.27536																	
2022-07-10	FS_INF-S				44.53883																	
2022-07-10	FS_INF-K				33.50272																	
2022-07-10	FS_INF-S				43.79592																	
2022-07-10	FS_INF-K				33.55882																	
2022-07-10	FS_INF-S				42.53039																	
2022-07-10	FS_INF-K				33.4815																	
2022-07-10	FS_INF-S				42.32035																	
2022-07-10	FS_INF-K				33.71375																	
2022-07-10	FS_INF-S				42.66964																	
2022-07-11	FS_INF-K				33.44053																	
2022-07-11	FS_INF-S				42.64022																	
2022-07-11	FS_INF-K				34.40065																	
2022-07-11	FS_INF-S				42.49369																	
2022-07-11	FS_BPO				< 0.23 < 0.0250	< 0.0050	0.0224	0.0803			< 0.01	8.1	8.22	0.132						11.2		11.0
2022-07-11	FS_INF-K				34.52925 36.3	< 0.0050	< 0.0050	< 0.0010				7.22	7.54	< 0.0020								
2022-07-11	FS_INF-S				42.86203 46.2	0.0378	0.0126	< 0.0010				7.54	7.69	0.0043								
2022-07-11	FS_BPO																					
2022-07-11	FS_INF-K				35.96028																	
2022-07-11	FS_INF-S				44.20904																	
2022-07-11	FS_INF-K				36.13763																	
2022-07-11	FS_INF-S				44.54381																	
2022-07-11	FS_INF-K				35.92595																	
2022-07-11	FS_INF-S				44.66343																	
2022-07-11	FS_INF-K				34.94556																	
2022-07-11	FS_INF-S				44.70763																	
2022-07-11	FS_INF-K				35.34927																	
2022-07-11	FS_INF-S				44.33808																	
2022-07-12	FS_INF-K				35.54813																	
2022-07-12	FS_INF-S				44.664																	
2022-07-12	FS_INF-K				35.63337																	
2022-07-12	FS_INF-S				43.89151																	
2022-07-12	FS_BPO	0.0489	7.86	8.13	< 0.23 0.140						< 0.01	8.18			5.32	0.476	8.41	< 0.010		11.2		11.7
2022-07-12	FS_INF-K	0.00195	30.0	29.6	35.22362							7.31			4.06					183		181
2022-07-12	FS_INF-S	0.00472	57.7	53.5	42.61416							7.67			4.69					510		484
2022-07-12	FS_INF-K				36.37693																	
2022-07-12	FS_INF-S				44.69736																	
2022-07-12	FS_BPO										< 0.01											
2022-07-12	FS_INF-K				35.49184																	
2022-07-12	FS_INF-S				43.83997																	
2022-07-12	FS_INF-K				35.71867																	
2022-07-12	FS_INF-S				44.71956																	
2022-07-12	FS_INF-K				35.29744																	
2022-07-12	FS_INF-S				43.36199																	
2022-07-12	FS_INF-K				35.58405																	
2022-07-12	FS_INF-S				44.22517																	
2022-07-13	FS_INF-K				35.51396																	
2022-07-13	FS_INF-S				44.2095																	
2022-07-13	FS_INF-K				35.64657																	
2022-07-13	FS_INF-S				44.31764																	
2022-07-13	FS_BPO				< 0.23 0.0675						< 0.01	7.93								10.9		11.1
2022-07-13	FS_INF-K	0.00310	30.0	30.0	35.40276							7.26			4.23					174		176
2022-07-13	FS_INF-S	0.00483	55.6	56.0	44.15463							7.6			5.07					504		513
2022-07-13	FS_BPO											8.23										
2022-07-13	FS_INF-K				35.74187																	
2022-07-13	FS_INF-S				44.28568																	
2022-07-13	FR_FRABCH				9.73688																	
2022-07-13	FS_INF-K				35.89945																	
2022-07-13	FS_INF-S				44.58976																	
2022-07-13	FS_INF-K				35.4276																	
2022-07-13	FS_INF-S				43.70209																	
2022-07-13	FS_INF-K				35.69675																	
2022-07-13	FS_INF-S				44.29656																	
2022-07-13	FS_INF-K				34.66947																	
2022-07-13	FS_INF-S				44.36396																	
2022-07-14	FS_INF-K				35.58194																	
2022-07-14	FS_INF-S				44.91716																	
2022-07-14	FS_INF-K				35.41698																	
2022-07-14	FS_INF-S				44.2902																	
2022-07-14	FS_BPO				< 0.23 0.0613						< 0.01	8.03				0.399	8.10	< 0.010		10.4		10.9
2022-07-14	FS_INF-K				35.6192							7.09										172
2022-07-14	FS_INF-S				44.2887							7.48										478
2022-07-14	FR_SCOUTDS	0.00202	3.01	3.18	6.66	0.0027	< 0.0050	0.0019				8.36	8.35	0.0080	1.16	0.111	24.9	< 0.010	27.4			28.3
2022-07-14	FS_INF-K				36.53251																	
2022-07-14	FS_INF-S				44.37542																	
2022-07-14	FS_INF-K				35.78099																	
2022-07-14	FS_INF-S				44.15991																	
2022-07-14	FS_INF-K				35.26828																	
2022-07-14	FS_INF-S				43.58884																	
2022-07-14	FS_INF-K				35.36239																	
2022-07-14	FS_INF-S				44.25402																	
2022-07-14	FS_INF-K				35.6671																	
2022-07-14	FS_INF-S				43.80739																	

	Parameter	Molybdenum	Nickel	Nickel	Nitrate Nitrogen (NO3), As N	Nitrite Nitrogen (NO2), As N	Nitrogen, Ammonia (As N)	Ortho-Phosphate	Ozone	Ozone	Ozone	pH, Field	pH, LAB	Phosphorus	Potassium	Se(IV) – selenite SeO3(-2)	Se(VI) – selenate SeO4(-2)	SeCN – selenocyanate SeCN(-1)	Selenium	Selenium	Selenium	Selenium
	Fraction	T	D	T	N	N	T	D	N	R	T	N	N	T	T	D	D	D	D	D	T	T
	Unit	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ph units	ph units	mg/l	mg/l	ug/l	ug/l	ug/l	mg/l	ug/l	mg/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-07-15	FS_INF-K				35.46143																	
2022-07-15	FS_INF-S				43.9145																	
2022-07-15	FS_INF-K				36.58063																	
2022-07-15	FS_INF-S				44.87107																	
2022-07-15	FS_BPO				< 0.23 0.0282						< 0.01	8.01							11.5		9.82	
2022-07-15	FS_INF-K				36.16127							7.04										
2022-07-15	FS_INF-S				44.28892							7.43										
2022-07-15	FS_INF-K				37.44471																	
2022-07-15	FS_INF-S				44.40849																	
2022-07-15	FS_INF-K				36.05999																	
2022-07-15	FS_INF-S				44.26376																	
2022-07-15	FS_INF-K				36.2457																	
2022-07-15	FS_INF-S				44.29259																	
2022-07-15	FS_INF-K				39.39629																	
2022-07-15	FS_INF-S				45.03053																	
2022-07-16	FS_INF-K				37.01916																	
2022-07-16	FS_INF-S				44.93731																	
2022-07-16	FS_INF-K				37.15265																	
2022-07-16	FS_INF-S				44.84596																	
2022-07-16	FS_BPO				< 0.23						< 0.01	8.03										
2022-07-16	FS_INF-K				37.25071							7.16										
2022-07-16	FS_INF-S				45.2219							7.51										
2022-07-16	FS_INF-K				37.36335																	
2022-07-16	FS_INF-S				44.79044																	
2022-07-16	FS_INF-K				37.63326																	
2022-07-16	FS_INF-S				44.97218																	
2022-07-16	FS_INF-K				38.0546																	
2022-07-16	FS_INF-K				37.91493																	
2022-07-16	FS_INF-K				37.99732																	
2022-07-17	FS_INF-K				38.3595																	
2022-07-17	FS_INF-K				38.30348																	
2022-07-17	FS_BPO				< 0.23 < 0.0250						< 0.01	7.94				0.276	6.86	< 0.010		7.32		7.51
2022-07-17	FS_INF-K				38.16798							7.12										180
2022-07-17	FS_INF-K				38.0981																	
2022-07-17	FS_INF-K				38.69936																	
2022-07-17	FS_INF-K				38.69206																	
2022-07-17	FS_INF-K				38.76072																	
2022-07-17	FS_INF-K				38.99614																	
2022-07-18	FS_INF-K				39.05682																	
2022-07-18	FS_INF-K				37.26015																	
2022-07-18	FS_BPO				< 0.23 < 0.0250	< 0.0050	0.0140	0.0472			< 0.01	7.94	7.77	0.0479						6.80		6.80
2022-07-18	FS_INF-K				38.87582 40.4	< 0.0050	< 0.0050	< 0.0010				7.15	7.29	< 0.0020								
2022-07-18	FS_INF-S				44.68032																	
2022-07-18	FS_INF-S											7.4										
2022-07-18	FS_BPO																					
2022-07-18	FS_INF-S				44.0	0.0443	0.0123	< 0.0010					7.55	< 0.0020								
2022-07-18	FS_INF-K				39.09312																	
2022-07-18	FS_INF-K				38.81596																	
2022-07-18	FS_INF-K				39.61754																	
2022-07-18	FS_INF-K				39.63826																	
2022-07-18	FS_INF-K				39.32218																	
2022-07-19	FS_INF-K				39.58905																	
2022-07-19	FS_INF-K				39.09834																	
2022-07-19	FS_BPO	0.0477	5.46	6.17	< 0.23 0.121						< 0.01	7.99			4.78	0.235	6.44	< 0.010		7.73		8.48
2022-07-19	FS_INF-K	0.00222	33.6	40.5	40.65576							7.19			5.17	0.070	161	< 0.010		180		225
2022-07-19	FS_INF-S	0.00530	59.9	61.6								7.4			5.25	0.857	492	< 0.010		484		556
2022-07-19	FS_INF-S				44.78875																	
2022-07-19	FS_INF-K				40.32418																	
2022-07-19	FS_INF-K				40.87812																	
2022-07-19	FS_INF-K				40.0886																	
2022-07-19	FS_INF-K				40.47379																	
2022-07-19	FS_INF-K				40.57439																	
2022-07-20	FS_INF-K				40.58495																	
2022-07-20	FS_INF-K				40.14886																	
2022-07-20	FS_BPO				< 0.23 0.0290						< 0.01	8.07								9.31		9.44
2022-07-20	FS_INF-K				41.48457							7.13										
2022-07-20	FS_INF-S											7.42										
2022-07-20	FS_INF-K				41.58107																	
2022-07-20	FS_INF-S				43.54943																	
2022-07-20	FS_INF-K				41.98592																	
2022-07-20	FS_INF-K				41.37289																	
2022-07-20	FS_INF-K				41.21387																	
2022-07-20	FS_INF-K				41.08449																	
2022-07-21	FS_INF-K				42.01031																	
2022-07-21	FS_INF-K				41.42003																	
2022-07-21	FS_BPO				< 0.23 < 0.0250						< 0.01	8.14				0.342	7.59	< 0.010		10.7		9.08
2022-07-21	FS_INF-K				42.87402							7.25										185
2022-07-21	FS_INF-S																					483
2022-07-21	FR_SCOUTDS	0.00164	5.20	5.00	9.08	0.0042	< 0.0050	0.0012				8.15	8.23	0.0027	1.29	0.156	43.9	< 0.010	47.5			46.7
2022-07-21	FS_INF-K				42.61133																	
2022-07-21	FS_INF-K				42.64648																	
2022-07-21	FS_INF-K				43.36223																	

	Parameter	Molybdenum	Nickel	Nickel	Nitrate Nitrogen (NO3), As N	Nitrite Nitrogen (NO2), As N	Nitrogen, Ammonia (As N)	Ortho-Phosphate	Ozone	Ozone	Ozone	pH, Field	pH, LAB	Phosphorus	Potassium	Se(IV) – selenite SeO3(-2)	Se(VI) – selenate SeO4(-2)	SeCN – selenocyanate SeCN(-1)	Selenium	Selenium	Selenium	Selenium
	Fraction	T	D	T	N	N	T	D	N	R	T	N	N	T	T	D	D	D	D	D	T	T
	Unit	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ph units	ph units	mg/l	mg/l	ug/l	ug/l	ug/l	mg/l	ug/l	mg/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-07-21	FS_INF-K				42.97376																	
2022-07-21	FS_INF-K				43.10619																	
2022-07-22	FS_BPO				< 0.23						< 0.01	8.09 8.06										
2022-07-22	FS_INF-K				42.70654																	
2022-07-22	FS_INF-K				43.81945																	
2022-07-22	FS_INF-K											7.09										
2022-07-22	FS_INF-K											7.47										
2022-07-22	FS_BPO				0.261															9.04		8.98
2022-07-22	FS_INF-K																					
2022-07-22	FS_INF-S																					
2022-07-22	FS_INF-K											7.06 7.31										
2022-07-22	FR_FRABCH				13.3																	53.5
2022-07-22	FR_SCOUTDS				10.4							8.21										49.2
2022-07-22	FS_INF-S				44.98289							7.49										
2022-07-22	FR_FRABCH				12.66527							8.12										
2022-07-22	FS_BPO				< 0.23						< 0.01	8.08										
2022-07-22	FS_INF-S				43.78497																	
2022-07-23	FS_BPO				0.51262 < 0.0250							8.07								8.73		8.61
2022-07-23	FS_INF-K				43.80962							7.23										
2022-07-23	FS_INF-K				43.75436																	
2022-07-23	FS_INF-S				42.8269																	
2022-07-23	FS_BPO										< 0.01											
2022-07-23	FR_SCOUTDS				10.5							8.18										50.2
2022-07-23	FS_BPO											7.17										
2022-07-23	FS_INF-S											7.63										
2022-07-23	FR_SCOUTDS																					
2022-07-23	FR_FRABCH				13.0207 13.9							8.52										60.3
2022-07-24	FR_SCOUTDS				11.3																	56.6
2022-07-24	FR_FRABCH				13.27837 14.0							7.98										61.1
2022-07-24	FR_SCOUTDS											8.17										
2022-07-24	FS_INF-S											7.19										
2022-07-24	FS_BPO				< 0.23 0.0257						< 0.01	8.19				0.436	6.42	< 0.010		8.55		8.82
2022-07-24	FS_INF-K				46.82336							7.11										196
2022-07-24	FS_INF-S																					485
2022-07-24	FS_INF-K				46.1497																	
2022-07-24	FS_INF-K				46.59784																	
2022-07-25	FS_BPO											8.27										
2022-07-25	FS_INF-K				46.47713																	
2022-07-25	FS_INF-K				46.65175																	
2022-07-25	FS_BPO				< 0.23 < 0.0250	< 0.0050	0.0078	0.0527			< 0.01	8.22	8.36	0.155						11.9		12.7
2022-07-25	FS_INF-K				46.40275 48.1	< 0.0050	< 0.0050	< 0.0010				7.14	7.64	< 0.0020								
2022-07-25	FS_INF-S				44.85117 45.2	0.0468	0.0145	< 0.0010					7.67	0.0061								
2022-07-25	FR_FRABCH	0.00142	2.53	2.77	14.2	0.0047	< 0.0050	< 0.0010					8.49	0.0041	1.70					66.4		62.6
2022-07-25	FS_INF-S											7.34										
2022-07-25	FS_BPO																					
2022-07-25	FS_INF-K				46.77773																	
2022-07-25	FS_INF-K				46.80327																	
2022-07-25	FS_INF-K				46.75751																	
2022-07-25	FS_INF-K				47.47047																	
2022-07-25	FS_INF-K				47.59034																	
2022-07-26	FS_INF-K				47.68512																	
2022-07-26	FS_INF-K				48.43621																	
2022-07-26	FS_BPO	0.0428	4.59	4.59	< 0.23 0.0410						< 0.01	8.19			6.94	0.322	10.1	< 0.010	12.7			10.8
2022-07-26	FS_INF-K	0.00182	39.3	37.8	47.42702							7.17			4.30				209			200
2022-07-26	FS_INF-S	0.0152	62.1	63.7	44.3856										5.35				533			558
2022-07-26	FR_FRABCH											8.3										
2022-07-26	FS_INF-K				47.52184																	
2022-07-26	FS_INF-K				47.57691																	
2022-07-26	FS_BPO											8.35										
2022-07-26	FS_INF-K				47.80341																	
2022-07-26	FS_INF-K				47.31054																	
2022-07-26	FS_INF-K				47.67326																	
2022-07-27	FS_INF-K				48.1823																	
2022-07-27	FS_INF-K				48.31657																	
2022-07-27	FS_BPO				< 0.23 0.0720						< 0.01	8.11								10.1		9.82
2022-07-27	FS_INF-K				48.72968							7.2										
2022-07-27	FS_INF-S				44.44487							6.73										
2022-07-27	FS_INF-K				48.28365																	
2022-07-27	FS_INF-K				48.48407																	
2022-07-27	FS_INF-K				48.47783																	
2022-07-27	FS_INF-K				48.68933																	
2022-07-27	FS_INF-K				48.75854																	
2022-07-28	FS_INF-K				49.02386																	
2022-07-28	FS_INF-K				49.03439																	
2022-07-28	FS_BPO				< 0.23 0.203						< 0.01	8.09				0.256	6.47	< 0.010		8.98		8.12
2022-07-28	FS_INF-K				48.71839							7.17										194
2022-07-28	FS_INF-S											7.18										574

	Parameter	Molybdenum	Nickel	Nickel	Nitrate Nitrogen (NO3), As N	Nitrite Nitrogen (NO2), As N	Nitrogen, Ammonia (As N)	Ortho-Phosphate	Ozone	Ozone	Ozone	pH, Field	pH, LAB	Phosphorus	Potassium	Se(IV) – selenite SeO3(-2)	Se(VI) – selenate SeO4(-2)	SeCN – selenocyanate SeCN(-1)	Selenium	Selenium	Selenium	Selenium
	Fraction	T	D	T	N	N	T	D	N	R	T	N	N	T	T	D	D	D	D	D	T	T
	Unit	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ph units	ph units	mg/l	mg/l	ug/l	ug/l	ug/l	mg/l	ug/l	mg/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-07-28	FR_SCOUTDS	0.00188	6.68	6.41	13.7	0.0076	< 0.0050	< 0.0010				8.13	8.34	0.0056	1.56	0.180	53.1	< 0.010	65.7			60.4
2022-07-28	FS_INF-K				48.92847																	
2022-07-28	FS_INF-K				48.28037																	
2022-07-28	FS_INF-K				48.80262																	
2022-07-28	FS_INF-S											7.21										
2022-07-28	FS_INF-K				48.83138																	
2022-07-28	FS_INF-S				43.90547																	
2022-07-28	FS_INF-K				49.14577																	
2022-07-29	FS_INF-K				48.53873																	
2022-07-29	FS_INF-K				49.12705																	
2022-07-29	FS_BPO				< 0.23 0.0590						< 0.01	7.93								8.74		8.14
2022-07-29	FS_INF-K				49.92095							7.75										
2022-07-29	FS_INF-S				43.46336							7.93										
2022-07-29	FS_INF-K				49.65664																	
2022-07-29	FS_INF-K				50.80159																	
2022-07-29	FS_INF-K				50.58825																	
2022-07-29	FS_INF-K				50.56295																	
2022-07-29	FS_INF-K				50.69976																	
2022-07-30	FS_INF-K				51.57971																	
2022-07-30	FS_INF-K				50.89442																	
2022-07-30	FS_BPO				< 0.23 0.0401						< 0.01	7.92								8.37		7.64
2022-07-30	FS_INF-K				51.54585							7.14										
2022-07-30	FS_INF-S											7.22										
2022-07-30	FS_INF-K				53.43295																	
2022-07-30	FS_INF-S				44.1862																	
2022-07-30	FS_INF-K				51.61716																	
2022-07-30	FS_INF-K				51.46175																	
2022-07-30	FS_INF-K				52.82736																	
2022-07-30	FS_INF-K				52.08002																	
2022-07-31	FS_INF-K				52.37769																	
2022-07-31	FS_INF-K				51.82828																	
2022-07-31	FS_BPO				< 0.23 0.221						< 0.01	7.92				0.184	6.06	< 0.010		7.44		7.40
2022-07-31	FS_INF-K				52.41366							7.19										215
2022-07-31	FS_INF-S											7.22										553
2022-07-31	FS_INF-K				52.81966																	
2022-07-31	FS_INF-S				44.92302																	
2022-07-31	FS_INF-K				51.53022																	
2022-07-31	FS_INF-K				52.15663																	
2022-07-31	FS_INF-K				52.50024																	
2022-07-31	FS_INF-K				52.85244																	
2022-08-01	FS_INF-K				53.31009																	
2022-08-01	FS_INF-K				52.91372																	
2022-08-01	FS_BPO				< 0.23 < 0.0250	< 0.0050	< 0.0050	0.432			< 0.01	7.96	8.21	0.468						7.81		8.68
2022-08-01	FS_INF-K				52.46035 53.4	< 0.0050	< 0.0050	< 0.0010				7.02	7.81	< 0.0020								
2022-08-01	FS_INF-S				43.7	0.0525	0.0192	< 0.0010				7.21	7.73	0.0040								
2022-08-01	FS_INF-S				43.97607																	
2022-08-01	FS_BPO																					
2022-08-01	FS_INF-K				52.70574																	
2022-08-01	FS_INF-K				53.06756																	
2022-08-01	FS_INF-K				55.22741																	
2022-08-01	FS_INF-K				53.0706																	
2022-08-01	FS_INF-K				53.18857																	
2022-08-02	FS_INF-K				54.85297																	
2022-08-02	FS_INF-K				53.53997																	
2022-08-02	FS_BPO	0.0630	5.90	5.47	< 0.23 0.0388						< 0.01	8.04			4.58	0.177	6.22	< 0.010	8.96			7.36
2022-08-02	FS_INF-K	0.00152	43.1	43.8	55.52633							7.26			4.77	0.067	181	< 0.010	218			217
2022-08-02	FS_INF-S	0.00466	56.4	57.5								7.3			4.98	1.00	476	< 0.010	572			468
2022-08-02	FS_INF-K				57.60719																	
2022-08-02	FS_INF-S				47.39646																	
2022-08-02	FS_BPO											8.2										
2022-08-03	FS_BPO											8.11										
2022-08-03	FS_BPO											8.05										
2022-08-03	FS_BPO				< 0.23 0.0376						< 0.01	8.12								8.74		7.44
2022-08-03	FS_INF-K				58.28301							7.25										
2022-08-03	FS_INF-S											7.62 7.45										
2022-08-03	FS_INF-S				45.55734																	
2022-08-03	FS_INF-K				56.40443																	
2022-08-03	FS_INF-K				56.55943																	
2022-08-03	FS_BPO											8.19										
2022-08-03	FS_INF-K				57.52139																	
2022-08-04	FS_INF-K				56.03416																	
2022-08-04	FS_BPO				< 0.23 0.106						< 0.01	8.14				0.250	8.10	< 0.010		8.20		8.40
2022-08-04	FS_INF-K				58.87754							7.27										209
2022-08-04	FS_INF-S				56.0904							7.67										474
2022-08-04	FR_SCOUTDS	0.00239	8.34	8.35	15.8	0.0115	0.0051	< 0.0010				8.25	8.30	0.0046	1.84	0.253	80.3	< 0.010	81.9			82.2
2022-08-04	FS_INF-K				57.26126																	
2022-08-04	FS_INF-K				55.59291																	
2022-08-04	FS_BPO											8.18										
2022-08-05	FS_BPO											8.28										
2022-08-05	FS_BPO										< 0.01	8.16										

	Parameter	Molybdenum	Nickel	Nickel	Nitrate Nitrogen (NO3), As N	Nitrite Nitrogen (NO2), As N	Nitrogen, Ammonia (As N)	Ortho-Phosphate	Ozone	Ozone	Ozone	pH, Field	pH, LAB	Phosphorus	Potassium	Se(IV) – selenite SeO3(-2)	Se(VI) – selenate SeO4(-2)	SeCN – selenocyanate SeCN(-1)	Selenium	Selenium	Selenium	Selenium
	Fraction	T	D	T	N	N	T	D	N	R	T	N	N	T	T	D	D	D	D	D	T	T
	Unit	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ph units	ph units	mg/l	mg/l	ug/l	ug/l	ug/l	mg/l	ug/l	mg/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-08-05	FS_BPO				< 0.23 0.504						< 0.01	8.18								8.81		9.98
2022-08-05	FS_INF-K				58.52675							7.25										
2022-08-05	FS_INF-S											8.27										
2022-08-05	FS_INF-K				58.39637																	
2022-08-05	FS_INF-S				47.8791																	
2022-08-05	FS_INF-K				59.2738																	
2022-08-05	FS_INF-K				58.1283																	
2022-08-05	FS_INF-K				58.78137																	
2022-08-05	FS_INF-K				59.1647																	
2022-08-06	FS_INF-K				58.18642																	
2022-08-06	FS_INF-K				58.76772																	
2022-08-06	FS_BPO				< 0.23 < 0.0250						< 0.01	8.19								10.2		11.0
2022-08-06	FS_INF-K				58.85649							7.27										
2022-08-06	FS_INF-S											7.42										
2022-08-06	FS_INF-K				61.12817																	
2022-08-06	FS_INF-K				55.91666																	
2022-08-06	FS_INF-S				45.63245																	
2022-08-06	FS_INF-K				56.35757																	
2022-08-06	FS_INF-K				57.12569																	
2022-08-06	FS_INF-K				57.47802																	
2022-08-07	FS_INF-K				57.63622																	
2022-08-07	FS_INF-K				57.42757																	
2022-08-07	FS_BPO				< 0.23 0.390						< 0.01	8.27				0.292	9.44	< 0.010		8.78		11.1
2022-08-07	FS_INF-K				60.93785							7.66										210
2022-08-07	FS_INF-S				48.64526							7.32										522
2022-08-07	FS_INF-K				61.08742																	
2022-08-07	FS_INF-K				58.8486																	
2022-08-07	FS_INF-K				61.51653																	
2022-08-07	FS_INF-K				60.3904																	
2022-08-07	FS_INF-K				59.40255																	
2022-08-08	FS_INF-K				59.40711																	
2022-08-08	FS_INF-K				60.92868																	
2022-08-08	FS_BPO				< 0.23 < 0.0250	< 0.0050	< 0.0050	0.256			< 0.01	8.27	8.49	0.329						10.8		10.1
2022-08-08	FS_INF-K				60.00673 58.4	< 0.0050	< 0.0050	< 0.0010				7.22	8.01	< 0.0020								
2022-08-08	FS_INF-S				51.0	0.0462	0.0142	< 0.0010				7.13	8.09	0.0034								
2022-08-08	FS_BPO																					
2022-08-08	FS_INF-K				59.87964																	
2022-08-08	FS_INF-S				54.84615																	
2022-08-08	FS_INF-K				60.1143																	
2022-08-08	FS_INF-K				60.68215																	
2022-08-08	FS_INF-K				57.64827																	
2022-08-08	FS_INF-K				58.15211																	
2022-08-09	FS_INF-K				57.95914																	
2022-08-09	FS_INF-K				61.32557																	
2022-08-09	FS_BPO	0.0558	6.81	6.90	< 0.23 0.0358						< 0.01	8.16			6.13	0.235	9.81	< 0.010		10.4		11.4
2022-08-09	FS_INF-K	0.00159	43.6	46.3	60.93625							7.26			4.76	0.078	224	< 0.010		231		223
2022-08-09	FS_INF-S	0.00486	57.3	64.6	52.90044							7.26			5.60	1.12	499	< 0.010		575		579
2022-08-09	FS_INF-K				60.55311																	
2022-08-09	FS_INF-K				60.20578																	
2022-08-09	FS_INF-S				46.2318																	
2022-08-09	FS_INF-K				61.67969																	
2022-08-09	FS_INF-S				44.00235																	
2022-08-09	FS_INF-K				62.85487																	
2022-08-09	FS_INF-S				43.74945																	
2022-08-10	FS_INF-K				61.70024																	
2022-08-10	FS_INF-S				43.80135																	
2022-08-10	FS_INF-K				61.45031																	
2022-08-10	FS_INF-S				43.57906																	
2022-08-10	FS_BPO				< 0.23 < 0.0250						< 0.01	8.13								11.1		9.92
2022-08-10	FS_INF-K				61.27816							7.22										
2022-08-10	FS_INF-S				42.47253							7.55										
2022-08-10	FS_BPO										< 0.01											
2022-08-10	FS_INF-K				60.29016																	
2022-08-10	FS_INF-S				42.21509																	
2022-08-10	FS_INF-K				61.18978																	
2022-08-10	FS_INF-S				42.29158																	
2022-08-10	FS_INF-K				58.88887																	
2022-08-10	FS_INF-S				42.33699																	
2022-08-10	FS_INF-K				63.08327																	
2022-08-10	FS_INF-S				43.64363																	
2022-08-11	FS_INF-K				61.94324																	
2022-08-11	FS_INF-S				43.72855																	
2022-08-11	FS_INF-K				64.2516																	
2022-08-11	FS_INF-S				44.28751																	
2022-08-11	FS_BPO				< 0.23 0.344						< 0.01	8.13				0.289	9.99	< 0.010		12.1		11.3
2022-08-11	FS_INF-K				63.98773							7.28										207
2022-08-11	FS_INF-S				43.67313							7.48										498
2022-08-11	FR_SCOUTDS	0.00411	5.38	5.39	13.9	0.0066	0.0051	0.0106				8.3	8.50	0.0165	1.97	0.180	46.1	< 0.010		47.9		48.4
2022-08-11	FS_INF-K				63.77778																	
2022-08-11	FS_INF-S				43.9195																	
2022-08-11	FS_INF-K				62.99466																	

Parameter		Molybdenum	Nickel	Nickel	Nitrate Nitrogen (NO3), As N	Nitrite Nitrogen (NO2), As N	Nitrogen, Ammonia (As N)	Ortho-Phosphate	Ozone	Ozone	Ozone	pH, Field	pH, LAB	Phosphorus	Potassium	Se(IV) – selenite SeO3(-2)	Se(VI) – selenate SeO4(-2)	SeCN – selenocyanate SeCN(-1)	Selenium	Selenium	Selenium	Selenium
Fraction		T	D	T	N	N	T	D	N	R	T	N	N	T	T	D	D	D	D	D	T	T
Unit		mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ph units	ph units	mg/l	mg/l	ug/l	ug/l	ug/l	mg/l	ug/l	mg/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-08-11	FS_INF-S				43.95905																	
2022-08-11	FS_INF-K				64.47383																	
2022-08-11	FS_INF-S				47.01386																	
2022-08-11	FS_INF-K				65.77203																	
2022-08-11	FS_INF-S				45.8996																	
2022-08-12	FS_INF-K				63.95592																	
2022-08-12	FS_INF-S				47.67659																	
2022-08-12	FS_INF-K				63.90089																	
2022-08-12	FS_INF-S				45.80133																	
2022-08-12	FS_BPO				< 0.23 0.430						< 0.01	8.13								15.2		12.8
2022-08-12	FS_INF-K				63.28029							7.24										
2022-08-12	FS_INF-S				44.2715							7.58										
2022-08-12	FS_INF-K				65.77895																	
2022-08-12	FS_INF-S				44.55476																	
2022-08-12	FS_INF-K				64.1762																	
2022-08-12	FS_INF-S				44.63578																	
2022-08-12	FS_INF-K				63.16904																	
2022-08-12	FS_INF-S				43.71657																	
2022-08-12	FS_INF-K				63.08237																	
2022-08-12	FS_INF-S				43.17517																	
2022-08-12	FS_INF-K				64.99762																	
2022-08-12	FS_INF-S				43.66632																	
2022-08-13	FS_INF-K				64.11971																	
2022-08-13	FS_INF-S				42.91848																	
2022-08-13	FS_INF-K				66.31712																	
2022-08-13	FS_INF-S				43.86295																	
2022-08-13	FS_BPO				< 0.23 < 0.0250						< 0.01	8.12								13.1		15.3
2022-08-13	FS_INF-K				63.62499							7.29										
2022-08-13	FS_INF-S				45.56855							7.56										
2022-08-13	FS_INF-K				64.52625																	
2022-08-13	FS_INF-S				46.89517																	
2022-08-13	FS_INF-K				63.9023																	
2022-08-13	FS_INF-S				46.99473																	
2022-08-13	FS_INF-K				64.44961																	
2022-08-13	FS_INF-S				45.22883																	
2022-08-13	FS_INF-K				64.49123																	
2022-08-13	FS_INF-S				45.00475																	
2022-08-13	FS_INF-K				63.83041																	
2022-08-13	FS_INF-S				46.08076																	
2022-08-14	FS_INF-K				64.12343																	
2022-08-14	FS_INF-S				46.2954																	
2022-08-14	FS_INF-K				66.83235																	
2022-08-14	FS_INF-S				46.64486																	
2022-08-14	FS_BPO				< 0.23 < 0.0250						< 0.01	8.12				0.395	12.6	< 0.010		14.4		15.1
2022-08-14	FS_INF-K				65.55867							7.25										244
2022-08-14	FS_INF-S				44.12831							7.58										567
2022-08-14	FS_INF-K				66.90013																	
2022-08-14	FS_INF-S				44.23079																	
2022-08-14	FS_INF-K				65.63468																	
2022-08-14	FS_INF-S				44.18044																	
2022-08-14	FS_INF-K				66.55466																	
2022-08-14	FS_INF-S				44.26503																	
2022-08-14	FS_INF-K				65.01019																	
2022-08-14	FS_INF-S				45.27202																	
2022-08-14	FS_INF-K				65.27918																	
2022-08-14	FS_INF-S				47.16969																	
2022-08-15	FS_INF-K				64.22019																	
2022-08-15	FS_INF-S				44.19999																	
2022-08-15	FS_INF-K				65.8298																	
2022-08-15	FS_INF-S				45.75808																	
2022-08-15	FS_BPO				< 0.23 0.0613	< 0.0050	< 0.0050	0.0898			< 0.01	8.12	8.39	0.148						15.1		15.6
2022-08-15	FS_INF-K				66.44607 63.4	< 0.0050	< 0.0050	< 0.0010				7.2	7.85	< 0.0020								
2022-08-15	FS_INF-S				45.03378 43.8	0.0429	0.0080	< 0.0010				7.34	8.00	0.0043								
2022-08-15	FS_BPO																					
2022-08-15	FS_INF-K				65.23722																	
2022-08-15	FS_INF-S				45.08289																	
2022-08-15	FS_INF-K				67.54794																	
2022-08-15	FS_INF-S				46.97266																	
2022-08-15	FS_INF-K				64.76829																	
2022-08-15	FS_INF-S				44.83128																	
2022-08-15	FS_INF-K				65.9159																	
2022-08-15	FS_INF-S				44.86737																	
2022-08-15	FS_INF-K				66.06744																	
2022-08-15	FS_INF-S				43.52128																	
2022-08-16	FS_INF-K				66.89989																	
2022-08-16	FS_INF-S				44.75776																	
2022-08-16	FS_BPO	0.0478	12.6	11.5	< 0.23 0.621						< 0.01	8.1			4.78	0.385	12.6	< 0.010		14.1		15.3
2022-08-16	FS_INF-K	0.00147	49.4	47.6	67.11328							7.37			4.85	0.072	206	< 0.010	231			223
2022-08-16	FS_INF-S	0.00442	63.8	61.7	44.18795							7.64			5.23	0.959	480	< 0.010	570			525
2022-08-16	FR_FRABCH	0.00198	1.85	1.90	18.8 19.21409	0.0050	0.0140	< 0.0010				8	8.35	0.0152	2.12					82.5		79.4
2022-08-16	FS_INF-K				66.85812																	

Parameter		Molybdenum	Nickel	Nickel	Nitrate Nitrogen (NO3), As N	Nitrite Nitrogen (NO2), As N	Nitrogen, Ammonia (As N)	Ortho-Phosphate	Ozone	Ozone	Ozone	pH, Field	pH, LAB	Phosphorus	Potassium	Se(IV) – selenite SeO3(-2)	Se(VI) – selenate SeO4(-2)	SeCN – selenocyanate SeCN(-1)	Selenium	Selenium	Selenium	Selenium
Fraction		T	D	T	N	N	T	D	N	R	T	N	N	T	T	D	D	D	D	D	T	T
Unit		mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ph units	ph units	mg/l	mg/l	ug/l	ug/l	ug/l	mg/l	ug/l	mg/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-08-16	FS_INF-S				43.68559																	
2022-08-16	FS_INF-K				67.17806																	
2022-08-16	FS_INF-S				44.23141																	
2022-08-16	FS_INF-K				67.0276																	
2022-08-16	FS_INF-S				44.59293																	
2022-08-16	FS_INF-K				65.64119																	
2022-08-16	FS_INF-S				45.42595																	
2022-08-17	FS_INF-K				67.12383																	
2022-08-17	FS_INF-S				44.64251																	
2022-08-17	FS_INF-K				67.52974																	
2022-08-17	FS_INF-S				45.28537																	
2022-08-17	FS_BPO				< 0.23 0.0708						< 0.01	8.13								15.0		15.1
2022-08-17	FS_INF-K				66.90189							7.25										
2022-08-17	FS_INF-S				45.4076							7.56										
2022-08-17	FR_FRABCH	0.00195	2.00	2.19	19.4	0.0058	0.0246	0.0011				7.89	8.06	0.0051	2.12					85.5		80.0
2022-08-17	FS_INF-K				68.17694																	
2022-08-17	FS_INF-S				45.23864																	
2022-08-17	FS_INF-K				67.99163																	
2022-08-17	FS_INF-S				47.01719																	
2022-08-17	FS_INF-K				67.32172																	
2022-08-17	FS_INF-S				44.84685																	
2022-08-17	FS_INF-K				67.45368																	
2022-08-17	FS_INF-S				46.30224																	
2022-08-17	FS_INF-K				70.54511																	
2022-08-17	FS_INF-S				45.98346																	
2022-08-18	FS_INF-K				66.4437																	
2022-08-18	FS_INF-S				43.76538																	
2022-08-18	FS_INF-K				68.23784																	
2022-08-18	FS_INF-S				47.37007																	
2022-08-18	FS_BPO				< 0.23 < 0.0250						< 0.01	8.07				0.245	12.2	< 0.010		13.8		13.5
2022-08-18	FS_INF-K				68.11069							7.27										214
2022-08-18	FS_INF-S				43.65698							7.59										477
2022-08-18	FR_SCOUTDS	0.00571	5.93	5.82	15.9	< 0.0050	< 0.0050	0.0129				8.3	8.40	0.0203	2.08	0.230	54.4	< 0.010		52.3		50.6
2022-08-18	FS_INF-K				68.45842																	
2022-08-18	FS_INF-S				43.6934																	
2022-08-18	FS_INF-K				69.53271																	
2022-08-18	FS_INF-S				44.18916																	
2022-08-18	FS_INF-K				68.9649																	
2022-08-18	FS_INF-S				40.93315																	
2022-08-18	FS_INF-K				69.82575																	
2022-08-18	FS_INF-S				44.77658																	
2022-08-18	FS_INF-K				71.2357																	
2022-08-18	FS_INF-S				43.9492																	
2022-08-19	FS_INF-K				69.4094																	
2022-08-19	FS_INF-S				44.06994																	
2022-08-19	FS_INF-K				69.53014																	
2022-08-19	FS_INF-S				44.14255																	
2022-08-19	FS_BPO	0.0522	8.58	9.69	< 0.23 0.111 < 0.0250	< 0.0050	0.0071	0.0543			< 0.01	8.02	8.14	0.0680	4.80	0.220	12.1	< 0.010		13.3 11.5		12.2 12.0
2022-08-19	FS_INF-K				69.71697							7.27										
2022-08-19	FS_INF-S				43.96979							7.52										
2022-08-19	FS_INF-K				69.61215																	
2022-08-19	FS_INF-S				44.39928																	
2022-08-19	FS_INF-K				71.34634																	
2022-08-19	FS_INF-S				43.59645																	
2022-08-19	FS_INF-K				71.58099																	
2022-08-19	FS_INF-S				43.70916																	
2022-08-19	FS_INF-K				70.2112																	
2022-08-19	FS_INF-S				44.12568																	
2022-08-19	FS_INF-K				72.49516																	
2022-08-19	FS_INF-S				44.61734																	
2022-08-20	FS_INF-K				70.57863																	
2022-08-20	FS_INF-S				43.91441																	
2022-08-20	FS_INF-K				70.4827																	
2022-08-20	FS_INF-S				44.84033																	
2022-08-20	FS_BPO				< 0.23 < 0.0250						< 0.01	8.05								15.7		13.0
2022-08-20	FS_INF-K				70.94659							7.33										
2022-08-20	FS_INF-S				43.85824							7.57										
2022-08-20	FS_INF-K				71.37123																	
2022-08-20	FS_INF-S				44.16826																	
2022-08-20	FS_INF-K				71.19008																	
2022-08-20	FS_INF-S				43.7695																	
2022-08-20	FS_INF-K				71.13822																	
2022-08-20	FS_INF-S				44.13323																	
2022-08-20	FS_INF-K				70.8461																	
2022-08-20	FS_INF-S				45.1396																	
2022-08-20	FS_INF-K				71.60194																	
2022-08-20	FS_INF-S				44.38405																	
2022-08-21	FS_INF-K				71.41594																	
2022-08-21	FS_INF-S				44.15672																	
2022-08-21	FS_INF-K				71.88436																	
2022-08-21	FS_INF-S				43.9695																	
2022-08-21	FS_BPO				< 0.23 0.0418						< 0.01	8				0.222	12.9	< 0.010		16.9		16.0

	Parameter	Molybdenum	Nickel	Nickel	Nitrate Nitrogen (NO3), As N	Nitrite Nitrogen (NO2), As N	Nitrogen, Ammonia (As N)	Ortho-Phosphate	Ozone	Ozone	Ozone	pH, Field	pH, LAB	Phosphorus	Potassium	Se(IV) – selenite SeO3(-2)	Se(VI) – selenate SeO4(-2)	SeCN – selenocyanate SeCN(-1)	Selenium	Selenium	Selenium	Selenium
	Fraction	T	D	T	N	N	T	D	N	R	T	N	N	T	T	D	D	D	D	D	T	T
	Unit	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ph units	ph units	mg/l	mg/l	ug/l	ug/l	ug/l	mg/l	ug/l	mg/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-08-21	FS_INF-K				71.52574							7.31										215
2022-08-21	FS_INF-S				43.85644							7.55										472
2022-08-21	FS_INF-K				71.08036																	
2022-08-21	FS_INF-S				43.68425																	
2022-08-21	FS_INF-K				72.13197																	
2022-08-21	FS_INF-S				43.62786																	
2022-08-21	FS_INF-K				69.61155																	
2022-08-21	FS_INF-S				43.65635																	
2022-08-21	FS_INF-K				71.31495																	
2022-08-21	FS_INF-S				44.11805																	
2022-08-21	FS_INF-K				73.48912																	
2022-08-21	FS_INF-S				43.83568																	
2022-08-22	FS_INF-K				72.03753																	
2022-08-22	FS_INF-S				44.19956																	
2022-08-22	FS_INF-K				71.61321																	
2022-08-22	FS_INF-S				44.69038																	
2022-08-22	FS_BPO				< 0.23 < 0.0250	< 0.0050	0.0085	0.0482			< 0.01	8.04	8.32	0.0739						15.9		13.8
2022-08-22	FS_INF-K				74.09217 69.9	0.0125	< 0.0050	< 0.0010				7.28	7.80	< 0.0020								
2022-08-22	FS_INF-S				44.09761 44.8	0.0380	0.0121	< 0.0010				7.46	7.93	0.0045								
2022-08-22	FS_BPO																					
2022-08-22	FS_INF-K				72.19585																	
2022-08-22	FS_INF-S				44.6493																	
2022-08-22	FS_INF-K				72.71091																	
2022-08-22	FS_INF-S				43.92772																	
2022-08-22	FS_INF-K				75.30031																	
2022-08-22	FS_INF-S				44.06106																	
2022-08-22	FS_INF-K				72.4062																	
2022-08-22	FS_INF-S				44.87777																	
2022-08-23	FS_INF-K				76.53704																	
2022-08-23	FS_INF-S				45.4161																	
2022-08-23	FS_INF-K				73.13461																	
2022-08-23	FS_INF-S				44.19212																	
2022-08-23	FS_BPO	0.0510	8.71	8.52	< 0.23 0.490						< 0.01	8.06			5.66	0.233	13.7	< 0.010		14.7		16.4
2022-08-23	FS_INF-K	0.00135	51.3	49.9	75.77727							7.56			4.85					236		232
2022-08-23	FS_INF-S	0.00438	63.4	62.2	43.93852							7.31			5.19					568		523
2022-08-23	FR_FRABCH	0.00184	1.59	2.11	20.2	0.0079	0.0145	< 0.0010				7.93	8.31	0.0222	2.13					92.6		73.4
2022-08-23	FS_BPO											8.08										
2022-08-23	FS_BPO				< 0.23						< 0.01	8.1										
2022-08-24	FS_INF-K				73.36204																	
2022-08-24	FS_INF-S				43.87927																	
2022-08-24	FS_BPO				< 0.23 0.410						< 0.01	8.13								17.4		15.8
2022-08-24	FS_INF-K				72.93536							7.27										
2022-08-24	FS_INF-S				43.284							7.62										
2022-08-24	FS_INF-K				74.04887																	
2022-08-24	FS_INF-S				44.13625																	
2022-08-24	FR_FRABCH				20.7 20.29983							8.08										80.8
2022-08-24	FR_SCOUTDS				16.3							8.31										70.0
2022-08-24	FS_INF-K				73.08453																	
2022-08-24	FS_INF-S				43.06262																	
2022-08-24	FS_INF-K				75.33167																	
2022-08-24	FS_INF-S				43.03516																	
2022-08-24	FS_INF-K				73.78407																	
2022-08-24	FS_INF-S				43.69245																	
2022-08-24	FS_INF-K				75.79348																	
2022-08-24	FS_INF-S				43.61594																	
2022-08-25	FS_INF-K				75.84691																	
2022-08-25	FS_INF-S				43.73403																	
2022-08-25	FS_INF-K				73.29459																	
2022-08-25	FS_INF-S				43.77832																	
2022-08-25	FS_BPO				< 0.23 0.503						< 0.01	8.2				0.367	20.3	< 0.010		25.5		22.0
2022-08-25	FS_INF-K				73.93051							7.4										253
2022-08-25	FS_INF-S				45.3452							7.59										557
2022-08-25	FR_SCOUTDS	0.00395	6.26	6.59	14.8	0.0086	0.0055	0.0019				8.3	8.35	0.0084	2.10	0.241	55.6	< 0.010		59.7		57.7
2022-08-25	FS_INF-K				73.96626																	
2022-08-25	FS_INF-S				45.55275																	
2022-08-25	FS_INF-K				76.68275																	
2022-08-25	FS_INF-S				44.39912																	
2022-08-25	FS_INF-K				77.21841																	
2022-08-25	FS_INF-S				45.15228																	
2022-08-25	FS_INF-K				76.36965																	
2022-08-25	FS_INF-S				44.44829																	
2022-08-25	FS_INF-K				76.37161																	
2022-08-25	FS_INF-S				44.08861																	
2022-08-26	FS_INF-K				76.01943																	
2022-08-26	FS_INF-S				43.74137																	
2022-08-26	FS_INF-K				74.52563																	
2022-08-26	FS_INF-S				43.82664																	
2022-08-26	FS_BPO				< 0.23 0.0826						< 0.01	8.2								24.4		24.0
2022-08-26	FS_INF-K				74.21066							7.23										
2022-08-26	FS_INF-S				42.8119							7.57										
2022-08-26	FS_INF-K				74.61483																	

Parameter		Molybdenum	Nickel	Nickel	Nitrate Nitrogen (NO3), As N	Nitrite Nitrogen (NO2), As N	Nitrogen, Ammonia (As N)	Ortho-Phosphate	Ozone	Ozone	Ozone	pH, Field	pH, LAB	Phosphorus	Potassium	Se(IV) – selenite SeO3(-2)	Se(VI) – selenate SeO4(-2)	SeCN – selenocyanate SeCN(-1)	Selenium	Selenium	Selenium	Selenium
Fraction		T	D	T	N	N	T	D	N	R	T	N	N	T	T	D	D	D	D	D	T	T
Unit		mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ph units	ph units	mg/l	mg/l	ug/l	ug/l	ug/l	mg/l	ug/l	mg/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-08-26	FS_INF-S				43.09382																	
2022-08-26	FS_INF-K				74.83948																	
2022-08-26	FS_INF-S				43.69773																	
2022-08-26	FS_INF-K				76.91604																	
2022-08-26	FS_INF-S				45.10123																	
2022-08-26	FS_INF-K				76.50498																	
2022-08-26	FS_INF-S				44.05008																	
2022-08-26	FS_INF-K				75.59972																	
2022-08-26	FS_INF-S				43.56193																	
2022-08-27	FS_INF-K				78.39068																	
2022-08-27	FS_INF-S				41.49934																	
2022-08-27	FS_INF-K				75.79453																	
2022-08-27	FS_INF-S				43.02139																	
2022-08-27	FS_BPO				< 0.23 73.1						< 0.01	8.15								26.1		29.0
2022-08-27	FS_INF-K				75.93452							7.32										
2022-08-27	FS_INF-S				46.41943							7.54										
2022-08-27	FS_INF-K				78.19226																	
2022-08-27	FS_INF-S				45.63169																	
2022-08-27	FS_INF-K				71.461																	
2022-08-27	FS_INF-S				43.86074																	
2022-08-27	FS_INF-K				76.08972																	
2022-08-27	FS_INF-S				44.0514																	
2022-08-27	FS_INF-K				74.67772																	
2022-08-27	FS_INF-S				44.43375																	
2022-08-28	FS_BPO				< 0.23 0.170						< 0.01	8.18				0.487	20.5	< 0.010		25.3		27.8
2022-08-28	FS_INF-K											7.38										247
2022-08-28	FS_INF-S											8.07										539
2022-08-28	FR_FRABCH				16.128																	
2022-08-28	FR_FRABCH				15.8																	61.6
2022-08-28	FR_SCOUTDS				11.0																	55.2
2022-08-28	FS_INF-K				78.36819																	
2022-08-28	FS_INF-S				43.51883																	
2022-08-29	FS_BPO										< 0.01											
2022-08-29	FS_BPO				< 0.23							8.15										
2022-08-29	FS_INF-K											7.35										
2022-08-29	FS_INF-S											7.499										
2022-08-29	FR_FRABCH				16.6																	69.8
2022-08-29	FR_SCOUTDS				12.1																	65.6
2022-08-29	FS_INF-K				72.04494																	
2022-08-29	FS_INF-S				42.79953																	
2022-08-29	FS_BPO											8.31										
2022-08-29	FS_BPO				0.0958	< 0.0050	0.0055	0.0388				8.32	8.22	0.0955						20.5		22.7
2022-08-29	FS_INF-K				78.06705 73.1	< 0.0050	< 0.0050	< 0.0010				7.1	7.77	< 0.0020								
2022-08-29	FS_INF-S				43.6 43.8175	0.0380	0.0129	< 0.0010				7.56	8.00	0.0077								
2022-08-29	FS_INF-S				42.32005																	
2022-08-30	FS_INF-S				43.42027																	
2022-08-30	FS_INF-S				43.92221																	
2022-08-30	FS_BPO	0.0453	9.24	8.74	< 0.23 0.106						< 0.01	8.35			7.91	0.661	20.5	< 0.010		24.8		23.6
2022-08-30	FS_INF-K	0.00144	55.5	55.0								7.55			4.78	0.077	243	< 0.010		263		257
2022-08-30	FS_INF-S	0.00406	63.4	64.8	43.06319							7.95			5.10	0.881	489	< 0.010		534		523
2022-08-30	FR_FRABCH	0.00187	1.79	1.85	17.7	0.0054	< 0.0050	< 0.0010				7.93	8.28	0.0061	1.91					77.8		68.5
2022-08-30	FS_INF-K				77.46548																	
2022-08-30	FS_INF-S				43.25823																	
2022-08-30	FS_INF-S				41.01411																	
2022-08-30	FS_INF-S				43.79011																	
2022-08-30	FS_INF-S				43.48158																	
2022-08-30	FS_INF-S				43.27697																	
2022-08-31	FS_INF-S				42.87051																	
2022-08-31	FS_INF-S				43.40358																	
2022-08-31	FS_BPO				< 0.23 0.263						< 0.01	8.2								22.6		24.9
2022-08-31	FS_INF-K											7.51										
2022-08-31	FS_INF-S				43.93881							7.61										
2022-08-31	FS_INF-K				77.95443																	
2022-08-31	FS_INF-S				44.68377																	
2022-08-31	FS_INF-K				77.84367																	
2022-08-31	FS_INF-S				45.66114																	
2022-08-31	FS_INF-K				78.64405																	
2022-08-31	FS_INF-S				44.45456																	
2022-08-31	FS_INF-K				78.4189																	
2022-08-31	FS_INF-S				43.04231																	
2022-09-01	FS_INF-K				78.47688																	
2022-09-01	FS_INF-S				43.45329																	
2022-09-01	FS_INF-K				78.40149																	
2022-09-01	FS_INF-S				42.49643																	
2022-09-01	FS_BPO				< 0.23 < 0.0250						< 0.01	8.16				0.466	17.3	< 0.010		20.5		21.7
2022-09-01	FS_INF-K				77.41328							7.32										257
2022-09-01	FS_INF-S				42.00722							7.65										567
2022-09-01	FR_SCOUTDS	0.00487	5.23	5.34	13.3	0.0084	0.0074	0.0016				8.3	8.43	0.0096	2.07	0.211	44.4	< 0.010		48.4		49.0
2022-09-01	FS_INF-K				80.33408																	
2022-09-01	FS_INF-S				43.14043																	
2022-09-01	FS_INF-K				78.36697																	
2022-09-01	FS_INF-S				43.07293																	

Parameter		Molybdenum	Nickel	Nickel	Nitrate Nitrogen (NO3), As N	Nitrite Nitrogen (NO2), As N	Nitrogen, Ammonia (As N)	Ortho-Phosphate	Ozone	Ozone	Ozone	pH, Field	pH, LAB	Phosphorus	Potassium	Se(IV) – selenite SeO3(-2)	Se(VI) – selenate SeO4(-2)	SeCN – selenocyanate SeCN(-1)	Selenium	Selenium	Selenium	Selenium
Fraction		T	D	T	N	N	T	D	N	R	T	N	N	T	T	D	D	D	D	D	T	T
Unit		mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ph units	ph units	mg/l	mg/l	ug/l	ug/l	ug/l	mg/l	ug/l	mg/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-09-01	FS_INF-K				77.93566																	
2022-09-01	FS_INF-S				42.70446																	
2022-09-01	FS_INF-K				82.21857																	
2022-09-01	FS_INF-S				42.74505																	
2022-09-01	FS_INF-K				81.12499																	
2022-09-01	FS_INF-S				42.81871																	
2022-09-02	FS_INF-K				81.68046																	
2022-09-02	FS_INF-S				42.76094																	
2022-09-02	FS_INF-K				82.31834																	
2022-09-02	FS_INF-S				43.07153																	
2022-09-02	FS_BPO				0.61132 < 0.0250						< 0.01	8.16								21.0		20.8
2022-09-02	FS_INF-K				79.74142							7.41										
2022-09-02	FS_INF-S				43.91286							7.75										
2022-09-02	FS_BPO											8.1										
2022-09-02	FS_INF-K				79.69499																	
2022-09-02	FS_INF-S				42.85964																	
2022-09-02	FS_INF-K				80.0479																	
2022-09-02	FS_INF-S				42.86172																	
2022-09-02	FS_INF-K				79.57231																	
2022-09-02	FS_INF-S				42.80891																	
2022-09-02	FS_INF-K				81.31184																	
2022-09-02	FS_INF-S				42.71597																	
2022-09-03	FS_INF-K				80.13843																	
2022-09-03	FS_INF-K				83.08165																	
2022-09-03	FS_BPO				< 0.23 0.0568						< 0.01	8.28								20.1		19.4
2022-09-03	FS_INF-K				82.03354							7.31										
2022-09-03	FS_INF-S				43.76932							7.35										
2022-09-03	FS_INF-K				79.89669																	
2022-09-03	FS_INF-K				79.33229																	
2022-09-03	FS_INF-K				79.7505																	
2022-09-03	FS_INF-K				80.53399																	
2022-09-03	FS_INF-K				82.587																	
2022-09-04	FS_INF-K				80.53419																	
2022-09-04	FS_INF-K				82.7997																	
2022-09-04	FS_BPO				< 0.23 0.460						< 0.01	8.37				0.462	15.9	< 0.010		19.5		20.9
2022-09-04	FS_INF-K				81.436							7.32										255
2022-09-04	FS_INF-S				47.6345							8.04										534
2022-09-04	FS_INF-K				81.64629																	
2022-09-04	FS_INF-K				81.7667																	
2022-09-04	FS_INF-K				82.01585																	
2022-09-04	FS_INF-K				83.03057																	
2022-09-04	FS_INF-K				80.98153																	
2022-09-05	FS_INF-K				80.39501																	
2022-09-05	FS_INF-K				81.07703																	
2022-09-05	FS_BPO				< 0.23 < 0.0250	< 0.0050	0.0079	0.0118			< 0.01	8.21	8.30	0.0811						18.9		18.2
2022-09-05	FS_INF-K				84.0693 78.6	< 0.0050	< 0.0050	< 0.0010				7.45	7.89	< 0.0020								
2022-09-05	FS_INF-S				43.2442 42.0	0.0388	0.0118	< 0.0010				7.54	8.05	0.0020								
2022-09-05	FS_BPO																					
2022-09-05	FS_INF-K				81.38963																	
2022-09-05	FS_INF-K				82.34002																	
2022-09-05	FS_INF-K				81.89453																	
2022-09-05	FS_INF-K				81.33721																	
2022-09-05	FS_INF-K				83.67609																	
2022-09-06	FS_INF-K				81.33386																	
2022-09-06	FS_BPO	0.0439	8.70	8.71	< 0.23 < 0.0250						< 0.01	8.21			5.36	0.372	15.4	< 0.010		20.2		19.0
2022-09-06	FS_INF-K	0.00133	62.2	57.8	81.47827							7.33			5.08					293		266
2022-09-06	FS_INF-S	0.00393	71.0	64.1	42.8166							7.43			4.94					599		562
2022-09-06	FR_FRABCH	0.00147	2.48	2.59	21.7	< 0.0050	< 0.0050	< 0.0010				7.96	8.28	0.0031	1.93					97.5		87.8
2022-09-06	FS_INF-K				82.748																	
2022-09-06	FS_INF-K				84.84809																	
2022-09-06	FR_FRABCH				21.26214																	
2022-09-06	FS_INF-K				85.47794																	
2022-09-06	FS_INF-K				82.22768																	
2022-09-06	FS_INF-K				85.11243																	
2022-09-07	FS_INF-K				85.54965																	
2022-09-07	FS_INF-K				82.93189																	
2022-09-07	FS_BPO				< 0.23 0.0530						< 0.01	8.19								17.6		16.1
2022-09-07	FS_INF-K				81.06591							7.35										
2022-09-07	FS_INF-S				42.00782							7.52										
2022-09-07	FS_INF-K				81.04129																	
2022-09-07	FS_INF-K				81.2347																	
2022-09-07	FS_INF-K				81.35197																	
2022-09-07	FS_BPO										< 0.01	8.2										
2022-09-07	FS_INF-K				81.07533																	
2022-09-07	FS_INF-K				83.2088																	
2022-09-08	FS_INF-K				80.10896																	
2022-09-08	FS_INF-S				38.99987																	
2022-09-08	FS_INF-K				80.17146																	
2022-09-08	FS_INF-S				41.40022																	
2022-09-08	FS_BPO				< 0.23 0.431						< 0.01	8.25				0.624	18.0	< 0.010		21.1		21.8

Parameter		Molybdenum	Nickel	Nickel	Nitrate Nitrogen (NO3), As N	Nitrite Nitrogen (NO2), As N	Nitrogen, Ammonia (As N)	Ortho-Phosphate	Ozone	Ozone	Ozone	pH, Field	pH, LAB	Phosphorus	Potassium	Se(IV) – selenite SeO3(-2)	Se(VI) – selenate SeO4(-2)	SeCN – selenocyanate SeCN(-1)	Selenium	Selenium	Selenium	Selenium
Fraction		T	D	T	N	N	T	D	N	R	T	N	N	T	T	D	D	D	D	D	T	T
Unit		mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ph units	ph units	mg/l	mg/l	ug/l	ug/l	ug/l	mg/l	ug/l	mg/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-09-08	FS_INF-K				83.81065							7.35										252
2022-09-08	FS_INF-S				41.58356							7.57										530
2022-09-08	FR_SCOUTDS	0.00163	12.2	12.8	22.4	0.0068	< 0.0050	< 0.0010				8.33	8.24	0.0031	2.51	0.300	102	< 0.010		114		116
2022-09-08	FS_INF-K				81.23859																	
2022-09-08	FS_INF-S				41.53944																	
2022-09-08	FS_INF-K				81.59622																	
2022-09-08	FS_INF-S				41.75644																	
2022-09-08	FS_INF-K				84.41283																	
2022-09-08	FS_INF-S				41.5828																	
2022-09-08	FS_INF-K				80.3578																	
2022-09-08	FS_INF-S				40.91668																	
2022-09-08	FS_INF-K				79.37423																	
2022-09-08	FS_INF-S				41.18972																	
2022-09-09	FS_INF-K				79.73737																	
2022-09-09	FS_INF-S				41.40522																	
2022-09-09	FS_BPO				< 0.23 0.0434						< 0.01	8.05								25.4		25.6
2022-09-09	FS_INF-K				81.37918							7.45										
2022-09-09	FS_INF-S				41.67365							7.73										
2022-09-09	FS_INF-K				81.98192																	
2022-09-09	FS_INF-S				42.13319																	
2022-09-09	FS_INF-K				80.23256																	
2022-09-09	FS_INF-S				41.20728																	
2022-09-09	FS_INF-K				81.57227																	
2022-09-09	FS_INF-S				41.68822																	
2022-09-09	FS_INF-K				81.78545																	
2022-09-09	FS_INF-S				41.8973																	
2022-09-09	FS_INF-K				81.69849																	
2022-09-09	FS_INF-S				41.89111																	
2022-09-10	FS_INF-K				81.67489																	
2022-09-10	FS_INF-S				41.62271																	
2022-09-10	FS_INF-K				81.48481																	
2022-09-10	FS_INF-S				41.60608																	
2022-09-10	FS_BPO				0.340 < 0.23						< 0.01	8.13								26.7		27.0
2022-09-10	FS_INF-K				81.46818							7.4										
2022-09-10	FS_INF-S				41.7215							7.72										
2022-09-10	FS_INF-K				84.21861																	
2022-09-10	FS_INF-S				41.47198																	
2022-09-10	FS_INF-K				83.90266																	
2022-09-10	FS_INF-S				41.44571																	
2022-09-10	FS_INF-K				80.89928																	
2022-09-10	FS_INF-S				41.77789																	
2022-09-10	FS_INF-K				85.18424																	
2022-09-10	FS_INF-S				42.02311																	
2022-09-11	FS_INF-K				81.68689																	
2022-09-11	FS_INF-S				43.40441																	
2022-09-11	FS_INF-K				79.97295																	
2022-09-11	FS_INF-S				41.27975																	
2022-09-11	FS_BPO				< 0.23 < 0.0250						< 0.01	8.13				0.633	17.5	< 0.010		22.7		21.4
2022-09-11	FS_INF-K				81.43716							7.44										279
2022-09-11	FS_INF-S				40.96574							7.67										550
2022-09-11	FS_INF-K				81.8344																	
2022-09-11	FS_INF-S				41.14309																	
2022-09-11	FS_INF-K				81.72705																	
2022-09-11	FS_INF-S				41.15385																	
2022-09-11	FS_INF-K				83.07963																	
2022-09-11	FS_INF-S				41.18758																	
2022-09-11	FS_INF-K				81.64971																	
2022-09-11	FS_INF-S				41.28429																	
2022-09-12	FS_INF-K				81.67582																	
2022-09-12	FS_INF-S				41.16671																	
2022-09-12	FS_INF-K				81.57172																	
2022-09-12	FS_INF-S				41.6674																	
2022-09-12	FS_BPO				< 0.23 0.0441	< 0.0050	0.0099	0.0670			< 0.01	8.28	8.37	0.0789						20.6		19.7
2022-09-12	FS_INF-K				82.42762 81.4	< 0.0050	< 0.0050	< 0.0010				7.42	7.92	< 0.0020								
2022-09-12	FS_INF-S				38.70469 41.8	0.0276	< 0.0050	< 0.0010				7.63	8.03	< 0.0020								
2022-09-12	FS_BPO																					
2022-09-12	FS_INF-K				82.4297																	
2022-09-12	FS_INF-S				41.02581																	
2022-09-12	FS_INF-K				84.51118																	
2022-09-12	FS_INF-S				42.09189																	
2022-09-12	FS_INF-K				85.22721																	
2022-09-12	FS_INF-S				42.43967																	
2022-09-12	FS_INF-K				82.68483																	
2022-09-12	FS_INF-S				41.7684																	
2022-09-12	FS_INF-K				84.79201																	
2022-09-12	FS_INF-S				44.97623																	
2022-09-13	FS_INF-K				83.54851																	
2022-09-13	FS_INF-S				40.44775																	
2022-09-13	FS_INF-K				81.82899																	
2022-09-13	FS_INF-S				40.58819																	
2022-09-13	FS_BPO	0.0546	10.9	11.4	< 0.23 0.0588						< 0.01	8.16			5.61	0.329	15.6	< 0.010		19.2		20.9
2022-09-13	FS_INF-K	0.00142	54.4	63.2	86.17825							7.39			5.27	0.058	259	< 0.010		280		281

	Parameter	Molybdenum	Nickel	Nickel	Nitrate Nitrogen (NO3), As N	Nitrite Nitrogen (NO2), As N	Nitrogen, Ammonia (As N)	Ortho-Phosphate	Ozone	Ozone	Ozone	pH, Field	pH, LAB	Phosphorus	Potassium	Se(IV) – selenite SeO3(-2)	Se(VI) – selenate SeO4(-2)	SeCN – selenocyanate SeCN(-1)	Selenium	Selenium	Selenium	Selenium
	Fraction	T	D	T	N	N	T	D	N	R	T	N	N	T	T	D	D	D	D	D	T	T
	Unit	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ph units	ph units	mg/l	mg/l	ug/l	ug/l	ug/l	mg/l	ug/l	mg/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-09-13	FS_INF-S	0.00429	59.3	69.4	41.65688							7.67			5.37	0.745	505	< 0.010		564		582
2022-09-13	FR_FRABCH	0.00188	1.66	1.58	22.0	0.0105	< 0.0050	< 0.0010				7.89 7.85	8.15	< 0.0020	2.12					104		79.6
2022-09-13	FS_INF-K				85.72388																	
2022-09-13	FS_INF-S				40.85979																	
2022-09-13	FS_INF-K				80.0499																	
2022-09-13	FS_INF-S				41.31413																	
2022-09-13	FS_INF-K				81.9894																	
2022-09-13	FS_INF-S				40.14801																	
2022-09-13	FR_FRABCH	0.00188	1.59	1.80	21.5	0.0050	0.0054	< 0.0010				7.85	8.06	0.0035	2.24					91.0		78.4
2022-09-13	FS_INF-K				84.76465																	
2022-09-13	FS_INF-S				40.42193																	
2022-09-13	FS_INF-K				82.29747																	
2022-09-13	FS_INF-S				41.2186																	
2022-09-14	FS_INF-K				82.10922																	
2022-09-14	FS_INF-S				40.68755																	
2022-09-14	FS_INF-K				82.49796																	
2022-09-14	FS_INF-S				40.9081																	
2022-09-14	FS_BPO				< 0.23 1.17							8.16								19.2		18.5
2022-09-14	FS_INF-K				82.35662 83.7							7.42										
2022-09-14	FS_INF-S				40.71622 41.7							7.67										
2022-09-14	FS_BPO										< 0.01											
2022-09-14	FS_INF-K				85.49694																	
2022-09-14	FS_INF-S				40.71741																	
2022-09-14	FS_INF-K				83.18536																	
2022-09-14	FS_INF-S				41.39719																	
2022-09-14	FS_INF-K				81.5631																	
2022-09-14	FS_INF-S				40.71462																	
2022-09-14	FS_INF-K				82.93743																	
2022-09-14	FS_INF-S				42.36069																	
2022-09-15	FS_INF-K				84.47387																	
2022-09-15	FS_INF-S				42.55098																	
2022-09-15	FS_INF-K				86.69097																	
2022-09-15	FS_INF-S				42.4726																	
2022-09-15	FS_BPO				< 0.23 0.292						< 0.01	8.1				0.591	18.9	0.020		23.4 21.8		25.4
2022-09-15	FS_INF-K				86.09824							7.44										284
2022-09-15	FS_INF-S				40.16792							7.8										552
2022-09-15	FR_SCOUTDS	0.00497	6.96	6.81	18.7	0.0055	0.0066	0.0048				8.37	8.27	0.0082	2.65	0.282	62.8	< 0.010		61.9		62.6
2022-09-15	FS_INF-K				80.30562																	
2022-09-15	FS_INF-S				39.24503																	
2022-09-15	FS_INF-K				78.78948																	
2022-09-15	FS_INF-S				38.35402																	
2022-09-15	FS_INF-K				81.67284																	
2022-09-15	FS_INF-S				38.28413																	
2022-09-15	FS_INF-K				81.98801																	
2022-09-15	FS_INF-S				40.76291																	
2022-09-15	FS_INF-K				84.99399																	
2022-09-15	FS_INF-S				40.44614																	
2022-09-16	FS_INF-K				81.79879																	
2022-09-16	FS_INF-S				39.98244																	
2022-09-16	FS_INF-K				82.65208																	
2022-09-16	FS_INF-S				40.09159																	
2022-09-16	FS_BPO				< 0.23 0.0629						< 0.01	8.11								20.9		23.1
2022-09-16	FS_INF-K				83.02439							7.44										
2022-09-16	FS_INF-S				40.7732							7.66										
2022-09-16	FS_INF-K				84.46277																	
2022-09-16	FS_INF-S				40.36517																	
2022-09-16	FS_INF-K				85.22394																	
2022-09-16	FS_INF-S				41.20592																	
2022-09-16	FS_INF-K				87.76784																	
2022-09-16	FS_INF-S				41.58302																	
2022-09-16	FS_INF-K				88.95756																	
2022-09-16	FS_INF-S				42.6205																	
2022-09-17	FS_INF-K				88.18696																	
2022-09-17	FS_INF-S				41.42215																	
2022-09-17	FS_INF-K				88.55273																	
2022-09-17	FS_INF-S				41.26821																	
2022-09-17	FS_BPO				< 0.23 0.0647						< 0.01	8.18								22.5		23.1
2022-09-17	FS_INF-K				85.48708							7.42										
2022-09-17	FS_INF-S				42.38245							7.61										
2022-09-17	FS_INF-K				87.82936																	
2022-09-17	FS_INF-S				41.81256																	
2022-09-17	FS_INF-K				86.08978																	
2022-09-17	FS_INF-S				41.31397																	
2022-09-17	FS_INF-K				85.29874																	
2022-09-17	FS_INF-S				41.2192																	
2022-09-17	FS_INF-K				90.14874																	
2022-09-17	FS_INF-S				41.68082																	
2022-09-17	FS_INF-K				86.67314																	
2022-09-17	FS_INF-S				41.28869																	
2022-09-18	FS_INF-K				86.27393																	
2022-09-18	FS_INF-S				41.34832																	
2022-09-18	FS_INF-K				89.46584																	

	Parameter	Molybdenum	Nickel	Nickel	Nitrate Nitrogen (NO3), As N	Nitrite Nitrogen (NO2), As N	Nitrogen, Ammonia (As N)	Ortho-Phosphate	Ozone	Ozone	Ozone	pH, Field	pH, LAB	Phosphorus	Potassium	Se(IV) – selenite SeO3(-2)	Se(VI) – selenate SeO4(-2)	SeCN – selenocyanate SeCN(-1)	Selenium	Selenium	Selenium	Selenium
	Fraction	T	D	T	N	N	T	D	N	R	T	N	N	T	T	D	D	D	D	D	T	T
	Unit	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ph units	ph units	mg/l	mg/l	ug/l	ug/l	ug/l	mg/l	ug/l	mg/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-09-18	FS_INF-S				41.83156																	
2022-09-18	FS_BPO				< 0.23 0.0433						< 0.01	8.11				0.527	21.8	0.015		21.3		24.5
2022-09-18	FS_INF-K				85.21593							7.48										295
2022-09-18	FS_INF-S				40.86813							7.66										612
2022-09-18	FS_INF-K				85.8738																	
2022-09-18	FS_INF-S				41.77388																	
2022-09-18	FS_INF-K				84.84509																	
2022-09-18	FS_INF-S				40.93665																	
2022-09-18	FS_INF-K				85.9251																	
2022-09-18	FS_INF-S				41.07669																	
2022-09-18	FS_INF-K				86.01057																	
2022-09-18	FS_INF-S				41.29104																	
2022-09-18	FS_INF-K				86.70479																	
2022-09-18	FS_INF-S				41.73728																	
2022-09-19	FS_INF-K				86.79805																	
2022-09-19	FS_INF-S				40.91736																	
2022-09-19	FS_INF-K				85.65213																	
2022-09-19	FS_INF-S				41.43006																	
2022-09-19	FS_BPO				< 0.23 0.191	< 0.0050	0.0214	0.0533			< 0.01	8.17	8.43	0.0855						23.9		22.4
2022-09-19	FS_INF-K				85.50714 83.5	< 0.0050	< 0.0050	0.0011				7.5	8.09	< 0.0020								
2022-09-19	FS_INF-S				40.9074 41.3	0.0237	0.0056	0.0017				7.69	8.14	0.0031								
2022-09-19	FS_BPO																					
2022-09-19	FS_INF-K				88.24825																	
2022-09-19	FS_INF-S				40.90838																	
2022-09-19	FS_INF-K				84.89646																	
2022-09-19	FS_INF-S				40.75364																	
2022-09-19	FS_INF-K				84.76863																	
2022-09-19	FS_INF-S				40.26019																	
2022-09-19	FS_INF-K				85.73694																	
2022-09-19	FS_INF-S				39.7373																	
2022-09-19	FS_BPO				< 0.23						< 0.01	8.2										
2022-09-19	FS_INF-K				85.92178																	
2022-09-19	FS_INF-S				40.25159																	
2022-09-20	FS_INF-K				88.95834																	
2022-09-20	FS_INF-S				40.13665																	
2022-09-20	FS_INF-K				87.03822																	
2022-09-20	FS_INF-S				40.64642																	
2022-09-20	FS_BPO	0.0514	12.3	11.3	< 0.23 0.0259						< 0.01	8.19			5.15	0.697	21.4	< 0.010		21.4		20.9
2022-09-20	FS_INF-K	0.00123	55.4	57.3	85.84915							7.47			5.16					286		257
2022-09-20	FS_INF-S	0.00311	59.8	51.5	40.01001							7.7			4.39					545		407
2022-09-20	FS_BPO											8.17										
2022-09-20	FS_INF-K				89.50533																	
2022-09-20	FS_INF-S				39.7813																	
2022-09-20	FS_BPO											8.14										
2022-09-20	FS_INF-K				86.43902																	
2022-09-20	FS_INF-S				39.87125																	
2022-09-20	FS_BPO											8.17										
2022-09-20	FS_INF-K				86.69379																	
2022-09-20	FS_INF-S				40.57597																	
2022-09-20	FS_BPO											8.17										
2022-09-20	FS_INF-K				88.6386																	
2022-09-20	FS_INF-S				40.1054																	
2022-09-21	FS_BPO											8.19										
2022-09-21	FS_INF-K				86.99768																	
2022-09-21	FS_INF-S				40.11539																	
2022-09-21	FS_BPO											8.16										
2022-09-21	FS_INF-K				90.30752																	
2022-09-21	FS_INF-S				40.08292																	
2022-09-21	FS_BPO				< 0.23 0.492						0.0350800339000000	8.22								24.5		23.4
2022-09-21	FS_INF-K				89.11443							7.45										
2022-09-21	FS_INF-S				39.51625							7.63										
2022-09-21	FS_BPO									< 0.01	< 0.01											
2022-09-21	FS_BPO											8.13										
2022-09-21	FS_INF-K				87.43369																	
2022-09-21	FS_INF-S				40.309																	
2022-09-21	FS_BPO											8.14										
2022-09-21	FS_INF-K				87.18561																	
2022-09-21	FS_INF-S				39.50183																	
2022-09-21	FS_BPO											8.12										
2022-09-21	FS_INF-K				87.22591																	
2022-09-21	FS_INF-S				39.5946																	
2022-09-21	FS_INF-K				88.82599																	
2022-09-21	FS_INF-S				40.08501																	
2022-09-22	FS_INF-K				87.30313																	
2022-09-22	FS_INF-S				40.09903																	
2022-09-22	FS_INF-K				87.7803																	
2022-09-22	FS_INF-S				40.42492																	
2022-09-22	FS_BPO				< 0.23 1.52						< 0.01	8.2				0.579	18.2	< 0.010		21.2		19.9
2022-09-22	FS_INF-K				86.8995							7.27										271
2022-09-22	FS_INF-S				39.7464							7.69										505
2022-09-22	FR_SCOUTDS																					
2022-09-22	FS_INF-K				86.03526																	

Parameter		Molybdenum	Nickel	Nickel	Nitrate Nitrogen (NO3), As N	Nitrite Nitrogen (NO2), As N	Nitrogen, Ammonia (As N)	Ortho-Phosphate	Ozone	Ozone	Ozone	pH, Field	pH, LAB	Phosphorus	Potassium	Se(IV) – selenite SeO3(-2)	Se(VI) – selenate SeO4(-2)	SeCN – selenocyanate SeCN(-1)	Selenium	Selenium	Selenium	Selenium
Fraction		T	D	T	N	N	T	D	N	R	T	N	N	T	T	D	D	D	D	D	T	T
Unit		mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ph units	ph units	mg/l	mg/l	ug/l	ug/l	ug/l	mg/l	ug/l	mg/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-09-22	FS_INF-S				39.69385																	
2022-09-22	FS_INF-K				89.66064																	
2022-09-22	FS_INF-S				39.98879																	
2022-09-22	FS_INF-K				86.0791																	
2022-09-22	FS_INF-S				40.04623																	
2022-09-22	FS_INF-K				86.04681																	
2022-09-22	FS_INF-S				40.03687																	
2022-09-22	FS_INF-K				88.30859																	
2022-09-22	FS_INF-S				39.60223																	
2022-09-23	FR_SCOUTDS	0.00489	11.0	10.8	24.6	0.0087	0.0193	0.0011				8.4	8.31	0.0056	2.58	0.283	86.2	< 0.010		92.7		86.2
2022-09-23	FS_INF-K				87.44322																	
2022-09-23	FS_INF-S				40.205																	
2022-09-23	FS_INF-K				89.98851																	
2022-09-23	FS_INF-S				39.67967																	
2022-09-23	FS_BPO				< 0.23 0.124						< 0.01	8.1								20.2		19.6
2022-09-23	FS_INF-K				83.96488							7.39										
2022-09-23	FS_INF-S				39.70358							7.6										
2022-09-23	FS_INF-K				87.94144																	
2022-09-23	FS_INF-S				39.61952																	
2022-09-23	FS_INF-K				87.85924																	
2022-09-23	FS_INF-S				39.79726																	
2022-09-23	FS_INF-K				88.25327																	
2022-09-23	FS_INF-S				40.946																	
2022-09-23	FS_INF-K				87.42101																	
2022-09-23	FS_INF-S				39.84412																	
2022-09-23	FS_INF-K				89.16666																	
2022-09-23	FS_INF-S				36.02921																	
2022-09-24	FS_INF-K				87.29109																	
2022-09-24	FS_INF-S				39.92876																	
2022-09-24	FS_INF-K				89.54331																	
2022-09-24	FS_INF-S				40.31381																	
2022-09-24	FS_BPO				< 0.23 0.0944						< 0.01	7.95								21.0		20.6
2022-09-24	FS_INF-K				87.26581							7.31										
2022-09-24	FS_INF-S				40.82348							7.65										
2022-09-24	FS_INF-K				85.23252																	
2022-09-24	FS_INF-S				39.79138																	
2022-09-24	FS_INF-K				87.76386																	
2022-09-24	FS_INF-S				41.45103																	
2022-09-24	FS_INF-K				89.18598																	
2022-09-24	FS_INF-S				41.03468																	
2022-09-24	FS_INF-K				87.41743																	
2022-09-24	FS_INF-S				40.62711																	
2022-09-24	FS_INF-K				88.20568																	
2022-09-24	FS_INF-S				40.78171																	
2022-09-25	FS_INF-K				89.06355																	
2022-09-25	FS_INF-S				41.59119																	
2022-09-25	FS_INF-K				87.56022																	
2022-09-25	FS_INF-S				40.70465																	
2022-09-25	FS_BPO				< 0.23 0.0577						< 0.01	7.63				0.635	16.1	< 0.010		20.4		19.6
2022-09-25	FS_INF-K				93.34521							7.18										300
2022-09-25	FS_INF-S				42.80291							7.31										551
2022-09-25	FS_INF-K				93.48393																	
2022-09-25	FS_INF-S				42.40465																	
2022-09-25	FS_INF-K				88.39507																	
2022-09-25	FS_INF-S				40.6207																	
2022-09-25	FS_INF-K				88.37839																	
2022-09-25	FS_INF-S				40.4991																	
2022-09-25	FS_INF-K				88.39263																	
2022-09-25	FS_INF-S				41.11184																	
2022-09-25	FS_INF-K				92.11904																	
2022-09-25	FS_INF-S				40.66263																	
2022-09-26	FS_INF-K				91.13374																	
2022-09-26	FS_INF-S				40.19746																	
2022-09-26	FS_INF-K				92.50227																	
2022-09-26	FS_INF-S				40.65112																	
2022-09-26	FS_BPO				< 0.23 0.0591	< 0.0050	0.0585	0.0356			< 0.01	7.8	8.23	0.0970						17.9		18.7
2022-09-26	FS_INF-K				91.18694 87.1	< 0.0050	< 0.0050	< 0.0010				7.09	7.89	< 0.0020								
2022-09-26	FS_INF-S				41.16229 41.8	0.0257	< 0.0050	< 0.0010				7.36	7.91	0.0055								
2022-09-26	FS_BPO																					
2022-09-26	FS_INF-K				87.77748																	
2022-09-26	FS_INF-S				40.40812																	
2022-09-26	FS_INF-K				84.35222																	
2022-09-26	FS_INF-S				39.67624																	
2022-09-26	FS_INF-K				87.63602																	
2022-09-26	FS_INF-S				39.38968																	
2022-09-26	FS_INF-K				87.32526																	
2022-09-26	FS_INF-S				40.00073																	
2022-09-26	FS_INF-K				86.80737																	
2022-09-26	FS_INF-S				38.35423																	
2022-09-27	FS_INF-K				86.96919																	
2022-09-27	FS_INF-S				39.94961																	
2022-09-27	FS_INF-K				90.95352																	
2022-09-27	FS_INF-S				39.60502																	

Parameter		Molybdenum	Nickel	Nickel	Nitrate Nitrogen (NO3), As N	Nitrite Nitrogen (NO2), As N	Nitrogen, Ammonia (As N)	Ortho-Phosphate	Ozone	Ozone	Ozone	pH, Field	pH, LAB	Phosphorus	Potassium	Se(IV) – selenite SeO3(-2)	Se(VI) – selenate SeO4(-2)	SeCN – selenocyanate SeCN(-1)	Selenium	Selenium	Selenium	Selenium
Fraction		T	D	T	N	N	T	D	N	R	T	N	N	T	T	D	D	D	D	D	T	T
Unit		mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ph units	ph units	mg/l	mg/l	ug/l	ug/l	ug/l	mg/l	ug/l	mg/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-09-27	FS_BPO	0.0497	9.47	11.2	< 0.23 0.119						< 0.01	7.72			5.32	1.27	18.1	0.039		23.7		23.5
2022-09-27	FS_INF-K	0.00122	63.3	58.7	91.79759							7.18			5.00	0.066	277	< 0.010		306		276
2022-09-27	FS_INF-S	0.00394	60.1	68.2	41.34782							7.3			5.55	0.776	474	< 0.010		534		618
2022-09-27	FS_INF-K				87.22872																	
2022-09-27	FS_INF-S				37.20935																	
2022-09-27	FS_INF-K				83.62151																	
2022-09-27	FS_INF-S				39.38662																	
2022-09-27	FS_INF-K				86.62752																	
2022-09-27	FS_INF-S				39.46444																	
2022-09-27	FS_INF-K				85.72749																	
2022-09-27	FS_INF-S				40.12325																	
2022-09-27	FS_INF-K				87.62884																	
2022-09-27	FS_INF-S				39.29047																	
2022-09-28	FS_INF-K				89.6131																	
2022-09-28	FS_INF-S				40.05387																	
2022-09-28	FS_BPO				< 0.23 0.106						< 0.01	7.93								22.0		21.4
2022-09-28	FS_INF-K				87.01968							7.17										
2022-09-28	FS_INF-S				39.03507							7.32										
2022-09-28	FS_INF-K				85.69641																	
2022-09-28	FS_INF-S				39.41756																	
2022-09-28	FS_INF-K				82.61079																	
2022-09-28	FS_INF-S				40.66084																	
2022-09-28	FS_INF-K				86.58942																	
2022-09-28	FS_INF-S				39.60128																	
2022-09-28	FS_INF-K				86.26704																	
2022-09-28	FS_INF-S				39.12645																	
2022-09-29	FS_INF-K				80.5882																	
2022-09-29	FS_INF-S				39.75776																	
2022-09-29	FS_INF-K				85.96022																	
2022-09-29	FS_INF-S				40.26408																	
2022-09-29	FS_BPO				< 0.23 0.254						< 0.01	8.11				1.08	18.3	< 0.010		25.0		25.6
2022-09-29	FS_INF-K				90.57645							7.26										313
2022-09-29	FS_INF-S				39.01113							7.44										579
2022-09-29	FR_SCOUTDS	0.00311	14.1	15.5	29.3	0.0127	0.0065	< 0.0010				8.321	8.28	0.0030	2.59	0.321	116	< 0.010		132		119
2022-09-29	FS_BPO											8.17										
2022-09-29	FS_BPO											8.08										
2022-09-29	FS_INF-K				85.90368																	
2022-09-29	FS_INF-S				38.6643																	
2022-09-29	FS_BPO											8.08										
2022-09-29	FS_INF-K				90.07495																	
2022-09-29	FS_INF-S				37.30498																	
2022-09-29	FS_INF-K				87.8589																	
2022-09-29	FS_INF-S				39.3437																	
2022-09-29	FS_BPO											8.13										
2022-09-29	FS_INF-K				87.66824																	
2022-09-29	FS_INF-S				38.94733																	
2022-09-29	FS_INF-K				86.0755																	
2022-09-29	FS_INF-S				39.49383																	
2022-09-30	FS_BPO											8.09 8.08										
2022-09-30	FS_INF-K				90.7168																	
2022-09-30	FS_INF-S				39.29529																	
2022-09-30	FS_INF-K				86.96778																	
2022-09-30	FS_INF-S				38.90408																	
2022-09-30	FS_BPO				0.61979 0.123						< 0.01	8.11								30.9		25.2
2022-09-30	FS_INF-K				90.47985							7.15										
2022-09-30	FS_INF-S				38.70534							7.38										
2022-09-30	FS_INF-K				87.44064																	
2022-09-30	FS_INF-S				38.89803																	
2022-09-30	FS_INF-K				93.19235																	
2022-09-30	FS_INF-S				40.62859																	
2022-09-30	FS_INF-K				88.09583																	
2022-09-30	FS_INF-S				38.85984																	
2022-09-30	FS_INF-K				89.00571																	
2022-09-30	FS_INF-S				38.95713																	
2022-09-30	FS_INF-K				88.97511																	
2022-09-30	FS_INF-S				39.14801																	
2022-10-01	FS_INF-K				91.52252																	
2022-10-01	FS_INF-S				39.03611																	
2022-10-01	FS_INF-K				88.82382																	
2022-10-01	FS_INF-S				39.07814																	
2022-10-01	FS_BPO				< 0.23 0.141						< 0.01	8.04								26.8		28.3
2022-10-01	FS_INF-K				87.83848							7.19										
2022-10-01	FS_INF-S				39.23061							7.36										
2022-10-01	FS_INF-K				89.42635																	
2022-10-01	FS_INF-S				39.70841																	
2022-10-01	FS_INF-K				88.93136																	
2022-10-01	FS_INF-S				39.32806																	
2022-10-01	FS_INF-K				88.92731																	
2022-10-01	FS_INF-S				38.87453																	
2022-10-01	FS_INF-K				91.35942																	
2022-10-01	FS_INF-S				39.17264																	
2022-10-01	FS_INF-K				92.03977																	
2022-10-01	FS_INF-S				40.83422																	

Parameter		Molybdenum	Nickel	Nickel	Nitrate Nitrogen (NO3), As N	Nitrite Nitrogen (NO2), As N	Nitrogen, Ammonia (As N)	Ortho-Phosphate	Ozone	Ozone	Ozone	pH, Field	pH, LAB	Phosphorus	Potassium	Se(IV) – selenite SeO3(-2)	Se(VI) – selenate SeO4(-2)	SeCN – selenocyanate SeCN(-1)	Selenium	Selenium	Selenium	Selenium
Fraction		T	D	T	N	N	T	D	N	R	T	N	N	T	T	D	D	D	D	D	T	T
Unit		mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ph units	ph units	mg/l	mg/l	ug/l	ug/l	ug/l	mg/l	ug/l	mg/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-10-02	FS_INF-K				94.27404																	
2022-10-02	FS_INF-S				40.78534																	
2022-10-02	FS_INF-K				92.30605																	
2022-10-02	FS_INF-S				40.83524																	
2022-10-02	FS_BPO				0.24418 0.261						< 0.01	8.06				1.06	20.3	< 0.010		25.4		26.1
2022-10-02	FS_INF-K				91.87605							7.3										356
2022-10-02	FS_INF-S				40.68312							7.32										613
2022-10-02	FS_INF-K				98.88156																	
2022-10-02	FS_INF-S				42.52129																	
2022-10-02	FS_INF-K				96.20279																	
2022-10-02	FS_INF-S				41.53892																	
2022-10-02	FS_INF-K				92.40295																	
2022-10-02	FS_INF-S				40.59385																	
2022-10-02	FS_INF-K				94.96474																	
2022-10-02	FS_INF-S				40.67715																	
2022-10-02	FS_INF-K				93.62331																	
2022-10-02	FS_INF-S				41.60872																	
2022-10-03	FS_INF-K				92.99077																	
2022-10-03	FS_INF-S				40.72778																	
2022-10-03	FS_INF-K				94.60016																	
2022-10-03	FS_INF-S				41.47206																	
2022-10-03	FS_BPO				0.29478 0.297	0.0094	0.0722	0.0922			< 0.01	8.09	8.35	0.135						27.4		28.7
2022-10-03	FS_INF-K				92.41843 90.8	< 0.0050	< 0.0050	< 0.0010				7	7.87	< 0.0020								
2022-10-03	FS_INF-S				40.39524 41.2	0.0252	< 0.0050	< 0.0010				7.39	7.85	0.0035								
2022-10-03	FS_BPO																					
2022-10-03	FS_INF-K				95.90092																	
2022-10-03	FS_INF-S				40.65235																	
2022-10-03	FS_INF-K				92.62299																	
2022-10-03	FS_INF-S				40.74756																	
2022-10-03	FS_INF-K				97.5387																	
2022-10-03	FS_INF-S				42.63412																	
2022-10-03	FS_INF-K				93.93005																	
2022-10-03	FS_INF-S				40.97437																	
2022-10-03	FS_INF-K				92.22979																	
2022-10-03	FS_INF-S				41.3135																	
2022-10-04	FS_INF-K				94.71748																	
2022-10-04	FS_INF-S				40.90572																	
2022-10-04	FS_INF-K				94.85762																	
2022-10-04	FS_INF-S				40.98634																	
2022-10-04	FS_BPO	0.0441	11.5	12.6	0.23652 0.756						0.0827715450000000	8.04			5.48	1.30	21.1	0.012		26.4		24.6
2022-10-04	FS_INF-K	0.00126	68.2	67.8	93.15959							7.21			5.13	0.093	294	< 0.010		333		308
2022-10-04	FS_INF-S	0.00353	71.0	65.3	40.80384							7.32			4.85	0.819	502	< 0.010		669		543
2022-10-04	FS_BPO										< 0.01											
2022-10-04	FS_INF-K				92.31958																	
2022-10-04	FS_INF-S				41.21576																	
2022-10-04	FS_INF-K				93.51221																	
2022-10-04	FS_INF-S				40.83447																	
2022-10-04	FS_INF-K				92.16473																	
2022-10-04	FS_INF-S				40.83143																	
2022-10-04	FS_INF-K				95.67835																	
2022-10-04	FS_INF-S				40.88826																	
2022-10-05	FS_INF-K				93.46181																	
2022-10-05	FS_INF-S				40.94537																	
2022-10-05	FS_INF-K				93.28371																	
2022-10-05	FS_INF-S				40.92198																	
2022-10-05	FS_BPO				< 0.23 1.02						< 0.01	8.07								25.6		25.4
2022-10-05	FS_INF-K				92.68653							7.19										
2022-10-05	FS_INF-S				40.2543							7.31										
2022-10-05	FS_INF-K				96.63719																	
2022-10-05	FS_INF-S				41.11716																	
2022-10-05	FS_INF-K				93.36846																	
2022-10-05	FS_INF-S				40.71065																	
2022-10-05	FS_INF-K				96.02965																	
2022-10-05	FS_INF-S				41.87946																	
2022-10-05	FS_INF-K				95.91055																	
2022-10-05	FS_INF-S				40.73391																	
2022-10-05	FS_INF-K				93.12876																	
2022-10-05	FS_INF-S				41.1157																	
2022-10-06	FS_INF-K				95.67829																	
2022-10-06	FS_INF-S				40.96875																	
2022-10-06	FS_INF-K				104.6977																	
2022-10-06	FS_INF-S				43.88569																	
2022-10-06	FS_BPO				< 0.23 0.582						< 0.01	8.06				1.26	19.6	< 0.010		24.2		26.8
2022-10-06	FS_INF-K				89.8173							7.22										326
2022-10-06	FS_INF-S				41.78468							7.37										586
2022-10-06	FR_SCOUTDS	0.00786	6.88	7.43	19.1	< 0.0050	< 0.0050	0.0026				8.18	8.39	0.0114	2.74	0.347	58.3	< 0.010		69.8		67.8
2022-10-06	FS_INF-K				94.1258																	
2022-10-06	FS_INF-S				40.38694																	
2022-10-06	FS_INF-K				90.72584																	
2022-10-06	FS_INF-S				39.56243																	
2022-10-06	FS_INF-K				90.06563																	
2022-10-06	FS_INF-S				40.21346																	

Parameter		Molybdenum	Nickel	Nickel	Nitrate Nitrogen (NO3), As N	Nitrite Nitrogen (NO2), As N	Nitrogen, Ammonia (As N)	Ortho-Phosphate	Ozone	Ozone	Ozone	pH, Field	pH, LAB	Phosphorus	Potassium	Se(IV) – selenite SeO3(-2)	Se(VI) – selenate SeO4(-2)	SeCN – selenocyanate SeCN(-1)	Selenium	Selenium	Selenium	Selenium
Fraction		T	D	T	N	N	T	D	N	R	T	N	N	T	T	D	D	D	D	D	T	T
Unit		mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ph units	ph units	mg/l	mg/l	ug/l	ug/l	ug/l	mg/l	ug/l	mg/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-10-06	FS_INF-K				87.9394																	
2022-10-06	FS_INF-S				41.27115																	
2022-10-06	FS_INF-K				91.09631																	
2022-10-06	FS_INF-S				39.28685																	
2022-10-07	FS_INF-K				90.10793																	
2022-10-07	FS_INF-S				39.60992																	
2022-10-07	FS_INF-K				92.15379																	
2022-10-07	FS_INF-S				39.92208																	
2022-10-07	FS_BPO				< 0.23 0.153						< 0.01	7.96								25.4		21.4
2022-10-07	FS_INF-K				90.82336							7.22										
2022-10-07	FS_INF-S				39.25611							7.34										
2022-10-07	FS_INF-K				90.96553																	
2022-10-07	FS_INF-S				39.36192																	
2022-10-07	FS_INF-K				91.66369																	
2022-10-07	FS_INF-S				39.73218																	
2022-10-07	FS_INF-K				89.78213																	
2022-10-07	FS_INF-S				38.82927																	
2022-10-07	FS_INF-K				92.23969																	
2022-10-07	FS_INF-S				38.54027																	
2022-10-08	FS_INF-K				89.7701																	
2022-10-08	FS_INF-S				38.67093																	
2022-10-08	FS_INF-K				94.07178																	
2022-10-08	FS_INF-S				40.50205																	
2022-10-08	FS_BPO				< 0.23 0.0941						< 0.01	7.92								20.5		21.0
2022-10-08	FS_INF-K				91.29892							7.25										
2022-10-08	FS_INF-S				41.8913							7.36										
2022-10-08	FS_INF-K				92.15039																	
2022-10-08	FS_INF-S				39.6539																	
2022-10-08	FS_INF-K				89.52529																	
2022-10-08	FS_INF-S				38.67335																	
2022-10-08	FS_INF-K				89.56594																	
2022-10-08	FS_INF-S				39.03735																	
2022-10-08	FS_INF-K				90.57588																	
2022-10-08	FS_INF-S				38.36179																	
2022-10-08	FS_INF-K				90.49808																	
2022-10-08	FS_INF-S				40.20464																	
2022-10-09	FS_INF-K				90.73447																	
2022-10-09	FS_INF-S				38.4502																	
2022-10-09	FS_INF-K				90.55848																	
2022-10-09	FS_INF-S				38.81932																	
2022-10-09	FS_BPO				< 0.23 0.0451						< 0.01	7.89				0.778	14.1	0.022		18.5		18.8
2022-10-09	FS_INF-K				90.40368							7.22										344
2022-10-09	FS_INF-S				38.86818							7.3										618
2022-10-09	FS_INF-K				92.5486																	
2022-10-09	FS_INF-S				39.6039																	
2022-10-09	FS_INF-K				91.48367																	
2022-10-09	FS_INF-S				39.03774																	
2022-10-09	FS_INF-K				95.9473																	
2022-10-09	FS_INF-S				40.44347																	
2022-10-09	FS_INF-K				92.93448																	
2022-10-09	FS_INF-S				38.69865																	
2022-10-09	FS_INF-K				90.05769																	
2022-10-09	FS_INF-S				37.86102																	
2022-10-10	FS_INF-K				90.70673																	
2022-10-10	FS_INF-S				39.0759																	
2022-10-10	FS_INF-K				90.78998																	
2022-10-10	FS_INF-S				38.65695																	
2022-10-10	FS_BPO				< 0.23 0.256	< 0.0050	0.0286	0.114			< 0.01	7.87	8.23	0.152						17.4		15.7
2022-10-10	FS_INF-K				92.59806 96.4	< 0.0050	< 0.0050	< 0.0010				7.15	7.92	< 0.0020								
2022-10-10	FS_INF-S				39.21033 41.7	0.0227	< 0.0050	< 0.0010				7.35	7.87	0.0035								
2022-10-10	FS_BPO																					
2022-10-10	FS_INF-K				94.10165																	
2022-10-10	FS_INF-S				39.37689																	
2022-10-10	FS_INF-K				92.38452																	
2022-10-10	FS_INF-S				39.01643																	
2022-10-10	FS_INF-K				94.06974																	
2022-10-10	FS_INF-S				38.64453																	
2022-10-10	FS_INF-K				94.78384																	
2022-10-10	FS_INF-S				39.29504																	
2022-10-10	FS_INF-K				90.47806																	
2022-10-10	FS_INF-S				38.23449																	
2022-10-11	FS_INF-K				92.12907																	
2022-10-11	FS_INF-S				39.28386																	
2022-10-11	FS_INF-K				96.09644																	
2022-10-11	FS_INF-S				40.33585																	
2022-10-11	FS_BPO	0.0521	9.02	8.03	< 0.23 0.305						< 0.01	7.88			5.29	0.585	12.1	0.018		18.7		14.1
2022-10-11	FS_INF-K	0.00129	74.2	67.0	93.42784							7.18			5.06	0.061	283	< 0.010		375		306
2022-10-11	FS_INF-S	0.00420	78.9	68.3	39.19774							7.35			4.69	0.726	473	< 0.010		733		554
2022-10-11	FS_INF-K				93.65754																	
2022-10-11	FS_INF-S				39.46664																	
2022-10-11	FR_FRABCH	0.00110	0.88	0.85	23.3	0.0076	0.0129	0.0014				7.96	8.35	0.0050	2.06					116		86.0
2022-10-11	FS_INF-K				92.17346																	

Parameter		Molybdenum	Nickel	Nickel	Nitrate Nitrogen (NO3), As N	Nitrite Nitrogen (NO2), As N	Nitrogen, Ammonia (As N)	Ortho-Phosphate	Ozone	Ozone	Ozone	pH, Field	pH, LAB	Phosphorus	Potassium	Se(IV) – selenite SeO3(-2)	Se(VI) – selenate SeO4(-2)	SeCN – selenocyanate SeCN(-1)	Selenium	Selenium	Selenium	Selenium
Fraction		T	D	T	N	N	T	D	N	R	T	N	N	T	T	D	D	D	D	D	T	T
Unit		mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ph units	ph units	mg/l	mg/l	ug/l	ug/l	ug/l	mg/l	ug/l	mg/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-10-11	FS_INF-S				39.22459																	
2022-10-11	FR_FRABCH				20.96408																	
2022-10-11	FS_INF-K				93.86545																	
2022-10-11	FS_INF-S				39.86073																	
2022-10-11	FS_INF-K				93.4961																	
2022-10-11	FS_INF-S				40.65995																	
2022-10-11	FS_INF-K				94.73812																	
2022-10-11	FS_INF-S				39.63723																	
2022-10-12	FS_INF-K				93.36286																	
2022-10-12	FS_INF-S				40.23722																	
2022-10-12	FS_INF-K				96.79121																	
2022-10-12	FS_INF-S				40.59111																	
2022-10-12	FS_BPO				< 0.23 < 0.0250						< 0.01	7.85							13.9		14.5	
2022-10-12	FS_INF-K				97.62621							7.3										
2022-10-12	FS_INF-S				39.62476							7.44										
2022-10-12	FS_INF-K				96.66901																	
2022-10-12	FS_INF-S				39.74088																	
2022-10-12	FS_INF-K				93.93884																	
2022-10-12	FS_INF-S				39.61081																	
2022-10-12	FS_INF-K				93.22231																	
2022-10-12	FS_INF-S				39.27183																	
2022-10-12	FS_INF-K				93.25747																	
2022-10-12	FS_INF-S				39.28679																	
2022-10-12	FS_INF-K				93.339																	
2022-10-12	FS_INF-S				39.27792																	
2022-10-13	FS_INF-K				95.17565																	
2022-10-13	FS_INF-S				39.16548																	
2022-10-13	FS_INF-K				96.58463																	
2022-10-13	FS_INF-S				39.24315																	
2022-10-13	FS_BPO				< 0.23 0.321						< 0.01	7.83				0.484	11.4	< 0.010		14.0		15.3
2022-10-13	FS_INF-K				93.89394							7.3										338
2022-10-13	FS_INF-S				39.65929							7.48										586
2022-10-13	FR_SCOUTDS	0.00292	14.0	13.7	26.1	0.0079	< 0.0050	< 0.0010				8.14	8.15	0.0068	2.34	0.303	109	< 0.010		135		117
2022-10-13	FS_INF-K				96.93567																	
2022-10-13	FS_INF-S				39.82723																	
2022-10-13	FS_INF-K				93.68837																	
2022-10-13	FS_INF-S				39.23649																	
2022-10-13	FS_INF-K				94.22294																	
2022-10-13	FS_INF-S				39.31705																	
2022-10-13	FS_INF-K				93.11896																	
2022-10-13	FS_INF-S				40.4454																	
2022-10-13	FS_INF-K				93.26883																	
2022-10-13	FS_INF-S				39.24843																	
2022-10-14	FS_INF-K				93.42641																	
2022-10-14	FS_INF-S				39.61619																	
2022-10-14	FS_INF-K				93.97365																	
2022-10-14	FS_INF-S				39.24032																	
2022-10-14	FS_BPO				< 0.23 0.116						< 0.01	7.85							15.4		15.3	
2022-10-14	FS_INF-K				93.56867							7.29										
2022-10-14	FS_INF-S				39.29473							7.48										
2022-10-14	FS_INF-K				97.70094																	
2022-10-14	FS_INF-S				40.03942																	
2022-10-14	FS_INF-K				94.55883																	
2022-10-14	FS_INF-S				39.41498																	
2022-10-14	FS_INF-K				96.43288																	
2022-10-14	FS_INF-S				40.28985																	
2022-10-14	FS_INF-K				96.27942																	
2022-10-14	FS_INF-S				40.80958																	
2022-10-14	FS_INF-K				96.05482																	
2022-10-14	FS_INF-S				40.21888																	
2022-10-15	FS_INF-K				95.94562																	
2022-10-15	FS_INF-S				40.04114																	
2022-10-15	FS_INF-K				95.59416																	
2022-10-15	FS_INF-S				39.61071																	
2022-10-15	FS_BPO				< 0.23 0.0803						< 0.01	7.83							14.6		16.9	
2022-10-15	FS_INF-K				96.41532							7.31										
2022-10-15	FS_INF-S				40.07085							7.45										
2022-10-15	FS_INF-K				95.57452																	
2022-10-15	FS_INF-S				39.87506																	
2022-10-15	FS_INF-K				97.29717																	
2022-10-15	FS_INF-S				40.14646																	
2022-10-15	FS_INF-K				96.85473																	
2022-10-15	FS_INF-S				40.8078																	
2022-10-15	FS_INF-K				96.13092																	
2022-10-15	FS_INF-S				39.89626																	
2022-10-15	FS_INF-K				96.36141																	
2022-10-15	FS_INF-S				40.10851																	
2022-10-16	FS_INF-K				96.5295																	
2022-10-16	FS_INF-S				40.05671																	
2022-10-16	FS_INF-K				97.09569																	
2022-10-16	FS_INF-S				39.92108																	
2022-10-16	FS_BPO				< 0.23 0.0389						< 0.01	7.83							15.0		17.6	
2022-10-16	FS_INF-K				97.1852							7.32										316
2022-10-16	FS_INF-S				39.94268							7.43										524

	Parameter	Molybdenum	Nickel	Nickel	Nitrate Nitrogen (NO3), As N	Nitrite Nitrogen (NO2), As N	Nitrogen, Ammonia (As N)	Ortho-Phosphate	Ozone	Ozone	Ozone	pH, Field	pH, LAB	Phosphorus	Potassium	Se(IV) – selenite SeO3(-2)	Se(VI) – selenate SeO4(-2)	SeCN – selenocyanate SeCN(-1)	Selenium	Selenium	Selenium	Selenium
	Fraction	T	D	T	N	N	T	D	N	R	T	N	N	T	T	D	D	D	D	D	T	T
	Unit	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ph units	ph units	mg/l	mg/l	ug/l	ug/l	ug/l	mg/l	ug/l	mg/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-10-16	FS_INF-K				95.94819																	
2022-10-16	FS_INF-S				40.5741																	
2022-10-16	FS_INF-K				97.18209																	
2022-10-16	FS_INF-S				39.76436																	
2022-10-16	FS_INF-K				97.32688																	
2022-10-16	FS_INF-S				39.80436																	
2022-10-16	FS_INF-K				96.09304																	
2022-10-16	FS_INF-S				39.80691																	
2022-10-16	FS_INF-K				96.91206																	
2022-10-16	FS_INF-S				39.92056																	
2022-10-17	FS_INF-K				101.4918																	
2022-10-17	FS_INF-S				41.06788																	
2022-10-17	FS_INF-K				98.64967																	
2022-10-17	FS_INF-S				40.0234																	
2022-10-17	FS_BPO				< 0.23 < 0.0250	< 0.0050	0.0454	0.0932			< 0.01	7.82	8.13	0.132						15.7		18.6
2022-10-17	FS_INF-K				96.98398 96.2	< 0.0050	< 0.0050	< 0.0010				7.76	8.00	< 0.0020								
2022-10-17	FS_INF-S				38.95794 41.2	0.0206	< 0.0050	< 0.0010				7.41	7.89	0.0040								
2022-10-17	FS_BPO																					
2022-10-17	FS_INF-K				96.01501																	
2022-10-17	FS_INF-S				39.03025																	
2022-10-17	FS_INF-K				96.43686																	
2022-10-17	FS_INF-S				39.36567																	
2022-10-17	FS_INF-K				104.8071																	
2022-10-17	FS_INF-S				41.2472																	
2022-10-17	FS_INF-K				97.72354																	
2022-10-17	FS_INF-S				39.51561																	
2022-10-17	FS_INF-K				101.8032																	
2022-10-17	FS_INF-S				40.8851																	
2022-10-18	FS_INF-K				103.4429																	
2022-10-18	FS_INF-S				41.36127																	
2022-10-18	FS_INF-K				111.4715																	
2022-10-18	FS_INF-S				42.27385																	
2022-10-18	FS_BPO	0.0495	11.3	12.2	< 0.23 0.0450						< 0.01	7.84			5.66	0.448	13.3	0.013		15.1		16.8
2022-10-18	FS_INF-K	0.00158	73.5	72.8	103.0596							7.27			5.89					346		382
2022-10-18	FS_INF-S	0.00402	70.0	65.8	40.99274							7.42			5.30					606		588
2022-10-18	FR_FRABCH	0.00139	1.07	1.14	23.0	0.0073	0.0058	< 0.0010				7.97	7.99	< 0.0020	2.29					119		87.4
2022-10-18	FS_INF-K				103.1676																	
2022-10-18	FS_INF-S				41.08754																	
2022-10-18	FS_INF-K				102.9828																	
2022-10-18	FS_INF-S				41.2223																	
2022-10-18	FS_INF-K				103.2283																	
2022-10-18	FS_INF-S				40.92215																	
2022-10-18	FS_INF-K				103.1885																	
2022-10-18	FS_INF-S				41.16698																	
2022-10-18	FS_INF-K				102.7212																	
2022-10-18	FS_INF-S				41.31119																	
2022-10-19	FS_INF-K				103.3384																	
2022-10-19	FS_INF-S				41.08689																	
2022-10-19	FS_INF-K				101.8277																	
2022-10-19	FS_INF-S				40.82098																	
2022-10-19	FS_BPO				< 0.23 0.0304						< 0.01	7.82								19.8		17.7
2022-10-19	FS_INF-K				41.18276							7.18										
2022-10-19	FS_INF-S				40.96581							7.5										
2022-10-19	FS_INF-K				104.7008																	
2022-10-19	FS_INF-S				41.11015																	
2022-10-19	FS_INF-K				108.6784																	
2022-10-19	FS_INF-S				41.629																	
2022-10-19	FS_INF-K				106.7199																	
2022-10-19	FS_INF-S				41.4998																	
2022-10-19	FS_INF-K				104.6049																	
2022-10-19	FS_INF-S				40.94995																	
2022-10-19	FS_INF-K				104.2894																	
2022-10-19	FS_INF-S				41.20679																	
2022-10-20	FS_INF-K				103.3162																	
2022-10-20	FS_INF-S				40.52792																	
2022-10-20	FS_BPO				< 0.23 0.102						0.010941494600000	7.88								21.7		21.0
2022-10-20	FS_INF-K				101.7401							7.23										383
2022-10-20	FS_INF-S				40.16203							7.41										578
2022-10-20	FS_BPO										< 0.01											
2022-10-20	FR_SCOUTDS	0.00755	8.45	8.34	23.5	0.0062	< 0.0050	0.0065				8.11	8.32	0.0135	2.79	0.281	67.7	< 0.010		89.1		71.5
2022-10-20	FS_INF-K				103.3634																	
2022-10-20	FS_INF-S				40.43513																	
2022-10-20	FS_INF-K				102.0223																	
2022-10-20	FS_INF-S				40.60518																	
2022-10-20	FS_INF-K				106.7654																	
2022-10-20	FS_INF-S				42.27402																	
2022-10-20	FS_INF-K				105.0977																	
2022-10-20	FS_INF-S				41.49267																	
2022-10-20	FS_INF-K				106.0726																	
2022-10-20	FS_INF-S				41.35027																	
2022-10-21	FS_INF-K				110.4646																	
2022-10-21	FS_INF-S				41.9714																	
2022-10-21	FS_INF-K				106.728																	

	Parameter	Molybdenum	Nickel	Nickel	Nitrate Nitrogen (NO3), As N	Nitrite Nitrogen (NO2), As N	Nitrogen, Ammonia (As N)	Ortho-Phosphate	Ozone	Ozone	Ozone	pH, Field	pH, LAB	Phosphorus	Potassium	Se(IV) – selenite SeO3(-2)	Se(VI) – selenate SeO4(-2)	SeCN – selenocyanate SeCN(-1)	Selenium	Selenium	Selenium	Selenium
	Fraction	T	D	T	N	N	T	D	N	R	T	N	N	T	T	D	D	D	D	D	T	T
	Unit	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ph units	ph units	mg/l	mg/l	ug/l	ug/l	ug/l	mg/l	ug/l	mg/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-10-21	FS_INF-S				41.10443																	
2022-10-21	FS_BPO				0.29774 0.0960						< 0.01	7.8								19.4		19.2
2022-10-21	FS_INF-K				105.1089							7.22										
2022-10-21	FS_INF-S				41.19693							7.42										
2022-10-21	FS_INF-K				105.5382																	
2022-10-21	FS_INF-S				41.09719																	
2022-10-21	FS_INF-K				111.7284																	
2022-10-21	FS_INF-S				40.83662																	
2022-10-21	FS_INF-K				112.5423																	
2022-10-21	FS_INF-S				41.04417																	
2022-10-21	FS_INF-K				110.3376																	
2022-10-21	FS_INF-S				41.73287																	
2022-10-21	FS_INF-K				104.7027																	
2022-10-21	FS_INF-S				40.86153																	
2022-10-22	FS_INF-K				105.7167																	
2022-10-22	FS_INF-S				41.37068																	
2022-10-22	FS_INF-K				105.3537																	
2022-10-22	FS_INF-S				41.57547																	
2022-10-22	FS_BPO				< 0.23 0.0556						< 0.01	7.78								19.9		19.5
2022-10-22	FS_INF-K				112.0175							7.34										
2022-10-22	FS_INF-S				41.83343							7.46										
2022-10-22	FS_INF-K				106.3868																	
2022-10-22	FS_INF-S				41.91848																	
2022-10-22	FS_INF-K				114.5291																	
2022-10-22	FS_INF-S				43.92403																	
2022-10-22	FS_INF-K				109.194																	
2022-10-22	FS_INF-S				42.52145																	
2022-10-22	FS_INF-K				104.8782																	
2022-10-22	FS_INF-S				40.68858																	
2022-10-22	FS_INF-K				115.8565																	
2022-10-22	FS_INF-S				43.01463																	
2022-10-23	FS_INF-K				108.8968																	
2022-10-23	FS_INF-S				41.26719																	
2022-10-23	FS_INF-K				115.0968																	
2022-10-23	FS_INF-S				43.1154																	
2022-10-23	FS_BPO				< 0.23 0.0318						< 0.01	7.9				0.400	16.1	< 0.010		19.2		19.6
2022-10-23	FS_INF-K				107.6237							7.37										371
2022-10-23	FS_INF-S				42.24638							7.5										579
2022-10-23	FS_INF-K				107.5772																	
2022-10-23	FS_INF-S				41.35117																	
2022-10-23	FS_INF-K				108.3163																	
2022-10-23	FS_INF-S				41.54289																	
2022-10-23	FS_INF-K				107.1142																	
2022-10-23	FS_INF-S				41.73489																	
2022-10-23	FS_INF-K				106.8197																	
2022-10-23	FS_INF-S				40.98315																	
2022-10-23	FS_INF-K				106.4273																	
2022-10-23	FS_INF-S				41.14478																	
2022-10-24	FS_INF-K				113.0743																	
2022-10-24	FS_INF-S				42.46967																	
2022-10-24	FS_INF-K				106.9875																	
2022-10-24	FS_INF-S				41.54623																	
2022-10-24	FS_BPO				< 0.23 0.0892	0.0059	0.0315	0.0508			< 0.01	7.9	8.34	0.0848						18.2		18.4
2022-10-24	FS_INF-K				108.044 102	< 0.0050	0.0067	< 0.0010				7.29	7.97	0.0048								
2022-10-24	FS_INF-S				41.24986 41.8	0.0170	0.0077	< 0.0010				7.51	8.12	0.0087								
2022-10-24	FS_BPO																					
2022-10-24	FS_INF-K				107.6852																	
2022-10-24	FS_INF-S				41.55425																	
2022-10-24	FS_INF-K				107.0006																	
2022-10-24	FS_INF-S				40.7353																	
2022-10-24	FS_INF-K				105.6969																	
2022-10-24	FS_INF-S				41.39309																	
2022-10-24	FS_INF-K				106.1356																	
2022-10-24	FS_INF-S				40.85314																	
2022-10-24	FS_INF-K				112.5866																	
2022-10-24	FS_INF-S				41.10746																	
2022-10-25	FS_INF-K				114.5942																	
2022-10-25	FS_INF-S				44.26283																	
2022-10-25	FS_INF-K				108.5754																	
2022-10-25	FS_INF-S				41.16483																	
2022-10-25	FS_BPO	0.0513	11.7	12.3	< 0.23 0.358						< 0.01	7.9			6.11	0.460	19.4	< 0.010		24.6		23.4
2022-10-25	FS_INF-K	0.00137	74.3	66.3	113.0778							7.34			5.71	0.071	327	< 0.010		387		357
2022-10-25	FS_INF-S	0.00387	66.2	60.9	42.34949							7.56			5.08	0.726	537	< 0.010		647		580
2022-10-25	FR_FRABCH	0.00141	1.27	1.22	23.6	< 0.0050	< 0.0050	< 0.0010				8.09	8.39	0.0101	2.04					99.6		78.3
2022-10-25	FR_SCOUTDS											8.85										
2022-10-25	FS_INF-K				108.163																	
2022-10-25	FS_INF-S				41.1759																	
2022-10-25	FS_INF-K				107.9675																	
2022-10-25	FS_INF-S				40.90202																	
2022-10-25	FS_INF-K				107.4519																	
2022-10-25	FS_INF-S				41.20121																	
2022-10-26	FS_INF-K				114.305																	

Parameter		Molybdenum	Nickel	Nickel	Nitrate Nitrogen (NO3), As N	Nitrite Nitrogen (NO2), As N	Nitrogen, Ammonia (As N)	Ortho-Phosphate	Ozone	Ozone	Ozone	pH, Field	pH, LAB	Phosphorus	Potassium	Se(IV) – selenite SeO3(-2)	Se(VI) – selenate SeO4(-2)	SeCN – selenocyanate SeCN(-1)	Selenium	Selenium	Selenium	Selenium
Fraction		T	D	T	N	N	T	D	N	R	T	N	N	T	T	D	D	D	D	D	T	T
Unit		mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ph units	ph units	mg/l	mg/l	ug/l	ug/l	ug/l	mg/l	ug/l	mg/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-10-26	FS_INF-S				42.72685																	
2022-10-26	FS_INF-K				107.7095																	
2022-10-26	FS_INF-S				41.23759																	
2022-10-26	FS_BPO				< 0.23 0.133						< 0.01	8.04								25.1		23.3
2022-10-26	FS_INF-K				107.458							7.34										
2022-10-26	FS_INF-S				41.47816							7.59										
2022-10-26	FS_INF-K				113.7027																	
2022-10-26	FS_INF-S				41.63927																	
2022-10-26	FS_INF-K				115.4451																	
2022-10-26	FS_INF-S				44.25411																	
2022-10-26	FS_INF-K				111.1839																	
2022-10-26	FS_INF-S				42.80911																	
2022-10-26	FS_INF-K				108.5717																	
2022-10-26	FS_INF-S				41.57368																	
2022-10-26	FS_INF-K				106.7469																	
2022-10-26	FS_INF-S				40.63922																	
2022-10-27	FS_INF-K				107.7077																	
2022-10-27	FS_INF-S				40.79961																	
2022-10-27	FS_INF-K				107.3428																	
2022-10-27	FS_INF-S				41.09024																	
2022-10-27	FS_BPO				< 0.23 0.139						< 0.01	8				0.546	21.2	< 0.010		23.9		24.3
2022-10-27	FS_INF-K				106.883							7.33										354
2022-10-27	FS_INF-S				40.91475							7.64										613
2022-10-27	FR_SCOUTDS	0.00818	8.30	8.78	21.9	0.0054	0.0061	0.0128				8.26	8.37	0.0178	2.74	0.316	70.3	< 0.010		67.4		72.6
2022-10-27	FS_INF-K				115.787																	
2022-10-27	FS_INF-S				42.97105																	
2022-10-27	FS_INF-K				108.6881																	
2022-10-27	FS_INF-S				41.44908																	
2022-10-27	FS_INF-K				107.2012																	
2022-10-27	FS_INF-S				40.76936																	
2022-10-27	FS_INF-K				113.3139																	
2022-10-27	FS_INF-S				41.58625																	
2022-10-27	FS_INF-K				107.5609																	
2022-10-27	FS_INF-S				40.91491																	
2022-10-28	FS_INF-K				106.7002																	
2022-10-28	FS_INF-S				40.84343																	
2022-10-28	FS_INF-K				107.0798																	
2022-10-28	FS_INF-S				40.77481																	
2022-10-28	FS_BPO				< 0.23 0.111						< 0.01	8.11								21.0		21.3
2022-10-28	FS_INF-K				107.8407							7.36										
2022-10-28	FS_INF-S				41.42643							7.69										
2022-10-28	FS_INF-K				107.4097																	
2022-10-28	FS_INF-S				41.1221																	
2022-10-28	FS_INF-K				107.8302																	
2022-10-28	FS_INF-S				40.8588																	
2022-10-28	FS_INF-K				117.4664																	
2022-10-28	FS_INF-S				41.33182																	
2022-10-28	FS_INF-K				113.9016																	
2022-10-28	FS_INF-S				40.91435																	
2022-10-28	FS_INF-K				113.0454																	
2022-10-28	FS_INF-S				40.47263																	
2022-10-29	FS_INF-K				115.9977																	
2022-10-29	FS_INF-S				42.56326																	
2022-10-29	FS_INF-K				112.7056																	
2022-10-29	FS_INF-S				41.44422																	
2022-10-29	FS_BPO				< 0.23 0.0478						< 0.01	8.06								22.8		19.7
2022-10-29	FS_INF-K				113.7873							7.35										
2022-10-29	FS_INF-S				42.02542							7.76										
2022-10-29	FS_INF-K				125.0065																	
2022-10-29	FS_INF-S				44.06506																	
2022-10-29	FS_INF-K				111.4545																	
2022-10-29	FS_INF-S				41.74107																	
2022-10-29	FS_INF-K				109.2946																	
2022-10-29	FS_INF-S				41.4227																	
2022-10-29	FS_INF-K				118.5358																	
2022-10-29	FS_INF-S				42.98407																	
2022-10-29	FS_INF-K				112.0948																	
2022-10-29	FS_INF-S				41.59482																	
2022-10-30	FS_INF-K				110.9967																	
2022-10-30	FS_INF-S				41.26549																	
2022-10-30	FS_INF-K				109.1448																	
2022-10-30	FS_INF-S				41.03142																	
2022-10-30	FS_BPO				< 0.23 0.0855						< 0.01	8.12				0.543	18.4	< 0.010		22.3		20.8
2022-10-30	FS_INF-K				114.8458							7.35										372
2022-10-30	FS_INF-S				41.14456							7.8										596
2022-10-30	FS_BPO											8.14										
2022-10-30	FS_INF-K				108.8534																	
2022-10-30	FS_INF-S				41.55587																	
2022-10-30	FS_INF-K				111.437																	
2022-10-30	FS_INF-S				41.42272																	
2022-10-30	FS_INF-K				110.8084																	
2022-10-30	FS_INF-S				41.24191																	
2022-10-30	FS_INF-K				114.4549																	
2022-10-30	FS_INF-S				42.29374																	

Parameter		Molybdenum	Nickel	Nickel	Nitrate Nitrogen (NO3), As N	Nitrite Nitrogen (NO2), As N	Nitrogen, Ammonia (As N)	Ortho-Phosphate	Ozone	Ozone	Ozone	pH, Field	pH, LAB	Phosphorus	Potassium	Se(IV) – selenite SeO3(-2)	Se(VI) – selenate SeO4(-2)	SeCN – selenocyanate SeCN(-1)	Selenium	Selenium	Selenium	Selenium
Fraction		T	D	T	N	N	T	D	N	R	T	N	N	T	T	D	D	D	D	D	T	T
Unit		mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ph units	ph units	mg/l	mg/l	ug/l	ug/l	ug/l	mg/l	ug/l	mg/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-10-30	FS_INF-K				109.5868																	
2022-10-30	FS_INF-S				42.16357																	
2022-10-31	FS_INF-K				109.7631																	
2022-10-31	FS_INF-S				42.28925																	
2022-10-31	FS_INF-S				42.87896																	
2022-10-31	FS_BPO				< 0.23 0.0498	< 0.0050	0.0369	0.0274				8.06	8.46	0.0526						17.9		20.7
2022-10-31	FS_INF-K				111.4448 100	< 0.0050	< 0.0050	< 0.0010				7.36	8.02	< 0.0020								
2022-10-31	FS_INF-S				41.36079 40.1	0.0149	0.0072	< 0.0010				7.8	8.09	0.0027								
2022-10-31	FS_BPO																					
2022-10-31	FS_BPO										< 0.01											
2022-10-31	FS_INF-K				111.1589																	
2022-10-31	FS_INF-S				39.97702																	
2022-10-31	FS_INF-K				119.8981																	
2022-10-31	FS_INF-S				43.18917																	
2022-10-31	FS_BPO											8.09										
2022-11-01	FS_INF-K				109.2262																	
2022-11-01	FS_INF-S				41.4094																	
2022-11-01	FS_BPO										< 0.01											
2022-11-01	FS_INF-K				111.7714							7.3										
2022-11-01	FS_INF-S				40.66399							7.76										
2022-11-01	FS_INF-K				110.4118																	
2022-11-01	FS_INF-S				40.39108																	
2022-11-01	FS_BPO	0.0475	10.6	11.5	0.29211 0.371						< 0.01	8.11			5.83	0.650	19.0	< 0.010		21.0		22.4
2022-11-01	FS_INF-K	0.00122	80.5	70.0	110.1981							7.43			5.29					374		356
2022-11-01	FS_INF-S	0.00343	68.1	56.5	40.3236							7.72			4.68					546		520
2022-11-01	FS_INF-K				111.0253																	
2022-11-01	FS_INF-S				40.92208																	
2022-11-01	FR_FRABCH	0.00122	1.92	2.20	23.7	0.0070	< 0.0050	< 0.0010				8.14	8.22	0.0047	2.14					124		91.4
2022-11-01	FS_INF-K				122.588																	
2022-11-01	FS_INF-S				44.90209																	
2022-11-01	FR_FRABCH				23.4818																	
2022-11-01	FS_BPO											8.14										
2022-11-02	FR_FRABCH											7.93										
2022-11-02	FR_SCOUTDS											8.19										
2022-11-02	FR_FRABCH				23.8																	88.3
2022-11-02	FR_SCOUTDS				26.7																	126
2022-11-02	FS_BPO				0.27484 0.263						0.016697987600000	8.33								22.4		21.8
2022-11-02	FS_INF-K				112.0389							7.41										
2022-11-02	FS_INF-S				41.40564							7.76										
2022-11-02	FS_BPO										< 0.01											
2022-11-02	FS_INF-K				112.2094																	
2022-11-02	FS_INF-S				41.5551																	
2022-11-03	FS_BPO											8.37										
2022-11-03	FS_INF-K				117.7345																	
2022-11-03	FS_INF-S				41.5802																	
2022-11-03	FS_INF-K				111.8366																	
2022-11-03	FS_INF-S				41.82299																	
2022-11-03	FS_BPO				0.40912 0.400						< 0.01	8.29				0.738	20.6	< 0.010		24.1		23.2
2022-11-03	FS_INF-K				112.2676							7.36										360
2022-11-03	FS_INF-S				41.84016							7.76										544
2022-11-03	FR_SCOUTDS	0.00642	6.95	6.93	19.5	0.0060	0.0131	0.0013				8.34	8.34	0.0090	2.88	0.320	62.5	< 0.010		71.4		68.0
2022-11-03	FS_INF-K				118.0464																	
2022-11-03	FS_INF-S				43.4219																	
2022-11-03	FS_INF-K				112.1149																	
2022-11-03	FS_INF-S				41.62597																	
2022-11-03	FS_INF-K				111.6226																	
2022-11-03	FS_INF-S				41.67535																	
2022-11-03	FS_INF-K				109.9759																	
2022-11-03	FS_INF-S				41.72294																	
2022-11-03	FS_INF-K				109.4995																	
2022-11-03	FS_INF-S				43.33176																	
2022-11-04	FS_INF-K				109.6321																	
2022-11-04	FS_INF-S				41.95619																	
2022-11-04	FS_INF-K				112.7666																	
2022-11-04	FS_INF-S				42.37946																	
2022-11-04	FS_BPO				0.40318 0.381						< 0.01	8.24								27.1		24.9
2022-11-04	FS_INF-K				112.0006							7.35										
2022-11-04	FS_INF-S				41.72125							7.72										
2022-11-04	FS_INF-K				111.8084																	
2022-11-04	FS_INF-S				42.17922																	
2022-11-04	FS_INF-K				114.0325																	
2022-11-04	FS_INF-S				42.21358																	
2022-11-04	FS_INF-K				118.7358																	
2022-11-04	FS_INF-S				41.68593																	
2022-11-04	FS_INF-K				110.9713																	
2022-11-04	FS_INF-S				42.24513																	
2022-11-04	FS_INF-K				111.0101																	
2022-11-04	FS_INF-S				42.34995																	
2022-11-05	FS_INF-K				111.0688																	
2022-11-05	FS_INF-S				43.25058																	
2022-11-05	FS_INF-K				118.874																	
2022-11-05	FS_INF-S				44.49343																	

	Parameter	Molybdenum	Nickel	Nickel	Nitrate Nitrogen (NO3), As N	Nitrite Nitrogen (NO2), As N	Nitrogen, Ammonia (As N)	Ortho-Phosphate	Ozone	Ozone	Ozone	pH, Field	pH, LAB	Phosphorus	Potassium	Se(IV) – selenite SeO3(-2)	Se(VI) – selenate SeO4(-2)	SeCN – selenocyanate SeCN(-1)	Selenium	Selenium	Selenium	Selenium
	Fraction	T	D	T	N	N	T	D	N	R	T	N	N	T	T	D	D	D	D	D	T	T
	Unit	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ph units	ph units	mg/l	mg/l	ug/l	ug/l	ug/l	mg/l	ug/l	mg/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-11-05	FS_BPO				0.23857 0.214						< 0.01	8.28								24.7		25.2
2022-11-05	FS_INF-K				112.8957							7.37										
2022-11-05	FS_INF-S				42.51281							7.73										
2022-11-05	FS_INF-K				112.9768																	
2022-11-05	FS_INF-S				42.68384																	
2022-11-05	FS_INF-K				111.8809																	
2022-11-05	FS_INF-S				43.06246																	
2022-11-05	FS_INF-K				114.278																	
2022-11-05	FS_INF-S				42.46403																	
2022-11-05	FS_INF-K				111.5147																	
2022-11-05	FS_INF-S				42.9019																	
2022-11-05	FS_INF-K				112.0556																	
2022-11-05	FS_INF-S				42.727																	
2022-11-06	FS_INF-K				112.958																	
2022-11-06	FS_INF-S				42.67728																	
2022-11-06	FS_INF-K				111.4892																	
2022-11-06	FS_INF-S				42.49037																	
2022-11-06	FS_BPO				< 0.23 0.133						< 0.01	8.25				0.491	18.2	< 0.010		20.5		21.2
2022-11-06	FS_INF-K				112.8092							7.37										340
2022-11-06	FS_INF-S				41.97631							7.66										606
2022-11-06	FS_INF-K				116.965																	
2022-11-06	FS_INF-S				42.26782																	
2022-11-06	FS_INF-K				112.432																	
2022-11-06	FS_INF-S				41.46872																	
2022-11-06	FS_INF-K				113.5782																	
2022-11-06	FS_INF-S				41.57055																	
2022-11-06	FS_INF-K				112.1539																	
2022-11-06	FS_INF-S				42.57754																	
2022-11-06	FS_INF-K				112.9966																	
2022-11-06	FS_INF-S				42.5122																	
2022-11-07	FS_INF-K				112.4943																	
2022-11-07	FS_INF-S				42.6383																	
2022-11-07	FS_INF-K				113.084																	
2022-11-07	FS_INF-S				43.13416																	
2022-11-07	FS_BPO		8.07		< 0.23 0.123	0.0065	0.0289	0.0786			< 0.01	8.25	8.36	0.0924						19.0		18.6
2022-11-07	FS_INF-K		73.0		115.6256 105	< 0.0050	< 0.0050	< 0.0010				7.45	7.92	0.0030						364		
2022-11-07	FS_INF-S		57.6		42.36286 41.8	0.0147	0.0059	< 0.0010					7.96	0.0036						543		
2022-11-07	FS_INF-K				122.0063																	
2022-11-07	FS_INF-S				42.71831																	
2022-11-07	FS_INF-K				116.323																	
2022-11-07	FS_INF-S				42.83954																	
2022-11-07	FS_INF-K				115.7774																	
2022-11-07	FS_INF-S				42.67143																	
2022-11-07	FS_INF-K				114.9402																	
2022-11-07	FS_INF-S				43.1501																	
2022-11-07	FS_INF-K				120.8702																	
2022-11-07	FS_INF-S				43.13252																	
2022-11-08	FS_INF-K				114.2873																	
2022-11-08	FS_INF-S				44.61406																	
2022-11-08	FS_INF-K				120.9142																	
2022-11-08	FS_INF-S				45.01279																	
2022-11-08	FS_BPO	0.0458	9.08	9.14	< 0.23 < 0.100						< 0.01	8.05			5.46	0.296	14.3	< 0.010		17.2		17.7
2022-11-08	FS_INF-K	0.00126	77.6	77.8	119.1313							7.38			5.61	0.089	272	< 0.010		401		376
2022-11-08	FS_INF-S	0.00381	61.7	58.4	42.13691							7.67			4.89	0.703	406	< 0.010		630		581
2022-11-08	FR_FRABCH	0.000812	0.81	0.88	23.5	0.0081	0.0149	< 0.0010				7.95	8.28	0.0042	1.86					99.8		94.7
2022-11-08	FS_INF-K				114.7353																	
2022-11-08	FS_INF-S				42.03325																	
2022-11-08	FR_FRABCH				24.13225																	
2022-11-08	FS_INF-K				115.0888																	
2022-11-08	FS_INF-S				42.45208																	
2022-11-08	FS_INF-K				115.183																	
2022-11-08	FS_INF-S				42.64286																	
2022-11-08	FS_INF-K				114.1717																	
2022-11-08	FS_INF-S				42.92163																	
2022-11-08	FS_INF-K				114.2171																	
2022-11-08	FS_INF-S				42.54425																	
2022-11-09	FS_INF-K				113.0058																	
2022-11-09	FS_INF-S				42.53809																	
2022-11-09	FS_INF-K				112.0567																	
2022-11-09	FS_INF-S				43.93589																	
2022-11-09	FS_BPO				< 0.23 0.128						< 0.01	7.91								16.9		18.2
2022-11-09	FS_INF-K				114.8966							7.43										
2022-11-09	FS_INF-S				41.8622							7.69										
2022-11-09	FS_INF-K				110.3324																	
2022-11-09	FS_INF-S				43.28289																	
2022-11-09	FS_INF-K				115.2311																	
2022-11-09	FS_INF-S				43.99698																	
2022-11-10	FS_INF-K				113.9913																	
2022-11-10	FS_INF-S				42.51143																	
2022-11-10	FS_INF-K				115.2222																	
2022-11-10	FS_INF-S				42.66014																	

Parameter		Molybdenum	Nickel	Nickel	Nitrate Nitrogen (NO3), As N	Nitrite Nitrogen (NO2), As N	Nitrogen, Ammonia (As N)	Ortho-Phosphate	Ozone	Ozone	Ozone	pH, Field	pH, LAB	Phosphorus	Potassium	Se(IV) – selenite SeO3(-2)	Se(VI) – selenate SeO4(-2)	SeCN – selenocyanate SeCN(-1)	Selenium	Selenium	Selenium	Selenium
Fraction		T	D	T	N	N	T	D	N	R	T	N	N	T	T	D	D	D	D	D	T	T
Unit		mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ph units	ph units	mg/l	mg/l	ug/l	ug/l	ug/l	mg/l	ug/l	mg/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-11-10	FS_BPO				< 0.23 0.0787						< 0.01	7.92				0.383	15.0	< 0.010		39.6		19.6
2022-11-10	FS_INF-K				115.3684							7.49										381
2022-11-10	FS_INF-S				41.69825							7.97										597
2022-11-10	FR_SCOUTDS											8.21										
2022-11-10	FR_SCOUTDS															0.311	74.4	< 0.010				
2022-11-10	FS_INF-K				114.5403																	
2022-11-10	FS_INF-S				41.85285																	
2022-11-10	FS_INF-K				113.9377																	
2022-11-10	FS_INF-S				41.56912																	
2022-11-10	FS_INF-K				115.0184																	
2022-11-10	FS_INF-S				41.77012																	
2022-11-10	FS_INF-K				115.2385																	
2022-11-10	FS_INF-S				41.71158																	
2022-11-10	FS_INF-K				115.7849																	
2022-11-10	FS_INF-S				41.84575																	
2022-11-11	FS_INF-K				113.6439																	
2022-11-11	FS_INF-S				41.60616																	
2022-11-11	FS_INF-K				123.2634																	
2022-11-11	FS_INF-S				41.96385																	
2022-11-11	FS_BPO				< 0.23 0.228						< 0.01	7.98								18.1		19.3
2022-11-11	FS_INF-K				116.2217							7.49										
2022-11-11	FS_INF-S				42.71804							7.78										
2022-11-11	FS_INF-K				114.8357																	
2022-11-11	FS_INF-S				41.56322																	
2022-11-11	FS_INF-K				122.2661																	
2022-11-11	FS_INF-S				41.51255																	
2022-11-11	FS_INF-K				121.4448																	
2022-11-11	FS_INF-S				41.34476																	
2022-11-11	FS_INF-K				113.5228																	
2022-11-11	FS_INF-S				41.46417																	
2022-11-11	FS_INF-K				114.9039																	
2022-11-11	FS_INF-S				41.10608																	
2022-11-12	FS_INF-K				120.4663																	
2022-11-12	FS_INF-S				41.76623																	
2022-11-12	FS_INF-K				115.6775																	
2022-11-12	FS_INF-S				41.98744																	
2022-11-12	FS_BPO				< 0.23 0.214						< 0.01	7.93								19.9		18.8
2022-11-12	FS_INF-K				116.1583							7.42										
2022-11-12	FS_INF-S				42.06939							7.83										
2022-11-12	FS_INF-K				114.8141																	
2022-11-12	FS_INF-S				42.22577																	
2022-11-12	FS_INF-K				115.731																	
2022-11-12	FS_INF-S				42.34075																	
2022-11-12	FS_INF-K				116.0409																	
2022-11-12	FS_INF-S				41.44883																	
2022-11-13	FS_BPO				< 0.23 0.115						< 0.01	7.84				0.384	15.1	< 0.010		21.7		19.8
2022-11-13	FS_INF-K				112.9602							7.32										416
2022-11-13	FS_INF-S				40.29596							7.76										599
2022-11-13	FS_INF-K				112.7839																	
2022-11-13	FS_INF-S				40.64761																	
2022-11-13	FS_INF-K				113.2082																	
2022-11-13	FS_INF-S				40.68433																	
2022-11-13	FS_INF-K				113.0169																	
2022-11-13	FS_INF-S				40.98939																	
2022-11-13	FS_INF-K				112.7598																	
2022-11-13	FS_INF-S				40.5434																	
2022-11-13	FS_INF-K				118.5151																	
2022-11-13	FS_INF-S				41.18739																	
2022-11-14	FS_INF-K				110.1663																	
2022-11-14	FS_INF-S				40.86775																	
2022-11-14	FS_INF-K				117.6596																	
2022-11-14	FS_INF-S				41.57119																	
2022-11-14	FS_BPO		11.4		< 0.23 0.112	< 0.0050	0.0241	0.0412			0.015611567000000	7.82	8.16	0.0968						21.3 20.0		20.8
2022-11-14	FS_INF-K		75.5		112.4543 108	< 0.0050	< 0.0050	< 0.0010				7.48	8.03	< 0.0020						425		
2022-11-14	FS_INF-S		53.2		41.02128 40.6	0.0100	0.0089	< 0.0010				7.85	8.10	0.0150						614		
2022-11-14	FS_BPO										< 0.01											
2022-11-14	FS_INF-K				113.2947																	
2022-11-14	FS_INF-S				40.5938																	
2022-11-14	FS_INF-K				113.447																	
2022-11-14	FS_INF-S				40.72079																	
2022-11-14	FS_INF-K				112.8016																	
2022-11-14	FS_INF-S				40.57729																	
2022-11-14	FS_INF-K				113.5635																	
2022-11-14	FS_INF-S				40.38283																	
2022-11-14	FS_INF-K				113.0725																	
2022-11-14	FS_INF-S				40.53493																	
2022-11-15	FS_INF-K				112.472																	
2022-11-15	FS_INF-S				40.38465																	
2022-11-15	FS_INF-K				112.8535																	
2022-11-15	FS_INF-S				40.4466																	
2022-11-15	FS_BPO	0.0511	9.80	11.2	< 0.23 0.129						< 0.01	8.19			5.47	0.491	13.7	< 0.010		16.9		20.8

Parameter		Molybdenum	Nickel	Nickel	Nitrate Nitrogen (NO3), As N	Nitrite Nitrogen (NO2), As N	Nitrogen, Ammonia (As N)	Ortho-Phosphate	Ozone	Ozone	Ozone	pH, Field	pH, LAB	Phosphorus	Potassium	Se(IV) – selenite SeO3(-2)	Se(VI) – selenate SeO4(-2)	SeCN – selenocyanate SeCN(-1)	Selenium	Selenium	Selenium	Selenium
Fraction		T	D	T	N	N	T	D	N	R	T	N	N	T	T	D	D	D	D	D	T	T
Unit		mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ph units	ph units	mg/l	mg/l	ug/l	ug/l	ug/l	mg/l	ug/l	mg/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-11-15	FS_INF-K	0.00124	81.2	78.7	113.7997							7.48			5.44					384		398
2022-11-15	FS_INF-S	0.00402	59.3	58.6	39.11314							7.81			5.11					631		629
2022-11-15	FS_INF-K				115.3525																	
2022-11-15	FS_INF-S				40.92009																	
2022-11-16	FR_SCOUTDS											8.19										
2022-11-16	FR_FRABCH				24.0																	85.2
2022-11-16	FR_SCOUTDS				25.5																	142
2022-11-16	FR_FRABCH											8.2										
2022-11-16	FS_BPO				< 0.23 0.103						< 0.01	8.38								19.5		16.6
2022-11-16	FS_INF-K				115.7124							7.48										
2022-11-16	FS_INF-S				40.34477							7.85										
2022-11-16	FS_INF-K				115.7381																	
2022-11-16	FS_INF-S				40.77989																	
2022-11-16	FS_INF-K				113.8089																	
2022-11-16	FS_INF-S				41.05785																	
2022-11-16	FS_INF-K				115.9837																	
2022-11-16	FS_INF-S				41.7046																	
2022-11-16	FS_INF-K				114.4613																	
2022-11-16	FS_INF-S				41.03327																	
2022-11-17	FS_INF-K				112.5061																	
2022-11-17	FS_INF-S				40.40552																	
2022-11-17	FS_INF-K				114.6787																	
2022-11-17	FS_INF-S				40.67293																	
2022-11-17	FS_BPO				< 0.23 0.0893						< 0.01	8.41				0.693	17.9	< 0.010		19.8		22.1
2022-11-17	FS_INF-K				113.9851							7.65										416
2022-11-17	FS_INF-S				40.69052							7.9										654
2022-11-17	FR_SCOUTDS	0.00782	7.30	7.36	21.7	0.0059	0.0067	0.0029				8.4	8.45	0.0084	2.76	0.311	78.8	< 0.010		91.9		92.4
2022-11-17	FS_INF-K				112.0138																	
2022-11-17	FS_INF-S				40.55736																	
2022-11-17	FS_INF-K				113.7261																	
2022-11-17	FS_INF-S				40.12693																	
2022-11-17	FS_INF-K				113.7095																	
2022-11-17	FS_INF-S				40.53528																	
2022-11-18	FS_BPO				< 0.23 0.117						< 0.01	8.37								20.9		21.4
2022-11-18	FS_INF-K				114.3271							7.39										
2022-11-18	FS_INF-S				39.91135							7.83										
2022-11-18	FS_INF-K				114.9718																	
2022-11-18	FS_INF-S				40.69316																	
2022-11-18	FS_INF-K				115.9795																	
2022-11-18	FS_INF-S				40.28284																	
2022-11-18	FS_INF-K				121.4956																	
2022-11-18	FS_INF-S				43.68036																	
2022-11-18	FS_INF-K				113.7621																	
2022-11-18	FS_INF-S				40.42996																	
2022-11-18	FS_BPO											8.34										
2022-11-18	FS_INF-K				113.0167																	
2022-11-18	FS_INF-S				40.0965																	
2022-11-19	FS_INF-K				114.9689																	
2022-11-19	FS_INF-S				40.39649																	
2022-11-19	FS_INF-K				114.7435																	
2022-11-19	FS_INF-S				40.33504																	
2022-11-19	FS_BPO				< 0.23 0.195						< 0.01	8.28								18.7		17.7
2022-11-19	FS_INF-K				116.2978							7.52										
2022-11-19	FS_INF-S				40.5468							7.94										
2022-11-19	FS_INF-K				125.1793																	
2022-11-19	FS_INF-S				40.84653																	
2022-11-19	FS_INF-K				116.8465																	
2022-11-19	FS_INF-S				41.41907																	
2022-11-19	FS_INF-K				115.5877																	
2022-11-19	FS_INF-S				40.87906																	
2022-11-19	FS_INF-K				115.528																	
2022-11-19	FS_INF-S				40.42879																	
2022-11-19	FS_INF-K				115.6735																	
2022-11-19	FS_INF-S				40.67389																	
2022-11-20	FS_INF-K				121.2399																	
2022-11-20	FS_INF-S				40.49079																	
2022-11-20	FS_INF-K				118.2626																	
2022-11-20	FS_INF-S				40.94423																	
2022-11-20	FS_BPO				< 0.23 0.0906						< 0.01	8.27				0.408	17.9	0.011		18.5		17.9
2022-11-20	FS_INF-K				119.7446							7.51										422
2022-11-20	FS_INF-S				41.90593							7.92										624
2022-11-20	FS_INF-K				117.5938																	
2022-11-20	FS_INF-S				39.75334																	
2022-11-20	FS_INF-K				124.8551																	
2022-11-20	FS_INF-S				41.62416																	
2022-11-20	FS_INF-K				118.1935																	
2022-11-20	FS_INF-S				41.54291																	
2022-11-20	FS_INF-K				117.7593																	
2022-11-20	FS_INF-S				40.75798																	
2022-11-20	FS_INF-K				118.4793																	
2022-11-20	FS_INF-S				41.36887																	
2022-11-21	FS_INF-K				119.2014																	
2022-11-21	FS_INF-S				41.22893																	
2022-11-21	FS_INF-K				117.4417																	

	Parameter	Molybdenum	Nickel	Nickel	Nitrate Nitrogen (NO3), As N	Nitrite Nitrogen (NO2), As N	Nitrogen, Ammonia (As N)	Ortho-Phosphate	Ozone	Ozone	Ozone	pH, Field	pH, LAB	Phosphorus	Potassium	Se(IV) – selenite SeO3(-2)	Se(VI) – selenate SeO4(-2)	SeCN – selenocyanate SeCN(-1)	Selenium	Selenium	Selenium	Selenium
	Fraction	T	D	T	N	N	T	D	N	R	T	N	N	T	T	D	D	D	D	D	T	T
	Unit	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ph units	ph units	mg/l	mg/l	ug/l	ug/l	ug/l	mg/l	ug/l	mg/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-11-21	FS_INF-S				40.88495																	
2022-11-21	FS_BPO				< 0.23 0.0428	0.0063	0.0239	0.0839			< 0.01	8.3	8.37	0.112						19.1		18.9
2022-11-21	FS_INF-K				121.0557 111	< 0.0050	< 0.0050	< 0.0010				7.5	8.06	< 0.0020								
2022-11-21	FS_INF-S				41.31929 40.6	0.0121	0.0175	< 0.0010				8	8.17	0.0047								
2022-11-21	FS_INF-K				126.6529																	
2022-11-21	FS_INF-S				41.10891																	
2022-11-21	FS_INF-K				129.4996																	
2022-11-21	FS_INF-S				43.05852																	
2022-11-21	FS_INF-K				127.4419																	
2022-11-21	FS_INF-S				41.88844																	
2022-11-21	FS_INF-K				118.8669																	
2022-11-21	FS_INF-S				41.34504																	
2022-11-21	FS_INF-K				118.4005																	
2022-11-21	FS_INF-S				40.99695																	
2022-11-22	FS_INF-K				118.2577																	
2022-11-22	FS_INF-S				40.85833																	
2022-11-22	FS_INF-K				124.1752																	
2022-11-22	FS_INF-S				42.01471																	
2022-11-22	FS_BPO	0.0462	12.3	12.6	< 0.23 0.201						< 0.01	8.2			5.70	0.336	16.1	< 0.010		19.2		17.6
2022-11-22	FS_INF-K	0.00134	83.2	86.8	126.7594							7.51			5.71	0.068	325	< 0.010		406		376
2022-11-22	FS_INF-S	0.00451	55.6	60.7	42.01566							7.87			5.25	0.743	467	< 0.010		592		564
2022-11-22	FS_INF-K				120.0166																	
2022-11-22	FS_INF-S				41.93942																	
2022-11-22	FS_INF-K				119.898																	
2022-11-22	FS_INF-S				42.17308																	
2022-11-22	FS_INF-K				120.1334																	
2022-11-22	FS_INF-S				41.553																	
2022-11-22	FS_INF-K				119.2455																	
2022-11-22	FS_INF-S				41.08828																	
2022-11-22	FS_INF-K				118.7751																	
2022-11-22	FS_INF-S				41.27233																	
2022-11-23	FS_INF-K				119.1606																	
2022-11-23	FS_INF-S				40.97092																	
2022-11-23	FS_INF-K				119.6665																	
2022-11-23	FS_INF-S				40.96128																	
2022-11-23	FS_BPO				< 0.23 0.150						< 0.01	8.11								17.9		16.7
2022-11-23	FS_INF-K				120.5758							7.56										
2022-11-23	FS_INF-S				41.38004							7.98										
2022-11-23	FS_INF-K				119.7404																	
2022-11-23	FS_INF-S				41.14257																	
2022-11-23	FS_INF-K				121.073																	
2022-11-23	FS_INF-S				41.10756																	
2022-11-23	FS_INF-K				124.8262																	
2022-11-23	FS_INF-S				41.66877																	
2022-11-23	FS_INF-K				118.2565																	
2022-11-23	FS_INF-S				40.42482																	
2022-11-24	FS_INF-K				119.0032																	
2022-11-24	FS_INF-S				40.9346																	
2022-11-24	FS_INF-K				121.1734																	
2022-11-24	FS_INF-S				41.27174																	
2022-11-24	FS_BPO				< 0.23 0.0371						< 0.01	8.3				0.399	15.6	< 0.010		19.0		17.7
2022-11-24	FS_INF-K				121.2978							7.4										387
2022-11-24	FS_INF-S				41.09809							7.95										575
2022-11-24	FR_SCOUTDS	0.00900	6.62	7.00	22.9	0.0065	< 0.0050	0.0030				8.52	8.49	0.0113	2.77	0.268	73.3	< 0.010		87.1		82.8
2022-11-24	FS_INF-K				120.0623																	
2022-11-24	FS_INF-S				41.03934																	
2022-11-24	FS_INF-K				123.5859																	
2022-11-24	FS_INF-S				40.52903																	
2022-11-24	FS_INF-K				117.055																	
2022-11-24	FS_INF-S				40.14602																	
2022-11-24	FS_INF-K				118.7633																	
2022-11-24	FS_INF-S				41.26923																	
2022-11-24	FS_INF-K				118.3485																	
2022-11-24	FS_INF-S				40.3012																	
2022-11-25	FS_INF-K				119.7129																	
2022-11-25	FS_INF-S				40.72962																	
2022-11-25	FS_INF-K				118.237																	
2022-11-25	FS_INF-S				40.45563																	
2022-11-25	FS_BPO				0.56207 0.0324						< 0.01	8.34								18.6		19.2
2022-11-25	FS_INF-K				116.5422							7.41										
2022-11-25	FS_INF-S				40.51764							7.97										
2022-11-25	FS_INF-K				118.9721																	
2022-11-25	FS_INF-S				39.94345																	
2022-11-25	FS_INF-K				116.8951																	
2022-11-25	FS_INF-S				40.14566																	
2022-11-25	FS_INF-K				118.163																	
2022-11-25	FS_INF-S				40.305																	
2022-11-25	FS_INF-K				117.2856																	
2022-11-25	FS_INF-S				40.73318																	
2022-11-25	FS_INF-K				116.1253																	
2022-11-25	FS_INF-S				39.77935																	
2022-11-26	FS_INF-K				118.525																	

Parameter		Molybdenum	Nickel	Nickel	Nitrate Nitrogen (NO3), As N	Nitrite Nitrogen (NO2), As N	Nitrogen, Ammonia (As N)	Ortho-Phosphate	Ozone	Ozone	Ozone	pH, Field	pH, LAB	Phosphorus	Potassium	Se(IV) – selenite SeO3(-2)	Se(VI) – selenate SeO4(-2)	SeCN – selenocyanate SeCN(-1)	Selenium	Selenium	Selenium	Selenium
Fraction		T	D	T	N	N	T	D	N	R	T	N	N	T	T	D	D	D	D	D	T	T
Unit		mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ph units	ph units	mg/l	mg/l	ug/l	ug/l	ug/l	mg/l	ug/l	mg/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-11-26	FS_INF-S				40.19759																	
2022-11-26	FS_INF-K				118.7653																	
2022-11-26	FS_INF-S				40.05219																	
2022-11-26	FS_BPO				< 0.23 < 0.0250						< 0.01	8.36 8.17								20.7		21.4
2022-11-26	FS_INF-K				118.2943							7.45										
2022-11-26	FS_INF-S				40.73099							8										
2022-11-26	FS_INF-K				117.7098																	
2022-11-26	FS_INF-S				40.31003																	
2022-11-26	FS_INF-K				127.0974																	
2022-11-26	FS_INF-S				40.50964																	
2022-11-26	FS_INF-K				116.7957																	
2022-11-26	FS_INF-S				40.29386																	
2022-11-26	FS_INF-K				119.6051																	
2022-11-26	FS_INF-S				39.842																	
2022-11-26	FS_INF-K				118.665																	
2022-11-26	FS_INF-S				40.6353																	
2022-11-27	FS_INF-K				119.7065																	
2022-11-27	FS_INF-S				40.10615																	
2022-11-27	FS_INF-K				118.4344																	
2022-11-27	FS_INF-S				40.71955																	
2022-11-27	FS_BPO				< 0.23 0.0330						< 0.01	8.35 8.28				0.403	15.5	< 0.010		19.7		21.3
2022-11-27	FS_INF-K				118.515							7.57										404
2022-11-27	FS_INF-S				40.16454							8										581
2022-11-27	FS_INF-K				120.4614																	
2022-11-27	FS_INF-S				40.27205																	
2022-11-27	FS_INF-K				120.0486																	
2022-11-27	FS_INF-S				40.89093																	
2022-11-27	FS_INF-K				119.4378																	
2022-11-27	FS_INF-S				40.37696																	
2022-11-27	FS_INF-K				131.4248																	
2022-11-27	FS_INF-S				41.97229																	
2022-11-27	FS_INF-K				130.4173																	
2022-11-27	FS_INF-S				41.99469																	
2022-11-28	FS_INF-K				122.8145																	
2022-11-28	FS_INF-S				38.74011																	
2022-11-28	FS_INF-K				119.358																	
2022-11-28	FS_INF-S				40.11636																	
2022-11-28	FS_BPO				< 0.23 0.281	< 0.0050	0.0313	0.0332			< 0.01	8.32	8.29	0.0646						19.6		19.1
2022-11-28	FS_INF-K				121.6457 112	< 0.0050	< 0.0050	< 0.0010				7.57	7.86	0.0060								
2022-11-28	FS_INF-S				40.341 38.0	0.0099	0.0179	< 0.0010				8	8.07	0.0032								
2022-11-28	FS_INF-K				121.2663																	
2022-11-28	FS_INF-S				40.69713																	
2022-11-28	FS_INF-K				128.4893																	
2022-11-28	FS_INF-S				40.84586																	
2022-11-28	FS_INF-K				119.6824																	
2022-11-28	FS_INF-S				40.10152																	
2022-11-28	FS_INF-K				121.3399																	
2022-11-28	FS_INF-S				40.29192																	
2022-11-28	FS_INF-K				120.4985																	
2022-11-28	FS_INF-S				40.14265																	
2022-11-29	FS_INF-K				121.994																	
2022-11-29	FS_INF-S				40.16208																	
2022-11-29	FS_INF-K				125.9376																	
2022-11-29	FS_INF-S				40.08205																	
2022-11-29	FS_BPO	0.0515	18.6	19.8	< 0.23 0.468						< 0.01	8.4			6.15	0.377	15.0	< 0.010		18.4		18.0
2022-11-29	FS_INF-K	0.00119	81.6	81.0	119.9287							7.71			5.76					407		398
2022-11-29	FS_INF-S	0.00408	55.5	55.8	40.2171							8.08			5.08					606		545
2022-11-29	FS_INF-K				120.6652																	
2022-11-29	FS_INF-S				40.2523																	
2022-11-29	FS_INF-K				121.9587																	
2022-11-29	FS_INF-S				40.35456																	
2022-11-29	FS_BPO											8.42										
2022-11-29	FS_INF-K				120.9373																	
2022-11-29	FS_INF-S				40.60793																	
2022-11-29	FS_INF-K				119.8642																	
2022-11-29	FS_INF-S				40.08089																	
2022-11-29	FS_BPO											8.44										
2022-11-29	FS_BPO											8.33 8.18										
2022-11-29	FS_INF-K				122.6057																	
2022-11-29	FS_INF-S				40.32848																	
2022-11-30	FS_INF-K				130.1626																	
2022-11-30	FS_INF-S				41.0144																	
2022-11-30	FS_BPO											8.24										
2022-11-30	FS_INF-K				135.3539																	
2022-11-30	FS_INF-S				43.12608																	
2022-11-30	FS_BPO				< 0.23 0.193						< 0.01	8.28								19.6		18.2
2022-11-30	FS_INF-K				125.1604							7.6										
2022-11-30	FS_INF-S				41.18781							8.07										
2022-11-30	FS_INF-K				123.5923																	
2022-11-30	FS_INF-S				40.73026																	
2022-11-30	FS_INF-K				122.9886																	

Parameter		Molybdenum	Nickel	Nickel	Nitrate Nitrogen (NO3), As N	Nitrite Nitrogen (NO2), As N	Nitrogen, Ammonia (As N)	Ortho-Phosphate	Ozone	Ozone	Ozone	pH, Field	pH, LAB	Phosphorus	Potassium	Se(IV) – selenite SeO3(-2)	Se(VI) – selenate SeO4(-2)	SeCN – selenocyanate SeCN(-1)	Selenium	Selenium	Selenium	Selenium
Fraction		T	D	T	N	N	T	D	N	R	T	N	N	T	T	D	D	D	D	D	T	T
Unit		mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ph units	ph units	mg/l	mg/l	ug/l	ug/l	ug/l	mg/l	ug/l	mg/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-11-30	FS_INF-S				40.7569																	
2022-11-30	FS_INF-K				122.9859																	
2022-11-30	FS_INF-S				42.23624																	
2022-11-30	FS_INF-K				122.1291																	
2022-11-30	FS_INF-S				40.44198																	
2022-11-30	FS_INF-K				120.5501																	
2022-11-30	FS_INF-S				40.35564																	
2022-12-01	FS_INF-K				123.2991																	
2022-12-01	FS_INF-S				40.38328																	
2022-12-01	FS_INF-K				121.1723																	
2022-12-01	FS_INF-S				40.3585																	
2022-12-01	FS_BPO				0.0685 < 0.23						< 0.01	8.32				0.341	14.7	< 0.010		19.8		16.1
2022-12-01	FS_INF-K				136.2515							7.72										388
2022-12-01	FS_INF-S				41.83875							8.11										587
2022-12-01	FR_SCOUTDS	0.0139	9.36	8.68	21.5	0.0064	< 0.0050	0.0118				8.57	8.34	0.0291	3.13	0.272	71.9	< 0.010		89.9		90.5
2022-12-01	FS_INF-K				132.0122																	
2022-12-01	FS_INF-S				40.83068																	
2022-12-01	FS_INF-S				41.24538																	
2022-12-01	FS_INF-S				43.2362																	
2022-12-01	FS_INF-S				43.48687																	
2022-12-01	FS_INF-S				41.81869																	
2022-12-02	FS_INF-S				41.1793																	
2022-12-02	FS_INF-S				40.59274																	
2022-12-02	FS_BPO				< 0.23 0.320						< 0.01	8.4								21.2		17.1
2022-12-02	FS_INF-S				40.37538							8.15										
2022-12-02	FS_INF-S				40.54736																	
2022-12-02	FS_BPO											8.37										
2022-12-02	FS_INF-S				40.61212																	
2022-12-02	FS_INF-S				40.31635																	
2022-12-02	FS_INF-S				40.41055																	
2022-12-02	FS_INF-S				43.45823																	
2022-12-03	FS_INF-S				41.69979																	
2022-12-03	FS_INF-S				41.10092																	
2022-12-03	FS_BPO				< 0.23 0.276						< 0.01	8.27								29.5		24.8
2022-12-03	FS_INF-S				41.13274							8.13										
2022-12-03	FS_INF-S				40.58245																	
2022-12-03	FS_INF-S				40.44675																	
2022-12-03	FS_INF-S				40.57724																	
2022-12-03	FS_INF-S				40.85066																	
2022-12-03	FS_INF-S				41.91467																	
2022-12-04	FS_INF-S				40.62389																	
2022-12-04	FS_INF-S				44.83895																	
2022-12-04	FS_BPO				0.29889 0.326						< 0.01	8.23				0.527	24.0	< 0.010		29.2		26.4
2022-12-04	FS_INF-S				42.76506							8.13										599
2022-12-04	FS_INF-S				40.86598																	
2022-12-04	FS_INF-S				40.45337																	
2022-12-04	FS_INF-S				40.20089																	
2022-12-04	FS_INF-S				40.45123																	
2022-12-04	FS_INF-S				40.26976																	
2022-12-05	FS_INF-S				40.47589																	
2022-12-05	FS_INF-S				40.30819																	
2022-12-05	FS_BPO				0.39288 0.464	0.0050	0.0500	0.0937			< 0.01	8.18	8.11	0.135						35.7		29.6
2022-12-05	FS_INF-S				40.27026 41.7	0.0108	0.0158	0.0024				8.22	8.07	0.0032								
2022-12-05	FS_INF-S				40.07486																	
2022-12-05	FS_INF-S				40.9422																	
2022-12-05	FS_INF-S				39.45319																	
2022-12-05	FS_INF-S				40.79586																	
2022-12-05	FS_INF-S				41.94294																	
2022-12-06	FS_INF-S				40.66658																	
2022-12-06	FS_INF-S				40.47952																	
2022-12-06	FS_BPO	0.0483	13.2	13.7	0.36546 0.407						< 0.01	8.28			6.21	0.481	22.4	< 0.010		31.5		31.0
2022-12-06	FS_INF-S	0.00443	57.4	56.3	38.90223							8.14			5.32	0.868	510	< 0.010		636		603
2022-12-06	FS_INF-S				40.35424																	
2022-12-06	FS_INF-S				40.85751																	
2022-12-06	FS_INF-S				40.50644																	
2022-12-06	FS_INF-S				40.18506																	
2022-12-06	FS_INF-S				41.03959																	
2022-12-07	FS_INF-S				43.10312																	
2022-12-07	FS_INF-S				41.57607																	
2022-12-07	FS_BPO				0.33689 0.388						< 0.01	8.45								29.2		27.1
2022-12-07	FS_INF-K				123.5799							8.43										
2022-12-07	FS_INF-S				40.26631							8.15										
2022-12-07	FS_INF-S				39.95107																	
2022-12-07	FS_INF-K				123.3445																	
2022-12-07	FS_INF-S				40.33465																	
2022-12-07	FS_INF-K				123.6042																	
2022-12-07	FS_INF-S				39.866																	
2022-12-08	FS_BPO				0.36595 0.396						< 0.01	8.36				0.401	21.0	< 0.010		24.5		25.8
2022-12-08	FS_INF-K				128.6897							7.75										423
2022-12-08	FS_INF-S				41.50476							8.18										620

	Parameter	Molybdenum	Nickel	Nickel	Nitrate Nitrogen (NO3), As N	Nitrite Nitrogen (NO2), As N	Nitrogen, Ammonia (As N)	Ortho-Phosphate	Ozone	Ozone	Ozone	pH, Field	pH, LAB	Phosphorus	Potassium	Se(IV) – selenite SeO3(-2)	Se(VI) – selenate SeO4(-2)	SeCN – selenocyanate SeCN(-1)	Selenium	Selenium	Selenium	Selenium
	Fraction	T	D	T	N	N	T	D	N	R	T	N	N	T	T	D	D	D	D	D	T	T
	Unit	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ph units	ph units	mg/l	mg/l	ug/l	ug/l	ug/l	mg/l	ug/l	mg/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-12-08	FR_SCOUTDS	0.00803	6.83	6.66	23.0	< 0.0050	0.0072	0.0137				8.63	8.38	0.0237	2.81	0.231	70.1	< 0.010		85.4		88.0
2022-12-08	FS_INF-K				128.0995																	
2022-12-08	FS_INF-S				40.91392																	
2022-12-08	FS_INF-K				126.6193																	
2022-12-08	FS_INF-S				41.17933																	
2022-12-08	FS_BPO											8.38										
2022-12-08	FS_INF-K				133.7419																	
2022-12-08	FS_INF-S				41.6688																	
2022-12-08	FS_INF-K				129.4047																	
2022-12-08	FS_INF-S				41.47496																	
2022-12-08	FS_INF-K				129.1224																	
2022-12-08	FS_INF-S				42.44477																	
2022-12-09	FS_INF-K				125.7171																	
2022-12-09	FS_INF-S				42.08651																	
2022-12-09	FS_INF-K				132.2673																	
2022-12-09	FS_INF-S				41.58095																	
2022-12-09	FS_BPO				0.27198 0.327						< 0.01	8.37								21.6		25.1
2022-12-09	FS_INF-K				129.3525							7.84										
2022-12-09	FS_INF-S				41.1053							8.24										
2022-12-09	FS_INF-K				133.7962																	
2022-12-09	FS_INF-S				40.90946																	
2022-12-09	FS_INF-K				133.8013																	
2022-12-09	FS_INF-S				40.47589																	
2022-12-09	FS_INF-K				126.5485																	
2022-12-09	FS_INF-S				40.49829																	
2022-12-09	FS_INF-K				128.2026																	
2022-12-09	FS_INF-S				41.06745																	
2022-12-09	FS_INF-K				127.9777																	
2022-12-09	FS_INF-S				41.04931																	
2022-12-10	FS_INF-K				130.3687																	
2022-12-10	FS_INF-S				41.1891																	
2022-12-10	FS_INF-K				128.9776																	
2022-12-10	FS_INF-S				41.27303																	
2022-12-10	FS_BPO				0.25601 0.350						< 0.01	8.23								20.9		20.4
2022-12-10	FS_INF-K				125.8683							7.72										
2022-12-10	FS_INF-S				40.43328							8.15										
2022-12-10	FS_INF-K				125.1029																	
2022-12-10	FS_INF-S				40.23769																	
2022-12-10	FS_INF-K				128.1519																	
2022-12-10	FS_INF-S				40.45061																	
2022-12-10	FS_INF-K				132.1294																	
2022-12-10	FS_INF-S				40.12169																	
2022-12-10	FS_INF-K				126.3446																	
2022-12-10	FS_INF-S				40.21086																	
2022-12-10	FS_INF-K				127.9512																	
2022-12-10	FS_INF-S				40.28268																	
2022-12-11	FS_INF-K				126.5519																	
2022-12-11	FS_INF-S				40.4711																	
2022-12-11	FS_INF-K				127.7478																	
2022-12-11	FS_INF-S				41.29971																	
2022-12-11	FS_BPO				< 0.23 0.165						< 0.01	8.2				0.289	17.6	< 0.010		21.8		21.3
2022-12-11	FS_INF-K				125.2976							7.74										424
2022-12-11	FS_INF-S				40.45088							8.17										650
2022-12-11	FS_INF-K				131.8149																	
2022-12-11	FS_INF-S				40.34184																	
2022-12-11	FS_INF-K				128.7486																	
2022-12-11	FS_INF-S				40.14527																	
2022-12-11	FS_INF-K				126.0133																	
2022-12-11	FS_INF-S				40.03643																	
2022-12-11	FS_INF-K				132.2462																	
2022-12-11	FS_INF-S				40.5418																	
2022-12-11	FS_INF-K				123.902																	
2022-12-11	FS_INF-S				39.87045																	
2022-12-12	FS_INF-K				123.762																	
2022-12-12	FS_INF-S				39.17941																	
2022-12-12	FS_INF-K				125.36																	
2022-12-12	FS_INF-S				40.15935																	
2022-12-12	FS_BPO				< 0.23 0.255	0.0073	0.0131	0.0399			< 0.01	8.12	8.60	0.0776						19.8		20.6
2022-12-12	FS_INF-K				130.3949 122	< 0.0050	< 0.0050	< 0.0010				7.72	7.90	< 0.0020								
2022-12-12	FS_INF-S				39.2597 42.3	0.0123	0.0207	0.0010				8.15	8.04	0.0029								
2022-12-12	FS_INF-K				130.7145																	
2022-12-12	FS_INF-S				39.61269																	
2022-12-12	FR_FRABCH											8.04										
2022-12-12	FS_INF-K				124.4656																	
2022-12-12	FS_INF-S				40.21976																	
2022-12-12	FS_INF-K				125.7073																	
2022-12-12	FS_INF-S				40.19886																	
2022-12-12	FS_INF-K				126.3843																	
2022-12-12	FS_INF-S				39.59204																	
2022-12-13	FS_INF-K				125.729																	
2022-12-13	FS_INF-S				40.63425																	
2022-12-13	FS_INF-K				124.3243																	
2022-12-13	FS_INF-S				39.41257																	

	Parameter	Molybdenum	Nickel	Nickel	Nitrate Nitrogen (NO3), As N	Nitrite Nitrogen (NO2), As N	Nitrogen, Ammonia (As N)	Ortho-Phosphate	Ozone	Ozone	Ozone	pH, Field	pH, LAB	Phosphorus	Potassium	Se(IV) – selenite SeO3(-2)	Se(VI) – selenate SeO4(-2)	SeCN – selenocyanate SeCN(-1)	Selenium	Selenium	Selenium	Selenium
	Fraction	T	D	T	N	N	T	D	N	R	T	N	N	T	T	D	D	D	D	D	T	T
	Unit	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ph units	ph units	mg/l	mg/l	ug/l	ug/l	ug/l	mg/l	ug/l	mg/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-12-13	FS_BPO	0.0512	13.2	14.2	< 0.23 0.204						< 0.01	8.13			5.31	0.459	15.8	< 0.010		18.8		19.2
2022-12-13	FS_INF-K	0.00105	91.1	88.2	126.0167							7.72			6.05	0.067	365	< 0.010		405		406
2022-12-13	FS_INF-S	0.00426	57.3	59.0	39.78113							8.16			5.40	0.813	516	< 0.010		606		630
2022-12-13	FR_SCOUTDS											8.45										
2022-12-13	FS_INF-K				127.0908																	
2022-12-13	FS_INF-S				39.99216																	
2022-12-13	FS_INF-K				128.1385																	
2022-12-13	FS_INF-S				41.03062																	
2022-12-13	FS_INF-K				128.0367																	
2022-12-13	FS_INF-S				40.18224																	
2022-12-13	FS_INF-K				126.646																	
2022-12-13	FS_INF-S				39.65846																	
2022-12-13	FS_INF-K				123.9597																	
2022-12-13	FS_INF-S				40.21948																	
2022-12-14	FS_INF-K				126.3595																	
2022-12-14	FS_INF-S				39.56533																	
2022-12-14	FS_INF-K				132.598																	
2022-12-14	FS_INF-S				39.44475																	
2022-12-14	FS_BPO				< 0.23 0.0521						< 0.01	7.79								18.9		20.6
2022-12-14	FS_INF-K				126.8031							7.44										
2022-12-14	FS_INF-S				39.91162							7.84										
2022-12-14	FS_INF-K				125.4948																	
2022-12-14	FS_INF-S				39.34799																	
2022-12-14	FS_INF-K				125.5163																	
2022-12-14	FS_INF-S				39.45237																	
2022-12-14	FS_INF-K				126.2349																	
2022-12-14	FS_INF-S				39.47389																	
2022-12-14	FS_INF-K				125.7405																	
2022-12-14	FS_INF-S				39.86255																	
2022-12-14	FS_INF-K				124.909																	
2022-12-14	FS_INF-S				39.59511																	
2022-12-15	FS_INF-K				132.396																	
2022-12-15	FS_INF-S				42.12393																	
2022-12-15	FS_INF-K				123.8956																	
2022-12-15	FS_INF-S				39.78017																	
2022-12-15	FS_BPO				< 0.23 0.100						< 0.01	8.19				0.385	14.1	< 0.010		17.7		16.2
2022-12-15	FS_INF-K				125.6933							7.6										437
2022-12-15	FS_INF-S				39.72283							8.3										622
2022-12-15	FR_SCOUTDS	0.00851	7.38	7.56	24.7	0.0061	0.0071	0.0022				8.2	8.41	0.0078	2.82	0.267	80.3	< 0.010		89.8		93.6
2022-12-15	FS_INF-K				125.945																	
2022-12-15	FS_INF-S				40.58774																	
2022-12-15	FS_INF-K				120.8946																	
2022-12-15	FS_INF-S				39.47788																	
2022-12-15	FS_INF-K				127.6175																	
2022-12-15	FS_INF-S				39.57062																	
2022-12-15	FS_INF-K				127.8245																	
2022-12-15	FS_INF-S				39.79921																	
2022-12-15	FS_INF-K				125.7425																	
2022-12-15	FS_INF-S				39.78691																	
2022-12-16	FS_INF-K				125.8603																	
2022-12-16	FS_INF-S				39.8405																	
2022-12-16	FS_INF-K				130.1116																	
2022-12-16	FS_INF-S				39.81358																	
2022-12-16	FS_BPO				0.42678 0.272						< 0.01	7.98								17.2		16.4
2022-12-16	FS_INF-K				126.0852							7.5										
2022-12-16	FS_INF-S				39.54613							7.9										
2022-12-16	FS_INF-K				126.1222																	
2022-12-16	FS_INF-S				39.25413																	
2022-12-16	FR_FRABCH	0.000798	< 0.50	0.52	23.8	< 0.0050	< 0.0050	< 0.0010				8.11	8.37	0.0022	1.96	0.120	88.1	< 0.010		114 83.1		92.2 87.5
2022-12-16	FS_INF-K				126.4385																	
2022-12-16	FS_INF-S				39.49418																	
2022-12-16	FS_INF-K				125.6347																	
2022-12-16	FS_INF-S				39.49866																	
2022-12-16	FS_INF-K				127.0193																	
2022-12-16	FS_INF-S				39.78381																	
2022-12-16	FS_INF-K				128.2412																	
2022-12-16	FS_INF-S				39.82095																	
2022-12-17	FS_INF-K				129.3446																	
2022-12-17	FS_INF-S				40.81856																	
2022-12-17	FS_INF-K				127.1982																	
2022-12-17	FS_INF-S				39.72763																	
2022-12-17	FS_BPO				< 0.23 0.0873						< 0.01	7.92								16.8		18.4
2022-12-17	FS_INF-K				129.5302							7.54										
2022-12-17	FS_INF-S				40.47309							7.92										
2022-12-17	FS_INF-K				128.1944																	
2022-12-17	FS_INF-S				39.91417																	
2022-12-17	FS_INF-K				128.4828																	
2022-12-17	FS_INF-S				39.93666																	
2022-12-17	FS_INF-K				129.3735																	
2022-12-17	FS_INF-S				40.46749																	
2022-12-17	FS_INF-K				125.969																	
2022-12-17	FS_INF-S				39.95416																	
2022-12-17	FS_INF-K				126.2018																	

Parameter		Molybdenum	Nickel	Nickel	Nitrate Nitrogen (NO3), As N	Nitrite Nitrogen (NO2), As N	Nitrogen, Ammonia (As N)	Ortho-Phosphate	Ozone	Ozone	Ozone	pH, Field	pH, LAB	Phosphorus	Potassium	Se(IV) – selenite SeO3(-2)	Se(VI) – selenate SeO4(-2)	SeCN – selenocyanate SeCN(-1)	Selenium	Selenium	Selenium	Selenium
Fraction		T	D	T	N	N	T	D	N	R	T	N	N	T	T	D	D	D	D	D	T	T
Unit		mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ph units	ph units	mg/l	mg/l	ug/l	ug/l	ug/l	mg/l	ug/l	mg/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-12-17	FS_INF-S				40.36197																	
2022-12-18	FS_INF-K				134.9476																	
2022-12-18	FS_INF-S				40.23083																	
2022-12-18	FS_INF-K				126.5719																	
2022-12-18	FS_INF-S				39.72566																	
2022-12-18	FS_BPO				< 0.23 0.0935						< 0.01	7.91				0.308	13.6	< 0.010		16.7		16.0
2022-12-18	FS_INF-K				131.5588							7.45										387
2022-12-18	FS_INF-S				40.52252							7.9										673
2022-12-18	FS_INF-K				129.4407																	
2022-12-18	FS_INF-S				39.99706																	
2022-12-18	FS_INF-K				123.875																	
2022-12-18	FS_INF-S				38.45894																	
2022-12-18	FS_INF-K				123.0174																	
2022-12-18	FS_INF-S				37.36634																	
2022-12-19	FS_INF-K				123.9342																	
2022-12-19	FS_INF-S				39.50584																	
2022-12-19	FS_INF-K				124.5801																	
2022-12-19	FS_INF-S				38.93137																	
2022-12-19	FS_BPO				< 0.23 0.0315	0.0053	0.0258	0.0601			< 0.01	7.91	8.23	0.0994						15.8		16.1
2022-12-19	FS_INF-K				125.5808 120	< 0.0050	< 0.0050	< 0.0010				7.52	8.05	< 0.0020								
2022-12-19	FS_INF-S				39.33197 40.3	0.0104	0.0132	< 0.0010				7.8	8.15	0.0029								
2022-12-19	FS_INF-K				125.0434																	
2022-12-19	FS_INF-S				39.50712																	
2022-12-19	FS_INF-K				124.8586																	
2022-12-19	FS_INF-S				44.72984																	
2022-12-19	FS_INF-K				125.0349																	
2022-12-19	FS_INF-S				38.95477																	
2022-12-19	FS_INF-K				125.3847																	
2022-12-19	FS_INF-S				39.32526																	
2022-12-19	FS_INF-K				126.8238																	
2022-12-19	FS_INF-S				39.48803																	
2022-12-20	FS_INF-K				126.9829																	
2022-12-20	FS_INF-S				39.83066																	
2022-12-20	FS_INF-K				129.391																	
2022-12-20	FS_INF-S				39.77143																	
2022-12-20	FS_BPO	0.0528	24.1	26.6	< 0.23 0.0510						< 0.01	7.389			5.49	0.278	13.8	< 0.010		17.1		17.1
2022-12-20	FS_INF-K	0.00107	89.8	86.0	130.6559							7.49		< 0.100	5.30	0.083	370	< 0.010		427	418	
2022-12-20	FS_INF-S	0.00428	58.4	57.4	39.77666							7.91		< 0.100	4.84	0.850	518	< 0.010		636	633	
2022-12-20	FS_INF-K				129.7066																	
2022-12-20	FS_INF-S				40.05024																	
2022-12-20	FS_INF-K				128.8421																	
2022-12-20	FS_INF-S				39.82866																	
2022-12-20	FS_INF-K				135.5217																	
2022-12-20	FS_INF-S				39.68181																	
2022-12-20	FS_INF-K				128.9586																	
2022-12-20	FS_INF-S				39.68008																	
2022-12-20	FS_INF-K				127.2803																	
2022-12-20	FS_INF-S				39.72872																	
2022-12-21	FS_INF-K				126.3791																	
2022-12-21	FS_INF-S				39.51389																	
2022-12-21	FS_INF-K				125.1761																	
2022-12-21	FS_INF-S				38.99002																	
2022-12-21	FS_BPO				< 0.23 0.216						< 0.01	7.95								18.4		15.8
2022-12-21	FS_INF-K				126.0492							7.46										
2022-12-21	FS_INF-S				38.93138							7.97										
2022-12-21	FS_INF-K				127.3752																	
2022-12-21	FS_INF-S				40.01669																	
2022-12-21	FR_FRABCH											8.08										
2022-12-21	FR_FRABCH				23.25862																	
2022-12-21	FS_INF-K				134.7287																	
2022-12-21	FS_INF-S				40.72546																	
2022-12-21	FS_INF-K				125.6236																	
2022-12-21	FS_INF-S				38.91196																	
2022-12-21	FS_INF-K				125.2333																	
2022-12-21	FS_INF-S				38.99789																	
2022-12-21	FS_INF-K				124.0279																	
2022-12-21	FS_INF-S				38.98975																	
2022-12-22	FS_INF-K				127.0531																	
2022-12-22	FS_INF-S				39.31586																	
2022-12-22	FS_INF-K				123.5477																	
2022-12-22	FS_INF-S				38.99684																	
2022-12-22	FS_BPO				< 0.23 0.434						< 0.01	7.9				0.332	13.4	< 0.010		18.2		16.4
2022-12-22	FS_INF-K				132.8433							7.73										421
2022-12-22	FS_INF-S				40.7461							8.1										603
2022-12-22	FR_SCOUTDS	0.00512	17.2	16.4	30.2	0.0078	0.0118	0.0016				8.2	8.21	0.0038 < 0.050	2.93	0.415	207	< 0.010		251		229
2022-12-22	FR_SCOUTDS				32.3																	216
2022-12-23	FS_BPO				< 0.23 0.0424						< 0.01									18.8		16.6
2022-12-23	FS_INF-K																					
2022-12-23	FS_INF-S																					
2022-12-23	FS_BPO											8.11										

Parameter		Molybdenum	Nickel	Nickel	Nitrate Nitrogen (NO3), As N	Nitrite Nitrogen (NO2), As N	Nitrogen, Ammonia (As N)	Ortho-Phosphate	Ozone	Ozone	Ozone	pH, Field	pH, LAB	Phosphorus	Potassium	Se(IV) – selenite SeO3(-2)	Se(VI) – selenate SeO4(-2)	SeCN – selenocyanate SeCN(-1)	Selenium	Selenium	Selenium	Selenium
Fraction		T	D	T	N	N	T	D	N	R	T	N	N	T	T	D	D	D	D	D	T	T
Unit		mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ph units	ph units	mg/l	mg/l	ug/l	ug/l	ug/l	mg/l	ug/l	mg/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-12-23	FR_FRABCH				23.1							8.32										89.6
2022-12-23	FR_SCOUTDS											8.15										
2022-12-23	FS_BPO				< 0.23						< 0.01	7.95										
2022-12-23	FS_INF-K				130.4322							7.64										
2022-12-23	FS_INF-S				40.25392							8.07										
2022-12-23	FR_SCOUTDS				23.3																	101
2022-12-23	FS_INF-K				129.634																	
2022-12-23	FS_INF-S				41.12581																	
2022-12-23	FS_INF-K				129.1468																	
2022-12-23	FS_INF-S				39.99917																	
2022-12-23	FS_INF-K				128.1871																	
2022-12-23	FS_INF-S				40.93031																	
2022-12-24	FS_INF-K				129.7163																	
2022-12-24	FS_INF-S				41.20606																	
2022-12-24	FS_INF-K				124.8826																	
2022-12-24	FS_INF-S				38.82761																	
2022-12-24	FS_BPO				< 0.23 0.0751						< 0.01	7.94								22.6		18.8
2022-12-24	FS_INF-K				131.1061							7.7										
2022-12-24	FS_INF-S				39.2088							8.07										
2022-12-24	FS_INF-K				131.2775																	
2022-12-24	FS_INF-S				39.96468																	
2022-12-24	FS_INF-K				133.8911																	
2022-12-24	FS_INF-S				39.63782																	
2022-12-24	FS_BPO										< 0.01											
2022-12-24	FS_INF-K				131.959																	
2022-12-24	FS_INF-S				38.65927																	
2022-12-25	FS_BPO											8.13										
2022-12-25	FS_INF-K				125.171																	
2022-12-25	FS_INF-S				39.07002																	
2022-12-25	FS_INF-K				125.8758																	
2022-12-25	FS_INF-S				38.89951																	
2022-12-25	FS_BPO				< 0.23 0.148						< 0.01	8.07				0.473	17.1	< 0.010		19.5		19.4
2022-12-25	FS_INF-K				127.8059							7.61										454
2022-12-25	FS_INF-S				39.65971							8.04										638
2022-12-25	FS_INF-K				133.2104																	
2022-12-25	FS_INF-S				41.29896																	
2022-12-25	FS_INF-K				137.7485																	
2022-12-25	FS_INF-S				40.38181																	
2022-12-25	FS_INF-K				129.5277																	
2022-12-25	FS_INF-S				40.36985																	
2022-12-25	FS_INF-K				131.5119																	
2022-12-25	FS_INF-S				40.58939																	
2022-12-25	FS_INF-K				131.8555																	
2022-12-25	FS_INF-S				41.02502																	
2022-12-26	FS_INF-K				130.2215																	
2022-12-26	FS_INF-S				40.35571																	
2022-12-26	FS_INF-K				135.3064																	
2022-12-26	FS_INF-S				40.34785																	
2022-12-26	FS_BPO				< 0.23 0.266	0.0074	0.0642	0.0373			< 0.01	7.95	8.21	0.0892						19.8		19.7
2022-12-26	FS_INF-K				139.3153 124	< 0.0050	< 0.0050	< 0.0010				7.95	8.03	< 0.0020								
2022-12-26	FS_INF-S				41.24201 40.6	0.0108	0.0207	< 0.0010				7.53	8.17	0.0032								
2022-12-26	FS_INF-K				131.0196																	
2022-12-26	FS_INF-S				40.78505																	
2022-12-26	FS_INF-K				130.3548																	
2022-12-26	FS_INF-S				40.35281																	
2022-12-26	FS_INF-K				137.7667																	
2022-12-26	FS_INF-S				41.20817																	
2022-12-26	FS_INF-K				127.9581																	
2022-12-26	FS_INF-S				40.40615																	
2022-12-26	FS_INF-K				129.3746																	
2022-12-26	FS_INF-S				40.77879																	
2022-12-27	FS_INF-K				141.5106																	
2022-12-27	FS_INF-S				41.35001																	
2022-12-27	FS_INF-K				131.8885																	
2022-12-27	FS_INF-S				40.69753																	
2022-12-27	FS_BPO	0.0520	14.9	15.6	< 0.23 0.150						< 0.01	7.76 8.26 8.41			6.00	0.360	15.5	< 0.010		17.7		18.4
2022-12-27	FS_INF-K	0.00111	95.5	90.4	135.9825							7.26			5.69					407		419
2022-12-27	FS_INF-S	0.00409	59.8	54.3	40.47244							7.76			4.92					574		596
2022-12-27	FS_INF-K				131.1185																	
2022-12-27	FS_INF-S				40.97323																	
2022-12-27	FS_INF-K				139.0466																	
2022-12-27	FS_INF-S				43.1254																	
2022-12-27	FS_INF-K				138.7899																	
2022-12-27	FS_INF-S				41.0835																	
2022-12-27	FS_INF-K				136.2774																	
2022-12-27	FS_INF-S				40.29247																	
2022-12-27	FS_INF-K				131.2658																	
2022-12-27	FS_INF-S				41.03193																	
2022-12-28	FS_INF-K				131.9273																	
2022-12-28	FS_INF-S				41.20085																	
2022-12-28	FS_INF-K				131.0934																	
2022-12-28	FS_INF-S				40.81716																	

Parameter		Molybdenum	Nickel	Nickel	Nitrate Nitrogen (NO3), As N	Nitrite Nitrogen (NO2), As N	Nitrogen, Ammonia (As N)	Ortho-Phosphate	Ozone	Ozone	Ozone	pH, Field	pH, LAB	Phosphorus	Potassium	Se(IV) – selenite SeO3(-2)	Se(VI) – selenate SeO4(-2)	SeCN – selenocyanate SeCN(-1)	Selenium	Selenium	Selenium	Selenium
Fraction		T	D	T	N	N	T	D	N	R	T	N	N	T	T	D	D	D	D	D	T	T
Unit		mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ph units	ph units	mg/l	mg/l	ug/l	ug/l	ug/l	mg/l	ug/l	mg/l	ug/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-12-28	FS_BPO				< 0.23 0.184						< 0.01	8.21								17.7		17.9
2022-12-28	FS_INF-K				130.6801							7.72										
2022-12-28	FS_INF-S				41.08518							8.4										
2022-12-28	FS_INF-K				131.067																	
2022-12-28	FS_INF-S				40.48484																	
2022-12-28	FS_INF-K				138.8169																	
2022-12-28	FS_INF-S				41.12215																	
2022-12-28	FS_INF-K				128.554																	
2022-12-28	FS_INF-S				41.12767																	
2022-12-28	FS_INF-K				130.7218																	
2022-12-28	FS_INF-S				40.75876																	
2022-12-28	FS_INF-K				130.1395																	
2022-12-28	FS_INF-S				41.2072																	
2022-12-29	FS_INF-K				139.417																	
2022-12-29	FS_INF-S				40.94695																	
2022-12-29	FS_INF-K				127.4783																	
2022-12-29	FS_INF-S				40.05447																	
2022-12-29	FS_BPO				< 0.23 0.192						< 0.01	8.06				0.366	15.7	< 0.010		17.8		18.0
2022-12-29	FS_INF-K				127.7498							7.87										451
2022-12-29	FS_INF-S				40.01404							8.55										632
2022-12-29	FR_SCOUTDS	0.00890	6.12	6.09	23.3	0.0059	0.0068	0.0045				8.97	8.41	0.0141	2.62	0.211	73.0	< 0.010		87.0		83.7
2022-12-29	FS_INF-K				126.9834																	
2022-12-29	FS_INF-S				39.87485																	
2022-12-29	FS_INF-K				136.4825																	
2022-12-29	FS_INF-S				40.19114																	
2022-12-29	FS_INF-K				126.8256																	
2022-12-29	FS_INF-S				39.79764																	
2022-12-29	FS_INF-K				127.4343																	
2022-12-29	FS_INF-S				39.5724																	
2022-12-29	FS_INF-K				126.098																	
2022-12-29	FS_INF-S				39.56789																	
2022-12-30	FS_INF-K				132.0145																	
2022-12-30	FS_INF-S				39.39748																	
2022-12-30	FS_INF-K				127.6644																	
2022-12-30	FS_INF-S				39.84753																	
2022-12-30	FS_BPO				< 0.23 0.0712						< 0.01	8.02								19.0		20.2
2022-12-30	FS_INF-K				126.9453							7.73										
2022-12-30	FS_INF-S				40.19044							8.19										
2022-12-30	FS_INF-K				128.6151																	
2022-12-30	FS_INF-S				39.94643																	
2022-12-30	FS_INF-K				127.402																	
2022-12-30	FS_INF-S				39.98894																	
2022-12-30	FS_INF-K				126.7821																	
2022-12-30	FS_INF-S				39.57211																	
2022-12-30	FS_INF-K				125.0456																	
2022-12-30	FS_INF-S				39.60703																	
2022-12-30	FS_INF-K				126.3227																	
2022-12-30	FS_INF-S				39.70147																	
2022-12-31	FS_INF-K				125.6093																	
2022-12-31	FS_INF-S				39.25065																	
2022-12-31	FS_INF-K				127.079																	
2022-12-31	FS_INF-S				40.88721																	
2022-12-31	FS_BPO				< 0.23 0.253						< 0.01	8.51								20.9		21.1
2022-12-31	FS_INF-K				125.7086							8.02										
2022-12-31	FS_INF-S				39.92527							8.22										
2022-12-31	FS_BPO											8.34 7.98										
2022-12-31	FS_INF-K				132.7002																	
2022-12-31	FS_INF-S				38.78105																	
2022-12-31	FS_INF-K				130.3173																	
2022-12-31	FS_INF-S				39.6628																	
2022-12-31	FS_INF-K				124.3789																	
2022-12-31	FS_INF-S				39.61655																	
2022-12-31	FS_INF-K				126.0952																	
2022-12-31	FS_INF-S				39.75269																	
2022-12-31	FS_INF-K				127.3749																	
2022-12-31	FS_INF-S				39.60714																	

	Parameter	Selenosulfate, SeSO3	SeMe – selenomethionine CH3SeCH2CH2CH(NH2)CO2H	Silver	Silver	Sodium	Specific conductivity, temperature corrected value (25 C)	Specific conductivity, temperature corrected value (25 C)	Strontium	Strontium	SULFIDE (as S)	Sulphate (As SO4)	Temperature, Field	Thallium	Thallium	Tin	Tin	Titanium	Titanium	Total Dissolved Solids (Residue, Filterable)	Total Kjeldahl Nitrogen	Total Suspended Solids, Lab
	Fraction	D	D	D	T	T	N	N	D	T	T	D	N	D	T	D	T	D	T	N	N	N
	Unit	ug/l	ug/l	mg/l	mg/l	mg/l	us/cm	uS/cm at 25 C	mg/l	mg/l	mg/l	mg/l	deg c	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-01-01	FS_BPO							2872					1.8									
2022-01-01	FS_BPO							2889					2									
2022-01-01	FS_BPO	< 0.010	< 0.010					2916					2.2							2360		4.0
2022-01-01	FS_INF-S							3186					2.1							2730		2.6
2022-01-01	FS_BPO							2946					2.1									
2022-01-01	FS_BPO							2926					2.2									
2022-01-01	FS_BPO							2929					2.3									
2022-01-01	FS_BPO							2934					2.3									
2022-01-01	FS_BPO							2942					2.5									
2022-01-01	FS_INF-S							3194					1.5									
2022-01-02	FS_BPO	< 0.010	< 0.010					2964					2.7							2390		2.7
2022-01-02	FS_INF-S							3189					2.1							2930		< 1.0
2022-01-02	FS_BPO							2994 2964					2.6									
2022-01-02	FS_BPO							2967					2.6									
2022-01-02	FS_BPO							2973					2.7									
2022-01-02	FS_INF-S							3187					1.6									
2022-01-03	FS_BPO	< 0.010	< 0.010					2995			0.0016	1420	3.3							2560	0.594	3.4
2022-01-03	FS_INF-S							3192				1610	1.7							3040		5.8
2022-01-03	FS_BPO																					
2022-01-03	FS_BPO																					
2022-01-03	FS_INF-S							3068					1.7									
2022-01-04	FS_BPO	< 0.010	< 0.010	< 0.020	< 0.020	78.4		3008	0.212	0.209			3.6	< 0.020	< 0.020	< 0.00020	< 0.00020	< 20.0	< 20.0	2390		4.0
2022-01-04	FS_INF-S	< 0.010	< 0.010					3190					1.6							2790		1.8
2022-01-04	FS_BPO																					
2022-01-04	FS_INF-S							3172					1.8									
2022-01-05	FS_BPO	< 0.010	< 0.010					3029					3.6							2560		3.7
2022-01-05	FS_INF-S							3181					1.6							2890		2.7
2022-01-05	FS_BPO																					
2022-01-05	FS_INF-S							3193					1.7									
2022-01-06	FR_SCOUTDS	< 0.010	< 0.010																			
2022-01-06	FS_BPO	< 0.010	< 0.010					3050					3.5							2060		5.6
2022-01-06	FS_INF-S							3191					1.8							2680		5.8
2022-01-06	FS_BPO																					
2022-01-06	FR_FRABCH																					
2022-01-06	FR_SCOUTDS			< 0.010	< 0.010	7.99		1607	0.246	0.223	0.0018	594	0.2	0.012	0.014	< 0.00010	< 0.00010	< 0.30	< 0.30	1200	< 0.050	< 1.0
2022-01-06	FR_FRABCH			< 0.010	< 0.010	3.34			0.189	0.195		365	-0.1	< 0.010	< 0.010	< 0.00010	< 0.00010	< 0.30	0.38	920	0.552	5.4
2022-01-06	FR_SCOUTDS												-0.1									
2022-01-06	FS_INF-S							3195					1.8									
2022-01-07	FS_BPO	< 0.010	< 0.010					3058					3.7							2720		5.9
2022-01-07	FS_INF-S							3197					1.7							2930		4.2
2022-01-07	FS_BPO																					
2022-01-07	FS_INF-S							3191					1.7									
2022-01-08	FS_BPO	< 0.010	< 0.010					3065					3.9							2550		< 1.0
2022-01-08	FS_INF-S							3191					1.8							2960		< 1.0
2022-01-08	FS_BPO																					
2022-01-08	FS_INF-S							3188					1.9									
2022-01-09	FS_BPO	< 0.010	< 0.010					3078					4.1							2620		3.3
2022-01-09	FS_INF-S							3192					1.8							2670		2.0
2022-01-09	FS_BPO																					
2022-01-09	FS_INF-S							3191					1.7									
2022-01-10	FS_BPO	< 0.010	< 0.010					3077			< 0.0015	1680	4.2							2780	0.448	5.6
2022-01-10	FS_INF-S							3194			< 0.0015	1750	1.9							2990	0.271	5.0
2022-01-10	FS_BPO																					
2022-01-10	FS_INF-S																					
2022-01-10	FS_BPO																					
2022-01-10	FS_INF-S							3189					1.9									
2022-01-11	FS_BPO	< 0.010	< 0.010					3076					4.2							2810		2.8
2022-01-11	FS_INF-S	< 0.010	< 0.010					3198					1.8							2880		3.6
2022-01-11	FS_BPO																					
2022-01-11	FS_INF-S							3196					1.9									
2022-01-12	FS_BPO	< 0.010	< 0.010					3077					4.6							2740		3.9
2022-01-12	FS_INF-S							3198					1.9							2840		3.6
2022-01-12	FS_BPO																					
2022-01-12	FS_INF-S							3197					2									
2022-01-13	FR_SCOUTDS	< 0.010	< 0.010																			
2022-01-13	FS_BPO	< 0.010	< 0.010					3086 3105					5.1 5.2							2820		3.2
2022-01-13	FS_INF-S			< 0.020	< 0.020	2.50		3200	0.238	0.234			2.1	0.060	0.047	< 0.00020	< 0.00020	< 20.0	< 10.0	2950		4.7
2022-01-13	FS_BPO																					
2022-01-13	FR_SCOUTDS			< 0.010	< 0.010	5.30		1513	0.237	0.218	< 0.0015	584	0.5	< 0.010	< 0.010	< 0.00010	< 0.00010	< 0.30	< 0.30	1050	< 0.050	7.3
2022-01-13	FS_INF-S							3193					3.1									
2022-01-14	FS_BPO	< 0.010	< 0.010					3083					4.6							2670		4.1

Parameter		Selenosulfate, SeSO3	SeMe – selenomethionine CH3SeCH2CH2CH(NH2)CO2H	Silver	Silver	Sodium	Specific conductivity, temperature corrected value (25 C)	Specific conductivity, temperature corrected value (25 C)	Strontium	Strontium	SULFIDE (as S)	Sulphate (As SO4)	Temperature, Field	Thallium	Thallium	Tin	Tin	Titanium	Titanium	Total Dissolved Solids (Residue, Filterable)	Total Kjeldahl Nitrogen	Total Suspended Solids, Lab
Fraction		D	D	D	T	T	N	N	D	T	T	D	N	D	T	D	T	D	T	N	N	N
Unit		ug/l	ug/l	mg/l	mg/l	mg/l	us/cm	uS/cm at 25 C	mg/l	mg/l	mg/l	mg/l	deg c	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-01-14	FS_INF-S							3196					2.2							2870		4.2
2022-01-14	FS_BPO																					
2022-01-14	FS_INF-S							3202					2.1									
2022-01-15	FS_BPO	< 0.010	< 0.010					3088					5.6							2880		1.4
2022-01-15	FS_INF-S							3199					2.5							2980		< 1.0
2022-01-15	FS_BPO																					
2022-01-15	FS_INF-S							3193					2.3									
2022-01-16	FS_BPO	< 0.010	< 0.010					3009					5.4							2640		2.0
2022-01-16	FS_INF-S							3144					2.5							2920		1.2
2022-01-16	FS_BPO																					
2022-01-16	FS_INF-S							3208					2.2									
2022-01-17	FS_BPO	< 0.010	< 0.010					3015 3001			0.0034	1620	5 5							2770	0.308	2.6
2022-01-17	FS_INF-S							3164				1660	2.2							2970	0.430	2.6
2022-01-17	FS_BPO																					
2022-01-17	FS_BPO																					
2022-01-17	FS_BPO							3015					5.2									
2022-01-17	FR_FRABCH			< 0.010	< 0.010	3.39			0.194	0.192		382	2.5	< 0.010	< 0.010	< 0.00010	< 0.00010	< 0.30	< 0.30	885	0.343	1.3
2022-01-17	FS_BPO							3010					5.9									
2022-01-17	FS_INF-S							3170					2.1									
2022-01-18	FS_BPO	< 0.010	< 0.010	< 0.020	< 0.020	19.5		3024	0.215	0.219			5.6	0.042	< 0.020	< 0.00020	< 0.00020	< 10.0	< 10.0	2440		< 1.0
2022-01-18	FS_INF-S	< 0.010	< 0.010	< 0.050	< 0.020	2.53		3166	0.232	0.234			2.6	0.054	0.050	< 0.00050	< 0.00020	< 10.0	< 10.0	2680		3.0
2022-01-18	FS_BPO																					
2022-01-18	FS_INF-S							3172					2.1									
2022-01-19	FS_BPO	< 0.010	< 0.010					3024					4.5							2730		2.8
2022-01-19	FS_INF-S							3171					2.2							2860		4.0
2022-01-19	FS_BPO																					
2022-01-19	FS_INF-S							3174					1.9									
2022-01-20	FR_SCOUTDS	< 0.010	< 0.010																			
2022-01-20	FS_BPO	< 0.010	< 0.010					3051					5							2760		3.8
2022-01-20	FS_INF-S							3172					1.9							2830		3.0
2022-01-20	FS_BPO																					
2022-01-20	FR_SCOUTDS			< 0.010	< 0.010	4.50		1588	0.224	0.230	< 0.0015	622	0.6	0.010	0.014	< 0.00010	< 0.00010	< 0.30	< 0.30	1200	0.285	3.4
2022-01-20	FS_BPO							3066					5.2									
2022-01-20	FS_BPO																					
2022-01-21	FS_BPO							3050					4.8									
2022-01-21	FS_INF-S							3178					2.2									
2022-01-21	FS_BPO	< 0.010	< 0.010																	2830		< 1.0
2022-01-21	FS_INF-S																			2880		< 1.0
2022-01-21	FS_BPO																					
2022-01-21	FS_BPO							3061					4.7									
2022-01-21	FS_BPO							3047					4.7									
2022-01-21	FS_INF-S							3181					1.9									
2022-01-21	FS_INF-S							3182					1.9									
2022-01-22	FS_BPO							3052					4.5							2810		4.0
2022-01-22	FS_INF-S							3074					20.9							3120		4.7
2022-01-22	FS_BPO	< 0.010	< 0.010																			
2022-01-22	FS_BPO							3066					4.7									
2022-01-22	FS_BPO																					
2022-01-22	FS_INF-S							3184					2.1									
2022-01-23	FS_BPO	< 0.010	< 0.010					3073					4.8							2890		6.8
2022-01-23	FS_INF-S							3180					2							2980		2.8
2022-01-23	FS_BPO																					
2022-01-23	FS_INF-S							3188					2.2									
2022-01-24	FS_BPO	< 0.010	< 0.010					3088			< 0.0015	1670	4.8							2740	0.193	2.9
2022-01-24	FS_INF-S							3128			< 0.0015	1700	6.8							3000	0.239	3.6
2022-01-24	FS_BPO																					
2022-01-24	FS_BPO																					
2022-01-24	FS_BPO							3093					4.5									
2022-01-24	FS_INF-S							3190					1.9									
2022-01-24	FS_INF-S							3190					1.8									
2022-01-25	FS_BPO	< 0.010	< 0.010					3090					4.9							2640		2.5
2022-01-25	FS_INF-S	< 0.010	< 0.010	< 0.020	< 0.050	2.62		3187	0.239	0.232			1.9	0.051	< 0.050	< 0.00020	< 0.00050	< 10.0	< 10.0	2580		< 1.0
2022-01-25	FS_BPO																					
2022-01-25	FS_INF-S							3191					1.9									
2022-01-26	FS_BPO	< 0.010	< 0.010					3097					5							2750		2.2
2022-01-26	FS_INF-S							3188					1.9							2650		2.2
2022-01-26	FS_BPO																					
2022-01-26	FS_INF-S							3192					1.9									
2022-01-27	FR_SCOUTDS	< 0.010	< 0.010																			
2022-01-27	FS_BPO	< 0.010	< 0.010					3121					4.7							2740		2.6
2022-01-27	FS_INF-S							3192					2							2660		4.2
2022-01-27	FS_BPO																					
2022-01-27	FR_FRABCH							1293					1.1									
2022-01-27	FR_SCOUTDS			< 0.010	< 0.010	5.08		1589	0.234	0.247	< 0.0015	550	0.4	0.011	< 0.010		0.00026	< 0.30	< 0.30	1180	0.388	1.7

Parameter		Selenosulfate, SeSO3	SeMe – selenomethionine CH3SeCH2CH2CH(NH2)CO2H	Silver	Silver	Sodium	Specific conductivity, temperature corrected value (25 C)	Specific conductivity, temperature corrected value (25 C)	Strontium	Strontium	SULFIDE (as S)	Sulphate (As SO4)	Temperature, Field	Thallium	Thallium	Tin	Tin	Titanium	Titanium	Total Dissolved Solids (Residue, Filterable)	Total Kjeldahl Nitrogen	Total Suspended Solids, Lab
Fraction		D	D	D	T	T	N	N	D	T	T	D	N	D	T	D	T	D	T	N	N	N
Unit		ug/l	ug/l	mg/l	mg/l	mg/l	us/cm	uS/cm at 25 C	mg/l	mg/l	mg/l	mg/l	deg c	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-01-27	FR_FRABCH			< 0.010	< 0.010	3.12			0.200	0.205		354	1.1	< 0.010	< 0.010	< 0.00010	< 0.00010	< 0.30	< 0.30	936	0.373	1.6
2022-01-27	FS_BPO																					
2022-01-27	FS_INF-S																					
2022-01-28	FS_BPO							3123					4.8							2750		5.8
2022-01-28	FS_INF-S							3167					2.1							2920		6.0
2022-01-28	FS_BPO																					
2022-01-29	FS_BPO	< 0.010	< 0.010					3133					4.7							2980		2.0
2022-01-29	FS_INF-S							3194					2							2440		2.5
2022-01-29	FS_BPO																					
2022-01-30	FS_BPO							3151					4.8							2760		3.2
2022-01-30	FS_INF-S							3209					1.8							2980		4.3
2022-01-30	FS_BPO																					
2022-01-31	FS_BPO							3139			< 0.0015	1650	5.1							2920	0.382	1.7
2022-01-31	FS_INF-S							3201				1650	1.9							3270	< 0.050	2.2
2022-01-31	FS_BPO																					
2022-01-31	FS_BPO																					
2022-02-01	FS_BPO	< 0.010	< 0.010					3136					4.7							2780		4.1
2022-02-01	FS_INF-S							3195					1.8							2560		3.7
2022-02-01	FS_BPO																					
2022-02-01	FR_FRABCH			< 0.010	< 0.010	3.54			0.200	0.224		382	0.4	< 0.010	< 0.010	< 0.00010	< 0.00010	< 0.30	< 0.30	764	< 0.050	< 1.0
2022-02-02	FS_BPO							3163					4.5							2820		2.9
2022-02-02	FS_INF-S							3208					1.6							2750		2.0
2022-02-02	FS_BPO																					
2022-02-03	FR_SCOUTDS	< 0.010	< 0.010																			
2022-02-03	FS_BPO	< 0.010	< 0.010					3172					4.1							2660		2.3
2022-02-03	FS_INF-S							3213					1.5							2820		3.2
2022-02-03	FS_BPO																					
2022-02-03	FR_SCOUTDS			< 0.010	< 0.010	4.94		1695	0.230	0.233	< 0.0015	632	0.3	< 0.010	< 0.010	< 0.00010	< 0.00010	< 0.30	< 0.30	1260	1.03	2.2
2022-02-04	FS_BPO							3174					3.9							2920		3.8
2022-02-04	FS_INF-S							3209					1.6							2900		2.0
2022-02-04	FS_BPO																					
2022-02-05	FS_BPO	0.012	< 0.010					3134					5							3110		2.9
2022-02-05	FS_INF-S							3203					1.8							3070		3.6
2022-02-05	FS_BPO																					
2022-02-05	FS_BPO							3165					5									
2022-02-06	FS_BPO																			2720		2.9
2022-02-06	FS_INF-S																			3030		4.3
2022-02-06	FS_BPO																					
2022-02-06	FS_BPO							3.146					4.6									
2022-02-06	FS_INF-S							3202					1.8									
2022-02-07	FS_BPO							3143			< 0.0015	1720	5							2820	0.255	5.9
2022-02-07	FS_INF-S							3206			< 0.0015	1730	1.9							3020	0.054	< 3.8
2022-02-07	FS_BPO																					
2022-02-07	FS_BPO																					
2022-02-08	FR_SCOUTDS	< 0.010	< 0.010																			
2022-02-08	FS_BPO	< 0.010	< 0.010	< 0.020	< 0.020	19.0		3148	0.219	0.242			5.5	< 0.020	< 0.020	< 0.00020	< 0.00020	< 20.0	< 10.0	2530		2.3
2022-02-08	FS_INF-S	< 0.010	< 0.010	< 0.020	< 0.020	2.92		3208	0.229	0.245			1.8	0.048	0.047	< 0.00020	< 0.00020	< 20.0	< 10.0	2640		4.4
2022-02-08	FS_BPO																					
2022-02-09	FS_BPO							3137					5.9							2950		4.2
2022-02-09	FS_INF-S							3205					1.8							3170		3.8
2022-02-09	FS_BPO																					
2022-02-09	FR_FRABCH							1314					2.1									
2022-02-10	FR_SCOUTDS	< 0.010	< 0.010																			
2022-02-10	FS_BPO	< 0.010	< 0.010					3138					6.5							2510		3.8
2022-02-10	FS_INF-S			< 0.020	< 0.020	2.66		3202	0.242	0.245			2.1	0.053	0.060	< 0.00020	< 0.00020	< 20.0	< 10.0	2660		4.6
2022-02-10	FS_BPO																					
2022-02-10	FR_SCOUTDS			< 0.010	< 0.010	4.62		1521	0.224	0.221	< 0.0015	547	1.1	< 0.010	0.010	< 0.00010	< 0.00010	< 0.30	< 0.30	1060	< 0.050	2.8
2022-02-11	FS_BPO							3118					6.1							2680		4.6
2022-02-11	FS_INF-S							3202					2.2							2700		3.1
2022-02-11	FS_BPO																					
2022-02-12	FS_BPO	< 0.010	< 0.010					3145					6.3							2890		4.8
2022-02-12	FS_INF-S							3180					2.1							2720		5.9
2022-02-12	FS_BPO																					
2022-02-13	FS_BPO	< 0.010	< 0.010					3149					6.6							3070		2.8
2022-02-13	FS_INF-S							3197					2.3							2890		5.4
2022-02-13	FS_BPO																					
2022-02-14	FS_BPO							3146			< 0.0015	1750	6.5							2790	0.252	< 1.0
2022-02-14	FS_INF-S							3188				1740	2.2							2850	0.302	3.4

Parameter		Selenosulfate, SeSO3	SeMe – selenomethionine CH3SeCH2CH2CH(NH2)CO2H	Silver	Silver	Sodium	Specific conductivity, temperature corrected value (25 C)	Specific conductivity, temperature corrected value (25 C)	Strontium	Strontium	SULFIDE (as S)	Sulphate (As SO4)	Temperature, Field	Thallium	Thallium	Tin	Tin	Titanium	Titanium	Total Dissolved Solids (Residue, Filterable)	Total Kjeldahl Nitrogen	Total Suspended Solids, Lab
Fraction		D	D	D	T	T	N	N	D	T	T	D	N	D	T	D	T	D	T	N	N	N
Unit		ug/l	ug/l	mg/l	mg/l	mg/l	us/cm	uS/cm at 25 C	mg/l	mg/l	mg/l	mg/l	deg c	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-02-14	FS_BPO																					
2022-02-14	FS_BPO																					
2022-02-14	FS_INF-S							3206					2.2									
2022-02-15	FS_BPO	< 0.010	< 0.010		< 0.050	17.2		3149		0.226			6.5		< 0.050		< 0.00050		< 10.0	2800		2.7
2022-02-15	FS_INF-S			< 0.020	< 0.050	2.75		3204	0.243	0.252			2.1	0.047	< 0.050	< 0.00020	< 0.00050	< 10.0	< 10.0	2910		4.8
2022-02-15	FS_BPO																					
2022-02-15	FR_FRABCH							1313					2.2									
2022-02-15	FS_BPO																					
2022-02-16	FS_BPO																					
2022-02-16	FS_INF-S																					
2022-02-16	FS_BPO																			2810		4.6
2022-02-16	FS_INF-S																			2780		4.8
2022-02-16	FS_BPO																					
2022-02-16	FR_FRABCH			< 0.010	< 0.010	3.46	1281		0.219	0.209		404	2.4	< 0.010	< 0.010	0.00010	< 0.00010	< 0.30	< 0.30	989	0.286	< 1.0
2022-02-16	FS_BPO							3148					7									
2022-02-16	FS_INF-S							3207					2.1									
2022-02-17	FR_SCOUTDS	< 0.010	< 0.010																			
2022-02-17	FS_BPO	< 0.010	< 0.010					3151					5.8							2730		< 1.0
2022-02-17	FS_INF-S							3205					2.1							2970		< 1.0
2022-02-17	FS_BPO																					
2022-02-17	FR_SCOUTDS			< 0.010	< 0.010	4.83	1442		0.234	0.242	< 0.0015	590	0.4	0.013	0.010	< 0.00010	< 0.00010	< 10.0	< 10.0	1190	0.348	2.0
2022-02-18	FS_BPO							3144					6.2							2990		4.7
2022-02-18	FS_INF-S							3196					2.2							3050		4.7
2022-02-18	FS_BPO																					
2022-02-19	FS_BPO							3108					6.5							2760		1.2
2022-02-19	FS_INF-S							3198					2.2							3050		< 1.0
2022-02-19	FS_BPO																					
2022-02-20	FS_BPO	< 0.010	< 0.010					3156					5.8							2870		3.1
2022-02-20	FS_INF-S							3189					2.2							3000		2.5
2022-02-20	FS_BPO																					
2022-02-21	FS_BPO							3162 3175 3107			< 0.0015	1690	1.3 1.3 1.2							3020	0.254	2.2
2022-02-21	FS_INF-S							3215				1690	2							3040	< 0.050	2.0
2022-02-21	FS_BPO																					
2022-02-21	FS_BPO																					
2022-02-21	FS_BPO							3151					0.9									
2022-02-22	FS_BPO							3210					2									
2022-02-22	FS_BPO	< 0.010	< 0.010					3209					2.2							2820		2.7
2022-02-22	FS_INF-S			< 0.020	< 0.020	2.75		3203	0.240	0.236			2	0.051	0.053	< 0.00020	< 0.00020	< 20.0	< 20.0	3030		3.4
2022-02-22	FS_BPO																					
2022-02-22	FR_FRABCH												-0.7									
2022-02-22	FS_BPO							3196					3.4									
2022-02-22	FS_BPO							3233					2.2									
2022-02-22	FS_INF-S							3195					2									
2022-02-23	FS_BPO							3257					1.6									
2022-02-23	FS_BPO							3232					2.2							3110		1.9
2022-02-23	FS_INF-S							3182					15.1							3290		5.2
2022-02-23	FS_BPO																					
2022-02-24	FR_SCOUTDS	< 0.010	< 0.010																			
2022-02-24	FS_BPO	< 0.010	< 0.010					3208					3.5							2760		2.2
2022-02-24	FS_INF-S							3240					1.9							3040		3.3
2022-02-24	FS_BPO																					
2022-02-24	FR_SCOUTDS			< 0.010	< 0.010	5.80		1518	0.227	0.225	< 0.0015	641	0.4	< 0.010	< 0.010	< 0.00010	< 0.00010	< 10.0	< 10.0	1260	0.351	2.9
2022-02-25	FS_BPO							3205					4							3010		4.6
2022-02-25	FS_INF-S							3202					15.2							3180		3.4
2022-02-25	FS_BPO																					
2022-02-25	FR_SCOUTDS							1649					0.5									
2022-02-25	FS_INF-K																			1950		1.6
2022-02-25	FS_INF-K																					
2022-02-25	FS_INF-K							3056					2.6									
2022-02-26	FS_BPO							3209					4							3000		2.1
2022-02-26	FS_INF-K							3056 3059					2.6 2.5							2360		1.2
2022-02-26	FS_INF-S							3243					1.5							2960		3.2
2022-02-26	FS_BPO																					
2022-02-27	FS_BPO	0.020	< 0.010					3160 3172					4.8 4.8							2700		5.3
2022-02-27	FS_INF-K				< 0.020	9.61		3056		0.394			3.5		0.046		< 0.00020		< 0.60	2610		2.7
2022-02-27	FS_INF-S							3283					1.5							2920		2.3
2022-02-27	FS_BPO																					
2022-02-28	FS_BPO							3126			< 0.0015	1660	9.4							2950	0.257	4.1
2022-02-28	FS_INF-K			< 0.050				3089	0.362			1020	3.5	< 0.050		< 0.00050		< 1.50		2550	< 0.050	2.4

Parameter		Selenosulfate, SeSO3	SeMe – selenomethionine CH3SeCH2CH2CH(NH2)CO2H	Silver	Silver	Sodium	Specific conductivity, temperature corrected value (25 C)	Specific conductivity, temperature corrected value (25 C)	Strontium	Strontium	SULFIDE (as S)	Sulphate (As SO4)	Temperature, Field	Thallium	Thallium	Tin	Tin	Titanium	Titanium	Total Dissolved Solids (Residue, Filterable)	Total Kjeldahl Nitrogen	Total Suspended Solids, Lab
Fraction		D	D	D	T	T	N	N	D	T	T	D	N	D	T	D	T	D	T	N	N	N
Unit		ug/l	ug/l	mg/l	mg/l	mg/l	us/cm	uS/cm at 25 C	mg/l	mg/l	mg/l	mg/l	deg c	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-02-28	FS_INF-S							3246				1720	1.8							3140	0.414	1.0
2022-02-28	FS_BPO																					
2022-02-28	FS_BPO																					
2022-03-01	FS_BPO	< 0.010	< 0.010	< 0.020	< 0.020	18.7		3129	0.249	0.247			6.3	< 0.020	< 0.020	< 0.00020	< 0.00020	< 20.0	< 20.0	3130		4.2
2022-03-01	FS_INF-K	< 0.010	< 0.010	< 0.020	< 0.020	10.3		3059	0.380	0.386			3.6	0.045	0.040	< 0.00020	< 0.00020	< 20.0	< 20.0	2460		1.2
2022-03-01	FS_INF-S	< 0.010	< 0.010	< 0.020	< 0.020	2.87		3240	0.241	0.238			1.8	0.056	0.046	< 0.00020	< 0.00020	< 20.0	< 20.0	3050		2.5
2022-03-01	FS_BPO																					
2022-03-01	FR_FRABCH			< 0.010	< 0.010	3.73		1297	0.204	0.210		399	2.1	< 0.010	< 0.010	< 0.00010	< 0.00010	< 0.30	< 0.30	886	0.439	9.2
2022-03-02	FS_BPO							3110					6.4							2900		2.7
2022-03-02	FS_INF-K							3072					3.6							2460		3.7
2022-03-02	FS_INF-S							3215					2.1							3010		1.4
2022-03-02	FS_BPO																					
2022-03-02	FR_FRABCH							1297					2.1									
2022-03-03	FR_SCOUTDS	< 0.010	< 0.010																			
2022-03-03	FS_BPO	< 0.010	< 0.010					3082					6.5							2730		2.3
2022-03-03	FS_INF-K							3077					4.2							2480		< 1.0
2022-03-03	FS_INF-S							3168					2.3							2660		1.5
2022-03-03	FS_BPO																					
2022-03-03	FR_SCOUTDS			< 0.010	< 0.010	4.89		1531	0.239	0.224	< 0.0015	495	0.7	0.010	< 0.010	< 0.00010	< 0.00010	< 10.0	< 10.0	1130	0.202	2.1
2022-03-04	FS_BPO							3028					5.7							2770		1.4
2022-03-04	FS_INF-K							3079					3.3							2270		2.2
2022-03-04	FS_INF-S							3190					2.1							2920		1.9
2022-03-04	FS_BPO																					
2022-03-04	FS_BPO												5.5									
2022-03-05	FS_BPO							3048					5.5							2830		2.8
2022-03-05	FS_INF-K							3065					2.8							2510		1.6
2022-03-05	FS_INF-S							3188					2.8							3160		3.0
2022-03-05	FS_BPO																					
2022-03-06	FS_BPO	< 0.010	< 0.010					3052					6							2800		2.2
2022-03-06	FS_INF-K							3096 3096					2.9 2.9							2490		2.7
2022-03-06	FS_INF-S							3210					2.2							3030		2.8
2022-03-06	FS_BPO																					
2022-03-07	FS_BPO							3038			< 0.0015	1570	6.1							2720	0.200	3.6
2022-03-07	FS_INF-K							3106				1070	2.7							2530	< 0.050	2.9
2022-03-07	FS_INF-S							3213				1740	2.2							2830	< 0.050	3.0
2022-03-07	FS_BPO																					
2022-03-07	FS_BPO																					
2022-03-08	FS_BPO	< 0.010	< 0.010		< 0.020	17.3		3011		0.251			4.9		< 0.020		< 0.00020		< 10.0	2720		2.7
2022-03-08	FS_INF-K	< 0.010	< 0.010	< 0.020	< 0.020	9.26		3110	0.391	0.384			2.3	0.044	0.048	< 0.00020	< 0.00020	< 10.0	< 10.0	2670		1.3
2022-03-08	FS_INF-S	< 0.010	< 0.010	< 0.020	< 0.020	2.62		3215	0.235	0.237			2.1	0.050	0.054	< 0.00020	< 0.00020	< 10.0	< 10.0	3160		3.5
2022-03-08	FS_BPO																					
2022-03-08	FS_INF-S																					
2022-03-08	FS_BPO							2935 3043					4.8 4.5									
2022-03-08	FR_FRABCH			< 0.010	< 0.010	3.62			0.202	0.220		416	0.5	< 0.010	< 0.010	0.00048	< 0.00010	< 0.30	< 0.30	966	< 0.050	1.8
2022-03-08	FS_BPO							3009					5.1									
2022-03-08	FS_BPO												5.6									
2022-03-09	FS_BPO												5.3									
2022-03-09	FS_BPO							3024					4.6							2880		3.1
2022-03-09	FS_INF-K							3115					2.3							2630		1.8
2022-03-09	FS_INF-S							3217					2.1							2990		1.5
2022-03-09	FS_BPO																					
2022-03-10	FR_SCOUTDS	< 0.010	< 0.010																			
2022-03-10	FS_BPO	< 0.010	< 0.010					2960					4.6							2790		< 1.0
2022-03-10	FS_INF-K							3106					2.9							2550		< 1.0
2022-03-10	FS_INF-S							3212					2.1							2930		< 1.0
2022-03-10	FS_BPO																					
2022-03-10	FR_SCOUTDS			< 0.010	< 0.010	5.88		1599	0.238	0.260	< 0.0015	586	0.6	< 0.010	< 0.010	< 0.00010	< 0.00010	< 10.0	< 10.0	1200	< 0.050	3.2
2022-03-11	FS_BPO							3059					5.1							2730		3.9
2022-03-11	FS_INF-K							2942					2.9							2560		2.4
2022-03-11	FS_INF-S							3187					2.1							3080		2.0
2022-03-11	FS_BPO																					
2022-03-12	FS_BPO							3052					5.9							2720		3.2
2022-03-12	FS_INF-K							3118					3.5							2460		3.8
2022-03-12	FS_INF-S							3223					2.1							2890		5.4
2022-03-12	FS_BPO																					
2022-03-13	FS_BPO	< 0.010	< 0.010					3065					6.2							2630		2.5
2022-03-13	FS_INF-K							3126					3.4							2420		2.9
2022-03-13	FS_INF-S							3214					2.1							2880		6.0
2022-03-13	FS_BPO																					

Parameter		Selenosulfate, SeSO3	SeMe – selenomethionine CH3SeCH2CH2CH(NH2)CO2H	Silver	Silver	Sodium	Specific conductivity, temperature corrected value (25 C)	Specific conductivity, temperature corrected value (25 C)	Strontium	Strontium	SULFIDE (as S)	Sulphate (As SO4)	Temperature, Field	Thallium	Thallium	Tin	Tin	Titanium	Titanium	Total Dissolved Solids (Residue, Filterable)	Total Kjeldahl Nitrogen	Total Suspended Solids, Lab
Fraction		D	D	D	T	T	N	N	D	T	T	D	N	D	T	D	T	D	T	N	N	N
Unit		ug/l	ug/l	mg/l	mg/l	mg/l	us/cm	uS/cm at 25 C	mg/l	mg/l	mg/l	mg/l	deg c	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-03-14	FS_BPO							3060			< 0.0015	1520	6.7							2610	< 0.050	3.6
2022-03-14	FS_INF-K							3134					3.6							2490		1.9
2022-03-14	FS_INF-S							3200					2.4							2910		2.0
2022-03-14	FS_BPO																					
2022-03-14	FS_BPO																					
2022-03-15	FS_BPO	< 0.010	< 0.010		< 0.020	18.8		3059		0.267			7.5		< 0.020		< 0.00020		< 0.60	2680		4.9
2022-03-15	FS_INF-K	< 0.010	< 0.010	< 0.020	< 0.020	9.63		3096	0.403	0.387			3.8	0.046	0.043	< 0.00020	< 0.00020	< 10.0	< 10.0	2530		3.3
2022-03-15	FS_INF-S	< 0.010	< 0.010	< 0.020	< 0.020	2.64		3156	0.239	0.230			2.7	0.052	0.057	< 0.00020	< 0.00020	< 10.0	< 10.0	2830		2.7
2022-03-15	FS_BPO																					
2022-03-15	FR_FRABCH			< 0.010	< 0.010	4.05			0.180	0.226		422	2.4	< 0.010	< 0.010	< 0.00010	< 0.00010	< 0.30	< 0.30	957	< 0.050	< 1.0
2022-03-16	FS_BPO							3041					7.1							2680		4.5
2022-03-16	FS_INF-K							2846					4.6							2620		4.5
2022-03-16	FS_INF-S							3145					2.6							2920		3.6
2022-03-16	FS_BPO																					
2022-03-17	FR_SCOUTDS	< 0.010	< 0.010																			
2022-03-17	FS_BPO	< 0.010	< 0.010					3047					6.6							2640		2.1
2022-03-17	FS_INF-K							3150					3.2							2350		< 1.0
2022-03-17	FS_INF-S							3134					2.6							2660		7.8
2022-03-17	FS_BPO																					
2022-03-17	FR_SCOUTDS			< 0.010	< 0.010	4.09		1483	0.245	0.242	< 0.0015	514	0.2	0.011	0.018	< 0.00010	< 0.00010	< 10.0	< 10.0	1170	0.430	30.1
2022-03-18	FS_BPO							3043					7.8							2840		4.2
2022-03-18	FS_INF-K							3050					3.7							2800		3.1
2022-03-18	FS_INF-S							3098					2.7							2950		3.4
2022-03-18	FS_BPO																					
2022-03-19	FS_BPO							3036 3033					7.6 7.5							2630		< 1.0
2022-03-19	FS_INF-K							3154					3.7							2560		< 1.0
2022-03-19	FS_INF-S							2685					2.7							2830		5.1
2022-03-19	FS_BPO																					
2022-03-20	FS_BPO	< 0.010	< 0.010					3014					7.3							2740		< 1.0
2022-03-20	FS_INF-K							3157					3.4							2550		< 1.0
2022-03-20	FS_INF-S							3042					2.6							2800		4.7
2022-03-20	FS_BPO																					
2022-03-21	FS_BPO							2988			< 0.0015	1480	6.9							2810	0.386	3.4
2022-03-21	FS_INF-K							3166				1080	3.5							2610	< 0.050	1.8
2022-03-21	FS_INF-S							3112				1620	2.6							2860	< 0.050	4.2
2022-03-21	FS_BPO																					
2022-03-21	FS_BPO																					
2022-03-22	FS_BPO	< 0.010	< 0.010	< 0.020	< 0.020	18.0		2924	0.249	0.251			6.9	< 0.020	< 0.020	< 0.00020	< 0.00020	< 20.0	< 20.0	2470		1.7
2022-03-22	FS_INF-K			< 0.020	< 0.020	8.88		3123	0.375	0.363			3.1	0.041	0.043	< 0.00020	< 0.00020	< 20.0	< 20.0	2620		1.8
2022-03-22	FS_INF-S			< 0.020	< 0.020	2.47		3133	0.215	0.216			2.6	0.048	0.049	< 0.00020	< 0.00020	< 20.0	< 20.0	2660		2.6
2022-03-22	FS_BPO																					
2022-03-23	FS_BPO							2966					7.6							2710		5.3
2022-03-23	FS_INF-K							3168					3.6							2600		2.4
2022-03-23	FS_INF-S							3114					2.8							2890		4.5
2022-03-23	FS_BPO																					
2022-03-23	FR_FRABCH			< 0.010	< 0.010	3.57		1379	0.200	0.211		430	2.8	< 0.010	< 0.010	< 0.00010	0.00018	< 0.30	< 0.30	999	0.372	2.1
2022-03-23	FR_FRABCH																					
2022-03-24	FR_SCOUTDS	< 0.010	< 0.010																			
2022-03-24	FS_BPO	< 0.010	< 0.010					2960					8.5							2620		1.6
2022-03-24	FS_INF-K							3147					3.8							2370		2.7
2022-03-24	FS_INF-S							3001					3.3							2590		5.7
2022-03-24	FS_BPO																					
2022-03-24	FR_SCOUTDS			< 0.010	< 0.010	4.34		1371	0.215	0.227	< 0.0015	503	4.8	0.012	0.014	< 0.00010	< 0.00010	< 10.0	< 10.0	1010	0.306	7.1
2022-03-25	FS_BPO							2944					8.8							2540		3.6
2022-03-25	FS_INF-K							3159					3.4							2560		3.6
2022-03-25	FS_INF-S							2856					3.2							2400		6.6
2022-03-25	FS_BPO																					
2022-03-26	FS_BPO							2917					8.7							2670		5.7
2022-03-26	FS_INF-K							3154					3.7							2600		3.4
2022-03-26	FS_INF-S							2790					3.1							2690		4.5
2022-03-26	FS_BPO																					
2022-03-27	FS_BPO	< 0.010	< 0.010					2861					8.5							2550		2.8
2022-03-27	FS_INF-K							3155					3.5							2780		3.2
2022-03-27	FS_INF-S							2740					3.2							2400		5.7
2022-03-27	FS_BPO																					
2022-03-28	FS_BPO							2852			< 0.0015	1340	9.2							2340	0.366	1.6
2022-03-28	FS_INF-K							3145					3.8							2570		2.3
2022-03-28	FS_INF-S							2023					3.5							2250		4.7
2022-03-28	FS_BPO																					

	Parameter	Selenosulfate, SeSO3	SeMe – selenomethionine CH3SeCH2CH2CH(NH2)CO2H	Silver	Silver	Sodium	Specific conductivity, temperature corrected value (25 C)	Specific conductivity, temperature corrected value (25 C)	Strontium	Strontium	SULFIDE (as S)	Sulphate (As SO4)	Temperature, Field	Thallium	Thallium	Tin	Tin	Titanium	Titanium	Total Dissolved Solids (Residue, Filterable)	Total Kjeldahl Nitrogen	Total Suspended Solids, Lab
	Fraction	D	D	D	T	T	N	N	D	T	T	D	N	D	T	D	T	D	T	N	N	N
	Unit	ug/l	ug/l	mg/l	mg/l	mg/l	us/cm	uS/cm at 25 C	mg/l	mg/l	mg/l	mg/l	deg c	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-03-28	FS_BPO																					
2022-03-29	FS_BPO	< 0.010	< 0.010	< 0.020	< 0.020	41.4		2805	0.230	0.238			8.9	< 0.020	< 0.020	< 0.00020	< 0.00020	< 10.0	< 10.0	2320		2.9
2022-03-29	FS_INF-K	< 0.010	< 0.010	< 0.020	< 0.020	9.21		3142	0.366	0.364			3.6	0.043	0.040	< 0.00020	< 0.00020	< 10.0	< 10.0	2640		4.6
2022-03-29	FS_INF-S	< 0.010	< 0.010	< 0.020	< 0.020	2.28		2542	0.184	0.178			3.3	0.036	0.042	< 0.00020	< 0.00020	< 10.0	< 10.0	2290		9.0
2022-03-29	FS_BPO																					
2022-03-30	FS_BPO							2757					9.4							2310		2.1
2022-03-30	FS_INF-K							3132					6.2							2730		1.1
2022-03-30	FS_INF-S							2635					3.6							2160		3.6
2022-03-30	FR_FRABCH			< 0.010	< 0.010	4.33		708	0.198	0.212		407	2.1	< 0.010	< 0.010	< 0.00010	0.00382	< 0.30	< 1.20	884	0.220	2.4
2022-03-30	FS_BPO																					
2022-03-30	FS_BPO							2756					9.2									
2022-03-31	FR_SCOUTDS	< 0.010	< 0.010																			
2022-03-31	FS_BPO	< 0.010	< 0.010					2710					8.7							2300		11.8
2022-03-31	FS_INF-K							3141					3.5							2440		< 1.0
2022-03-31	FS_INF-S							2682					3.6							2200		4.0
2022-03-31	FS_BPO																					
2022-03-31	FR_SCOUTDS			< 0.010	< 0.010	3.36		1149	0.206	0.202	< 0.0015	387	1.8	0.014	0.017	< 0.00010	< 0.00010	< 10.0	< 10.0	799	0.510	6.2
2022-04-01	FS_BPO							2691					7.7							2690		2.5
2022-04-01	FS_INF-K							3148					3.6							2380		3.4
2022-04-01	FS_INF-S							2789					3.5							2300		4.6
2022-04-01	FS_BPO																					
2022-04-01	FR_FRABCH						1075.00						2.90									
2022-04-02	FS_BPO							2702					8.1							2210		3.1
2022-04-02	FS_INF-K							3137					3.8							2420		2.3
2022-04-02	FS_INF-S							2873					3.7							2740		2.9
2022-04-02	FS_BPO																					
2022-04-02	FS_INF-S							2881					3.6									
2022-04-03	FS_BPO	< 0.010	< 0.010					2238					7.7							2280		2.2
2022-04-03	FS_INF-K							3135					3.3							2580		1.7
2022-04-03	FS_INF-S							2925					3.7							2500		2.7
2022-04-03	FS_BPO																					
2022-04-04	FS_BPO							2780			< 0.0015	1270	7.6							2410	0.251	3.8
2022-04-04	FS_INF-K							3121				1060	3.7							2580	< 0.050	1.5
2022-04-04	FS_INF-S							2959				1520	3.8							2620	0.405	2.9
2022-04-04	FS_BPO																					
2022-04-04	FS_BPO																					
2022-04-05	FS_BPO			< 0.020	< 0.020	21.2		2811	0.284	0.304			7.3	< 0.020	< 0.020	< 0.00020	< 0.00020	< 10.0	< 0.60	2250		2.9
2022-04-05	FS_INF-K			< 0.020	< 0.020	10.1		3119	0.361	0.413			3.6	0.042	0.041	< 0.00020	< 0.00020	< 20.0	< 20.0	2510		2.0
2022-04-05	FS_INF-S			< 0.020	< 0.020	2.82		2981	0.212	0.244			3.5	0.048	0.043	< 0.00020	< 0.00020	< 20.0	< 20.0	2450		5.6
2022-04-05	FS_BPO																					
2022-04-05	FR_FRABCH			< 0.010	< 0.010	3.90	1099.00		0.194	0.210		408	2.90	< 0.010	< 0.010	< 0.00010	< 0.00010	< 0.30	< 0.90	932	0.254	1.9
2022-04-06	FS_BPO	< 0.010	< 0.010																			
2022-04-06	FS_INF-K	< 0.010	< 0.010																			
2022-04-06	FS_INF-S	< 0.010	< 0.010																			
2022-04-06	FS_BPO							2844					7.2							2450		2.1
2022-04-06	FS_INF-K							3112					3.3							2440		1.8
2022-04-06	FS_INF-S							3008					3.5							2640		2.5
2022-04-06	FS_BPO																					
2022-04-06	FR_FRABCH																					
2022-04-07	FS_BPO	< 0.010	< 0.010					2849					8.2							2630		1.9
2022-04-07	FS_INF-K							3102					3.3							2720		< 1.0
2022-04-07	FS_INF-S							3032					3.8							2760		2.2
2022-04-07	FS_BPO																					
2022-04-07	FR_SCOUTDS	< 0.010	< 0.010	< 0.010	< 0.010	3.85		1328	0.266	0.267	< 0.0015	470	2.6	0.017	0.018	< 0.00010	< 0.00010	< 10.0	< 10.0	972	< 0.050	3.1
2022-04-08	FS_BPO							2861					9.2							2410		3.4
2022-04-08	FS_INF-K							3084					3.6							2600		3.6
2022-04-08	FS_INF-S							3011					4.4							2570		1.8
2022-04-08	FS_BPO																					
2022-04-09	FS_BPO							2859					9.2							2380		1.8
2022-04-09	FS_INF-K							3057					3.9							2270		2.8
2022-04-09	FS_INF-S							2987					4.7							2600		3.6
2022-04-09	FS_BPO																					
2022-04-10	FS_BPO	< 0.010	< 0.010					2856					8.2							2160		4.1
2022-04-10	FS_INF-K							3050					3.2							2220		1.9
2022-04-10	FS_INF-S							2930					4.4							2480		2.6
2022-04-10	FS_BPO																					
2022-04-11	FS_BPO							2833			< 0.0015	1360	7.5							2240	0.258	1.2

	Parameter	Selenosulfate, SeSO3	SeMe – selenomethionine CH3SeCH2CH2CH(NH2)CO2H	Silver	Silver	Sodium	Specific conductivity, temperature corrected value (25 C)	Specific conductivity, temperature corrected value (25 C)	Strontium	Strontium	SULFIDE (as S)	Sulphate (As SO4)	Temperature, Field	Thallium	Thallium	Tin	Tin	Titanium	Titanium	Total Dissolved Solids (Residue, Filterable)	Total Kjeldahl Nitrogen	Total Suspended Solids, Lab
	Fraction	D	D	D	T	T	N	N	D	T	T	D	N	D	T	D	T	D	T	N	N	N
	Unit	ug/l	ug/l	mg/l	mg/l	mg/l	us/cm	uS/cm at 25 C	mg/l	mg/l	mg/l	mg/l	deg c	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-04-11	FS_INF-K							3043					3.2							2290		1.2
2022-04-11	FS_INF-S							2867					4.7							2620		2.7
2022-04-11	FS_BPO																					
2022-04-11	FS_BPO																					
2022-04-12	FS_BPO	< 0.010	< 0.010	< 0.020	< 0.020	18.7		2810	0.255	0.278			6.6	< 0.020	< 0.020	< 0.00020	< 0.00020	< 10.0	< 10.0	2290		2.1
2022-04-12	FS_INF-K	< 0.010	< 0.010	< 0.020	< 0.020	9.84		2803	0.345	0.365			3.1	0.042	0.044	< 0.00020	< 0.00020	< 10.0	< 10.0	2210		2.6
2022-04-12	FS_INF-S	< 0.010	< 0.010	< 0.020	< 0.020	2.84		3010	0.208	0.227			4.1	0.047	0.047	< 0.00020	< 0.00020	< 10.0	< 10.0	2540		2.5
2022-04-12	FS_BPO																					
2022-04-12	FR_FRABCH			< 0.010	< 0.010	4.07	1128.00		0.210	0.229		372	1.10	< 0.010	< 0.010	< 0.00010	< 0.00010	< 0.30	0.47	965	0.176	3.3
2022-04-13	FS_BPO							2803					6.3							2190		3.3
2022-04-13	FS_INF-K							3014					3.2							2320		3.6
2022-04-13	FS_INF-S							3025					3.9							2450		2.2
2022-04-13	FS_BPO																					
2022-04-14	FS_BPO	< 0.010	< 0.010					2806					6.4							2330		1.8
2022-04-14	FS_INF-K							2917					3							2670		2.2
2022-04-14	FS_INF-S							3020					3.9							2820		4.2
2022-04-14	FS_BPO																					
2022-04-14	FR_SCOUTDS	< 0.010	< 0.010	< 0.010	< 0.010	4.24		1371	0.235	0.237	< 0.0015	446	0.3	0.013	0.014	< 0.00010	< 0.00010	< 10.0	< 10.0	1040	< 0.050	3.3
2022-04-15	FS_BPO																					
2022-04-15	FS_BPO																					
2022-04-15	FS_BPO							2807 2806 2747					7 7.1							2340		3.3
2022-04-15	FS_INF-K							2987					4.5							2290		2.4
2022-04-15	FS_INF-S							3026					3.9							2730		2.7
2022-04-15	FS_BPO																					
2022-04-15	FS_BPO																					
2022-04-15	FS_BPO																					
2022-04-16	FS_BPO																					
2022-04-16	FS_BPO																					
2022-04-16	FS_BPO							2805					6.6							2300		1.8
2022-04-16	FS_INF-K							2991					3.1							2350		1.3
2022-04-16	FS_INF-S							3024					3.8							2510		1.8
2022-04-16	FS_BPO																					
2022-04-16	FS_BPO																					
2022-04-17	FS_BPO	< 0.010	< 0.010					2795					3.3							2520		4.4
2022-04-17	FS_INF-K							2977					3.3							2530		4.2
2022-04-17	FS_INF-S							3016					4.3							2760		2.6
2022-04-17	FS_BPO																					
2022-04-18	FS_BPO							2798			< 0.0015	1270	8.1							2290	0.337	2.3
2022-04-18	FS_INF-K							2966				937	3.6							2310	< 0.050	< 1.0
2022-04-18	FS_INF-S							3003				1500	4.4							2700	< 0.050	2.4
2022-04-18	FS_BPO																					
2022-04-18	FS_BPO																					
2022-04-19	FS_BPO	< 0.010	< 0.010	< 0.020	< 0.020	19.6		2793	0.255	0.276			8	< 0.020	< 0.020	< 0.00020	< 0.00020	< 20.0	< 20.0	2280		2.9
2022-04-19	FS_INF-K			< 0.020	< 0.020	10.9		2630	0.372	0.398			4	0.042	0.052	< 0.00020	< 0.00020	< 20.0	< 20.0	2270		< 1.0
2022-04-19	FS_INF-S			< 0.020	< 0.020	2.61		2516	0.226	0.232			4.8	0.047	0.052	< 0.00020	< 0.00020	< 20.0	< 20.0	2530		1.3
2022-04-19	FS_BPO																					
2022-04-20	FS_BPO												7.8									
2022-04-20	FR_FRABCH			< 0.010	< 0.010	3.51	1070.00		0.201	0.215		402	3.00	< 0.010	< 0.010	< 0.00010	< 0.00010	< 0.30	< 0.30	1020	< 0.050	< 1.0
2022-04-21	FR_SCOUTDS						1373						5.3									
2022-04-21	FS_INF-K																			2190		2.4
2022-04-21	FR_SCOUTDS	< 0.010	< 0.010	< 0.010	< 0.010	3.01			0.208	0.210	< 0.0015	470		0.015	0.015	< 0.00010	< 0.00010	< 10.0	< 10.0	1030	0.348	2.4
2022-04-21	FS_INF-K						2921						4.8									
2022-04-22	FS_BPO																			2370		7.0
2022-04-22	FS_INF-S																			2590		1.0
2022-04-22	FR_SCOUTDS						1356						6.4									
2022-04-22	FS_BPO																					
2022-04-22	FR_FRABCH																					
2022-04-22	FR_FRABCH																					
2022-04-22	FS_BPO						2775						7.3									
2022-04-22	FS_INF-S																					
2022-04-22	FS_INF-S						2982						4.1									
2022-04-22	FS_BPO						2771						7.6									
2022-04-22	FS_BPO						2770						7.9									
2022-04-22	FS_INF-S						2982						5.1									
2022-04-22	FS_INF-S																					
2022-04-23	FS_BPO						2785						7.7							2380		3.6
2022-04-23	FS_INF-S						2982						5							2640		2.9
2022-04-23	FS_BPO																					
2022-04-23	FS_INF-S						2971						5.8									
2022-04-24	FS_BPO	< 0.010	< 0.010				2811						8.7							2430		3.4
2022-04-24	FS_INF-S						2973						5.5							2700		3.5
2022-04-24	FS_BPO																					

Parameter		Selenosulfate, SeSO3	SeMe – selenomethionine CH3SeCH2CH2CH(NH2)CO2H	Silver	Silver	Sodium	Specific conductivity, temperature corrected value (25 C)	Specific conductivity, temperature corrected value (25 C)	Strontium	Strontium	SULFIDE (as S)	Sulphate (As SO4)	Temperature, Field	Thallium	Thallium	Tin	Tin	Titanium	Titanium	Total Dissolved Solids (Residue, Filterable)	Total Kjeldahl Nitrogen	Total Suspended Solids, Lab
Fraction		D	D	D	T	T	N	N	D	T	T	D	N	D	T	D	T	D	T	N	N	N
Unit		ug/l	ug/l	mg/l	mg/l	mg/l	us/cm	uS/cm at 25 C	mg/l	mg/l	mg/l	mg/l	deg c	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-04-24	FS_INF-S						2935						6.7									
2022-04-25	FS_BPO						2783				< 0.0015	1300	9.8							2320	0.538	6.2
2022-04-25	FS_INF-S						2965						6.2							2600		5.2
2022-04-25	FS_BPO																					
2022-04-25	FS_BPO																					
2022-04-26	FS_BPO	< 0.010	< 0.010				2889						10.4							2470		4.9
2022-04-26	FS_INF-S	< 0.010	< 0.010	< 0.020	< 0.020	2.46	2930		0.209	0.229			6.4	0.049	0.050	< 0.00020	< 0.00020	< 10.0	< 10.0	2660		3.5
2022-04-26	FS_BPO																					
2022-04-27	FS_BPO						2920						10.5							2360		5.0
2022-04-27	FS_INF-S						2894						5.6							2480		5.4
2022-04-27	FS_BPO																					
2022-04-28	FS_BPO	< 0.010	< 0.010				2924						10.2							2440		12.2
2022-04-28	FS_INF-S						2919						5.2							2620		10.9
2022-04-28	FS_BPO																					
2022-04-28	FR_SCOUTDS	< 0.010	< 0.010	< 0.010	< 0.010	3.11	1042		0.158	0.161	< 0.0015	355	2.5	0.011	0.014	< 0.00010	< 0.00010	< 10.0	< 10.0	771	0.346	7.6
2022-04-28	FR_FRABCH																					
2022-04-29	FS_BPO						2925						10.1							2400		1.2
2022-04-29	FS_INF-S						2893						5.5							2420		5.6
2022-04-29	FS_BPO																					
2022-04-30	FS_BPO						2931						10.3							2570		3.5
2022-04-30	FS_INF-S						2877						6							2300		2.1
2022-04-30	FS_BPO																					
2022-05-01	FS_BPO	< 0.010	< 0.010				2913						10.5							2320		3.9
2022-05-01	FS_INF-K						2870						13.8							2180		< 1.0
2022-05-01	FS_INF-S						2866						6.4							2490		2.2
2022-05-01	FS_BPO																					
2022-05-01	FS_INF-K						2852						4.5									
2022-05-01	FS_BPO						2917						11.1									
2022-05-01	FS_BPO																					
2022-05-02	FS_BPO						2912				0.0017	1560	10.7							2480	0.230	6.7
2022-05-02	FS_INF-S											1520								2470	0.485	5.0
2022-05-02	FS_BPO																					
2022-05-02	FS_BPO																					
2022-05-02	FS_BPO																					
2022-05-02	FS_BPO						2906						11.3									
2022-05-02	FS_INF-S						2816						6.7									
2022-05-03	FS_BPO	< 0.010	< 0.010	< 0.020	< 0.020	27.8	2909		0.179	0.201			10.6	< 0.020	< 0.020	< 0.00020	< 0.00020	< 20.0	< 20.0	2560		7.6
2022-05-03	FS_INF-S			< 0.020	< 0.020	2.38	2806		0.208	0.208			5.7	0.048	0.054	< 0.00020	< 0.00020	< 20.0	< 20.0	2420		8.3
2022-05-03	FS_BPO																					
2022-05-04	FS_BPO						2899						11.2							2290		3.3
2022-05-04	FS_INF-S						2768						6.5							2500		3.4
2022-05-04	FS_BPO																					
2022-05-05	FS_BPO	< 0.010	< 0.010				2858						10.6							2450		< 1.0
2022-05-05	FS_INF-K						2829						4							2240		1.3
2022-05-05	FS_INF-S						2798						6.6							2460		1.2
2022-05-05	FS_BPO																					
2022-05-05	FR_SCOUTDS	< 0.010	< 0.010	< 0.010	< 0.010	2.09	865		0.135	0.135	< 0.0015	360	6	0.011	0.011	< 0.00010	< 0.00010	< 10.0	< 10.0	687	0.404	6.9
2022-05-05	FR_FRABCH																					
2022-05-06	FS_BPO							2813					10.7							2670		2.6
2022-05-06	FS_INF-K							2812					3.9							2420		4.7
2022-05-06	FS_INF-S							2697					6.2							2510		1.4
2022-05-06	FS_BPO																					
2022-05-07	FS_BPO						2809						10.7							2330		6.3
2022-05-07	FS_INF-K						2834						3.9							2430		3.5
2022-05-07	FS_INF-S						2444						5.2							2110		5.7
2022-05-07	FS_BPO																					
2022-05-07	FS_INF-S																					
2022-05-08	FS_BPO	0.018	< 0.010				2678						10.4							2440		4.7
2022-05-08	FS_INF-K						2825						3.8							2360		3.5
2022-05-08	FS_INF-S						2315						4.6							2060		8.0
2022-05-08	FS_BPO																					
2022-05-08	FS_INF-S																					
2022-05-08	FS_BPO																					
2022-05-09	FS_INF-S																					
2022-05-09	FS_INF-S																					
2022-05-09	FS_BPO						2538				< 0.0015	1180	9.6							2040	0.171	1.9
2022-05-09	FS_INF-K						2836						3.6							2390		< 1.0
2022-05-09	FS_INF-S						2385						4.8							1890		7.5
2022-05-09	FS_BPO																					
2022-05-09	FS_BPO																					
2022-05-10	FS_INF-S																					
2022-05-10	FS_INF-S																					

Parameter		Selenosulfate, SeSO3	SeMe – selenomethionine CH3SeCH2CH2CH(NH2)CO2H	Silver	Silver	Sodium	Specific conductivity, temperature corrected value (25 C)	Specific conductivity, temperature corrected value (25 C)	Strontium	Strontium	SULFIDE (as S)	Sulphate (As SO4)	Temperature, Field	Thallium	Thallium	Tin	Tin	Titanium	Titanium	Total Dissolved Solids (Residue, Filterable)	Total Kjeldahl Nitrogen	Total Suspended Solids, Lab
Fraction		D	D	D	T	T	N	N	D	T	T	D	N	D	T	D	T	D	T	N	N	N
Unit		ug/l	ug/l	mg/l	mg/l	mg/l	us/cm	uS/cm at 25 C	mg/l	mg/l	mg/l	mg/l	deg c	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-05-10	FS_BPO	0.014	< 0.010	< 0.020	< 0.020	23.0	2508		0.185	0.188			10.2	< 0.020	< 0.020	< 0.00020	< 0.00020	< 20.0	< 0.60	1980		5.6
2022-05-10	FS_INF-K	< 0.010	< 0.010	< 0.020	< 0.020	13.2	2824		0.337	0.336			3.8	0.044	0.041	< 0.00020	< 0.00020	< 20.0	< 10.0	2350		33.6
2022-05-10	FS_INF-S	< 0.010	< 0.010	< 0.020	< 0.020	1.96	2418		0.170	0.168			5.2	0.045	0.045	< 0.00020	< 0.00020	< 20.0	< 10.0	2010		3.5
2022-05-10	FS_BPO																					
2022-05-10	FR_FRABCH																					
2022-05-11	FS_BPO						2500						10.1							1940		2.5
2022-05-11	FS_INF-K						2838						3.9							2200		3.3
2022-05-11	FS_INF-S						2490						5.2							1980		6.1
2022-05-11	FS_BPO																					
2022-05-12	FS_BPO	< 0.010	< 0.010				2515						10.5							2290		2.8
2022-05-12	FS_INF-K						2830						3.6							2680		2.4
2022-05-12	FS_INF-S						2532						5.7							2280		1.4
2022-05-12	FS_BPO																					
2022-05-12	FR_SCOUTDS	< 0.010	< 0.010	< 0.010	< 0.010	3.03	988		0.156	0.156	< 0.0015	280	4.6	< 0.010	0.012	< 0.00010	< 0.00010	< 10.0	< 10.0	666	0.302	1.6
2022-05-12	FS_INF-K																					
2022-05-12	FS_INF-S																					
2022-05-12	FS_INF-K																					
2022-05-12	FS_INF-S																					
2022-05-12	FS_INF-K																					
2022-05-12	FS_INF-S																					
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2022-05-12	FS_INF-K																					
2022-05-12	FS_INF-S																					
2022-05-13	FS_INF-K																					
2022-05-13	FS_INF-S																					
2022-05-13	FS_INF-K																					
2022-05-13	FS_INF-S																					
2022-05-13	FS_BPO						2557						10.8							2310		3.9
2022-05-13	FS_INF-K						2823						3.8							2640		5.2
2022-05-13	FS_INF-S						2601						6.3							2480		5.5
2022-05-13	FS_BPO																					
2022-05-13	FS_INF-K																					
2022-05-13	FS_INF-S																					
2022-05-13	FS_INF-K																					
2022-05-13	FS_INF-S																					
2022-05-13	FS_INF-K																					
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2022-05-14	FS_INF-K																					
2022-05-14	FS_INF-S																					
2022-05-14	FS_INF-K																					
2022-05-14	FS_INF-S																					
2022-05-14	FS_BPO						2601						10.2							2070		4.3
2022-05-14	FS_INF-K						2812						3.6							2140		2.0
2022-05-14	FS_INF-S						2627						5.6							2140		3.5
2022-05-14	FS_BPO																					
2022-05-14	FS_INF-K																					
2022-05-14	FS_INF-S																					
2022-05-14	FS_INF-K																					
2022-05-14	FS_INF-S																					
2022-05-14	FS_INF-K																					
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2022-05-14	FS_INF-K																					
2022-05-14	FS_INF-S																					
2022-05-15	FS_INF-K																					
2022-05-15	FS_INF-S																					
2022-05-15	FS_INF-K																					
2022-05-15	FS_INF-S																					
2022-05-15	FS_BPO	< 0.010	< 0.010				2638						10.8							2140		2.2
2022-05-15	FS_INF-K						2796						4							2140		2.2
2022-05-15	FS_INF-S						1490						6.4							2250		2.0
2022-05-15	FS_BPO																					
2022-05-15	FS_INF-K																					
2022-05-15	FS_INF-S																					
2022-05-15	FS_INF-K																					
2022-05-15	FS_INF-S																					
2022-05-15	FS_INF-K																					
2022-05-15	FS_INF-S																					
2022-05-15	FS_INF-K																					
2022-05-15	FS_INF-S																					
2022-05-16	FS_INF-K																					
2022-05-16	FS_INF-S																					
2022-05-16	FS_INF-K																					
2022-05-16	FS_INF-S																					
2022-05-16	FS_BPO						2651				< 0.0015	1300	11.7							1990	0.171	5.7

Parameter		Selenosulfate, SeSO3	SeMe – selenomethionine CH3SeCH2CH2CH(NH2)CO2H	Silver	Silver	Sodium	Specific conductivity, temperature corrected value (25 C)	Specific conductivity, temperature corrected value (25 C)	Strontium	Strontium	SULFIDE (as S)	Sulphate (As SO4)	Temperature, Field	Thallium	Thallium	Tin	Tin	Titanium	Titanium	Total Dissolved Solids (Residue, Filterable)	Total Kjeldahl Nitrogen	Total Suspended Solids, Lab
Fraction		D	D	D	T	T	N	N	D	T	T	D	N	D	T	D	T	D	T	N	N	N
Unit		ug/l	ug/l	mg/l	mg/l	mg/l	us/cm	uS/cm at 25 C	mg/l	mg/l	mg/l	mg/l	deg c	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-05-16	FS_INF-K						2778					893	4							2010	< 0.050	1.9
2022-05-16	FS_INF-S						2665					1350	7.2							2140	< 0.050	2.8
2022-05-16	FS_BPO																					
2022-05-16	FS_BPO																					
2022-05-16	FS_INF-K																					
2022-05-16	FS_INF-S																					
2022-05-16	FS_INF-K																					
2022-05-16	FS_INF-S																					
2022-05-16	FS_INF-K																					
2022-05-16	FS_INF-S																					
2022-05-16	FS_INF-K																					
2022-05-16	FS_INF-S																					
2022-05-16	FS_INF-K																					
2022-05-16	FS_INF-S																					
2022-05-17	FS_INF-K																					
2022-05-17	FS_INF-S																					
2022-05-17	FS_INF-K																					
2022-05-17	FS_INF-S																					
2022-05-17	FS_BPO	< 0.010	< 0.010	< 0.020	< 0.020	27.2	2670		0.214	0.206			11.6	< 0.020	< 0.020	< 0.00020	< 0.00020	< 20.0	< 20.0	2320		2.5
2022-05-17	FS_INF-K			< 0.020	< 0.020	13.6	2758		0.345	0.330			4.1	0.044	0.041	< 0.00020	< 0.00020	< 10.0	< 20.0	2300		< 1.0
2022-05-17	FS_INF-S			< 0.020	< 0.020	2.36	2677		0.199	0.191			7.3	0.052	0.044	< 0.00020	< 0.00020	< 10.0	< 20.0	2210		< 1.0
2022-05-17	FS_BPO																					
2022-05-17	FR_FRABCH			< 0.010	< 0.010	2.76	955.00		0.148	0.140		298	4.60	< 0.010	< 0.010	< 0.00010	0.00014	< 0.30	1.31	534	< 0.050	4.8
2022-05-17	FS_INF-K																					
2022-05-17	FS_INF-S																					
2022-05-17	FS_INF-K																					
2022-05-17	FS_INF-S																					
2022-05-17	FS_INF-K																					
2022-05-17	FS_INF-S																					
2022-05-17	FS_INF-K																					
2022-05-17	FS_INF-S																					
2022-05-17	FS_INF-K																					
2022-05-17	FS_INF-S																					
2022-05-17	FS_INF-K																					
2022-05-17	FS_INF-S																					
2022-05-18	FS_INF-K																					
2022-05-18	FS_INF-S																					
2022-05-18	FS_INF-K																					
2022-05-18	FS_INF-S																					
2022-05-18	FS_BPO						2684 2667						10.9 11							2360		2.5
2022-05-18	FS_INF-K						2714						4.8							2170		1.5
2022-05-18	FS_INF-S						2668						6.6							2390		2.3
2022-05-18	FS_BPO																					
2022-05-18	FS_BPO																					
2022-05-18	FS_INF-K																					
2022-05-18	FS_INF-S																					
2022-05-18	FS_INF-K																					
2022-05-18	FS_INF-S																					
2022-05-18	FS_INF-K																					
2022-05-18	FS_INF-S																					
2022-05-19	FS_INF-K																					
2022-05-19	FS_INF-S																					
2022-05-19	FS_INF-K																					
2022-05-19	FS_INF-S																					
2022-05-19	FS_BPO	< 0.010	< 0.010				2675						10.1							2150		< 1.0
2022-05-19	FS_INF-K						2688						3.9							2170		3.2
2022-05-19	FS_INF-S						2451						4.7							2070		< 1.0
2022-05-19	FS_BPO																					
2022-05-19	FR_SCOUTDS	< 0.010	< 0.010	< 0.010	< 0.010	1.63	846		0.126	0.134	< 0.0015	224	4.6	< 0.010	< 0.010	< 0.00010	< 0.00010	< 10.0	< 10.0	565	0.256	3.0
2022-05-19	FS_INF-K																					
2022-05-19	FS_INF-S																					
2022-05-19	FS_INF-K																					
2022-05-19	FS_INF-S																					
2022-05-19	FS_INF-K																					
2022-05-19	FS_INF-S																					
2022-05-19	FS_INF-K																					
2022-05-19	FS_INF-S																					
2022-05-19	FS_INF-K																					
2022-05-19	FS_INF-S																					
2022-05-20	FS_INF-K																					
2022-05-20	FS_INF-S																					
2022-05-20	FS_INF-K																					
2022-05-20	FS_INF-S																					
2022-05-20	FS_BPO						2597						9.9							2150		2.3
2022-05-20	FS_INF-K						2646						3.8							1970		2.0
2022-05-20	FS_INF-S						2319						4.6							1910		8.5
2022-05-20	FS_BPO																					
2022-05-20	FS_INF-K																					
2022-05-20	FS_INF-S																					
2022-05-20	FS_INF-K																					
2022-05-20	FS_INF-S																					
2022-05-20	FS_INF-K																					
2022-05-20	FS_INF-S																					

Parameter		Selenosulfate, SeSO3	SeMe – selenomethionine CH3SeCH2CH2CH(NH2)CO2H	Silver	Silver	Sodium	Specific conductivity, temperature corrected value (25 C)	Specific conductivity, temperature corrected value (25 C)	Strontium	Strontium	SULFIDE (as S)	Sulphate (As SO4)	Temperature, Field	Thallium	Thallium	Tin	Tin	Titanium	Titanium	Total Dissolved Solids (Residue, Filterable)	Total Kjeldahl Nitrogen	Total Suspended Solids, Lab
Fraction		D	D	D	T	T	N	N	D	T	T	D	N	D	T	D	T	D	T	N	N	N
Unit		ug/l	ug/l	mg/l	mg/l	mg/l	us/cm	uS/cm at 25 C	mg/l	mg/l	mg/l	mg/l	deg c	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-05-20	FS_INF-K																					
2022-05-20	FS_INF-S																					
2022-05-21	FS_INF-K																					
2022-05-21	FS_INF-S																					
2022-05-21	FS_INF-K																					
2022-05-21	FS_INF-S																					
2022-05-21	FS_BPO						2536						9.9							2060		1.2
2022-05-21	FS_INF-K						2618						3.7							2030		2.8
2022-05-21	FS_INF-S						2475						5.8							2060		< 1.0
2022-05-21	FS_BPO																					
2022-05-21	FS_INF-K																					
2022-05-21	FS_INF-S																					
2022-05-21	FS_INF-K																					
2022-05-21	FS_INF-S																					
2022-05-21	FS_INF-K																					
2022-05-21	FS_INF-S																					
2022-05-21	FS_INF-K																					
2022-05-21	FS_INF-S																					
2022-05-22	FS_INF-K																					
2022-05-22	FS_INF-S																					
2022-05-22	FS_INF-K																					
2022-05-22	FS_INF-S																					
2022-05-22	FS_BPO	< 0.010	< 0.010				2476						10.1							2060		2.6
2022-05-22	FS_INF-K						2589						3.8							1970		3.1
2022-05-22	FS_INF-S						2539						6.2							2200		4.7
2022-05-22	FS_BPO																					
2022-05-22	FS_BPO						2520						10.5									
2022-05-22	FS_BPO																					
2022-05-22	FS_INF-K																					
2022-05-22	FS_INF-S																					
2022-05-22	FS_INF-K																					
2022-05-22	FS_INF-S																					
2022-05-22	FS_INF-K																					
2022-05-22	FS_INF-S																					
2022-05-23	FS_INF-K																					
2022-05-23	FS_INF-S																					
2022-05-23	FS_INF-K																					
2022-05-23	FS_INF-S																					
2022-05-23	FS_BPO						2527				< 0.0015	1280	10.2							1950	0.307	< 1.0
2022-05-23	FS_INF-K						2561						3.9							2000		1.2
2022-05-23	FS_INF-S						2611						6.2							2130		3.0
2022-05-23	FS_BPO																					
2022-05-23	FS_BPO																					
2022-05-23	FR_FRABCH																					
2022-05-23	FS_INF-K																					
2022-05-23	FS_INF-S																					
2022-05-23	FS_INF-K																					
2022-05-23	FS_INF-S																					
2022-05-23	FS_INF-K																					
2022-05-23	FS_INF-S																					
2022-05-23	FS_INF-K																					
2022-05-23	FS_INF-S																					
2022-05-23	FS_INF-K																					
2022-05-23	FS_INF-S																					
2022-05-24	FS_INF-K																					
2022-05-24	FS_INF-S																					
2022-05-24	FS_INF-K																					
2022-05-24	FS_INF-S																					
2022-05-24	FS_BPO	< 0.010	< 0.010	< 0.020	< 0.020	25.0	2587		0.194	0.194			11	< 0.020	< 0.020	< 0.00020	< 0.00020	< 10.0	< 10.0	2080		4.6
2022-05-24	FS_INF-K	0.031	< 0.010	< 0.020	< 0.010	15.5	2550		0.291	0.334			4.1	0.030	0.041	< 0.00020	< 0.00010	< 10.0	< 10.0	1950		1.6
2022-05-24	FS_INF-S	< 0.010	< 0.010	< 0.020	< 0.020	2.07	2658		0.190	0.215			6.9	0.042	0.050	< 0.00020	< 0.00020	< 10.0	< 10.0	2360		< 1.0
2022-05-24	FS_BPO																					
2022-05-24	FR_FRABCH			< 0.010	< 0.010	3.16	992.00		0.152	0.156		291	7.60	< 0.010	< 0.010	< 0.00010	< 0.00010	< 0.30	< 0.30	688	< 0.050	2.4
2022-05-24	FS_INF-K																					
2022-05-24	FS_INF-S																					
2022-05-24	FS_INF-K																					
2022-05-24	FS_INF-S																					
2022-05-24	FS_INF-K																					
2022-05-24	FS_INF-S																					
2022-05-24	FS_INF-K																					
2022-05-24	FS_INF-S																					
2022-05-24	FS_INF-K																					
2022-05-24	FS_INF-S																					
2022-05-25	FS_INF-K																					
2022-05-25	FS_INF-S																					
2022-05-25	FS_INF-K																					
2022-05-25	FS_INF-S																					
2022-05-25	FS_BPO						2615						11.5							2040		2.0
2022-05-25	FS_INF-K						2539						3.9							1830		2.0
2022-05-25	FS_INF-S						2685						7.4							2150		3.3
2022-05-25	FS_BPO																					
2022-05-25	FS_INF-K																					
2022-05-25	FS_INF-S																					
2022-05-25	FS_INF-K																					

Parameter		Selenosulfate, SeSO3	SeMe – selenomethionine CH3SeCH2CH2CH(NH2)CO2H	Silver	Silver	Sodium	Specific conductivity, temperature corrected value (25 C)	Specific conductivity, temperature corrected value (25 C)	Strontium	Strontium	SULFIDE (as S)	Sulphate (As SO4)	Temperature, Field	Thallium	Thallium	Tin	Tin	Titanium	Titanium	Total Dissolved Solids (Residue, Filterable)	Total Kjeldahl Nitrogen	Total Suspended Solids, Lab
Fraction		D	D	D	T	T	N	N	D	T	T	D	N	D	T	D	T	D	T	N	N	N
Unit		ug/l	ug/l	mg/l	mg/l	mg/l	us/cm	uS/cm at 25 C	mg/l	mg/l	mg/l	mg/l	deg c	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-05-25	FS_INF-S																					
2022-05-25	FS_INF-K																					
2022-05-25	FS_INF-S																					
2022-05-25	FS_INF-K																					
2022-05-25	FS_INF-S																					
2022-05-25	FS_INF-K																					
2022-05-25	FS_INF-S																					
2022-05-26	FS_INF-K																					
2022-05-26	FS_INF-S																					
2022-05-26	FS_INF-K																					
2022-05-26	FS_INF-S																					
2022-05-26	FS_BPO	< 0.010	< 0.010				2630						11.4							2080		2.1
2022-05-26	FS_INF-K						2535						3.7							1830		< 1.0
2022-05-26	FS_INF-S						2741						7.3							2270		2.2
2022-05-26	FS_BPO																					
2022-05-26	FR_SCOUTDS	< 0.010	< 0.010	< 0.010	< 0.010	1.94	716		0.125	0.119	< 0.0015	184	5.6	< 0.010	< 0.010	< 0.00010	< 0.00010	< 0.30	0.93	430	0.494	3.0
2022-05-26	FS_INF-K																					
2022-05-26	FS_INF-S																					
2022-05-26	FS_INF-K																					
2022-05-26	FS_INF-S																					
2022-05-26	FS_INF-K																					
2022-05-26	FS_INF-S																					
2022-05-26	FS_INF-K																					
2022-05-26	FS_INF-S																					
2022-05-26	FS_INF-K																					
2022-05-26	FS_INF-S																					
2022-05-27	FS_INF-K																					
2022-05-27	FS_INF-S																					
2022-05-27	FS_INF-K																					
2022-05-27	FS_INF-S																					
2022-05-27	FS_BPO						2657						12.4							2090		4.1
2022-05-27	FS_INF-K						2525						3.9							1980		< 1.0
2022-05-27	FS_INF-S						2355						6.5							2020		3.7
2022-05-27	FS_INF-K																					
2022-05-27	FS_INF-S																					
2022-05-27	FS_INF-K																					
2022-05-27	FS_INF-S																					
2022-05-27	FS_INF-K																					
2022-05-27	FS_INF-S																					
2022-05-27	FS_INF-K																					
2022-05-27	FS_INF-S																					
2022-05-28	FS_INF-K																					
2022-05-28	FS_INF-S																					
2022-05-28	FS_INF-K																					
2022-05-28	FS_INF-S																					
2022-05-28	FS_BPO						2589						12.1							2150		3.3
2022-05-28	FS_INF-K						2513						3.9							2140		< 1.0
2022-05-28	FS_INF-S						2490						7.4							2080		3.8
2022-05-28	FS_INF-K																					
2022-05-28	FS_INF-S																					
2022-05-28	FS_INF-K																					
2022-05-28	FS_INF-S																					
2022-05-28	FS_INF-K																					
2022-05-28	FS_INF-S																					
2022-05-28	FS_INF-K																					
2022-05-28	FS_INF-S																					
2022-05-28	FS_INF-K																					
2022-05-29	FS_INF-S																					
2022-05-29	FS_INF-K																					
2022-05-29	FS_INF-S																					
2022-05-29	FS_INF-K																					
2022-05-29	FS_INF-S																					
2022-05-29	FS_BPO	< 0.010	< 0.010				2544						12							2240		2.0
2022-05-29	FS_INF-K						2500						3.8							2100		1.8
2022-05-29	FS_INF-S						2532						7.4							2290		< 1.0
2022-05-29	FS_BPO						2520						12.96									
2022-05-29	FS_INF-K																					
2022-05-29	FS_INF-S																					
2022-05-29	FS_INF-K																					
2022-05-29	FS_INF-S																					
2022-05-29	FS_INF-K																					
2022-05-29	FS_INF-S																					
2022-05-29	FS_INF-K																					
2022-05-29	FS_INF-S																					
2022-05-29	FS_INF-K																					
2022-05-29	FS_INF-S																					
2022-05-30	FS_INF-K																					
2022-05-30	FS_INF-S																					
2022-05-30	FS_BPO						2532				< 0.0015	1180	11.5							1810	0.209	3.0
2022-05-30	FS_INF-K						2510 2471					794	3.8 3.7							1740	< 0.050	3.2

Parameter		Selenosulfate, SeSO3	SeMe – selenomethionine CH3SeCH2CH2CH(NH2)CO2H	Silver	Silver	Sodium	Specific conductivity, temperature corrected value (25 C)	Specific conductivity, temperature corrected value (25 C)	Strontium	Strontium	SULFIDE (as S)	Sulphate (As SO4)	Temperature, Field	Thallium	Thallium	Tin	Tin	Titanium	Titanium	Total Dissolved Solids (Residue, Filterable)	Total Kjeldahl Nitrogen	Total Suspended Solids, Lab
Fraction		D	D	D	T	T	N	N	D	T	T	D	N	D	T	D	T	D	T	N	N	N
Unit		ug/l	ug/l	mg/l	mg/l	mg/l	us/cm	uS/cm at 25 C	mg/l	mg/l	mg/l	mg/l	deg c	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-05-30	FS_INF-S						2683					1360	7.1							2220	< 0.050	4.4
2022-05-30	FS_BPO																					
2022-05-30	FS_INF-K																					
2022-05-30	FS_INF-S																					
2022-05-30	FS_INF-K																					
2022-05-30	FS_INF-S																					
2022-05-30	FS_INF-K																					
2022-05-30	FS_INF-S																					
2022-05-30	FS_INF-K																					
2022-05-30	FS_INF-S																					
2022-05-30	FS_INF-K																					
2022-05-30	FS_INF-S																					
2022-05-31	FS_INF-K																					
2022-05-31	FS_INF-S																					
2022-05-31	FS_INF-K																					
2022-05-31	FS_INF-S																					
2022-05-31	FS_BPO	0.018	< 0.010	< 0.020	< 0.020	25.7	2571		0.207	0.190			11.1	< 0.020	< 0.020	< 0.00020	< 0.00020	< 0.60	< 0.60	2110		< 1.0
2022-05-31	FS_INF-K			< 0.010	< 0.020	12.7	2483		0.301	0.279			3.7	0.038	0.038	< 0.00010	< 0.00020	< 0.30	< 0.60	1980		1.1
2022-05-31	FS_INF-S			< 0.020	< 0.020	2.14	2683		0.199	0.185			6.8	0.046	0.050	< 0.00020	< 0.00020	< 0.60	< 0.60	2300		4.1
2022-05-31	FR_FRABCH			< 0.010	< 0.010	2.11	290.00		0.115	0.127		168	3.40	< 0.010	< 0.010	< 0.00010	< 0.00010	< 0.30	1.88	466	0.402	10.9
2022-05-31	FR_FRABCH																					
2022-05-31	FS_INF-K																					
2022-05-31	FS_INF-S																					
2022-05-31	FS_INF-K																					
2022-05-31	FS_INF-S																					
2022-05-31	FS_INF-K																					
2022-05-31	FS_INF-S																					
2022-05-31	FS_INF-K																					
2022-05-31	FS_INF-S																					
2022-06-01	FS_INF-K																					
2022-06-01	FS_INF-S																					
2022-06-01	FS_BPO						2599						10.9							2060		2.6
2022-06-01	FS_INF-K						2455						3.7							1920		2.3
2022-06-01	FS_INF-S						2725						6.6							2270		< 1.0
2022-06-01	FS_INF-K																					
2022-06-01	FS_INF-S																					
2022-06-01	FS_INF-K																					
2022-06-01	FS_INF-S																					
2022-06-01	FS_INF-K																					
2022-06-01	FS_INF-S																					
2022-06-01	FS_INF-K																					
2022-06-01	FS_INF-S																					
2022-06-01	FS_INF-K																					
2022-06-01	FS_INF-S																					
2022-06-02	FS_INF-K																					
2022-06-02	FS_INF-S																					
2022-06-02	FS_INF-K																					
2022-06-02	FS_INF-S																					
2022-06-02	FS_BPO	0.013	< 0.010				2634						10.9							2070		2.3
2022-06-02	FS_INF-K						2411						4							1770		1.1
2022-06-02	FS_INF-S						2749						6.6							2250		1.8
2022-06-02	FR_SCOUTDS	< 0.010	< 0.010	< 0.010	< 0.010	1.61	547		0.0856	0.0956	< 0.0015	121	6.2	< 0.010	< 0.010	< 0.00010	< 0.00010	< 0.30	< 0.60	328	0.481	3.5
2022-06-02	FS_INF-K																					
2022-06-02	FS_INF-S																					
2022-06-02	FS_INF-K																					
2022-06-02	FS_INF-S																					
2022-06-02	FS_INF-K																					
2022-06-02	FS_INF-S																					
2022-06-02	FS_BPO						2653						11.6									
2022-06-02	FS_INF-K																					
2022-06-02	FS_INF-S																					
2022-06-02	FS_INF-K																					
2022-06-02	FS_INF-S																					
2022-06-03	FS_INF-K																					
2022-06-03	FS_INF-S																					
2022-06-03	FS_INF-K																					
2022-06-03	FS_INF-S																					
2022-06-03	FS_BPO						2650						11							2120		3.0
2022-06-03	FS_INF-K						2761						6.7							1790		< 1.0
2022-06-03	FS_INF-S						2369						3.7							2320		1.4
2022-06-03	FS_INF-K																					
2022-06-03	FS_INF-S																					
2022-06-03	FS_INF-K																					
2022-06-03	FS_INF-S																					
2022-06-03	FS_INF-K																					
2022-06-03	FS_INF-S																					
2022-06-03	FS_INF-K																					
2022-06-03	FS_INF-S																					
2022-06-04	FS_INF-K																					
2022-06-04	FS_INF-S																					
2022-06-04	FS_INF-K																					
2022-06-04	FS_INF-S																					
2022-06-04	FS_BPO						2667						11.4							2100		2.3

	Parameter	Selenosulfate, SeSO3	SeMe – selenomethionine CH3SeCH2CH2CH(NH2)CO2H	Silver	Silver	Sodium	Specific conductivity, temperature corrected value (25 C)	Specific conductivity, temperature corrected value (25 C)	Strontium	Strontium	SULFIDE (as S)	Sulphate (As SO4)	Temperature, Field	Thallium	Thallium	Tin	Tin	Titanium	Titanium	Total Dissolved Solids (Residue, Filterable)	Total Kjeldahl Nitrogen	Total Suspended Solids, Lab
	Fraction	D	D	D	T	T	N	N	D	T	T	D	N	D	T	D	T	D	T	N	N	N
	Unit	ug/l	ug/l	mg/l	mg/l	mg/l	us/cm	uS/cm at 25 C	mg/l	mg/l	mg/l	mg/l	deg c	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-06-04	FS_INF-K						2327						4							1790		< 1.0
2022-06-04	FS_INF-S						2785						7.2							2270		2.8
2022-06-04	FS_INF-K																					
2022-06-04	FS_INF-S																					
2022-06-04	FS_INF-K																					
2022-06-04	FS_INF-S																					
2022-06-04	FS_INF-K																					
2022-06-04	FS_INF-S																					
2022-06-04	FS_INF-K																					
2022-06-04	FS_INF-S																					
2022-06-04	FS_INF-K																					
2022-06-04	FS_INF-S																					
2022-06-05	FS_INF-K																					
2022-06-05	FS_INF-S																					
2022-06-05	FS_INF-K																					
2022-06-05	FS_INF-S																					
2022-06-05	FS_BPO	< 0.010	< 0.010				2692						12.2							2140		3.1
2022-06-05	FS_INF-K						2266						4							1680		2.7
2022-06-05	FS_INF-S						2718						7.9							2220		3.6
2022-06-05	FS_INF-K																					
2022-06-05	FS_INF-S																					
2022-06-05	FS_INF-K																					
2022-06-05	FS_INF-S																					
2022-06-05	FS_INF-K																					
2022-06-05	FS_INF-S																					
2022-06-05	FS_INF-K																					
2022-06-05	FS_INF-S																					
2022-06-05	FS_INF-K																					
2022-06-05	FS_INF-S																					
2022-06-06	FS_INF-K																					
2022-06-06	FS_INF-S																					
2022-06-06	FS_INF-K																					
2022-06-06	FS_INF-S																					
2022-06-06	FS_BPO						2614				< 0.0015	1320	12.3							2120	0.209	< 1.0
2022-06-06	FS_INF-K						2141						3.8							1550		< 1.0
2022-06-06	FS_INF-S						2451						6.9							2060		< 1.0
2022-06-06	FS_BPO																					
2022-06-06	FS_INF-K																					
2022-06-06	FS_INF-S																					
2022-06-06	FS_INF-K																					
2022-06-06	FS_INF-S																					
2022-06-06	FS_INF-K																					
2022-06-06	FS_INF-S																					
2022-06-06	FS_INF-K																					
2022-06-06	FS_INF-S																					
2022-06-07	FS_INF-K																					
2022-06-07	FS_INF-S																					
2022-06-07	FS_INF-K																					
2022-06-07	FS_INF-S																					
2022-06-07	FS_BPO	< 0.010	< 0.010	< 0.010	< 0.020	26.4	2583		0.197	0.196			12	0.036	< 0.020	< 0.00010	< 0.00020	< 0.30	< 0.60	2020		2.6
2022-06-07	FS_INF-K	< 0.010	< 0.010	< 0.010	< 0.010	9.59	2081		0.257	0.252			3.8	0.036	0.035	< 0.00010	< 0.00010	< 0.30	< 0.30	1570		1.4
2022-06-07	FS_INF-S	< 0.010	< 0.010	< 0.020	< 0.020	1.99	2589		0.187	0.187			7.5	0.050	0.043	< 0.00020	< 0.00020	< 0.60	< 0.60	2130		2.7
2022-06-07	FR_FRABCH	< 0.010	< 0.010	< 0.010	< 0.010	1.69	613		0.0987	0.106		135	4.4	< 0.010	0.013	< 0.00010	< 0.00010	< 0.30	1.62	377	0.614	34.5
2022-06-07	FS_INF-K																					
2022-06-07	FS_INF-S																					
2022-06-07	FS_INF-K																					
2022-06-07	FS_INF-S																					
2022-06-07	FS_INF-K																					
2022-06-07	FS_INF-S																					
2022-06-07	FS_INF-K																					
2022-06-07	FS_INF-S																					
2022-06-07	FS_INF-K																					
2022-06-07	FS_INF-S																					
2022-06-08	FS_INF-K																					
2022-06-08	FS_INF-S																					
2022-06-08	FS_INF-K																					
2022-06-08	FS_INF-S																					
2022-06-08	FS_BPO						2508						12							1940		3.9
2022-06-08	FS_INF-K						1967						3.7							1350		1.8
2022-06-08	FS_INF-S						2702						7.7							2210		2.2
2022-06-08	FS_INF-K																					
2022-06-08	FS_INF-S																					
2022-06-08	FS_INF-K																					
2022-06-08	FS_INF-S																					
2022-06-08	FS_INF-K																					
2022-06-08	FS_INF-S																					
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2022-06-08	FS_INF-S																					
2022-06-08	FS_INF-K																					
2022-06-08	FS_INF-S																					
2022-06-09	FS_INF-K																					
2022-06-09	FS_INF-S																					
2022-06-09	FS_INF-K																					
2022-06-09	FS_INF-S																					

Parameter		Selenosulfate, SeSO3	SeMe – selenomethionine CH3SeCH2CH2CH(NH2)CO2H	Silver	Silver	Sodium	Specific conductivity, temperature corrected value (25 C)	Specific conductivity, temperature corrected value (25 C)	Strontium	Strontium	SULFIDE (as S)	Sulphate (As SO4)	Temperature, Field	Thallium	Thallium	Tin	Tin	Titanium	Titanium	Total Dissolved Solids (Residue, Filterable)	Total Kjeldahl Nitrogen	Total Suspended Solids, Lab
Fraction		D	D	D	T	T	N	N	D	T	T	D	N	D	T	D	T	D	T	N	N	N
Unit		ug/l	ug/l	mg/l	mg/l	mg/l	us/cm	uS/cm at 25 C	mg/l	mg/l	mg/l	mg/l	deg c	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-06-09	FS_BPO	< 0.010	< 0.010				2516						12.4							2140		2.7
2022-06-09	FS_INF-K						1873						3.6							1390		2.0
2022-06-09	FS_INF-S						2735						7.8							2340		3.4
2022-06-09	FR_SCOUTDS	< 0.010	< 0.010	< 0.010	< 0.010	1.18	343.5		0.0812	0.0810	< 0.0015	89.0	5.3	< 0.010	< 0.010	< 0.00010	< 0.00010	< 0.30	1.40	208	0.302	3.7
2022-06-09	FS_INF-K																					
2022-06-09	FS_INF-S																					
2022-06-09	FR_FRABCH																					
2022-06-09	FS_INF-K																					
2022-06-09	FS_INF-S																					
2022-06-09	FS_INF-K																					
2022-06-09	FS_INF-S																					
2022-06-09	FS_INF-K																					
2022-06-09	FS_INF-S																					
2022-06-09	FS_INF-K																					
2022-06-09	FS_INF-S																					
2022-06-10	FS_INF-K																					
2022-06-10	FS_INF-S																					
2022-06-10	FS_INF-K																					
2022-06-10	FS_INF-S																					
2022-06-10	FS_BPO						2539						12.6							2160		2.1
2022-06-10	FS_INF-K						1784						3.8							1270		< 1.0
2022-06-10	FS_INF-S						2782						8.6							2440		< 1.0
2022-06-10	FS_INF-K																					
2022-06-10	FS_INF-S																					
2022-06-10	FS_INF-K																					
2022-06-10	FS_INF-S																					
2022-06-10	FS_INF-K																					
2022-06-10	FS_INF-S																					
2022-06-10	FS_INF-K																					
2022-06-10	FS_INF-S																					
2022-06-10	FS_INF-K																					
2022-06-10	FS_INF-S																					
2022-06-11	FS_INF-K																					
2022-06-11	FS_INF-S																					
2022-06-11	FS_INF-K																					
2022-06-11	FS_INF-S																					
2022-06-11	FS_INF-K																					
2022-06-11	FS_INF-S																					
2022-06-11	FS_BPO						2571						13.1							2580		3.0
2022-06-11	FS_INF-K						1681						3.7							1310		< 1.0
2022-06-11	FS_INF-S						2796						9.3							2100		2.9
2022-06-11	FS_INF-K																					
2022-06-11	FS_INF-S																					
2022-06-11	FS_INF-K																					
2022-06-11	FS_INF-S																					
2022-06-11	FS_INF-K																					
2022-06-11	FS_INF-S																					
2022-06-11	FS_INF-K																					
2022-06-12	FS_INF-K																					
2022-06-12	FS_INF-S																					
2022-06-12	FS_INF-K																					
2022-06-12	FS_INF-S																					
2022-06-12	FS_BPO	< 0.010	< 0.010				2578						12.9							404		3.7
2022-06-12	FS_INF-K						1597						3.6							2350		< 1.0
2022-06-12	FS_INF-S						2815						8.5							2110		1.2
2022-06-12	FS_INF-K																					
2022-06-12	FS_INF-S																					
2022-06-12	FS_INF-K																					
2022-06-12	FS_INF-S																					
2022-06-12	FS_INF-K																					
2022-06-12	FS_INF-S																					
2022-06-12	FS_INF-K																					
2022-06-12	FS_INF-S																					
2022-06-12	FS_INF-K																					
2022-06-12	FS_INF-S																					
2022-06-13	FS_INF-K																					
2022-06-13	FS_INF-S																					
2022-06-13	FS_INF-K																					
2022-06-13	FS_INF-S																					
2022-06-13	FS_BPO						2588				< 0.0015	1270	13.4							2110	0.271	3.0
2022-06-13	FS_INF-K						1485					362	3.4							1050	0.222	< 1.0
2022-06-13	FS_INF-S						2830					1500	8.4							2400	< 0.050	2.4
2022-06-13	FS_BPO																					
2022-06-13	FS_INF-K																					
2022-06-13	FS_INF-S																					
2022-06-13	FS_INF-K																					
2022-06-13	FS_INF-S																					
2022-06-13	FS_INF-K																					
2022-06-13	FS_INF-S																					
2022-06-13	FS_INF-K																					
2022-06-13	FS_INF-S																					
2022-06-13	FS_INF-K																					
2022-06-13	FS_INF-S																					

Parameter		Selenosulfate, SeSO3	SeMe – selenomethionine CH3SeCH2CH2CH(NH2)CO2H	Silver	Silver	Sodium	Specific conductivity, temperature corrected value (25 C)	Specific conductivity, temperature corrected value (25 C)	Strontium	Strontium	SULFIDE (as S)	Sulphate (As SO4)	Temperature, Field	Thallium	Thallium	Tin	Tin	Titanium	Titanium	Total Dissolved Solids (Residue, Filterable)	Total Kjeldahl Nitrogen	Total Suspended Solids, Lab
Fraction		D	D	D	T	T	N	N	D	T	T	D	N	D	T	D	T	D	T	N	N	N
Unit		ug/l	ug/l	mg/l	mg/l	mg/l	us/cm	uS/cm at 25 C	mg/l	mg/l	mg/l	mg/l	deg c	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-06-14	FS_BPO						2544						10.7									
2022-06-14	FR_FRABCH			< 0.010	< 0.010	1.81	679		0.0931	0.100		137	2.3	< 0.010	0.014	< 0.00010	< 0.00010	< 0.30	2.05	398	0.553	21.3
2022-06-14	FS_BPO						2541						10.7									
2022-06-14	FR_FRABCH																					
2022-06-14	FS_BPO						2536						10.3									
2022-06-14	FS_BPO						2477						10									
2022-06-14	FS_INF-K						1368						4.1									
2022-06-14	FS_INF-S						2649						6									
2022-06-14	FS_BPO	< 0.010	< 0.010																	2110		3.7
2022-06-14	FS_INF-K	< 0.010	< 0.010	< 0.020	< 0.020	5.50			0.155	0.168				0.034	0.020	< 0.00020	< 0.00020	< 0.60	< 0.60	882		< 1.0
2022-06-14	FS_INF-S	< 0.010	< 0.010	< 0.020	< 0.020	2.20			0.203	0.204				0.054	0.036	< 0.00020	< 0.00020	< 0.60	0.79	2260		4.4
2022-06-15	FS_BPO						2518						9.7									
2022-06-15	FS_BPO						2468						9.9									
2022-06-15	FS_INF-K																					
2022-06-15	FS_INF-S																					
2022-06-15	FS_BPO						2469						9.7							2260		3.2
2022-06-15	FS_INF-K						1337						3.3							1040		2.6
2022-06-15	FS_INF-S						2642						5.2							2360		4.9
2022-06-15	FS_INF-K																					
2022-06-15	FS_INF-S																					
2022-06-15	FS_BPO						2488						10.1									
2022-06-15	FS_INF-K																					
2022-06-15	FS_INF-S																					
2022-06-15	FS_INF-K																					
2022-06-15	FS_INF-S																					
2022-06-15	FS_INF-K																					
2022-06-15	FS_INF-S																					
2022-06-15	FS_INF-K																					
2022-06-15	FS_INF-S																					
2022-06-16	FS_INF-K																					
2022-06-16	FS_INF-S																					
2022-06-16	FS_INF-K																					
2022-06-16	FS_INF-S																					
2022-06-16	FS_BPO	< 0.010	< 0.010				2509						11.1							2200		3.8
2022-06-16	FS_INF-K						1303						3.2							2050		< 1.0
2022-06-16	FS_INF-S						2502						6.5							2150		3.3
2022-06-16	FR_SCOUTDS	< 0.010	< 0.010	< 0.010	< 0.010	1.34	481.1		0.0892	0.0867	0.0018	99.0	5.9	< 0.010	< 0.010	< 0.00010	< 0.00010	< 0.30	1.96	305	0.304	< 1.0
2022-06-16	FS_INF-K																					
2022-06-16	FS_INF-S																					
2022-06-16	FR_SCOUTDS																					
2022-06-16	FS_INF-K																					
2022-06-16	FS_INF-S																					
2022-06-16	FS_INF-K																					
2022-06-16	FS_INF-S																					
2022-06-16	FS_INF-K																					
2022-06-16	FS_INF-S																					
2022-06-16	FS_INF-K																					
2022-06-16	FS_INF-S																					
2022-06-17	FS_INF-K																					
2022-06-17	FS_INF-S																					
2022-06-17	FS_INF-K																					
2022-06-17	FS_INF-S																					
2022-06-17	FS_BPO						2412						11.7							2070		2.4
2022-06-17	FS_INF-K						1283						3.3							925		< 1.0
2022-06-17	FS_INF-S						2553						6.9							2140		< 1.0
2022-06-17	FS_INF-K																					
2022-06-17	FS_INF-S																					
2022-06-17	FS_INF-S																					
2022-06-17	FS_INF-S																					
2022-06-17	FS_INF-S																					
2022-06-18	FS_INF-S																					
2022-06-18	FS_BPO						2403						12.9							2110		4.6
2022-06-18	FS_INF-S						2546						8.6							2240		2.4
2022-06-18	FS_INF-S																					
2022-06-18	FS_INF-S																					
2022-06-18	FS_INF-S																					
2022-06-18	FS_INF-S																					
2022-06-18	FS_INF-S																					
2022-06-19	FS_INF-S																					
2022-06-19	FS_INF-S																					
2022-06-19	FS_BPO	< 0.010	< 0.010				2469						13.4							2020		3.3
2022-06-19	FS_INF-S						2532						8.7							2080		3.3
2022-06-19	FS_INF-K																					
2022-06-19	FS_INF-S																					
2022-06-19	FS_INF-S																					
2022-06-19	FS_INF-S																					
2022-06-19	FS_INF-S																					
2022-06-20	FS_INF-S																					
2022-06-20	FS_INF-S																					
2022-06-20	FS_BPO						2507				0.0887	1280	13.4							2130	0.239	1.9
2022-06-20	FS_INF-K						1328						16									

Parameter		Selenosulfate, SeSO3	SeMe – selenomethionine CH3SeCH2CH2CH(NH2)CO2H	Silver	Silver	Sodium	Specific conductivity, temperature corrected value (25 C)	Specific conductivity, temperature corrected value (25 C)	Strontium	Strontium	SULFIDE (as S)	Sulphate (As SO4)	Temperature, Field	Thallium	Thallium	Tin	Tin	Titanium	Titanium	Total Dissolved Solids (Residue, Filterable)	Total Kjeldahl Nitrogen	Total Suspended Solids, Lab
Fraction		D	D	D	T	T	N	N	D	T	T	D	N	D	T	D	T	D	T	N	N	N
Unit		ug/l	ug/l	mg/l	mg/l	mg/l	us/cm	uS/cm at 25 C	mg/l	mg/l	mg/l	mg/l	deg c	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-06-20	FS_INF-S						2514						8.8							2340		1.8
2022-06-20	FS_BPO																					
2022-06-20	FS_INF-S																					
2022-06-20	FS_INF-S																					
2022-06-20	FS_INF-S																					
2022-06-20	FS_INF-S																					
2022-06-21	FS_INF-S																					
2022-06-21	FS_INF-S																					
2022-06-21	FS_BPO	< 0.010	< 0.010	< 0.020	< 0.020	22.7	2503		0.193	0.191			12.9	< 0.020	< 0.020	< 0.00020	< 0.00020	< 0.60	< 0.60	2060		8.5
2022-06-21	FS_INF-S	< 0.010	< 0.010	< 0.020	< 0.020	2.13	2508		0.197	0.193			8.1	0.047	0.038	< 0.00020	< 0.00020	< 0.60	< 0.60	2320		2.1
2022-06-21	FR_FRABCH			< 0.010	< 0.010	1.75	63.20		0.0849	0.100		115	4.70	< 0.010	0.016	< 0.00010	< 0.00010	< 0.30	1.81	426	0.362	20.5
2022-06-21	FS_INF-S																					
2022-06-21	FS_INF-S																					
2022-06-21	FS_INF-S																					
2022-06-21	FS_INF-S																					
2022-06-21	FS_INF-S																					
2022-06-22	FS_INF-S																					
2022-06-22	FS_INF-S																					
2022-06-22	FS_BPO						2492						13.2							1980		3.1
2022-06-22	FS_INF-S						2508						8.8							2090		2.1
2022-06-22	FS_INF-K						1289						3.7							866		< 1.0
2022-06-22	FS_INF-S																					
2022-06-22	FS_INF-K																					
2022-06-22	FS_INF-S																					
2022-06-22	FS_INF-K																					
2022-06-22	FS_INF-S																					
2022-06-22	FS_INF-K																					
2022-06-22	FS_INF-S																					
2022-06-22	FS_INF-S																					
2022-06-22	FS_INF-K																					
2022-06-22	FS_INF-S																					
2022-06-23	FS_INF-K																					
2022-06-23	FS_INF-S																					
2022-06-23	FS_INF-K																					
2022-06-23	FS_INF-S																					
2022-06-23	FS_BPO	0.019	< 0.010				2488						12.9							2300		3.3
2022-06-23	FS_INF-K						1229						3.1							944		< 1.0
2022-06-23	FS_INF-S						2518						8.2							2320		1.4
2022-06-23	FR_SCOUTDS	< 0.010	< 0.010	< 0.010	< 0.010	1.09	398.2		0.0789	0.0773	< 0.0015	71.2	5.2	< 0.010	< 0.010	< 0.00010	< 0.00010	< 0.30	1.57	262	0.303	14.9
2022-06-23	FS_INF-K																					
2022-06-23	FS_INF-S																					
2022-06-23	FS_INF-K																					
2022-06-23	FS_INF-S																					
2022-06-23	FS_INF-K																					
2022-06-23	FS_INF-S																					
2022-06-23	FS_INF-K																					
2022-06-23	FS_INF-S																					
2022-06-24	FS_INF-K																					
2022-06-24	FS_INF-S																					
2022-06-24	FS_INF-K																					
2022-06-24	FS_INF-K																					
2022-06-24	FS_INF-S																					
2022-06-24	FS_BPO						2461 2494						11.7 11.8							2260		3.3
2022-06-24	FS_INF-K						1161 1177						2.9							873		< 1.0
2022-06-24	FS_INF-S						2529 2552						7.4 7.5							2320		2.2
2022-06-24	FS_INF-K																					
2022-06-24	FS_INF-S																					
2022-06-24	FS_INF-K																					
2022-06-24	FS_INF-S																					
2022-06-24	FS_INF-K																					
2022-06-24	FS_INF-S																					
2022-06-24	FS_INF-K																					
2022-06-24	FS_INF-S																					
2022-06-24	FS_INF-K																					
2022-06-24	FS_INF-S																					
2022-06-25	FS_INF-K																					
2022-06-25	FS_INF-S																					
2022-06-25	FS_INF-K																					
2022-06-25	FS_INF-S																					
2022-06-25	FS_BPO						2443						11.7							2000		3.6
2022-06-25	FS_INF-K						1088						2.8							773		< 1.0
2022-06-25	FS_INF-S						2529						7.3							2110		2.8
2022-06-25	FS_INF-K																					
2022-06-25	FS_INF-S																					
2022-06-25	FS_INF-K																					
2022-06-25	FS_INF-S																					
2022-06-25	FS_INF-K																					
2022-06-25	FS_INF-S																					
2022-06-25	FS_INF-K																					
2022-06-25	FS_INF-S																					
2022-06-25	FS_INF-K																					
2022-06-25	FS_INF-S																					
2022-06-26	FS_INF-K																					

Parameter		Selenosulfate, SeSO3	SeMe – selenomethionine CH3SeCH2CH2CH(NH2)CO2H	Silver	Silver	Sodium	Specific conductivity, temperature corrected value (25 C)	Specific conductivity, temperature corrected value (25 C)	Strontium	Strontium	SULFIDE (as S)	Sulphate (As SO4)	Temperature, Field	Thallium	Thallium	Tin	Tin	Titanium	Titanium	Total Dissolved Solids (Residue, Filterable)	Total Kjeldahl Nitrogen	Total Suspended Solids, Lab
Fraction		D	D	D	T	T	N	N	D	T	T	D	N	D	T	D	T	D	T	N	N	N
Unit		ug/l	ug/l	mg/l	mg/l	mg/l	us/cm	uS/cm at 25 C	mg/l	mg/l	mg/l	mg/l	deg c	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-06-26	FS_INF-S																					
2022-06-26	FS_INF-K																					
2022-06-26	FS_INF-S																					
2022-06-26	FS_BPO	0.014	< 0.010				2408						12.4							2210		3.3
2022-06-26	FS_INF-K						1055						2.7							784		1.4
2022-06-26	FS_INF-S						2534						8							2360		4.5
2022-06-26	FS_INF-K																					
2022-06-26	FS_INF-S																					
2022-06-26	FS_INF-K																					
2022-06-26	FS_INF-S																					
2022-06-26	FS_INF-K																					
2022-06-26	FS_INF-S																					
2022-06-26	FS_INF-K																					
2022-06-26	FS_INF-S																					
2022-06-26	FS_INF-K																					
2022-06-26	FS_INF-S																					
2022-06-27	FS_INF-K																					
2022-06-27	FS_INF-S																					
2022-06-27	FS_INF-K																					
2022-06-27	FS_INF-S																					
2022-06-27	FS_BPO						2371				< 0.0015	1120	13.1							2060	0.196	2.1
2022-06-27	FS_INF-K						1070					220	2.7							759	< 0.050	< 1.0
2022-06-27	FS_INF-S						2490					1240	9.1							2220	0.334	< 1.0
2022-06-27	FS_BPO																					
2022-06-27	FS_INF-K																					
2022-06-27	FS_INF-S																					
2022-06-27	FS_INF-K																					
2022-06-27	FS_INF-S																					
2022-06-27	FS_INF-K																					
2022-06-27	FS_INF-S																					
2022-06-27	FS_INF-K																					
2022-06-27	FS_INF-S																					
2022-06-27	FS_BPO						2369						14.6									
2022-06-27	FS_INF-K																					
2022-06-27	FS_INF-S																					
2022-06-28	FS_BPO						2377						14.3									
2022-06-28	FS_INF-K																					
2022-06-28	FS_INF-S																					
2022-06-28	FS_INF-K																					
2022-06-28	FS_INF-S																					
2022-06-28	FS_BPO	< 0.010	< 0.010	< 0.020	< 0.020	22.3	2379		0.181	0.178			13.7	< 0.020	< 0.020	< 0.00020	< 0.00020	< 0.60	< 0.60	1820		< 1.0
2022-06-28	FS_INF-K			< 0.020	< 0.020	4.39	1128		0.124	0.128			3	0.020	0.024	< 0.00020	< 0.00020	< 0.60	< 0.60	678		< 1.0
2022-06-28	FS_INF-S			< 0.020	< 0.020	2.27	2806		0.195	0.199			9.8	0.042	0.043	< 0.00020	< 0.00020	< 0.60	< 0.60	2010		1.9
2022-06-28	FR_FRABCH			< 0.010	< 0.010	1.82	606.00		0.0925	0.0966		115	5.50	< 0.010	< 0.010	< 0.00010	< 0.00010	< 0.30	1.60	416	0.475	18.3
2022-06-28	FR_FRABCH																					
2022-06-28	FS_INF-K																					
2022-06-28	FS_INF-S																					
2022-06-28	FS_INF-K																					
2022-06-28	FS_INF-S																					
2022-06-28	FS_INF-K																					
2022-06-28	FS_INF-S																					
2022-06-28	FS_INF-K																					
2022-06-28	FS_INF-S																					
2022-06-28	FS_INF-K																					
2022-06-28	FS_INF-S																					
2022-06-29	FS_INF-K																					
2022-06-29	FS_INF-S																					
2022-06-29	FS_INF-K																					
2022-06-29	FS_INF-S																					
2022-06-29	FS_BPO						2382						14							1960		2.8
2022-06-29	FS_INF-K						1179						2.9							830		1.1
2022-06-29	FS_INF-S						2647						9.9							2270		3.3
2022-06-29	FS_INF-K																					
2022-06-29	FS_INF-S																					
2022-06-29	FS_INF-K																					
2022-06-29	FS_INF-S																					
2022-06-29	FS_BPO						2435						13.8									
2022-06-29	FS_BPO			< 0.020	< 0.020	21.7			0.186	0.189	< 0.0015	1120		< 0.020	< 0.020	< 0.00020	< 0.00020	< 0.60	< 0.60	2080	0.278	3.6
2022-06-29	FS_INF-K																					
2022-06-29	FS_INF-S																					
2022-06-29	FS_INF-K																					
2022-06-29	FS_INF-S																					
2022-06-29	FS_INF-K																					
2022-06-29	FS_INF-S																					
2022-06-30	FS_INF-K																					
2022-06-30	FS_INF-S																					
2022-06-30	FS_INF-K																					
2022-06-30	FS_INF-S																					
2022-06-30	FS_BPO	< 0.010	< 0.010	< 0.020	< 0.020	21.1	2464		0.194	0.192			13.3	< 0.020	0.069	< 0.00020	< 0.00020	< 0.60	< 0.60	1940		2.3
2022-06-30	FS_INF-K						1228						2.9							768		< 1.0
2022-06-30	FS_INF-S						2689						9.1							2190		< 1.0
2022-06-30	FS_BPO						2689						9.1									

Parameter		Selenosulfate, SeSO3	SeMe – selenomethionine CH3SeCH2CH2CH(NH2)CO2H	Silver	Silver	Sodium	Specific conductivity, temperature corrected value (25 C)	Specific conductivity, temperature corrected value (25 C)	Strontium	Strontium	SULFIDE (as S)	Sulphate (As SO4)	Temperature, Field	Thallium	Thallium	Tin	Tin	Titanium	Titanium	Total Dissolved Solids (Residue, Filterable)	Total Kjeldahl Nitrogen	Total Suspended Solids, Lab
Fraction		D	D	D	T	T	N	N	D	T	T	D	N	D	T	D	T	D	T	N	N	N
Unit		ug/l	ug/l	mg/l	mg/l	mg/l	us/cm	uS/cm at 25 C	mg/l	mg/l	mg/l	mg/l	deg c	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-06-30	FR_SCOUTDS						479.1						6									
2022-06-30	FR_SCOUTDS	< 0.010	< 0.010	< 0.010	< 0.010	1.35			0.0881	0.0858	< 0.0015	103		< 0.010	< 0.010	< 0.00010	< 0.00010	< 0.30	0.52	296	0.092	3.9
2022-06-30	FS_INF-K																					
2022-06-30	FS_INF-S																					
2022-06-30	FS_INF-K																					
2022-06-30	FS_INF-S																					
2022-06-30	FS_INF-K																					
2022-06-30	FS_INF-S																					
2022-06-30	FS_INF-K																					
2022-06-30	FS_INF-S																					
2022-06-30	FS_INF-K																					
2022-06-30	FS_INF-S																					
2022-07-01	FS_INF-K																					
2022-07-01	FS_INF-S																					
2022-07-01	FS_INF-K																					
2022-07-01	FS_INF-S																					
2022-07-01	FS_BPO						2529						13.6							2270		1.7
2022-07-01	FS_INF-K						1304						2.9							959		< 1.0
2022-07-01	FS_INF-S						2748						9.1							2440		< 1.0
2022-07-01	FS_INF-K																					
2022-07-01	FS_INF-S																					
2022-07-01	FS_INF-K																					
2022-07-01	FS_INF-S																					
2022-07-01	FS_INF-K																					
2022-07-01	FS_INF-S																					
2022-07-02	FS_BPO						13.1						13.1									
2022-07-02	FS_BPO						2550						14.2									
2022-07-02	FR_SCOUTDS																					
2022-07-02	FR_FRABCH																					
2022-07-02	FS_BPO																			2330		4.4
2022-07-02	FS_INF-K																			1030		< 1.0
2022-07-02	FS_INF-S																			2540		1.7
2022-07-02	FS_BPO						2533						15.7									
2022-07-02	FS_INF-K						1403						3.4									
2022-07-02	FS_INF-S						2809						9.7									
2022-07-03	FS_INF-K																					
2022-07-03	FS_INF-S																					
2022-07-03	FS_INF-K																					
2022-07-03	FS_INF-S																					
2022-07-03	FS_BPO	< 0.010	< 0.010				2616						14.6							2280		4.9
2022-07-03	FS_INF-K						1418						3.3							1060		< 1.0
2022-07-03	FS_INF-S						2802						10							2420		< 1.0
2022-07-03	FS_INF-K																					
2022-07-03	FS_INF-S																					
2022-07-03	FR_FRABCH																					
2022-07-03	FS_INF-K																					
2022-07-03	FS_INF-S																					
2022-07-03	FS_INF-K																					
2022-07-03	FS_INF-S																					
2022-07-03	FS_INF-K																					
2022-07-03	FS_INF-S																					
2022-07-04	FS_INF-K																					
2022-07-04	FS_INF-S																					
2022-07-04	FS_INF-K																					
2022-07-04	FS_INF-S																					
2022-07-04	FS_BPO						2617				< 0.0015	1250	13.5							2030	0.332	2.6
2022-07-04	FS_INF-K						1453						3.3							939		< 1.0
2022-07-04	FS_INF-S						2820						9.1							2300		1.2
2022-07-04	FS_BPO																					
2022-07-04	FS_INF-K																					
2022-07-04	FS_INF-S																					
2022-07-04	FS_INF-K																					
2022-07-04	FS_INF-S																					
2022-07-04	FS_INF-K																					
2022-07-04	FS_INF-S																					
2022-07-04	FS_INF-K																					
2022-07-04	FS_INF-S																					
2022-07-04	FS_INF-K																					
2022-07-04	FS_INF-S																					
2022-07-05	FS_INF-K																					
2022-07-05	FS_INF-S																					
2022-07-05	FS_INF-K																					
2022-07-05	FS_INF-S																					
2022-07-05	FS_BPO	< 0.010	< 0.010	< 0.020	< 0.020	26.0	2600		0.194	0.192			13.1	< 0.020	< 0.020	< 0.00020	< 0.00020	< 0.60	< 0.60	2290		1.6
2022-07-05	FS_INF-K	< 0.010	< 0.010	< 0.020	< 0.020	4.13	1450		0.178	0.171			3.1	0.030	0.029	< 0.00020	< 0.00020	< 0.60	< 0.60	1110		< 1.0
2022-07-05	FS_INF-S	< 0.010	< 0.010	< 0.020	< 0.020	2.03	2778		0.203	0.203			8.5	0.057	0.054	< 0.00020	< 0.00020	< 0.60	1.19	2690		2.2
2022-07-05	FR_FRABCH																					
2022-07-05	FS_INF-K																					
2022-07-05	FS_INF-S																					
2022-07-05	FS_INF-K																					
2022-07-05	FS_INF-S																					
2022-07-05	FR_SCOUTDS			< 0.010	< 0.010	1.59	458.5		0.0856	0.0802	< 0.0015	98.1	8.5	< 0.010	< 0.010	< 0.00010	< 0.00010	< 0.30	0.91	300	0.396	5.6
2022-07-05	FS_INF-K																					

Parameter		Selenosulfate, SeSO3	SeMe – selenomethionine CH3SeCH2CH2CH(NH2)CO2H	Silver	Silver	Sodium	Specific conductivity, temperature corrected value (25 C)	Specific conductivity, temperature corrected value (25 C)	Strontium	Strontium	SULFIDE (as S)	Sulphate (As SO4)	Temperature, Field	Thallium	Thallium	Tin	Tin	Titanium	Titanium	Total Dissolved Solids (Residue, Filterable)	Total Kjeldahl Nitrogen	Total Suspended Solids, Lab
Fraction		D	D	D	T	T	N	N	D	T	T	D	N	D	T	D	T	D	T	N	N	N
Unit		ug/l	ug/l	mg/l	mg/l	mg/l	us/cm	uS/cm at 25 C	mg/l	mg/l	mg/l	mg/l	deg c	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-07-05	FS_INF-S																					
2022-07-05	FS_INF-K																					
2022-07-05	FS_INF-S																					
2022-07-05	FS_INF-K																					
2022-07-05	FS_INF-S																					
2022-07-06	FS_INF-K																					
2022-07-06	FS_INF-S																					
2022-07-06	FS_INF-K																					
2022-07-06	FS_INF-S																					
2022-07-06	FS_BPO						2608 2624 2611						12.9							2320		3.8
2022-07-06	FS_INF-K						1457						3.2							1070		< 1.0
2022-07-06	FS_INF-S						2814						8.3							2580		3.5
2022-07-06	FR_SCOUTDS			< 0.010	< 0.010	1.64	473.50		0.0865	0.0819	< 0.0015	103	6.30	< 0.010	< 0.010	< 0.00010	< 0.00010	< 0.30	0.59	314	0.341	3.8
2022-07-06	FS_INF-K																					
2022-07-06	FS_INF-S																					
2022-07-06	FS_INF-K																					
2022-07-06	FS_INF-S																					
2022-07-06	FS_INF-K																					
2022-07-06	FS_INF-S																					
2022-07-06	FS_INF-K																					
2022-07-06	FS_INF-S																					
2022-07-06	FS_INF-K																					
2022-07-06	FS_INF-S																					
2022-07-07	FS_INF-K																					
2022-07-07	FS_INF-S																					
2022-07-07	FS_INF-K																					
2022-07-07	FS_INF-S																					
2022-07-07	FS_BPO	< 0.010	< 0.010				2624						12.9							2450		3.0
2022-07-07	FS_INF-K						1462						3.2							1080		< 1.0
2022-07-07	FS_INF-S						2844						8.2							2550		1.7
2022-07-07	FR_SCOUTDS	< 0.010	< 0.010	< 0.010	< 0.010	1.47	504		0.0864	0.0970	< 0.0015	118	7.9	< 0.010	< 0.010	< 0.00010	< 0.00010	< 0.30	0.71	328	0.318	1.6
2022-07-07	FR_SCOUTDS			< 0.010	< 0.010	1.83	536.00		0.0878	0.0888	< 0.0015	111	9.50	< 0.010	< 0.010	< 0.00010	< 0.00010	0.30	0.37	308	0.396	2.2
2022-07-07	FS_INF-K																					
2022-07-07	FS_INF-S																					
2022-07-07	FS_INF-K																					
2022-07-07	FS_INF-S																					
2022-07-07	FS_BPO						2621						14.2									
2022-07-07	FS_INF-K																					
2022-07-07	FS_INF-S																					
2022-07-07	FS_BPO						2628						14.4									
2022-07-07	FS_INF-K																					
2022-07-07	FS_INF-S																					
2022-07-08	FS_BPO						2615						14.2									
2022-07-08	FS_INF-K																					
2022-07-08	FS_INF-S																					
2022-07-08	FS_BPO						2609						14									
2022-07-08	FS_INF-K																					
2022-07-08	FS_INF-S																					
2022-07-08	FS_BPO						2611						13.7							2220		3.8
2022-07-08	FS_INF-K						1473						3.5							1030		< 1.0
2022-07-08	FS_INF-S						2864						9.3							2540		3.9
2022-07-08	FR_SCOUTDS			< 0.010	< 0.010	1.40	478.80		0.0806	0.0876	< 0.0015	102	13.50	< 0.010	< 0.010	< 0.00010	< 0.00010	< 0.30	< 0.30	309	0.369	3.2
2022-07-08	FS_BPO																					
2022-07-08	FS_INF-K												13.9									
2022-07-08	FS_INF-S																					
2022-07-08	FS_BPO						2614						14.2									
2022-07-08	FS_INF-K																					
2022-07-08	FS_INF-S																					
2022-07-08	FS_BPO						2626						14.8									
2022-07-08	FS_INF-K																					
2022-07-08	FS_INF-S																					
2022-07-08	FS_INF-K																					
2022-07-08	FS_INF-S																					
2022-07-08	FS_INF-K																					
2022-07-08	FS_INF-S																					
2022-07-09	FS_INF-K																					
2022-07-09	FS_INF-S																					
2022-07-09	FS_INF-K																					
2022-07-09	FS_INF-S																					
2022-07-09	FS_BPO						2859						13.8							2220		4.0
2022-07-09	FS_INF-K						1504						3.3							1080		< 1.0
2022-07-09	FS_INF-S						2883						9.8							2510		2.5
2022-07-09	FR_SCOUTDS			< 0.010	< 0.010	1.16	538.00		0.0942	0.0928	< 0.0015	143	9.30	< 0.010	< 0.010	< 0.00010	< 0.00010	< 0.30	< 0.30	363	0.336	2.0
2022-07-09	FS_BPO						2611						15.2									
2022-07-10	FS_BPO																					
2022-07-10	FS_INF-K																					
2022-07-10	FS_INF-S																					
2022-07-10	FS_INF-K																					
2022-07-10	FS_INF-S																					
2022-07-10	FS_BPO	< 0.010	< 0.010				2605						14.3							2440		3.8
2022-07-10	FS_INF-K						1531						3.4							1190		< 1.0
2022-07-10	FS_INF-S						2904						10							2700		3.1

Parameter		Selenosulfate, SeSO3	SeMe – selenomethionine CH3SeCH2CH2CH(NH2)CO2H	Silver	Silver	Sodium	Specific conductivity, temperature corrected value (25 C)	Specific conductivity, temperature corrected value (25 C)	Strontium	Strontium	SULFIDE (as S)	Sulphate (As SO4)	Temperature, Field	Thallium	Thallium	Tin	Tin	Titanium	Titanium	Total Dissolved Solids (Residue, Filterable)	Total Kjeldahl Nitrogen	Total Suspended Solids, Lab
Fraction		D	D	D	T	T	N	N	D	T	T	D	N	D	T	D	T	D	T	N	N	N
Unit		ug/l	ug/l	mg/l	mg/l	mg/l	us/cm	uS/cm at 25 C	mg/l	mg/l	mg/l	mg/l	deg c	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-07-10	FS_INF-K																					
2022-07-10	FS_INF-S																					
2022-07-10	FS_INF-K																					
2022-07-10	FS_INF-S																					
2022-07-10	FS_INF-K																					
2022-07-10	FS_INF-S																					
2022-07-10	FS_INF-K																					
2022-07-10	FS_INF-S																					
2022-07-10	FS_INF-K																					
2022-07-10	FS_INF-S																					
2022-07-11	FS_INF-K																					
2022-07-11	FS_INF-S																					
2022-07-11	FS_INF-K																					
2022-07-11	FS_INF-S																					
2022-07-11	FS_BPO						2656				< 0.0015	1320	13.9							2060	0.251	1.5
2022-07-11	FS_INF-K						1556					383	3.2							1070	0.324	1.3
2022-07-11	FS_INF-S						2923					1520	9.9							2420	0.339	4.7
2022-07-11	FS_BPO																					
2022-07-11	FS_INF-K																					
2022-07-11	FS_INF-S																					
2022-07-11	FS_INF-K																					
2022-07-11	FS_INF-S																					
2022-07-11	FS_INF-K																					
2022-07-11	FS_INF-S																					
2022-07-11	FS_INF-K																					
2022-07-11	FS_INF-S																					
2022-07-11	FS_INF-K																					
2022-07-11	FS_INF-S																					
2022-07-12	FS_INF-K																					
2022-07-12	FS_INF-S																					
2022-07-12	FS_INF-K																					
2022-07-12	FS_INF-S																					
2022-07-12	FS_BPO	< 0.010	< 0.010	< 0.020	< 0.020	28.5	2654		0.211	0.210			14.2	< 0.020	< 0.020	< 0.00020	< 0.00020	< 0.60	< 0.60	2370		3.4
2022-07-12	FS_INF-K			< 0.020	< 0.020	4.69	1568		0.195	0.196			3.3	0.030	0.027	< 0.00020	< 0.00020	< 0.60	< 0.60	1220		1.6
2022-07-12	FS_INF-S			< 0.020	< 0.020	2.27	2935		0.228	0.217			10.6	0.061	0.054	< 0.00020	< 0.00020	< 0.60	< 0.60	2770		2.5
2022-07-12	FS_INF-K																					
2022-07-12	FS_INF-S																					
2022-07-12	FS_BPO																					
2022-07-12	FS_INF-K																					
2022-07-12	FS_INF-S																					
2022-07-12	FS_INF-K																					
2022-07-12	FS_INF-S																					
2022-07-12	FS_INF-K																					
2022-07-12	FS_INF-S																					
2022-07-12	FS_INF-K																					
2022-07-12	FS_INF-S																					
2022-07-13	FS_INF-K																					
2022-07-13	FS_INF-S																					
2022-07-13	FS_INF-K																					
2022-07-13	FS_INF-S																					
2022-07-13	FS_BPO						2685						14.8							2240		4.0
2022-07-13	FS_INF-K			< 0.020	< 0.020	4.74	1581		0.198	0.196			3.52	0.031	0.028	< 0.00020	< 0.00020	< 0.60	< 0.60	1160		1.9
2022-07-13	FS_INF-S			< 0.020	< 0.020	2.38	2906		0.224	0.221			10.8	0.056	0.058	< 0.00020	< 0.00020	< 0.60	< 0.60	2720		4.1
2022-07-13	FS_BPO						2655						14.9									
2022-07-13	FS_INF-K																					
2022-07-13	FS_INF-S																					
2022-07-13	FR_FRABCH																					
2022-07-13	FS_INF-K																					
2022-07-13	FS_INF-S																					
2022-07-13	FS_INF-K																					
2022-07-13	FS_INF-S																					
2022-07-13	FS_INF-K																					
2022-07-13	FS_INF-S																					
2022-07-13	FS_INF-K																					
2022-07-13	FS_INF-S																					
2022-07-14	FS_INF-K																					
2022-07-14	FS_INF-S																					
2022-07-14	FS_INF-K																					
2022-07-14	FS_INF-S																					
2022-07-14	FS_BPO	< 0.010	< 0.010				2660						14.5							2230		3.9
2022-07-14	FS_INF-K						1595						3.4							1210		< 1.0
2022-07-14	FS_INF-S						2969						11							2750		3.6
2022-07-14	FR_SCOUTDS	< 0.010	< 0.010	< 0.010	< 0.010	1.67	564		0.0992	0.0916	< 0.0015	138	8.7	< 0.010	< 0.010	< 0.00010	0.00010	< 0.30	0.54	384	0.133	2.3
2022-07-14	FS_INF-K																					
2022-07-14	FS_INF-S																					
2022-07-14	FS_INF-K																					
2022-07-14	FS_INF-S																					
2022-07-14	FS_INF-K																					
2022-07-14	FS_INF-S																					
2022-07-14	FS_INF-K																					
2022-07-14	FS_INF-S																					
2022-07-14	FS_INF-K																					
2022-07-14	FS_INF-S																					

	Parameter	Selenosulfate, SeSO3	SeMe – selenomethionine CH3SeCH2CH2CH(NH2)CO2H	Silver	Silver	Sodium	Specific conductivity, temperature corrected value (25 C)	Specific conductivity, temperature corrected value (25 C)	Strontium	Strontium	SULFIDE (as S)	Sulphate (As SO4)	Temperature, Field	Thallium	Thallium	Tin	Tin	Titanium	Titanium	Total Dissolved Solids (Residue, Filterable)	Total Kjeldahl Nitrogen	Total Suspended Solids, Lab
	Fraction	D	D	D	T	T	N	N	D	T	T	D	N	D	T	D	T	D	T	N	N	N
	Unit	ug/l	ug/l	mg/l	mg/l	mg/l	us/cm	uS/cm at 25 C	mg/l	mg/l	mg/l	mg/l	deg c	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-07-15	FS_INF-K																					
2022-07-15	FS_INF-S																					
2022-07-15	FS_INF-K																					
2022-07-15	FS_INF-S																					
2022-07-15	FS_BPO						2610						14.4							2180		3.8
2022-07-15	FS_INF-K						1604						3.5							1220		< 1.0
2022-07-15	FS_INF-S						2981						11.1							2590		3.2
2022-07-15	FS_INF-K																					
2022-07-15	FS_INF-S																					
2022-07-15	FS_INF-K																					
2022-07-15	FS_INF-S																					
2022-07-15	FS_INF-K																					
2022-07-15	FS_INF-S																					
2022-07-15	FS_INF-K																					
2022-07-15	FS_INF-S																					
2022-07-16	FS_INF-K																					
2022-07-16	FS_INF-S																					
2022-07-16	FS_INF-K																					
2022-07-16	FS_INF-S																					
2022-07-16	FS_BPO						2334						13.8									3.2
2022-07-16	FS_INF-K						1619						3.4									< 1.0
2022-07-16	FS_INF-S						2992						11.3									2.9
2022-07-16	FS_INF-K																					
2022-07-16	FS_INF-S																					
2022-07-16	FS_INF-K																					
2022-07-16	FS_INF-S																					
2022-07-16	FS_INF-K																					
2022-07-16	FS_INF-K																					
2022-07-16	FS_INF-K																					
2022-07-17	FS_INF-K																					
2022-07-17	FS_INF-K																					
2022-07-17	FS_BPO	< 0.010	< 0.010				2113						12.4							1720		3.6
2022-07-17	FS_INF-K						1638						3.6							1160		1.7
2022-07-17	FS_INF-K																					
2022-07-17	FS_INF-K																					
2022-07-17	FS_INF-K																					
2022-07-17	FS_INF-K																					
2022-07-17	FS_INF-K																					
2022-07-18	FS_INF-K																					
2022-07-18	FS_INF-K																					
2022-07-18	FS_BPO						1950				< 0.0015	660	12.5							1460	0.174	2.9
2022-07-18	FS_INF-K						1658					411	3.8							1270	1.15	< 1.0
2022-07-18	FS_INF-S																					
2022-07-18	FS_INF-S						3020						10.8									
2022-07-18	FS_BPO																					
2022-07-18	FS_INF-S											1450								2850	< 0.050	6.2
2022-07-18	FS_INF-K																					
2022-07-18	FS_INF-K																					
2022-07-18	FS_INF-K																					
2022-07-18	FS_INF-K																					
2022-07-18	FS_INF-K																					
2022-07-19	FS_INF-K																					
2022-07-19	FS_INF-K																					
2022-07-19	FS_BPO	< 0.010	< 0.010	< 0.020	< 0.020	25.4	1818		0.185	0.209			11.5	< 0.020	< 0.020	< 0.00020	< 0.00020	< 0.60	< 0.60	1370		4.2
2022-07-19	FS_INF-K	< 0.010	< 0.010	< 0.020	< 0.020	5.78	1688		0.214	0.259			3.4	0.027	0.039	< 0.00020	< 0.00020	< 0.60	< 0.60	1280		1.4
2022-07-19	FS_INF-S	< 0.010	< 0.010	< 0.020	< 0.020	2.45	3031		0.234	0.248			10	0.055	0.065	< 0.00020	< 0.00020	< 0.60	< 0.60	2650		2.2
2022-07-19	FS_INF-S																					
2022-07-19	FS_INF-K																					
2022-07-19	FS_INF-K																					
2022-07-19	FS_INF-K																					
2022-07-19	FS_INF-K																					
2022-07-19	FS_INF-K																					
2022-07-20	FS_INF-K																					
2022-07-20	FS_INF-K																					
2022-07-20	FS_BPO						1719						11.9							1270		2.4
2022-07-20	FS_INF-K						1719						3.4							1330		< 1.0
2022-07-20	FS_INF-S						3045						11.6							2820		2.1
2022-07-20	FS_INF-K																					
2022-07-20	FS_INF-S																					
2022-07-20	FS_INF-K																					
2022-07-20	FS_INF-K																					
2022-07-20	FS_INF-K																					
2022-07-20	FS_INF-K																					
2022-07-21	FS_INF-K																					
2022-07-21	FS_INF-K																					
2022-07-21	FS_BPO	< 0.010	< 0.010				1704						12.7							1420		2.6
2022-07-21	FS_INF-K						1731						3.5							1440		< 1.0
2022-07-21	FS_INF-S																			2960		4.2
2022-07-21	FR_SCOUTDS	< 0.010	< 0.010	< 0.010	< 0.010	1.47	683		0.113	0.112	< 0.0015	166	9.4	< 0.010	< 0.010	< 0.00010	< 0.00010	< 0.30	< 0.30	508	0.286	2.0
2022-07-21	FS_INF-K																					
2022-07-21	FS_INF-K																					
2022-07-21	FS_INF-K																					

Parameter		Selenosulfate, SeSO3	SeMe – selenomethionine CH3SeCH2CH2CH(NH2)CO2H	Silver	Silver	Sodium	Specific conductivity, temperature corrected value (25 C)	Specific conductivity, temperature corrected value (25 C)	Strontium	Strontium	SULFIDE (as S)	Sulphate (As SO4)	Temperature, Field	Thallium	Thallium	Tin	Tin	Titanium	Titanium	Total Dissolved Solids (Residue, Filterable)	Total Kjeldahl Nitrogen	Total Suspended Solids, Lab
Fraction		D	D	D	T	T	N	N	D	T	T	D	N	D	T	D	T	D	T	N	N	N
Unit		ug/l	ug/l	mg/l	mg/l	mg/l	us/cm	uS/cm at 25 C	mg/l	mg/l	mg/l	mg/l	deg c	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-07-21	FS_INF-K																					
2022-07-21	FS_INF-K																					
2022-07-22	FS_BPO						1687						13.5 13.3									
2022-07-22	FS_INF-K																					
2022-07-22	FS_INF-K																					
2022-07-22	FS_INF-K						1771						3.1									
2022-07-22	FS_INF-K						1742						3.1									
2022-07-22	FS_BPO																			1410		2.7
2022-07-22	FS_INF-K																			1500		< 1.0
2022-07-22	FS_INF-S																			3100		8.6
2022-07-22	FS_INF-K						1775 1687						3.3 3.4									
2022-07-22	FR_FRABCH																					
2022-07-22	FR_SCOUTDS						270.8						10.4									
2022-07-22	FS_INF-S						3058						12.6									
2022-07-22	FR_FRABCH						811						8.8									
2022-07-22	FS_BPO						1688						13.8									
2022-07-22	FS_INF-S																					
2022-07-23	FS_BPO						1710						12.9							1410		2.8
2022-07-23	FS_INF-K						1788						3.6							1380		2.6
2022-07-23	FS_INF-K																					
2022-07-23	FS_INF-S																			2780		3.2
2022-07-23	FS_BPO																					
2022-07-23	FR_SCOUTDS						714						11.1									
2022-07-23	FS_BPO						3056						11.6									
2022-07-23	FS_INF-S						2993						12.5									
2022-07-23	FR_SCOUTDS																					
2022-07-23	FR_FRABCH						831						8.5									
2022-07-24	FR_SCOUTDS																					
2022-07-24	FR_FRABCH						837						8									
2022-07-24	FR_SCOUTDS						761						12.1									
2022-07-24	FS_INF-S						3084						10.5									
2022-07-24	FS_BPO	< 0.010	< 0.010				1695						14.4							1220		3.7
2022-07-24	FS_INF-K						1819						4.4							1360		< 1.0
2022-07-24	FS_INF-S																			2620		3.2
2022-07-24	FS_INF-K																					
2022-07-24	FS_INF-K																					
2022-07-25	FS_BPO						1187						14.7									
2022-07-25	FS_INF-K																					
2022-07-25	FS_INF-K																					
2022-07-25	FS_BPO						1778				< 0.0015	464	14.5							1330	0.327	4.9
2022-07-25	FS_INF-K						1835					478	3.6							1440	0.328	2.8
2022-07-25	FS_INF-S											1520								3160	0.332	7.0
2022-07-25	FR_FRABCH			< 0.010	< 0.010	2.28			0.125	0.123		215		< 0.010	< 0.010	< 0.00010	< 0.00010	< 0.30	< 0.30	577	0.460	1.1
2022-07-25	FS_INF-S						1051						10.8									
2022-07-25	FS_BPO																					
2022-07-25	FS_INF-K																					
2022-07-25	FS_INF-K																					
2022-07-25	FS_INF-K																					
2022-07-25	FS_INF-K																					
2022-07-25	FS_INF-K																					
2022-07-26	FS_INF-K																					
2022-07-26	FS_INF-K																					
2022-07-26	FS_BPO	< 0.010	< 0.010	< 0.010	< 0.020	47.4	1778		0.147	0.184			13.4	< 0.010	< 0.020	< 0.00010	< 0.00020	< 0.30	< 0.60	1280		4.6
2022-07-26	FS_INF-K			< 0.010	< 0.010	5.47	1855		0.246	0.238			3.6	0.037	0.048	< 0.00010	< 0.00010	< 0.30	< 0.30	1430		2.1
2022-07-26	FS_INF-S			< 0.010	< 0.010	3.08			0.244	0.249				0.061	0.071	< 0.00010	< 0.00010	< 0.30	0.42	2620		1.8
2022-07-26	FR_FRABCH						869						8.1									
2022-07-26	FS_INF-K																					
2022-07-26	FS_INF-K																					
2022-07-26	FS_BPO																					
2022-07-26	FS_INF-K																					
2022-07-26	FS_INF-K																					
2022-07-26	FS_INF-K																					
2022-07-27	FS_INF-K																					
2022-07-27	FS_INF-K																					
2022-07-27	FS_BPO						1780						12.1							1350		8.9
2022-07-27	FS_INF-K						1873						3.6							1470		2.7
2022-07-27	FS_INF-S						3288						11							2860		2.8
2022-07-27	FS_INF-K																					
2022-07-27	FS_INF-K																					
2022-07-27	FS_INF-K																					
2022-07-27	FS_INF-K																					
2022-07-27	FS_INF-K																					
2022-07-28	FS_INF-K																					
2022-07-28	FS_INF-K																					
2022-07-28	FS_BPO	< 0.010	< 0.010				1830						12.1							1290		4.5
2022-07-28	FS_INF-K						1955						3.5							1450		1.1
2022-07-28	FS_INF-S						3241						11.4							2530		2.9

	Parameter	Selenosulfate, SeSO3	SeMe – selenomethionine CH3SeCH2CH2CH(NH2)CO2H	Silver	Silver	Sodium	Specific conductivity, temperature corrected value (25 C)	Specific conductivity, temperature corrected value (25 C)	Strontium	Strontium	SULFIDE (as S)	Sulphate (As SO4)	Temperature, Field	Thallium	Thallium	Tin	Tin	Titanium	Titanium	Total Dissolved Solids (Residue, Filterable)	Total Kjeldahl Nitrogen	Total Suspended Solids, Lab
	Fraction	D	D	D	T	T	N	N	D	T	T	D	N	D	T	D	T	D	T	N	N	N
	Unit	ug/l	ug/l	mg/l	mg/l	mg/l	us/cm	uS/cm at 25 C	mg/l	mg/l	mg/l	mg/l	deg c	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-07-28	FR_SCOUTDS	< 0.010	< 0.010	< 0.010	< 0.010	1.84	852		0.126	0.126	< 0.0015	250	10.8	< 0.010	< 0.010	< 0.00010	< 0.00010	< 0.30	< 0.30	567	0.402	2.5
2022-07-28	FS_INF-K																					
2022-07-28	FS_INF-K																					
2022-07-28	FS_INF-K																					
2022-07-28	FS_INF-S						3239						12.4									
2022-07-28	FS_INF-K																					
2022-07-28	FS_INF-S																					
2022-07-28	FS_INF-K																					
2022-07-29	FS_INF-K																					
2022-07-29	FS_INF-K																					
2022-07-29	FS_BPO						1887						11.8							1340		4.6
2022-07-29	FS_INF-K						1927						3.6							1460		4.0
2022-07-29	FS_INF-S						1887						11.5							2730		3.5
2022-07-29	FS_INF-K																					
2022-07-29	FS_INF-K																					
2022-07-29	FS_INF-K																					
2022-07-29	FS_INF-K																					
2022-07-29	FS_INF-K																					
2022-07-30	FS_INF-K																					
2022-07-30	FS_INF-K																					
2022-07-30	FS_BPO						1894						11.2							1380		2.5
2022-07-30	FS_INF-K						1994						3.7							1480		< 1.0
2022-07-30	FS_INF-S						3253						11.3							2760		2.9
2022-07-30	FS_INF-K																					
2022-07-30	FS_INF-S																					
2022-07-30	FS_INF-K																					
2022-07-30	FS_INF-K																					
2022-07-30	FS_INF-K																					
2022-07-30	FS_INF-K																					
2022-07-31	FS_INF-K																					
2022-07-31	FS_INF-K																					
2022-07-31	FS_BPO	< 0.010	< 0.010				1905						11.4							1390		1.6
2022-07-31	FS_INF-K						2008						3.6							1490		2.1
2022-07-31	FS_INF-S						3263						11.5							2870		3.0
2022-07-31	FS_INF-K																					
2022-07-31	FS_INF-S																					
2022-07-31	FS_INF-K																					
2022-07-31	FS_INF-K																					
2022-07-31	FS_INF-K																					
2022-07-31	FS_INF-K																					
2022-08-01	FS_INF-K																					
2022-08-01	FS_INF-K																					
2022-08-01	FS_BPO						1878				< 0.0015	515	11.5							1400	0.201	1.9
2022-08-01	FS_INF-K						1973					521	3.5							1520	0.331	1.0
2022-08-01	FS_INF-S						3143					1550	11.6							2780	0.465	2.9
2022-08-01	FS_INF-S																					
2022-08-01	FS_BPO																					
2022-08-01	FS_INF-K																					
2022-08-01	FS_INF-K																					
2022-08-01	FS_INF-K																					
2022-08-01	FS_INF-K																					
2022-08-01	FS_INF-K																					
2022-08-02	FS_INF-K																					
2022-08-02	FS_INF-K																					
2022-08-02	FS_BPO	< 0.010	< 0.010	< 0.020	< 0.020	24.7	186		0.212	0.236			11.9	< 0.020	< 0.020	< 0.00020	< 0.00020	< 0.60	< 0.60	1310		2.1
2022-08-02	FS_INF-K	< 0.010	< 0.010	< 0.020	< 0.020	6.12	1980		0.252	0.254			3.9	0.036	0.031	< 0.00020	< 0.00020	< 0.60	< 0.60	1450		< 1.0
2022-08-02	FS_INF-S	< 0.010	< 0.010	< 0.020	< 0.020	2.44	1711		0.264	0.245			11.5	0.060	0.058	< 0.00020	< 0.00020	< 0.60	< 0.60	2730		2.1
2022-08-02	FS_INF-K																					
2022-08-02	FS_INF-S																					
2022-08-02	FS_BPO						1889						12.9									
2022-08-03	FS_BPO						1903						13.2									
2022-08-03	FS_BPO						1911						11.5									
2022-08-03	FS_BPO						1883						11.6							1410		2.2
2022-08-03	FS_INF-K						1994						3.9							1640		< 1.0
2022-08-03	FS_INF-S						36.5 3212						11.9 12.3							3040		1.6
2022-08-03	FS_INF-S																					
2022-08-03	FS_INF-K																					
2022-08-03	FS_INF-K																					
2022-08-03	FS_BPO						1832						13									
2022-08-03	FS_INF-K																					
2022-08-04	FS_INF-K																					
2022-08-04	FS_BPO	< 0.010	< 0.010				1892						13.7							1470		3.0
2022-08-04	FS_INF-K						2000						3.6							1560		1.4
2022-08-04	FS_INF-S						3111						11.5							2940		3.2
2022-08-04	FR_SCOUTDS	< 0.010	< 0.010	< 0.010	< 0.010	2.13	979		0.139	0.146	< 0.0015	290	9.9	< 0.010	0.012	< 0.00010	< 0.00010	< 0.30	< 0.30	721	0.406	2.0
2022-08-04	FS_INF-K																					
2022-08-04	FS_INF-K																					
2022-08-04	FS_BPO						1937						14.5									
2022-08-05	FS_BPO						1878						14.2									
2022-08-05	FS_BPO						1923						13.8									

	Parameter	Selenosulfate, SeSO3	SeMe – selenomethionine CH3SeCH2CH2CH(NH2)CO2H	Silver	Silver	Sodium	Specific conductivity, temperature corrected value (25 C)	Specific conductivity, temperature corrected value (25 C)	Strontium	Strontium	SULFIDE (as S)	Sulphate (As SO4)	Temperature, Field	Thallium	Thallium	Tin	Tin	Titanium	Titanium	Total Dissolved Solids (Residue, Filterable)	Total Kjeldahl Nitrogen	Total Suspended Solids, Lab
	Fraction	D	D	D	T	T	N	N	D	T	T	D	N	D	T	D	T	D	T	N	N	N
	Unit	ug/l	ug/l	mg/l	mg/l	mg/l	us/cm	uS/cm at 25 C	mg/l	mg/l	mg/l	mg/l	deg c	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-08-05	FS_BPO						1925						13.7							1440		4.8
2022-08-05	FS_INF-K						2013						4							1680		< 1.0
2022-08-05	FS_INF-S						854						12.4									
2022-08-05	FS_INF-K																					
2022-08-05	FS_INF-S																			2980		2.9
2022-08-05	FS_INF-K																					
2022-08-05	FS_INF-K																					
2022-08-05	FS_INF-K																					
2022-08-05	FS_INF-K																					
2022-08-06	FS_INF-K																					
2022-08-06	FS_INF-K																					
2022-08-06	FS_BPO						1969						15.3							1320		5.1
2022-08-06	FS_INF-K						2024						3.4							1510		1.7
2022-08-06	FS_INF-S						3227						10.8							2900		3.3
2022-08-06	FS_INF-K																					
2022-08-06	FS_INF-K																					
2022-08-06	FS_INF-S																					
2022-08-06	FS_INF-K																					
2022-08-06	FS_INF-K																					
2022-08-06	FS_INF-K																					
2022-08-07	FS_INF-K																					
2022-08-07	FS_INF-K																					
2022-08-07	FS_BPO	< 0.010	< 0.010				1939						16.7							1430		5.5
2022-08-07	FS_INF-K						3203						16.1							1640		1.7
2022-08-07	FS_INF-S						3216						10.3							2790		3.1
2022-08-07	FS_INF-K																					
2022-08-07	FS_INF-K																					
2022-08-07	FS_INF-K																					
2022-08-07	FS_INF-K																					
2022-08-07	FS_INF-K																					
2022-08-08	FS_INF-K																					
2022-08-08	FS_INF-K																					
2022-08-08	FS_BPO						1911				0.0018	566	17.9							1460	0.235	6.4
2022-08-08	FS_INF-K						2050					578	3.6							1560	< 0.050	< 1.0
2022-08-08	FS_INF-S						3220					1620	11.3							3020	0.319	1.9
2022-08-08	FS_BPO																					
2022-08-08	FS_INF-K																					
2022-08-08	FS_INF-S																					
2022-08-08	FS_INF-K																					
2022-08-08	FS_INF-K																					
2022-08-08	FS_INF-K																					
2022-08-08	FS_INF-K																					
2022-08-09	FS_INF-K																					
2022-08-09	FS_INF-K																					
2022-08-09	FS_BPO	< 0.010	< 0.010	< 0.010	< 0.010	37.0	1906		0.211	0.259			18.4	< 0.010	< 0.010	< 0.00010	0.00010	< 0.30	< 0.30	1490		3.4
2022-08-09	FS_INF-K	< 0.010	< 0.010	< 0.010	< 0.010	6.47	2061		0.252	0.272			3.7	0.035	0.034	< 0.00010	< 0.00010	< 0.30	< 0.30	1640		< 1.0
2022-08-09	FS_INF-S	< 0.010	< 0.010	< 0.010	< 0.010	2.89	3042		0.231	0.266			10.9	0.063	0.063	< 0.00010	< 0.00010	< 0.30	< 0.30	2990		2.2
2022-08-09	FS_INF-K																					
2022-08-09	FS_INF-K																					
2022-08-09	FS_INF-S																					
2022-08-09	FS_INF-K																					
2022-08-09	FS_INF-S																					
2022-08-09	FS_INF-K																					
2022-08-09	FS_INF-S																					
2022-08-10	FS_INF-K																					
2022-08-10	FS_INF-S																					
2022-08-10	FS_INF-K																					
2022-08-10	FS_INF-S																					
2022-08-10	FS_BPO						2161						18.6							1410		4.5
2022-08-10	FS_INF-K						2069						4.3							1420		2.3
2022-08-10	FS_INF-S						3237						11.5							2710		5.8
2022-08-10	FS_BPO																					
2022-08-10	FS_INF-K																					
2022-08-10	FS_INF-S																					
2022-08-10	FS_INF-K																					
2022-08-10	FS_INF-S																					
2022-08-10	FS_INF-K																					
2022-08-10	FS_INF-S																					
2022-08-10	FS_INF-K																					
2022-08-10	FS_INF-S																					
2022-08-11	FS_INF-K																					
2022-08-11	FS_INF-S																					
2022-08-11	FS_INF-K																					
2022-08-11	FS_INF-S																					
2022-08-11	FS_BPO	< 0.010	< 0.010				2474						18.1							2120		5.1
2022-08-11	FS_INF-K						2080						4							1660		1.7
2022-08-11	FS_INF-S						3248						10.7							3100		4.1
2022-08-11	FR_SCOUTDS	< 0.010	< 0.010	< 0.010	< 0.010	3.49	981		0.148	0.148	< 0.0015	298	11.7	< 0.010	< 0.010	< 0.00010	< 0.00010	< 0.30	< 0.30	719	0.304	1.7
2022-08-11	FS_INF-K																					
2022-08-11	FS_INF-S																					
2022-08-11	FS_INF-K																					

Parameter		Selenosulfate, SeSO3	SeMe – selenomethionine CH3SeCH2CH2CH(NH2)CO2H	Silver	Silver	Sodium	Specific conductivity, temperature corrected value (25 C)	Specific conductivity, temperature corrected value (25 C)	Strontium	Strontium	SULFIDE (as S)	Sulphate (As SO4)	Temperature, Field	Thallium	Thallium	Tin	Tin	Titanium	Titanium	Total Dissolved Solids (Residue, Filterable)	Total Kjeldahl Nitrogen	Total Suspended Solids, Lab
Fraction		D	D	D	T	T	N	N	D	T	T	D	N	D	T	D	T	D	T	N	N	N
Unit		ug/l	ug/l	mg/l	mg/l	mg/l	us/cm	uS/cm at 25 C	mg/l	mg/l	mg/l	mg/l	deg c	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-08-11	FS_INF-S																					
2022-08-11	FS_INF-K																					
2022-08-11	FS_INF-S																					
2022-08-11	FS_INF-K																					
2022-08-11	FS_INF-S																					
2022-08-12	FS_INF-K																					
2022-08-12	FS_INF-S																					
2022-08-12	FS_INF-K																					
2022-08-12	FS_INF-S																					
2022-08-12	FS_BPO						2683						18.7							2350		3.9
2022-08-12	FS_INF-K						2096						3.9							1620		< 1.0
2022-08-12	FS_INF-S						3247						11.2							2930		2.6
2022-08-12	FS_INF-K																					
2022-08-12	FS_INF-S																					
2022-08-12	FS_INF-K																					
2022-08-12	FS_INF-S																					
2022-08-12	FS_INF-K																					
2022-08-12	FS_INF-S																					
2022-08-12	FS_INF-K																					
2022-08-12	FS_INF-S																					
2022-08-12	FS_INF-K																					
2022-08-13	FS_INF-S																					
2022-08-13	FS_INF-K																					
2022-08-13	FS_INF-S																					
2022-08-13	FS_INF-K																					
2022-08-13	FS_BPO						2816						18.5							2580		3.2
2022-08-13	FS_INF-K						2108						3.9							1740		2.6
2022-08-13	FS_INF-S						3257						10.8							3050		2.4
2022-08-13	FS_INF-K																					
2022-08-13	FS_INF-S																					
2022-08-13	FS_INF-K																					
2022-08-13	FS_INF-S																					
2022-08-13	FS_INF-K																					
2022-08-13	FS_INF-S																					
2022-08-14	FS_INF-K																					
2022-08-14	FS_INF-S																					
2022-08-14	FS_INF-K																					
2022-08-14	FS_INF-S																					
2022-08-14	FS_BPO	< 0.010	< 0.010				2899						18.3							2790		4.5
2022-08-14	FS_INF-K						2124						3.7							1790		< 1.0
2022-08-14	FS_INF-S						3262						10.6							3320		3.3
2022-08-14	FS_INF-K																					
2022-08-14	FS_INF-S																					
2022-08-14	FS_INF-K																					
2022-08-14	FS_INF-S																					
2022-08-14	FS_INF-K																					
2022-08-14	FS_INF-S																					
2022-08-14	FS_INF-K																					
2022-08-14	FS_INF-S																					
2022-08-14	FS_INF-K																					
2022-08-14	FS_INF-S																					
2022-08-15	FS_INF-K																					
2022-08-15	FS_INF-S																					
2022-08-15	FS_INF-K																					
2022-08-15	FS_INF-S																					
2022-08-15	FS_BPO						2955				< 0.0015	1560	18.4							2280	0.340	4.3
2022-08-15	FS_INF-K						2132					566	3.7							1440	< 0.050	< 1.0
2022-08-15	FS_INF-S						3270					1640	10.9							2660	< 0.050	1.4
2022-08-15	FS_BPO																					
2022-08-15	FS_INF-K																					
2022-08-15	FS_INF-S																					
2022-08-15	FS_INF-K																					
2022-08-15	FS_INF-S																					
2022-08-15	FS_INF-K																					
2022-08-15	FS_INF-S																					
2022-08-15	FS_INF-K																					
2022-08-15	FS_INF-S																					
2022-08-15	FS_INF-K																					
2022-08-15	FS_INF-S																					
2022-08-16	FS_INF-K																					
2022-08-16	FS_INF-S																					
2022-08-16	FS_BPO	< 0.010	< 0.010	< 0.020	< 0.010	16.2	2985		0.239	0.235			18.5	< 0.020	< 0.010	< 0.00020	0.00013	< 0.60	< 0.30	2490		4.4
2022-08-16	FS_INF-K	< 0.010	< 0.010	< 0.020	< 0.010	6.94	2146		0.267	0.277			3.7	0.034	0.036	< 0.00020	< 0.00010	< 0.60	< 0.30	2880		2.5
2022-08-16	FS_INF-S	< 0.010	< 0.010	< 0.020	< 0.010	2.58	3265		0.235	0.239			10.9	0.066	0.060	< 0.00020	< 0.00010	< 0.60	< 0.30	1620		1.2
2022-08-16	FR_FRABCH			< 0.010	< 0.010	3.33	1121		0.162	0.164		281	8.4	< 0.010	< 0.010	< 0.00010	< 0.00010	< 0.30	< 0.30	743	0.289	5.1
2022-08-16	FS_INF-K																					

Parameter		Selenosulfate, SeSO3	SeMe – selenomethionine CH3SeCH2CH2CH(NH2)CO2H	Silver	Silver	Sodium	Specific conductivity, temperature corrected value (25 C)	Specific conductivity, temperature corrected value (25 C)	Strontium	Strontium	SULFIDE (as S)	Sulphate (As SO4)	Temperature, Field	Thallium	Thallium	Tin	Tin	Titanium	Titanium	Total Dissolved Solids (Residue, Filterable)	Total Kjeldahl Nitrogen	Total Suspended Solids, Lab
Fraction		D	D	D	T	T	N	N	D	T	T	D	N	D	T	D	T	D	T	N	N	N
Unit		ug/l	ug/l	mg/l	mg/l	mg/l	us/cm	uS/cm at 25 C	mg/l	mg/l	mg/l	mg/l	deg c	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-08-16	FS_INF-S																					
2022-08-16	FS_INF-K																					
2022-08-16	FS_INF-S																					
2022-08-16	FS_INF-K																					
2022-08-16	FS_INF-S																					
2022-08-16	FS_INF-K																					
2022-08-16	FS_INF-S																					
2022-08-17	FS_INF-K																					
2022-08-17	FS_INF-S																					
2022-08-17	FS_INF-K																					
2022-08-17	FS_INF-S																					
2022-08-17	FS_BPO						2982						18.7							2640		3.5
2022-08-17	FS_INF-K						2156						3.9							1640		1.7
2022-08-17	FS_INF-S						3274						11							3030		2.5
2022-08-17	FR_FRABCH			< 0.010	< 0.010	3.27	1108.00		0.145	0.161		287	13.60	< 0.010	< 0.010	< 0.00010	< 0.00010	< 0.30	< 0.30	766	0.246	1.9
2022-08-17	FS_INF-K																					
2022-08-17	FS_INF-S																					
2022-08-17	FS_INF-K																					
2022-08-17	FS_INF-S																					
2022-08-17	FS_INF-K																					
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2022-08-17	FS_INF-S																					
2022-08-17	FS_INF-K																					
2022-08-17	FS_INF-S																					
2022-08-18	FS_INF-K																					
2022-08-18	FS_INF-S																					
2022-08-18	FS_INF-K																					
2022-08-18	FS_INF-S																					
2022-08-18	FS_BPO	< 0.010	< 0.010				2956						18.9							2480		3.1
2022-08-18	FS_INF-K						2170						3.8							1620		1.4
2022-08-18	FS_INF-S						3275						11.4							2940		3.0
2022-08-18	FR_SCOUTDS	< 0.010	< 0.010	< 0.010	< 0.010	3.77	910		0.161	0.160	0.0020	371	15	< 0.010	< 0.010	< 0.00010	< 0.00010	< 0.30	< 0.30	767	0.465	1.4
2022-08-18	FS_INF-K																					
2022-08-18	FS_INF-S																					
2022-08-18	FS_INF-K																					
2022-08-18	FS_INF-S																					
2022-08-18	FS_INF-K																					
2022-08-18	FS_INF-S																					
2022-08-18	FS_INF-K																					
2022-08-18	FS_INF-S																					
2022-08-19	FS_INF-K																					
2022-08-19	FS_INF-S																					
2022-08-19	FS_INF-K																					
2022-08-19	FS_INF-S																					
2022-08-19	FS_BPO	< 0.010	< 0.010	< 0.020	< 0.020	16.9	2909		0.224	0.250		1250	19	< 0.020	< 0.020	0.00129	< 0.00020	< 0.60	< 0.60	2480 2230	< 0.500	3.7 1.7
2022-08-19	FS_INF-K						2185						3.8							1540		< 1.0
2022-08-19	FS_INF-S						3281						11.3							2790		2.5
2022-08-19	FS_INF-K																					
2022-08-19	FS_INF-S																					
2022-08-19	FS_INF-K																					
2022-08-19	FS_INF-S																					
2022-08-19	FS_INF-K																					
2022-08-19	FS_INF-S																					
2022-08-19	FS_INF-K																					
2022-08-19	FS_INF-S																					
2022-08-20	FS_INF-K																					
2022-08-20	FS_INF-S																					
2022-08-20	FS_INF-K																					
2022-08-20	FS_INF-S																					
2022-08-20	FS_BPO						2851						18.7							2520		2.8
2022-08-20	FS_INF-K						2195						3.8							1790		1.7
2022-08-20	FS_INF-S						3289						11.4							3120		3.7
2022-08-20	FS_INF-K																					
2022-08-20	FS_INF-S																					
2022-08-20	FS_INF-K																					
2022-08-20	FS_INF-S																					
2022-08-20	FS_INF-K																					
2022-08-20	FS_INF-S																					
2022-08-20	FS_INF-K																					
2022-08-20	FS_INF-S																					
2022-08-20	FS_INF-K																					
2022-08-20	FS_INF-S																					
2022-08-21	FS_INF-K																					
2022-08-21	FS_INF-S																					
2022-08-21	FS_INF-K																					
2022-08-21	FS_INF-S																					
2022-08-21	FS_BPO	< 0.010	< 0.010				2858						18.5							2500		1.8

Parameter		Selenosulfate, SeSO3	SeMe – selenomethionine CH3SeCH2CH2CH(NH2)CO2H	Silver	Silver	Sodium	Specific conductivity, temperature corrected value (25 C)	Specific conductivity, temperature corrected value (25 C)	Strontium	Strontium	SULFIDE (as S)	Sulphate (As SO4)	Temperature, Field	Thallium	Thallium	Tin	Tin	Titanium	Titanium	Total Dissolved Solids (Residue, Filterable)	Total Kjeldahl Nitrogen	Total Suspended Solids, Lab
Fraction		D	D	D	T	T	N	N	D	T	T	D	N	D	T	D	T	D	T	N	N	N
Unit		ug/l	ug/l	mg/l	mg/l	mg/l	us/cm	uS/cm at 25 C	mg/l	mg/l	mg/l	mg/l	deg c	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-08-21	FS_INF-K						2206						3.9							1680		< 1.0
2022-08-21	FS_INF-S						3292						10.6							3190		< 1.0
2022-08-21	FS_INF-K																					
2022-08-21	FS_INF-S																					
2022-08-21	FS_INF-K																					
2022-08-21	FS_INF-S																					
2022-08-21	FS_INF-K																					
2022-08-21	FS_INF-S																					
2022-08-21	FS_INF-K																					
2022-08-21	FS_INF-S																					
2022-08-21	FS_INF-K																					
2022-08-21	FS_INF-S																					
2022-08-22	FS_INF-K																					
2022-08-22	FS_INF-S																					
2022-08-22	FS_INF-K																					
2022-08-22	FS_INF-S																					
2022-08-22	FS_BPO						2853				< 0.0015	1350	18.2							2440	0.187	2.6
2022-08-22	FS_INF-K						2217					656	3.8							1710	0.196	< 1.0
2022-08-22	FS_INF-S						3271					1710	10.5							3030	< 0.050	2.2
2022-08-22	FS_BPO																					
2022-08-22	FS_INF-K																					
2022-08-22	FS_INF-S																					
2022-08-22	FS_INF-K																					
2022-08-22	FS_INF-S																					
2022-08-22	FS_INF-K																					
2022-08-22	FS_INF-S																					
2022-08-22	FS_INF-K																					
2022-08-22	FS_INF-S																					
2022-08-23	FS_INF-K																					
2022-08-23	FS_INF-S																					
2022-08-23	FS_INF-K																					
2022-08-23	FS_INF-S																					
2022-08-23	FS_BPO	< 0.010	< 0.010	< 0.020	< 0.010	21.0	2789		0.244	0.250			18.6	< 0.020	< 0.010	< 0.00020	< 0.00010	< 0.60	< 0.30	2430		2.6
2022-08-23	FS_INF-K			0.041	< 0.020	7.25	3263		0.281	0.269			11.2	0.038	0.036	< 0.00020	< 0.00020	< 0.60	< 0.60	1670		1.8
2022-08-23	FS_INF-S			< 0.020	< 0.020	2.49	2222		0.249	0.244			3.8	0.060	0.063	< 0.00020	< 0.00020	< 0.60	< 0.60	2770		3.6
2022-08-23	FR_FRABCH			< 0.010	0.010	3.44	1070.00		0.159	0.166		308	12.20	< 0.010	< 0.010	< 0.00010	< 0.00010	< 0.30	0.53	764	0.146	39.9
2022-08-23	FS_BPO						2848						18.5									
2022-08-23	FS_BPO						2802						18.4									
2022-08-24	FS_INF-K																					
2022-08-24	FS_INF-S																					
2022-08-24	FS_BPO						2807						18							2280		5.3
2022-08-24	FS_INF-K						2236						4.1							1660		1.4
2022-08-24	FS_INF-S						3261						10.7							2820		2.3
2022-08-24	FS_INF-K																					
2022-08-24	FS_INF-S																					
2022-08-24	FR_FRABCH						1093						9.2									
2022-08-24	FR_SCOUTDS						1047						12.2									
2022-08-24	FS_INF-K																					
2022-08-24	FS_INF-S																					
2022-08-24	FS_INF-K																					
2022-08-24	FS_INF-S																					
2022-08-24	FS_INF-K																					
2022-08-24	FS_INF-S																					
2022-08-24	FS_INF-K																					
2022-08-24	FS_INF-S																					
2022-08-25	FS_INF-K																					
2022-08-25	FS_INF-S																					
2022-08-25	FS_INF-K																					
2022-08-25	FS_INF-S																					
2022-08-25	FS_BPO	< 0.010	< 0.010				2808						18.2							2560		1.9
2022-08-25	FS_INF-K						2202						12.6							1800		1.0
2022-08-25	FS_INF-S						3251						10.3							3020		3.6
2022-08-25	FR_SCOUTDS	< 0.010	< 0.010	< 0.010	< 0.010	3.86	1038		0.167	0.168	< 0.0015	314	11.3	< 0.010	< 0.010	< 0.00010	< 0.00010	< 0.30	< 0.30	782	0.441	1.9
2022-08-25	FS_INF-K																					
2022-08-25	FS_INF-S																					
2022-08-25	FS_INF-K																					
2022-08-25	FS_INF-S																					
2022-08-25	FS_INF-K																					
2022-08-25	FS_INF-S																					
2022-08-25	FS_INF-K																					
2022-08-25	FS_INF-S																					
2022-08-25	FS_INF-K																					
2022-08-25	FS_INF-S																					
2022-08-26	FS_INF-K																					
2022-08-26	FS_INF-S																					
2022-08-26	FS_INF-K																					
2022-08-26	FS_INF-S																					
2022-08-26	FS_BPO						2927						18.1							2420		7.9
2022-08-26	FS_INF-K						2289						4.6							1710		3.6
2022-08-26	FS_INF-S						3257						9.6							2840		11.0
2022-08-26	FS_INF-K																					

Parameter		Selenosulfate, SeSO3	SeMe – selenomethionine CH3SeCH2CH2CH(NH2)CO2H	Silver	Silver	Sodium	Specific conductivity, temperature corrected value (25 C)	Specific conductivity, temperature corrected value (25 C)	Strontium	Strontium	SULFIDE (as S)	Sulphate (As SO4)	Temperature, Field	Thallium	Thallium	Tin	Tin	Titanium	Titanium	Total Dissolved Solids (Residue, Filterable)	Total Kjeldahl Nitrogen	Total Suspended Solids, Lab
Fraction		D	D	D	T	T	N	N	D	T	T	D	N	D	T	D	T	D	T	N	N	N
Unit		ug/l	ug/l	mg/l	mg/l	mg/l	us/cm	uS/cm at 25 C	mg/l	mg/l	mg/l	mg/l	deg c	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-08-26	FS_INF-S																					
2022-08-26	FS_INF-K																					
2022-08-26	FS_INF-S																					
2022-08-26	FS_INF-K																					
2022-08-26	FS_INF-S																					
2022-08-26	FS_INF-K																					
2022-08-26	FS_INF-S																					
2022-08-26	FS_INF-K																					
2022-08-26	FS_INF-S																					
2022-08-27	FS_INF-K																					
2022-08-27	FS_INF-S																					
2022-08-27	FS_INF-K																					
2022-08-27	FS_INF-S																					
2022-08-27	FS_BPO						2995						18.2							2530		4.7
2022-08-27	FS_INF-K						2265						5.1							1770		6.6
2022-08-27	FS_INF-S						3251						10.1							2800		3.7
2022-08-27	FS_INF-K																					
2022-08-27	FS_INF-S																					
2022-08-27	FS_INF-K																					
2022-08-27	FS_INF-S																					
2022-08-27	FS_INF-K																					
2022-08-27	FS_INF-S																					
2022-08-27	FS_INF-K																					
2022-08-27	FS_INF-S																					
2022-08-28	FS_BPO	< 0.010	< 0.010				2884						17.7							2500		5.4
2022-08-28	FS_INF-K						2029						4.6							1710		1.1
2022-08-28	FS_INF-S						3026						9.1							2930		9.9
2022-08-28	FR_FRABCH																					
2022-08-28	FR_FRABCH																					
2022-08-28	FR_SCOUTDS																					
2022-08-28	FS_INF-K																					
2022-08-28	FS_INF-S																					
2022-08-29	FS_BPO																					
2022-08-29	FS_BPO						2995						17.4									
2022-08-29	FS_INF-K						2159						4.3									
2022-08-29	FS_INF-S						3064						9.2									
2022-08-29	FR_FRABCH																					
2022-08-29	FR_SCOUTDS																					
2022-08-29	FS_INF-K																					
2022-08-29	FS_INF-S																					
2022-08-29	FS_BPO						2880						17.3									
2022-08-29	FS_BPO						2975				< 0.0015	1450	17.2							2490	0.267	18.0
2022-08-29	FS_INF-K						2295					619	3.6							1680	< 0.050	1.4
2022-08-29	FS_INF-S						3248					1640	10.1							2760	< 0.050	4.0
2022-08-29	FS_INF-S																					
2022-08-30	FS_INF-S																					
2022-08-30	FS_INF-S																					
2022-08-30	FS_BPO	< 0.010	< 0.010	< 0.010	< 0.020	48.9	3085		0.239	0.225			17.4	< 0.010	< 0.020	< 0.00010	< 0.00020	< 0.30	< 0.60	2450		6.2
2022-08-30	FS_INF-K	< 0.010	< 0.010	< 0.020	< 0.020	8.91	2137		0.295	0.285			4	0.033	0.038	< 0.00020	< 0.00020	< 0.60	< 0.60	1770		1.2
2022-08-30	FS_INF-S	< 0.010	< 0.010	< 0.020	< 0.020	2.80	3259		0.237	0.222			9.5	0.058	0.057	< 0.00020	< 0.00020	< 0.60	0.71	2860		6.3
2022-08-30	FR_FRABCH			< 0.010	< 0.010	3.34	1078.00		0.166	0.164		287	11.50	< 0.010	< 0.010	< 0.00010	< 0.00010	< 0.30	< 0.30	716	< 0.050	1.4
2022-08-30	FS_INF-K																					
2022-08-30	FS_INF-S																					
2022-08-30	FS_INF-S																					
2022-08-30	FS_INF-S																					
2022-08-30	FS_INF-S																					
2022-08-30	FS_INF-S																					
2022-08-31	FS_INF-S																					
2022-08-31	FS_INF-S																					
2022-08-31	FS_BPO						3153						18.7							2580		7.6
2022-08-31	FS_INF-K						2301						5							1630		2.0
2022-08-31	FS_INF-S						3268						9.6							2610		1.7
2022-08-31	FS_INF-K																					
2022-08-31	FS_INF-S																					
2022-08-31	FS_INF-K																					
2022-08-31	FS_INF-S																					
2022-08-31	FS_INF-K																					
2022-08-31	FS_INF-S																					
2022-08-31	FS_INF-K																					
2022-08-31	FS_INF-S																					
2022-09-01	FS_INF-K																					
2022-09-01	FS_INF-S																					
2022-09-01	FS_INF-K																					
2022-09-01	FS_INF-S																					
2022-09-01	FS_BPO	< 0.010	< 0.010				3177						18.8							2640		5.2
2022-09-01	FS_INF-K						2314						3.9							1690		< 1.0
2022-09-01	FS_INF-S						3297						9.9							2920		2.2
2022-09-01	FR_SCOUTDS	< 0.010	< 0.010	< 0.010	< 0.010	5.02	1044		0.156	0.162	< 0.0015	343	12.5	< 0.010	< 0.010	< 0.00010	< 0.00010	< 0.30	< 0.30	733	0.197	2.2
2022-09-01	FS_INF-K																					
2022-09-01	FS_INF-S																					
2022-09-01	FS_INF-K																					
2022-09-01	FS_INF-S																					

Parameter		Selenosulfate, SeSO3	SeMe – selenomethionine CH3SeCH2CH2CH(NH2)CO2H	Silver	Silver	Sodium	Specific conductivity, temperature corrected value (25 C)	Specific conductivity, temperature corrected value (25 C)	Strontium	Strontium	SULFIDE (as S)	Sulphate (As SO4)	Temperature, Field	Thallium	Thallium	Tin	Tin	Titanium	Titanium	Total Dissolved Solids (Residue, Filterable)	Total Kjeldahl Nitrogen	Total Suspended Solids, Lab
Fraction		D	D	D	T	T	N	N	D	T	T	D	N	D	T	D	T	D	T	N	N	N
Unit		ug/l	ug/l	mg/l	mg/l	mg/l	us/cm	uS/cm at 25 C	mg/l	mg/l	mg/l	mg/l	deg c	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-09-01	FS_INF-K																					
2022-09-01	FS_INF-S																					
2022-09-01	FS_INF-K																					
2022-09-01	FS_INF-S																					
2022-09-01	FS_INF-K																					
2022-09-01	FS_INF-S																					
2022-09-02	FS_INF-K																					
2022-09-02	FS_INF-S																					
2022-09-02	FS_INF-K																					
2022-09-02	FS_INF-S																					
2022-09-02	FS_BPO						3133						18.5							2680		4.4
2022-09-02	FS_INF-K						2314						5.6							1810		1.8
2022-09-02	FS_INF-S						3279						11.2							2840		3.1
2022-09-02	FS_BPO						3013						18.5									
2022-09-02	FS_INF-K																					
2022-09-02	FS_INF-S																					
2022-09-02	FS_INF-K																					
2022-09-02	FS_INF-S																					
2022-09-02	FS_INF-K																					
2022-09-02	FS_INF-S																					
2022-09-02	FS_INF-K																					
2022-09-02	FS_INF-S																					
2022-09-03	FS_INF-K																					
2022-09-03	FS_INF-K																					
2022-09-03	FS_BPO						3060						17.9							2520		2.4
2022-09-03	FS_INF-K						2333						3.9							1780		2.3
2022-09-03	FS_INF-S						3299						9.8							2840		5.5
2022-09-03	FS_INF-K																					
2022-09-03	FS_INF-K																					
2022-09-03	FS_INF-K																					
2022-09-03	FS_INF-K																					
2022-09-03	FS_INF-K																					
2022-09-04	FS_INF-K																					
2022-09-04	FS_INF-K																					
2022-09-04	FS_BPO	< 0.010	< 0.010				2844						17.8							2300		55.3
2022-09-04	FS_INF-K						2342						3.8							1760		< 1.0
2022-09-04	FS_INF-S						2190						19.7							2820		4.8
2022-09-04	FS_INF-K																					
2022-09-04	FS_INF-K																					
2022-09-04	FS_INF-K																					
2022-09-04	FS_INF-K																					
2022-09-04	FS_INF-K																					
2022-09-05	FS_INF-K																					
2022-09-05	FS_INF-K																					
2022-09-05	FS_BPO						2120				< 0.0015	1100	17.9							2000	0.435	60.6
2022-09-05	FS_INF-K						2350					666	3.7							1820	0.092	< 1.0
2022-09-05	FS_INF-S						3363					1650	10							2860	< 0.050	4.2
2022-09-05	FS_BPO																					
2022-09-05	FS_INF-K																					
2022-09-05	FS_INF-K																					
2022-09-05	FS_INF-K																					
2022-09-05	FS_INF-K																					
2022-09-05	FS_INF-K																					
2022-09-06	FS_INF-K																					
2022-09-06	FS_BPO	< 0.010	< 0.010	< 0.010	< 0.010	24.4	2351		0.239	0.249			17.3	< 0.010	< 0.010	< 0.00010	< 0.00010	< 0.30	< 0.30	1820		26.2
2022-09-06	FS_INF-K			< 0.020	< 0.020	9.38	2399		0.327	0.291			3.5	0.037	0.035	< 0.00020	< 0.00020	< 0.60	< 0.60	1860		< 1.0
2022-09-06	FS_INF-S			< 0.020	< 0.020	2.36	3375		0.252	0.233			9.1	0.059	0.063	< 0.00020	< 0.00020	< 0.60	< 0.60	2980		2.5
2022-09-06	FR_FRABCH			< 0.010	< 0.010	3.06	1137.00		0.177	0.164		330	10.30	< 0.010	< 0.010	< 0.00010	< 0.00010	< 0.30	< 0.30	835	0.308	< 1.0
2022-09-06	FS_INF-K																					
2022-09-06	FS_INF-K																					
2022-09-06	FR_FRABCH																					
2022-09-06	FS_INF-K																					
2022-09-06	FS_INF-K																					
2022-09-06	FS_INF-K																					
2022-09-07	FS_INF-K																					
2022-09-07	FS_INF-K																					
2022-09-07	FS_BPO						2252						17.4							1630		26.9
2022-09-07	FS_INF-K						2408						3.6							1770		1.4
2022-09-07	FS_INF-S						3378						9							2830		4.8
2022-09-07	FS_INF-K																					
2022-09-07	FS_INF-K																					
2022-09-07	FS_INF-K																					
2022-09-07	FS_BPO						2234						18.4									
2022-09-07	FS_INF-K																					
2022-09-07	FS_INF-K																					
2022-09-08	FS_INF-K																					
2022-09-08	FS_INF-S																					
2022-09-08	FS_INF-K																					
2022-09-08	FS_INF-S																					
2022-09-08	FS_BPO	< 0.010	< 0.010				2183						17.1							1570		35.9

Parameter		Selenosulfate, SeSO3	SeMe – selenomethionine CH3SeCH2CH2CH(NH2)CO2H	Silver	Silver	Sodium	Specific conductivity, temperature corrected value (25 C)	Specific conductivity, temperature corrected value (25 C)	Strontium	Strontium	SULFIDE (as S)	Sulphate (As SO4)	Temperature, Field	Thallium	Thallium	Tin	Tin	Titanium	Titanium	Total Dissolved Solids (Residue, Filterable)	Total Kjeldahl Nitrogen	Total Suspended Solids, Lab
Fraction		D	D	D	T	T	N	N	D	T	T	D	N	D	T	D	T	D	T	N	N	N
Unit		ug/l	ug/l	mg/l	mg/l	mg/l	us/cm	uS/cm at 25 C	mg/l	mg/l	mg/l	mg/l	deg c	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-09-08	FS_INF-K						2366						3.9							1610		5.5
2022-09-08	FS_INF-S						3327						9							2840		2.8
2022-09-08	FR_SCOUTDS	< 0.010	< 0.010	< 0.010	< 0.010	3.06	1252		0.184	0.171	< 0.0015	458	9.6	0.014	0.012	< 0.00010	< 0.00010	< 0.30	< 0.30	942	0.126	2.1
2022-09-08	FS_INF-K																					
2022-09-08	FS_INF-S																					
2022-09-08	FS_INF-K																					
2022-09-08	FS_INF-S																					
2022-09-08	FS_INF-K																					
2022-09-08	FS_INF-S																					
2022-09-08	FS_INF-K																					
2022-09-08	FS_INF-S																					
2022-09-08	FS_INF-K																					
2022-09-08	FS_INF-S																					
2022-09-09	FS_INF-K																					
2022-09-09	FS_INF-S																					
2022-09-09	FS_BPO						2462						16.8							1880		6.5
2022-09-09	FS_INF-K						2392						3.6							1800		< 1.0
2022-09-09	FS_INF-S						3326						8.5							2860		4.9
2022-09-09	FS_INF-K																					
2022-09-09	FS_INF-S																					
2022-09-09	FS_INF-K																					
2022-09-09	FS_INF-S																					
2022-09-09	FS_INF-K																					
2022-09-09	FS_INF-S																					
2022-09-09	FS_INF-K																					
2022-09-09	FS_INF-S																					
2022-09-09	FS_INF-K																					
2022-09-09	FS_INF-S																					
2022-09-10	FS_INF-K																					
2022-09-10	FS_INF-S																					
2022-09-10	FS_INF-K																					
2022-09-10	FS_INF-S																					
2022-09-10	FS_BPO						2718						16.5							2220		3.6
2022-09-10	FS_INF-K						2402						3.7							1880		1.3
2022-09-10	FS_INF-S						3330						7.9							2930		2.1
2022-09-10	FS_INF-K																					
2022-09-10	FS_INF-S																					
2022-09-10	FS_INF-K																					
2022-09-10	FS_INF-S																					
2022-09-10	FS_INF-K																					
2022-09-10	FS_INF-S																					
2022-09-10	FS_INF-K																					
2022-09-10	FS_INF-S																					
2022-09-11	FS_INF-K																					
2022-09-11	FS_INF-S																					
2022-09-11	FS_INF-K																					
2022-09-11	FS_INF-S																					
2022-09-11	FS_BPO	< 0.010	< 0.010				2829						17							2330		8.0
2022-09-11	FS_INF-K						2411						3.9							1820		1.7
2022-09-11	FS_INF-S						3335						8							2880		3.8
2022-09-11	FS_INF-K																					
2022-09-11	FS_INF-S																					
2022-09-11	FS_INF-K																					
2022-09-11	FS_INF-S																					
2022-09-11	FS_INF-K																					
2022-09-11	FS_INF-S																					
2022-09-11	FS_INF-K																					
2022-09-11	FS_INF-S																					
2022-09-12	FS_INF-K																					
2022-09-12	FS_INF-S																					
2022-09-12	FS_INF-K																					
2022-09-12	FS_INF-S																					
2022-09-12	FS_BPO						2867				< 0.0015	1300	17							2270	0.380	2.8
2022-09-12	FS_INF-K						2437					685	3.7							1790	2.94	< 1.0
2022-09-12	FS_INF-S						3335					1670	8							2840	3.34	3.2
2022-09-12	FS_BPO																					
2022-09-12	FS_INF-K																					
2022-09-12	FS_INF-S																					
2022-09-12	FS_INF-K																					
2022-09-12	FS_INF-S																					
2022-09-12	FS_INF-K																					
2022-09-12	FS_INF-S																					
2022-09-12	FS_INF-K																					
2022-09-12	FS_INF-S																					
2022-09-12	FS_INF-K																					
2022-09-13	FS_INF-K																					
2022-09-13	FS_INF-S																					
2022-09-13	FS_INF-K																					
2022-09-13	FS_INF-S																					
2022-09-13	FS_BPO	< 0.010	< 0.010	< 0.020	< 0.010	25.3	2818		0.274	0.277			17.3	< 0.020	< 0.010	< 0.00020	< 0.00010	< 0.60	< 0.30	2180		2.3
2022-09-13	FS_INF-K	< 0.010	< 0.010	< 0.010	< 0.020	11.2	2429		0.299	0.315			3.8	0.035	0.038	< 0.00010	< 0.00020	< 0.30	< 0.60	1830		1.3

	Parameter	Selenosulfate, SeSO3	SeMe – selenomethionine CH3SeCH2CH2CH(NH2)CO2H	Silver	Silver	Sodium	Specific conductivity, temperature corrected value (25 C)	Specific conductivity, temperature corrected value (25 C)	Strontium	Strontium	SULFIDE (as S)	Sulphate (As SO4)	Temperature, Field	Thallium	Thallium	Tin	Tin	Titanium	Titanium	Total Dissolved Solids (Residue, Filterable)	Total Kjeldahl Nitrogen	Total Suspended Solids, Lab
	Fraction	D	D	D	T	T	N	N	D	T	T	D	N	D	T	D	T	D	T	N	N	N
	Unit	ug/l	ug/l	mg/l	mg/l	mg/l	us/cm	uS/cm at 25 C	mg/l	mg/l	mg/l	mg/l	deg c	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-09-13	FS_INF-S	< 0.010	< 0.010	< 0.010	< 0.020	2.60	3336		0.242	0.255			8	0.054	0.071	< 0.00010	< 0.00020	< 0.30	< 0.60	2860		4.4
2022-09-13	FR_FRABCH			< 0.010	< 0.010	3.78	1169 1164		0.183	0.177		324	11.2 7.5	< 0.010	< 0.010	< 0.00010	< 0.00010	< 0.30	< 0.30	797	0.414	< 1.0
2022-09-13	FS_INF-K																					
2022-09-13	FS_INF-S																					
2022-09-13	FS_INF-K																					
2022-09-13	FS_INF-S																					
2022-09-13	FS_INF-K																					
2022-09-13	FS_INF-S																					
2022-09-13	FR_FRABCH			< 0.010	< 0.010	3.88	1164.00		0.167	0.173		328	7.50	< 0.010	< 0.010	< 0.00010	< 0.00010	< 0.30	< 0.30	878	0.073	< 1.0
2022-09-13	FS_INF-K																					
2022-09-13	FS_INF-S																					
2022-09-13	FS_INF-K																					
2022-09-13	FS_INF-S																					
2022-09-14	FS_INF-K																					
2022-09-14	FS_INF-S																					
2022-09-14	FS_INF-K																					
2022-09-14	FS_INF-S																					
2022-09-14	FS_BPO						2779						17.2							2220		4.2
2022-09-14	FS_INF-K						2449						3.7							1990		1.1
2022-09-14	FS_INF-S						3333						7.9							2900		2.6
2022-09-14	FS_BPO																					
2022-09-14	FS_INF-K																					
2022-09-14	FS_INF-S																					
2022-09-14	FS_INF-K																					
2022-09-14	FS_INF-S																					
2022-09-14	FS_INF-K																					
2022-09-14	FS_INF-S																					
2022-09-14	FS_INF-K																					
2022-09-14	FS_INF-S																					
2022-09-15	FS_INF-K																					
2022-09-15	FS_INF-S																					
2022-09-15	FS_INF-K																					
2022-09-15	FS_INF-S																					
2022-09-15	FS_INF-K																					
2022-09-15	FS_INF-S																					
2022-09-15	FS_BPO						2761						13.8							2260		2.0
2022-09-15	FS_INF-K						2449						3.9							1900		1.3
2022-09-15	FS_INF-S						3326						8.1							2930		1.4
2022-09-15	FR_SCOUTDS	< 0.010	< 0.010	< 0.010	< 0.010	5.59	1182		0.190	0.182	< 0.0015	381	9	< 0.010	< 0.010	< 0.00010	< 0.00010	< 0.30	< 0.30	875	< 0.050	2.3
2022-09-15	FS_INF-K																					
2022-09-15	FS_INF-S																					
2022-09-15	FS_INF-K																					
2022-09-15	FS_INF-S																					
2022-09-15	FS_INF-K																					
2022-09-15	FS_INF-S																					
2022-09-15	FS_INF-K																					
2022-09-15	FS_INF-S																					
2022-09-15	FS_INF-K																					
2022-09-15	FS_INF-S																					
2022-09-16	FS_INF-K																					
2022-09-16	FS_INF-S																					
2022-09-16	FS_INF-K																					
2022-09-16	FS_INF-S																					
2022-09-16	FS_BPO						2760						17.2							2360		< 1.0
2022-09-16	FS_INF-K						2455						3.8							1890		1.1
2022-09-16	FS_INF-S						3325						7.7							3060		2.5
2022-09-16	FS_INF-K																					
2022-09-16	FS_INF-S																					
2022-09-16	FS_INF-K																					
2022-09-16	FS_INF-S																					
2022-09-16	FS_INF-K																					
2022-09-16	FS_INF-S																					
2022-09-16	FS_INF-K																					
2022-09-16	FS_INF-S																					
2022-09-17	FS_INF-K																					
2022-09-17	FS_INF-S																					
2022-09-17	FS_INF-K																					
2022-09-17	FS_INF-S																					
2022-09-17	FS_BPO						2750						17.3							2350		3.8
2022-09-17	FS_INF-K						2464						3.8							2150		2.3
2022-09-17	FS_INF-S						3329						7.9							3220		3.0
2022-09-17	FS_INF-K																					
2022-09-17	FS_INF-S																					
2022-09-17	FS_INF-K																					
2022-09-17	FS_INF-S																					
2022-09-17	FS_INF-K																					
2022-09-17	FS_INF-S																					
2022-09-17	FS_INF-K																					
2022-09-17	FS_INF-S																					
2022-09-17	FS_INF-K																					
2022-09-17	FS_INF-S																					
2022-09-18	FS_INF-K																					
2022-09-18	FS_INF-S																					
2022-09-18	FS_INF-K																					

Parameter		Selenosulfate, SeSO3	SeMe – selenomethionine CH3SeCH2CH2CH(NH2)CO2H	Silver	Silver	Sodium	Specific conductivity, temperature corrected value (25 C)	Specific conductivity, temperature corrected value (25 C)	Strontium	Strontium	SULFIDE (as S)	Sulphate (As SO4)	Temperature, Field	Thallium	Thallium	Tin	Tin	Titanium	Titanium	Total Dissolved Solids (Residue, Filterable)	Total Kjeldahl Nitrogen	Total Suspended Solids, Lab
Fraction		D	D	D	T	T	N	N	D	T	T	D	N	D	T	D	T	D	T	N	N	N
Unit		ug/l	ug/l	mg/l	mg/l	mg/l	us/cm	uS/cm at 25 C	mg/l	mg/l	mg/l	mg/l	deg c	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-09-18	FS_INF-S																					
2022-09-18	FS_BPO	< 0.010	< 0.010				2695						17							2190		< 1.0
2022-09-18	FS_INF-K						2425						3.5							1900		< 1.0
2022-09-18	FS_INF-S						3276						7.2							2940		1.3
2022-09-18	FS_INF-K																					
2022-09-18	FS_INF-S																					
2022-09-18	FS_INF-K																					
2022-09-18	FS_INF-S																					
2022-09-18	FS_INF-K																					
2022-09-18	FS_INF-S																					
2022-09-18	FS_INF-K																					
2022-09-18	FS_INF-S																					
2022-09-19	FS_INF-K																					
2022-09-19	FS_INF-S																					
2022-09-19	FS_INF-K																					
2022-09-19	FS_INF-S																					
2022-09-19	FS_BPO						2696				< 0.0015	1210	16.7							2290	0.416	3.3
2022-09-19	FS_INF-K						2433					728	3.5							2120	2.38	< 1.0
2022-09-19	FS_INF-S						3278					1730	7.3							2980	2.59	2.7
2022-09-19	FS_BPO																					
2022-09-19	FS_INF-K																					
2022-09-19	FS_INF-S																					
2022-09-19	FS_INF-K																					
2022-09-19	FS_INF-S																					
2022-09-19	FS_INF-K																					
2022-09-19	FS_INF-S																					
2022-09-19	FS_INF-K																					
2022-09-19	FS_INF-S																					
2022-09-19	FS_BPO						2731						18.4									
2022-09-19	FS_INF-K																					
2022-09-19	FS_INF-S																					
2022-09-20	FS_INF-K																					
2022-09-20	FS_INF-S																					
2022-09-20	FS_INF-K																					
2022-09-20	FS_INF-S																					
2022-09-20	FS_BPO	< 0.010	< 0.010	< 0.020	< 0.020	24.9	2700		0.275	0.286			15.9	< 0.020	< 0.020	< 0.00020	< 0.00020	< 0.60	< 0.60	2270		2.8
2022-09-20	FS_INF-K			< 0.010	< 0.020	10.9	2440		0.311	0.305			4.4	0.044	0.038	< 0.00010	< 0.00020	< 0.30	< 0.60	1980		2.2
2022-09-20	FS_INF-S			< 0.020	< 0.020	2.14	3289		0.237	0.192			7.2	0.066	0.051	< 0.00020	< 0.00020	< 0.60	< 0.60	2950		2.4
2022-09-20	FS_BPO						2688						16.6									
2022-09-20	FS_INF-K																					
2022-09-20	FS_INF-S																					
2022-09-20	FS_BPO						2686						17									
2022-09-20	FS_INF-K																					
2022-09-20	FS_INF-S																					
2022-09-20	FS_BPO						2684						16.9									
2022-09-20	FS_INF-K																					
2022-09-20	FS_INF-S																					
2022-09-20	FS_BPO						2688						16.8									
2022-09-20	FS_INF-K																					
2022-09-20	FS_INF-S																					
2022-09-21	FS_BPO						2727						16.5									
2022-09-21	FS_INF-K																					
2022-09-21	FS_INF-S																					
2022-09-21	FS_BPO						2737						16.5									
2022-09-21	FS_INF-K																					
2022-09-21	FS_INF-S																					
2022-09-21	FS_BPO						2726						16.2							2370		2.8
2022-09-21	FS_INF-K						2478						3.3							1780		2.9
2022-09-21	FS_INF-S						3332						6.8							2770		3.4
2022-09-21	FS_BPO																					
2022-09-21	FS_BPO						2732						16.7									
2022-09-21	FS_INF-K																					
2022-09-21	FS_INF-S																					
2022-09-21	FS_BPO						2738						16.9									
2022-09-21	FS_INF-K																					
2022-09-21	FS_INF-S																					
2022-09-21	FS_BPO						2743						17.6									
2022-09-21	FS_INF-K																					
2022-09-21	FS_INF-S																					
2022-09-21	FS_INF-K																					
2022-09-21	FS_INF-S																					
2022-09-22	FS_INF-K																					
2022-09-22	FS_INF-S																					
2022-09-22	FS_INF-K																					
2022-09-22	FS_INF-S																					
2022-09-22	FS_BPO	< 0.010	< 0.010				2731						16.7							2050		6.4
2022-09-22	FS_INF-K						2443						3.8							1740		2.1
2022-09-22	FS_INF-S						3336						7.1							2830		3.2
2022-09-22	FR_SCOUTDS																					
2022-09-22	FS_INF-K																					

Parameter		Selenosulfate, SeSO3	SeMe – selenomethionine CH3SeCH2CH2CH(NH2)CO2H	Silver	Silver	Sodium	Specific conductivity, temperature corrected value (25 C)	Specific conductivity, temperature corrected value (25 C)	Strontium	Strontium	SULFIDE (as S)	Sulphate (As SO4)	Temperature, Field	Thallium	Thallium	Tin	Tin	Titanium	Titanium	Total Dissolved Solids (Residue, Filterable)	Total Kjeldahl Nitrogen	Total Suspended Solids, Lab
Fraction		D	D	D	T	T	N	N	D	T	T	D	N	D	T	D	T	D	T	N	N	N
Unit		ug/l	ug/l	mg/l	mg/l	mg/l	us/cm	uS/cm at 25 C	mg/l	mg/l	mg/l	mg/l	deg c	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-09-22	FS_INF-S																					
2022-09-22	FS_INF-K																					
2022-09-22	FS_INF-S																					
2022-09-22	FS_INF-K																					
2022-09-22	FS_INF-S																					
2022-09-22	FS_INF-K																					
2022-09-22	FS_INF-S																					
2022-09-22	FS_INF-K																					
2022-09-22	FS_INF-S																					
2022-09-23	FR_SCOUTDS	< 0.010	< 0.010	< 0.010	< 0.010	4.50	1327		0.214	0.197	< 0.0015	445	8	0.019	0.010	< 0.00010	< 0.00010	< 0.30	< 0.30	948	< 0.050	2.1
2022-09-23	FS_INF-K																					
2022-09-23	FS_INF-S																					
2022-09-23	FS_INF-K																					
2022-09-23	FS_INF-S																					
2022-09-23	FS_BPO						2730						16.9							2260		3.8
2022-09-23	FS_INF-K						2499						3.8							1940		1.9
2022-09-23	FS_INF-S						3314						7							3070		3.8
2022-09-23	FS_INF-K																					
2022-09-23	FS_INF-S																					
2022-09-23	FS_INF-K																					
2022-09-23	FS_INF-S																					
2022-09-23	FS_INF-K																					
2022-09-23	FS_INF-S																					
2022-09-23	FS_INF-K																					
2022-09-23	FS_INF-S																					
2022-09-23	FS_INF-K																					
2022-09-23	FS_INF-S																					
2022-09-24	FS_INF-K																					
2022-09-24	FS_INF-S																					
2022-09-24	FS_INF-K																					
2022-09-24	FS_INF-S																					
2022-09-24	FS_BPO						2747						17.2							2210		2.8
2022-09-24	FS_INF-K						2513						3.9							1930		1.1
2022-09-24	FS_INF-S						3349						6.9							2890		2.7
2022-09-24	FS_INF-K																					
2022-09-24	FS_INF-S																					
2022-09-24	FS_INF-K																					
2022-09-24	FS_INF-S																					
2022-09-24	FS_INF-K																					
2022-09-24	FS_INF-S																					
2022-09-24	FS_INF-K																					
2022-09-24	FS_INF-S																					
2022-09-25	FS_INF-K																					
2022-09-25	FS_INF-S																					
2022-09-25	FS_INF-K																					
2022-09-25	FS_INF-S																					
2022-09-25	FS_BPO	< 0.010	< 0.010				2777						17.2							2310		3.7
2022-09-25	FS_INF-K						2562						4.7							2020		< 1.0
2022-09-25	FS_INF-S						3358						7.3							3060		1.4
2022-09-25	FS_INF-K																					
2022-09-25	FS_INF-S																					
2022-09-25	FS_INF-K																					
2022-09-25	FS_INF-S																					
2022-09-25	FS_INF-K																					
2022-09-25	FS_INF-S																					
2022-09-25	FS_INF-K																					
2022-09-25	FS_INF-S																					
2022-09-25	FS_INF-K																					
2022-09-25	FS_INF-S																					
2022-09-26	FS_INF-K																					
2022-09-26	FS_INF-S																					
2022-09-26	FS_INF-K																					
2022-09-26	FS_INF-S																					
2022-09-26	FS_BPO						2781				< 0.0015	1190	17.3							2270	0.508	5.5
2022-09-26	FS_INF-K						2529					758	3.8							1980	< 0.050	1.1
2022-09-26	FS_INF-S						3361					1750	7.4							2970	< 0.050	3.0
2022-09-26	FS_BPO																					
2022-09-26	FS_INF-K																					
2022-09-26	FS_INF-S																					
2022-09-26	FS_INF-K																					
2022-09-26	FS_INF-S																					
2022-09-26	FS_INF-K																					
2022-09-26	FS_INF-S																					
2022-09-26	FS_INF-K																					
2022-09-26	FS_INF-S																					
2022-09-27	FS_INF-K																					
2022-09-27	FS_INF-S																					
2022-09-27	FS_INF-K																					
2022-09-27	FS_INF-S																					

	Parameter	Selenosulfate, SeSO3	SeMe – selenomethionine CH3SeCH2CH2CH(NH2)CO2H	Silver	Silver	Sodium	Specific conductivity, temperature corrected value (25 C)	Specific conductivity, temperature corrected value (25 C)	Strontium	Strontium	SULFIDE (as S)	Sulphate (As SO4)	Temperature, Field	Thallium	Thallium	Tin	Tin	Titanium	Titanium	Total Dissolved Solids (Residue, Filterable)	Total Kjeldahl Nitrogen	Total Suspended Solids, Lab
	Fraction	D	D	D	T	T	N	N	D	T	T	D	N	D	T	D	T	D	T	N	N	N
	Unit	ug/l	ug/l	mg/l	mg/l	mg/l	us/cm	uS/cm at 25 C	mg/l	mg/l	mg/l	mg/l	deg c	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-09-27	FS_BPO	< 0.010	< 0.010	< 0.010	< 0.020	27.6	2776		0.270	0.294			17.7	< 0.010	< 0.020	< 0.00010	< 0.00020	< 0.30	< 0.60	2090		6.1
2022-09-27	FS_INF-K	< 0.010	< 0.010	< 0.020	< 0.020	11.2	2544		0.328	0.295			3.9	0.042	0.036	< 0.00020	< 0.00020	< 0.60	< 0.60	2080		1.3
2022-09-27	FS_INF-S	< 0.010	< 0.010	< 0.020	< 0.020	2.90	2976		0.237	0.258			5.7	0.068	0.074	< 0.00020	< 0.00020	< 0.60	< 0.60	2970		4.4
2022-09-27	FS_INF-K																					
2022-09-27	FS_INF-S																					
2022-09-27	FS_INF-K																					
2022-09-27	FS_INF-S																					
2022-09-27	FS_INF-K																					
2022-09-27	FS_INF-S																					
2022-09-27	FS_INF-K																					
2022-09-27	FS_INF-S																					
2022-09-27	FS_INF-K																					
2022-09-27	FS_INF-S																					
2022-09-28	FS_INF-K																					
2022-09-28	FS_INF-S																					
2022-09-28	FS_BPO						2789						17.4							2460		3.3
2022-09-28	FS_INF-K						2555						3.6							2070		2.1
2022-09-28	FS_INF-S						3311						7.4							2950		3.0
2022-09-28	FS_INF-K																					
2022-09-28	FS_INF-S																					
2022-09-28	FS_INF-K																					
2022-09-28	FS_INF-S																					
2022-09-28	FS_INF-K																					
2022-09-28	FS_INF-S																					
2022-09-28	FS_INF-K																					
2022-09-28	FS_INF-S																					
2022-09-29	FS_INF-K																					
2022-09-29	FS_INF-S																					
2022-09-29	FS_INF-K																					
2022-09-29	FS_INF-S																					
2022-09-29	FS_BPO	< 0.010	< 0.010				2843						17.2							2280		3.8
2022-09-29	FS_INF-K						2565						4.5							1830		1.3
2022-09-29	FS_INF-S						3380						8.3							3160		3.3
2022-09-29	FR_SCOUTDS	< 0.010	< 0.010	< 0.010	< 0.010	3.68	1333		0.220	0.209	< 0.0015	558	9.1	0.017	0.014	< 0.00010	< 0.00010	< 0.30	< 0.30	978	< 0.050	2.4
2022-09-29	FS_BPO						2854						17									
2022-09-29	FS_BPO						2843						17									
2022-09-29	FS_INF-K																					
2022-09-29	FS_INF-S																					
2022-09-29	FS_BPO						2855						17.2									
2022-09-29	FS_INF-K																					
2022-09-29	FS_INF-S																					
2022-09-29	FS_INF-K																					
2022-09-29	FS_INF-S																					
2022-09-29	FS_BPO						2887						17.1									
2022-09-29	FS_INF-K																					
2022-09-29	FS_INF-S																					
2022-09-29	FS_INF-K																					
2022-09-29	FS_INF-S																					
2022-09-30	FS_BPO						2897 2858						17									
2022-09-30	FS_INF-K																					
2022-09-30	FS_INF-S																					
2022-09-30	FS_INF-K																					
2022-09-30	FS_INF-S																					
2022-09-30	FS_BPO						2917						16.7							2430		1.4
2022-09-30	FS_INF-K						2578						3.9							2020		< 1.0
2022-09-30	FS_INF-S						3378						8.2							3000		< 1.0
2022-09-30	FS_INF-K																					
2022-09-30	FS_INF-S																					
2022-09-30	FS_INF-K																					
2022-09-30	FS_INF-S																					
2022-09-30	FS_INF-K																					
2022-09-30	FS_INF-S																					
2022-09-30	FS_INF-K																					
2022-09-30	FS_INF-S																					
2022-09-30	FS_INF-K																					
2022-09-30	FS_INF-S																					
2022-10-01	FS_INF-K																					
2022-10-01	FS_INF-S																					
2022-10-01	FS_INF-K																					
2022-10-01	FS_INF-S																					
2022-10-01	FS_BPO						3017						16.3							2620		1.5
2022-10-01	FS_INF-K						2589						3.6							2080		1.2
2022-10-01	FS_INF-S						3380						7.5							3020		< 1.0
2022-10-01	FS_INF-K																					
2022-10-01	FS_INF-S																					
2022-10-01	FS_INF-K																					
2022-10-01	FS_INF-S																					
2022-10-01	FS_INF-K																					
2022-10-01	FS_INF-S																					
2022-10-01	FS_INF-K																					
2022-10-01	FS_INF-S																					
2022-10-01	FS_INF-K																					
2022-10-01	FS_INF-S																					

Parameter		Selenosulfate, SeSO3	SeMe – selenomethionine CH3SeCH2CH2CH(NH2)CO2H	Silver	Silver	Sodium	Specific conductivity, temperature corrected value (25 C)	Specific conductivity, temperature corrected value (25 C)	Strontium	Strontium	SULFIDE (as S)	Sulphate (As SO4)	Temperature, Field	Thallium	Thallium	Tin	Tin	Titanium	Titanium	Total Dissolved Solids (Residue, Filterable)	Total Kjeldahl Nitrogen	Total Suspended Solids, Lab
Fraction		D	D	D	T	T	N	N	D	T	T	D	N	D	T	D	T	D	T	N	N	N
Unit		ug/l	ug/l	mg/l	mg/l	mg/l	us/cm	uS/cm at 25 C	mg/l	mg/l	mg/l	mg/l	deg c	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-10-02	FS_INF-K																					
2022-10-02	FS_INF-S																					
2022-10-02	FS_INF-K																					
2022-10-02	FS_INF-S																					
2022-10-02	FS_BPO	< 0.010	< 0.010				3043						16.3							2790		3.8
2022-10-02	FS_INF-K						2608						3.6							2000		2.4
2022-10-02	FS_INF-S						3392						7.5							2990		2.9
2022-10-02	FS_INF-K																					
2022-10-02	FS_INF-S																					
2022-10-02	FS_INF-K																					
2022-10-02	FS_INF-S																					
2022-10-02	FS_INF-K																					
2022-10-02	FS_INF-S																					
2022-10-02	FS_INF-K																					
2022-10-02	FS_INF-S																					
2022-10-02	FS_INF-K																					
2022-10-02	FS_INF-S																					
2022-10-03	FS_INF-K																					
2022-10-03	FS_INF-S																					
2022-10-03	FS_INF-K																					
2022-10-03	FS_INF-S																					
2022-10-03	FS_BPO						3092				< 0.0015	1560	16.2							2670	0.523	4.5
2022-10-03	FS_INF-K						2614					794	3.6							2010	1.90	1.4
2022-10-03	FS_INF-S						3401					1750	7.5							3040	1.31	3.8
2022-10-03	FS_BPO																					
2022-10-03	FS_INF-K																					
2022-10-03	FS_INF-S																					
2022-10-03	FS_INF-K																					
2022-10-03	FS_INF-S																					
2022-10-03	FS_INF-K																					
2022-10-03	FS_INF-S																					
2022-10-03	FS_INF-K																					
2022-10-03	FS_INF-S																					
2022-10-03	FS_INF-K																					
2022-10-03	FS_INF-S																					
2022-10-03	FS_INF-K																					
2022-10-03	FS_INF-S																					
2022-10-04	FS_INF-K																					
2022-10-04	FS_INF-S																					
2022-10-04	FS_INF-K																					
2022-10-04	FS_INF-S																					
2022-10-04	FS_BPO	< 0.010	< 0.010	< 0.020	< 0.020	22.4	3125		0.251	0.243			16.3	< 0.020	< 0.020	< 0.00020	< 0.00020	< 0.60	< 0.60	2660		3.7
2022-10-04	FS_INF-K	< 0.010	< 0.010	< 0.020	< 0.020	12.1	2632		0.339	0.323			3.8	0.044	0.037	< 0.00020	< 0.00020	< 0.60	< 0.60	2040		< 1.0
2022-10-04	FS_INF-S	< 0.010	< 0.010	< 0.020	< 0.020	2.45	3431		0.258	0.248			7.5	0.064	0.061	< 0.00020	< 0.00020	< 0.60	< 0.60	2990		3.2
2022-10-04	FS_BPO																					
2022-10-04	FS_INF-K																					
2022-10-04	FS_INF-S																					
2022-10-04	FS_INF-K																					
2022-10-04	FS_INF-S																					
2022-10-04	FS_INF-K																					
2022-10-04	FS_INF-S																					
2022-10-04	FS_INF-K																					
2022-10-04	FS_INF-S																					
2022-10-05	FS_INF-K																					
2022-10-05	FS_INF-S																					
2022-10-05	FS_INF-K																					
2022-10-05	FS_INF-S																					
2022-10-05	FS_BPO						3134						16.4							2850		1.8
2022-10-05	FS_INF-K						2626						3.8							2290		< 1.0
2022-10-05	FS_INF-S						3415						7.5							3270		< 1.0
2022-10-05	FS_INF-K																					
2022-10-05	FS_INF-S																					
2022-10-05	FS_INF-K																					
2022-10-05	FS_INF-S																					
2022-10-05	FS_INF-K																					
2022-10-05	FS_INF-S																					
2022-10-05	FS_INF-K																					
2022-10-05	FS_INF-S																					
2022-10-05	FS_INF-K																					
2022-10-05	FS_INF-S																					
2022-10-06	FS_INF-K																					
2022-10-06	FS_INF-S																					
2022-10-06	FS_INF-K																					
2022-10-06	FS_INF-S																					
2022-10-06	FS_BPO	< 0.010	< 0.010				3150						16.3							2680		5.1
2022-10-06	FS_INF-K						2632						3.6							2140		1.4
2022-10-06	FS_INF-S						3422						7.2							3000		2.9
2022-10-06	FR_SCOUTDS	< 0.010	< 0.010	< 0.010	< 0.010	6.18	1399		0.208	0.233	< 0.0015	496	6.6	< 0.010	< 0.010	< 0.00010	< 0.00010	< 0.30	< 0.30	1050	< 0.050	2.3
2022-10-06	FS_INF-K																					
2022-10-06	FS_INF-S																					
2022-10-06	FS_INF-K																					
2022-10-06	FS_INF-S																					
2022-10-06	FS_INF-K																					
2022-10-06	FS_INF-S																					

Parameter		Selenosulfate, SeSO3	SeMe – selenomethionine CH3SeCH2CH2CH(NH2)CO2H	Silver	Silver	Sodium	Specific conductivity, temperature corrected value (25 C)	Specific conductivity, temperature corrected value (25 C)	Strontium	Strontium	SULFIDE (as S)	Sulphate (As SO4)	Temperature, Field	Thallium	Thallium	Tin	Tin	Titanium	Titanium	Total Dissolved Solids (Residue, Filterable)	Total Kjeldahl Nitrogen	Total Suspended Solids, Lab
Fraction		D	D	D	T	T	N	N	D	T	T	D	N	D	T	D	T	D	T	N	N	N
Unit		ug/l	ug/l	mg/l	mg/l	mg/l	us/cm	uS/cm at 25 C	mg/l	mg/l	mg/l	mg/l	deg c	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-10-06	FS_INF-K																					
2022-10-06	FS_INF-S																					
2022-10-06	FS_INF-K																					
2022-10-06	FS_INF-S																					
2022-10-07	FS_INF-K																					
2022-10-07	FS_INF-S																					
2022-10-07	FS_INF-K																					
2022-10-07	FS_INF-S																					
2022-10-07	FS_BPO						3150						16.3							2610		5.0
2022-10-07	FS_INF-K						2644						3.6							1900		2.0
2022-10-07	FS_INF-S						3357						7.2							2970		5.7
2022-10-07	FS_INF-K																					
2022-10-07	FS_INF-S																					
2022-10-07	FS_INF-K																					
2022-10-07	FS_INF-S																					
2022-10-07	FS_INF-K																					
2022-10-07	FS_INF-S																					
2022-10-07	FS_INF-K																					
2022-10-07	FS_INF-S																					
2022-10-08	FS_INF-K																					
2022-10-08	FS_INF-S																					
2022-10-08	FS_INF-K																					
2022-10-08	FS_INF-S																					
2022-10-08	FS_BPO						3114						16.5							2540		3.8
2022-10-08	FS_INF-K						2656						3.6							1890		1.2
2022-10-08	FS_INF-S						3432						7.1							2910		4.8
2022-10-08	FS_INF-K																					
2022-10-08	FS_INF-S																					
2022-10-08	FS_INF-K																					
2022-10-08	FS_INF-S																					
2022-10-08	FS_INF-K																					
2022-10-08	FS_INF-S																					
2022-10-09	FS_INF-K																					
2022-10-09	FS_INF-S																					
2022-10-09	FS_INF-K																					
2022-10-09	FS_INF-S																					
2022-10-09	FS_BPO	< 0.010	< 0.010				3062						16.5							2750		< 1.0
2022-10-09	FS_INF-K						2664						3.5							2200		< 1.0
2022-10-09	FS_INF-S						3438						6.8							3060		< 1.0
2022-10-09	FS_INF-K																					
2022-10-09	FS_INF-S																					
2022-10-09	FS_INF-K																					
2022-10-09	FS_INF-S																					
2022-10-09	FS_INF-K																					
2022-10-09	FS_INF-S																					
2022-10-09	FS_INF-K																					
2022-10-09	FS_INF-S																					
2022-10-09	FS_INF-K																					
2022-10-09	FS_INF-S																					
2022-10-10	FS_INF-K																					
2022-10-10	FS_INF-S																					
2022-10-10	FS_INF-K																					
2022-10-10	FS_INF-S																					
2022-10-10	FS_BPO						3001				< 0.0015	1350	16.5							2540	0.439	3.0
2022-10-10	FS_INF-K						2677					856	3.5							2170	2.30	1.6
2022-10-10	FS_INF-S						3312					1790	6.5							3190	3.15	3.2
2022-10-10	FS_BPO																					
2022-10-10	FS_INF-K																					
2022-10-10	FS_INF-S																					
2022-10-10	FS_INF-K																					
2022-10-10	FS_INF-S																					
2022-10-10	FS_INF-K																					
2022-10-10	FS_INF-S																					
2022-10-10	FS_INF-K																					
2022-10-10	FS_INF-S																					
2022-10-10	FS_INF-K																					
2022-10-10	FS_INF-S																					
2022-10-11	FS_INF-K																					
2022-10-11	FS_INF-S																					
2022-10-11	FS_INF-K																					
2022-10-11	FS_INF-S																					
2022-10-11	FS_BPO	< 0.010	< 0.010	< 0.020	< 0.020	28.0	2930		0.318	0.295			16.4	< 0.020	< 0.020	< 0.00020	< 0.00020	< 0.60	< 0.60	2380		3.1
2022-10-11	FS_INF-K	< 0.010	< 0.010	< 0.020	< 0.020	11.2	2688		0.348	0.327			3.6	0.038	0.043	< 0.00020	< 0.00020	< 0.60	< 0.60	2070		2.2
2022-10-11	FS_INF-S	< 0.010	< 0.010	< 0.020	< 0.020	2.54	3445		0.274	0.278			6.5	0.065	0.069	0.00020	< 0.00020	< 0.60	< 0.60	3240		2.6
2022-10-11	FS_INF-K																					
2022-10-11	FS_INF-S																					
2022-10-11	FR_FRABCH			< 0.010	< 0.010	4.00	1114.00		0.186	0.164		356	5.90	< 0.010	< 0.010	< 0.00010	< 0.00010	< 0.30	< 0.30	828	< 0.050	1.8
2022-10-11	FS_INF-K																					

Parameter		Selenosulfate, SeSO3	SeMe – selenomethionine CH3SeCH2CH2CH(NH2)CO2H	Silver	Silver	Sodium	Specific conductivity, temperature corrected value (25 C)	Specific conductivity, temperature corrected value (25 C)	Strontium	Strontium	SULFIDE (as S)	Sulphate (As SO4)	Temperature, Field	Thallium	Thallium	Tin	Tin	Titanium	Titanium	Total Dissolved Solids (Residue, Filterable)	Total Kjeldahl Nitrogen	Total Suspended Solids, Lab
Fraction		D	D	D	T	T	N	N	D	T	T	D	N	D	T	D	T	D	T	N	N	N
Unit		ug/l	ug/l	mg/l	mg/l	mg/l	us/cm	uS/cm at 25 C	mg/l	mg/l	mg/l	mg/l	deg c	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-10-11	FS_INF-S																					
2022-10-11	FR_FRABCH																					
2022-10-11	FS_INF-K																					
2022-10-11	FS_INF-S																					
2022-10-11	FS_INF-K																					
2022-10-11	FS_INF-S																					
2022-10-11	FS_INF-K																					
2022-10-11	FS_INF-S																					
2022-10-12	FS_INF-K																					
2022-10-12	FS_INF-S																					
2022-10-12	FS_INF-K																					
2022-10-12	FS_INF-S																					
2022-10-12	FS_BPO						2920						16.4							2210		3.8
2022-10-12	FS_INF-K						2691						3.5							1960		2.5
2022-10-12	FS_INF-S						3449						6.3							2960		2.4
2022-10-12	FS_INF-K																					
2022-10-12	FS_INF-S																					
2022-10-12	FS_INF-K																					
2022-10-12	FS_INF-S																					
2022-10-12	FS_INF-K																					
2022-10-12	FS_INF-S																					
2022-10-12	FS_INF-K																					
2022-10-12	FS_INF-S																					
2022-10-12	FS_INF-K																					
2022-10-12	FS_INF-S																					
2022-10-13	FS_INF-K																					
2022-10-13	FS_INF-S																					
2022-10-13	FS_INF-K																					
2022-10-13	FS_INF-S																					
2022-10-13	FS_BPO	< 0.010	< 0.010				2946						16.7							2330		3.6
2022-10-13	FS_INF-K						2696						4							2010		1.9
2022-10-13	FS_INF-S						3457						6.1							3040		5.6
2022-10-13	FR_SCOUTDS	< 0.010	< 0.010	< 0.010	< 0.010	2.93	1375		0.212	0.188	< 0.0015	517	5.7	0.014	0.014	< 0.00010	< 0.00010	< 0.30	0.46	1050	0.415	2.8
2022-10-13	FS_INF-K																					
2022-10-13	FS_INF-S																					
2022-10-13	FS_INF-K																					
2022-10-13	FS_INF-S																					
2022-10-13	FS_INF-K																					
2022-10-13	FS_INF-S																					
2022-10-13	FS_INF-K																					
2022-10-13	FS_INF-S																					
2022-10-14	FS_INF-K																					
2022-10-14	FS_INF-S																					
2022-10-14	FS_INF-K																					
2022-10-14	FS_INF-S																					
2022-10-14	FS_BPO						2961						16.5							2240		2.8
2022-10-14	FS_INF-K						2711						3.5							2140		3.7
2022-10-14	FS_INF-S						3401						5.9							2960		3.1
2022-10-14	FS_INF-K																					
2022-10-14	FS_INF-S																					
2022-10-14	FS_INF-K																					
2022-10-14	FS_INF-S																					
2022-10-14	FS_INF-K																					
2022-10-14	FS_INF-S																					
2022-10-14	FS_INF-K																					
2022-10-14	FS_INF-S																					
2022-10-15	FS_INF-K																					
2022-10-15	FS_INF-S																					
2022-10-15	FS_INF-K																					
2022-10-15	FS_INF-S																					
2022-10-15	FS_BPO						3049						16.4							2350		2.1
2022-10-15	FS_INF-K						2784						3.4							2150		1.5
2022-10-15	FS_INF-S						3549						5.9							3270		4.2
2022-10-15	FS_INF-K																					
2022-10-15	FS_INF-S																					
2022-10-15	FS_INF-K																					
2022-10-15	FS_INF-S																					
2022-10-15	FS_INF-K																					
2022-10-15	FS_INF-S																					
2022-10-15	FS_INF-K																					
2022-10-15	FS_INF-S																					
2022-10-15	FS_INF-K																					
2022-10-15	FS_INF-S																					
2022-10-16	FS_INF-K																					
2022-10-16	FS_INF-S																					
2022-10-16	FS_INF-K																					
2022-10-16	FS_INF-S																					
2022-10-16	FS_BPO						3065						16.5							2460		4.3
2022-10-16	FS_INF-K						2795						3.5							2140		2.3
2022-10-16	FS_INF-S						3555						5.8							3110		1.4

Parameter		Selenosulfate, SeSO3	SeMe – selenomethionine CH3SeCH2CH2CH(NH2)CO2H	Silver	Silver	Sodium	Specific conductivity, temperature corrected value (25 C)	Specific conductivity, temperature corrected value (25 C)	Strontium	Strontium	SULFIDE (as S)	Sulphate (As SO4)	Temperature, Field	Thallium	Thallium	Tin	Tin	Titanium	Titanium	Total Dissolved Solids (Residue, Filterable)	Total Kjeldahl Nitrogen	Total Suspended Solids, Lab
Fraction		D	D	D	T	T	N	N	D	T	T	D	N	D	T	D	T	D	T	N	N	N
Unit		ug/l	ug/l	mg/l	mg/l	mg/l	us/cm	uS/cm at 25 C	mg/l	mg/l	mg/l	mg/l	deg c	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-10-16	FS_INF-K																					
2022-10-16	FS_INF-S																					
2022-10-16	FS_INF-K																					
2022-10-16	FS_INF-S																					
2022-10-16	FS_INF-K																					
2022-10-16	FS_INF-S																					
2022-10-16	FS_INF-K																					
2022-10-16	FS_INF-S																					
2022-10-16	FS_INF-K																					
2022-10-16	FS_INF-S																					
2022-10-17	FS_INF-K																					
2022-10-17	FS_INF-S																					
2022-10-17	FS_INF-K																					
2022-10-17	FS_INF-S																					
2022-10-17	FS_BPO						3010				< 0.0015	1300	16.5							2410	0.389	4.4
2022-10-17	FS_INF-K						2744					854	3.4							2120	1.62	< 1.0
2022-10-17	FS_INF-S						3492					1800	5.7							3090	< 0.500	4.2
2022-10-17	FS_BPO																					
2022-10-17	FS_INF-K																					
2022-10-17	FS_INF-S																					
2022-10-17	FS_INF-K																					
2022-10-17	FS_INF-S																					
2022-10-17	FS_INF-K																					
2022-10-17	FS_INF-S																					
2022-10-17	FS_INF-K																					
2022-10-17	FS_INF-S																					
2022-10-17	FS_INF-K																					
2022-10-17	FS_INF-S																					
2022-10-18	FS_INF-K																					
2022-10-18	FS_INF-S																					
2022-10-18	FS_INF-K																					
2022-10-18	FS_INF-S																					
2022-10-18	FS_BPO	< 0.010	< 0.010	< 0.020	< 0.020	28.8	3000		0.284	0.296			16.6	< 0.020	< 0.020	< 0.00020	< 0.00020	< 0.60	< 0.60	2470		2.8
2022-10-18	FS_INF-K			< 0.020	< 0.020	12.5	2756		0.346	0.437			3.4	0.041	0.050	< 0.00020	< 0.00020	< 0.60	< 0.60	2220		3.7
2022-10-18	FS_INF-S			< 0.020	< 0.020	2.63	3490		0.255	0.289			5.6	0.062	0.069	< 0.00020	< 0.00020	< 0.60	< 0.60	3180		1.7
2022-10-18	FR_FRABCH			< 0.010	< 0.010	4.77	1159.00		0.201	0.209		355	6.20	< 0.010	< 0.010	< 0.00010	< 0.00010	< 0.30	< 0.30	854	1.09	16.4
2022-10-18	FS_INF-K																					
2022-10-18	FS_INF-S																					
2022-10-18	FS_INF-K																					
2022-10-18	FS_INF-S																					
2022-10-18	FS_INF-K																					
2022-10-18	FS_INF-S																					
2022-10-18	FS_INF-K																					
2022-10-18	FS_INF-S																					
2022-10-18	FS_INF-K																					
2022-10-18	FS_INF-S																					
2022-10-19	FS_INF-K																					
2022-10-19	FS_INF-S																					
2022-10-19	FS_INF-K																					
2022-10-19	FS_INF-S																					
2022-10-19	FS_BPO						2997						16.6							2390		1.7
2022-10-19	FS_INF-K						2775						3.6							1990		1.9
2022-10-19	FS_INF-S						3495						5.5							2850		4.1
2022-10-19	FS_INF-K																					
2022-10-19	FS_INF-S																					
2022-10-19	FS_INF-K																					
2022-10-19	FS_INF-S																					
2022-10-19	FS_INF-K																					
2022-10-19	FS_INF-S																					
2022-10-19	FS_INF-K																					
2022-10-19	FS_INF-S																					
2022-10-19	FS_INF-K																					
2022-10-19	FS_INF-S																					
2022-10-20	FS_INF-K																					
2022-10-20	FS_INF-S																					
2022-10-20	FS_BPO						2967						16.5							2430		4.3
2022-10-20	FS_INF-K						2781						3.5							2070		3.1
2022-10-20	FS_INF-S						3385						5.4							3050		1.9
2022-10-20	FS_BPO																					
2022-10-20	FR_SCOUTDS	< 0.010	< 0.010	< 0.010	< 0.010	6.37	1458		0.232	0.231	< 0.0015	493	4.8	0.010	0.023	< 0.00010	< 0.00010	< 0.30	< 0.30	1060	0.376	2.7
2022-10-20	FS_INF-K																					
2022-10-20	FS_INF-S																					
2022-10-20	FS_INF-K																					
2022-10-20	FS_INF-S																					
2022-10-20	FS_INF-K																					
2022-10-20	FS_INF-S																					
2022-10-20	FS_INF-K																					
2022-10-20	FS_INF-S																					
2022-10-20	FS_INF-K																					
2022-10-20	FS_INF-S																					
2022-10-21	FS_INF-K																					
2022-10-21	FS_INF-S																					
2022-10-21	FS_INF-K																					

	Parameter	Selenosulfate, SeSO3	SeMe – selenomethionine CH3SeCH2CH2CH(NH2)CO2H	Silver	Silver	Sodium	Specific conductivity, temperature corrected value (25 C)	Specific conductivity, temperature corrected value (25 C)	Strontium	Strontium	SULFIDE (as S)	Sulphate (As SO4)	Temperature, Field	Thallium	Thallium	Tin	Tin	Titanium	Titanium	Total Dissolved Solids (Residue, Filterable)	Total Kjeldahl Nitrogen	Total Suspended Solids, Lab
	Fraction	D	D	D	T	T	N	N	D	T	T	D	N	D	T	D	T	D	T	N	N	N
	Unit	ug/l	ug/l	mg/l	mg/l	mg/l	us/cm	uS/cm at 25 C	mg/l	mg/l	mg/l	mg/l	deg c	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-10-21	FS_INF-S																					
2022-10-21	FS_BPO						2999						16.7							2120		3.9
2022-10-21	FS_INF-K						2863						3.8							1890		2.7
2022-10-21	FS_INF-S						3549						5.1							2830		1.7
2022-10-21	FS_INF-K																					
2022-10-21	FS_INF-S																					
2022-10-21	FS_INF-K																					
2022-10-21	FS_INF-S																					
2022-10-21	FS_INF-K																					
2022-10-21	FS_INF-S																					
2022-10-21	FS_INF-K																					
2022-10-21	FS_INF-S																					
2022-10-21	FS_INF-K																					
2022-10-21	FS_INF-S																					
2022-10-22	FS_INF-K																					
2022-10-22	FS_INF-S																					
2022-10-22	FS_INF-K																					
2022-10-22	FS_INF-S																					
2022-10-22	FS_BPO						3005						16.3							2460		2.5
2022-10-22	FS_INF-K						2868						3.5							2280		2.6
2022-10-22	FS_INF-S						3544						4.9							3270		2.3
2022-10-22	FS_INF-K																					
2022-10-22	FS_INF-S																					
2022-10-22	FS_INF-K																					
2022-10-22	FS_INF-S																					
2022-10-22	FS_INF-K																					
2022-10-22	FS_INF-S																					
2022-10-22	FS_INF-K																					
2022-10-22	FS_INF-S																					
2022-10-22	FS_INF-K																					
2022-10-22	FS_INF-S																					
2022-10-23	FS_INF-K																					
2022-10-23	FS_INF-S																					
2022-10-23	FS_INF-K																					
2022-10-23	FS_INF-S																					
2022-10-23	FS_BPO	0.012	< 0.010				3012						15.6							2720		2.5
2022-10-23	FS_INF-K						2902						3.4							2140		2.2
2022-10-23	FS_INF-S						3490						4.1							3020		4.8
2022-10-23	FS_INF-K																					
2022-10-23	FS_INF-S																					
2022-10-23	FS_INF-K																					
2022-10-23	FS_INF-S																					
2022-10-23	FS_INF-K																					
2022-10-23	FS_INF-S																					
2022-10-23	FS_INF-K																					
2022-10-23	FS_INF-S																					
2022-10-23	FS_INF-K																					
2022-10-23	FS_INF-S																					
2022-10-24	FS_INF-K																					
2022-10-24	FS_INF-S																					
2022-10-24	FS_INF-K																					
2022-10-24	FS_INF-S																					
2022-10-24	FS_BPO						3012				< 0.0015	1350	15.7							2280	0.367	1.3
2022-10-24	FS_INF-K						2856					892	3.5							2140	< 0.050	3.1
2022-10-24	FS_INF-S						3545					1830	3.1							2860	0.242	2.9
2022-10-24	FS_BPO																					
2022-10-24	FS_INF-K																					
2022-10-24	FS_INF-S																					
2022-10-24	FS_INF-K																					
2022-10-24	FS_INF-S																					
2022-10-24	FS_INF-K																					
2022-10-24	FS_INF-S																					
2022-10-24	FS_INF-K																					
2022-10-24	FS_INF-S																					
2022-10-24	FS_INF-K																					
2022-10-24	FS_INF-S																					
2022-10-25	FS_INF-K																					
2022-10-25	FS_INF-S																					
2022-10-25	FS_INF-K																					
2022-10-25	FS_INF-S																					
2022-10-25	FS_BPO	< 0.010	< 0.010	< 0.010	< 0.020	31.0	3018		0.294	0.301			15.8	< 0.010	< 0.020	< 0.00010	< 0.00020	< 0.30	< 0.60	2570		3.0
2022-10-25	FS_INF-K	< 0.010	< 0.010	< 0.020	< 0.020	11.6	2810		0.360	0.372			3.4	0.040	0.043	< 0.00020	< 0.00020	< 0.60	< 0.60	2170		1.2
2022-10-25	FS_INF-S	< 0.010	< 0.010	< 0.020	< 0.020	2.60	3534		0.252	0.259			3.2	0.057	0.062	< 0.00020	< 0.00020	< 0.60	< 0.60	2800		2.4
2022-10-25	FR_FRABCH			< 0.010	< 0.010	4.38	1220.00		0.189	0.180		372	4.40	< 0.010	< 0.010	< 0.00010	< 0.00010	< 0.30	< 0.30	870	< 0.050	7.2
2022-10-25	FR_SCOUTDS							1526					4.6									
2022-10-25	FS_INF-K																					
2022-10-25	FS_INF-S																					
2022-10-25	FS_INF-K																					
2022-10-25	FS_INF-S																					
2022-10-25	FS_INF-K																					
2022-10-25	FS_INF-S																					
2022-10-26	FS_INF-K																					

Parameter		Selenosulfate, SeSO3	SeMe – selenomethionine CH3SeCH2CH2CH(NH2)CO2H	Silver	Silver	Sodium	Specific conductivity, temperature corrected value (25 C)	Specific conductivity, temperature corrected value (25 C)	Strontium	Strontium	SULFIDE (as S)	Sulphate (As SO4)	Temperature, Field	Thallium	Thallium	Tin	Tin	Titanium	Titanium	Total Dissolved Solids (Residue, Filterable)	Total Kjeldahl Nitrogen	Total Suspended Solids, Lab
Fraction		D	D	D	T	T	N	N	D	T	T	D	N	D	T	D	T	D	T	N	N	N
Unit		ug/l	ug/l	mg/l	mg/l	mg/l	us/cm	uS/cm at 25 C	mg/l	mg/l	mg/l	mg/l	deg c	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-10-26	FS_INF-S																					
2022-10-26	FS_INF-K																					
2022-10-26	FS_INF-S																					
2022-10-26	FS_BPO						3010						15.2							2520		4.2
2022-10-26	FS_INF-K						2940						3.4							2220		1.4
2022-10-26	FS_INF-S						3536						3							3130		3.6
2022-10-26	FS_INF-K																					
2022-10-26	FS_INF-S																					
2022-10-26	FS_INF-K																					
2022-10-26	FS_INF-S																					
2022-10-26	FS_INF-K																					
2022-10-26	FS_INF-S																					
2022-10-26	FS_INF-K																					
2022-10-26	FS_INF-S																					
2022-10-26	FS_INF-K																					
2022-10-26	FS_INF-S																					
2022-10-27	FS_INF-K																					
2022-10-27	FS_INF-S																					
2022-10-27	FS_INF-K																					
2022-10-27	FS_INF-S																					
2022-10-27	FS_BPO	< 0.010	< 0.010				2993						15.5							2450		3.6
2022-10-27	FS_INF-K						2882						3.4							2210		1.8
2022-10-27	FS_INF-S						3518						3							3070		5.8
2022-10-27	FR_SCOUTDS	< 0.010	< 0.010	< 0.010	< 0.010	7.23	1465		0.219	0.246	< 0.0015	485	3.3	0.014	< 0.010	< 0.00010	< 0.00010	< 0.30	< 0.30	1070	0.469	1.2
2022-10-27	FS_INF-K																					
2022-10-27	FS_INF-S																					
2022-10-27	FS_INF-K																					
2022-10-27	FS_INF-S																					
2022-10-27	FS_INF-K																					
2022-10-27	FS_INF-S																					
2022-10-27	FS_INF-K																					
2022-10-27	FS_INF-S																					
2022-10-27	FS_INF-K																					
2022-10-27	FS_INF-S																					
2022-10-28	FS_INF-K																					
2022-10-28	FS_INF-S																					
2022-10-28	FS_INF-K																					
2022-10-28	FS_INF-S																					
2022-10-28	FS_BPO						3080						14.4							2480		2.0
2022-10-28	FS_INF-K						2889						3.4							2230		2.0
2022-10-28	FS_INF-S						3526						3.2							3040		2.2
2022-10-28	FS_INF-K																					
2022-10-28	FS_INF-S																					
2022-10-28	FS_INF-K																					
2022-10-28	FS_INF-S																					
2022-10-28	FS_INF-K																					
2022-10-28	FS_INF-S																					
2022-10-28	FS_INF-K																					
2022-10-28	FS_INF-S																					
2022-10-28	FS_INF-K																					
2022-10-29	FS_INF-K																					
2022-10-29	FS_INF-S																					
2022-10-29	FS_INF-K																					
2022-10-29	FS_INF-S																					
2022-10-29	FS_BPO						3097						15							2530		3.7
2022-10-29	FS_INF-K						2899						3.4							2260		2.1
2022-10-29	FS_INF-S						3517						2.4							3150		1.2
2022-10-29	FS_INF-K																					
2022-10-29	FS_INF-S																					
2022-10-29	FS_INF-K																					
2022-10-29	FS_INF-S																					
2022-10-29	FS_INF-K																					
2022-10-29	FS_INF-S																					
2022-10-29	FS_INF-K																					
2022-10-29	FS_INF-S																					
2022-10-29	FS_INF-K																					
2022-10-29	FS_INF-S																					
2022-10-30	FS_INF-K																					
2022-10-30	FS_INF-S																					
2022-10-30	FS_INF-K																					
2022-10-30	FS_INF-S																					
2022-10-30	FS_BPO	< 0.010	< 0.010				3085						15.1							2530		5.1
2022-10-30	FS_INF-K						2921						3.5							2240		2.1
2022-10-30	FS_INF-S						3514						2.8							3070		5.5
2022-10-30	FS_BPO						3081						15.2									
2022-10-30	FS_INF-K																					
2022-10-30	FS_INF-S																					
2022-10-30	FS_INF-K																					
2022-10-30	FS_INF-S																					
2022-10-30	FS_INF-K																					
2022-10-30	FS_INF-S																					
2022-10-30	FS_INF-K																					
2022-10-30	FS_INF-S																					

Parameter		Selenosulfate, SeSO3	SeMe – selenomethionine CH3SeCH2CH2CH(NH2)CO2H	Silver	Silver	Sodium	Specific conductivity, temperature corrected value (25 C)	Specific conductivity, temperature corrected value (25 C)	Strontium	Strontium	SULFIDE (as S)	Sulphate (As SO4)	Temperature, Field	Thallium	Thallium	Tin	Tin	Titanium	Titanium	Total Dissolved Solids (Residue, Filterable)	Total Kjeldahl Nitrogen	Total Suspended Solids, Lab
Fraction		D	D	D	T	T	N	N	D	T	T	D	N	D	T	D	T	D	T	N	N	N
Unit		ug/l	ug/l	mg/l	mg/l	mg/l	us/cm	uS/cm at 25 C	mg/l	mg/l	mg/l	mg/l	deg c	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-10-30	FS_INF-K																					
2022-10-30	FS_INF-S																					
2022-10-31	FS_INF-K																					
2022-10-31	FS_INF-S																					
2022-10-31	FS_INF-S																					
2022-10-31	FS_BPO						3074				< 0.0015	1270	15							2730	0.422	2.9
2022-10-31	FS_INF-K						2902					858	3.6							2640	< 0.050	2.5
2022-10-31	FS_INF-S						3254					1680	3.6							3010	< 0.050	3.7
2022-10-31	FS_BPO																					
2022-10-31	FS_BPO																					
2022-10-31	FS_INF-K																					
2022-10-31	FS_INF-S																					
2022-10-31	FS_INF-K																					
2022-10-31	FS_INF-S																					
2022-10-31	FS_BPO						3036						14.4									
2022-11-01	FS_INF-K																					
2022-11-01	FS_INF-S																					
2022-11-01	FS_BPO																					
2022-11-01	FS_INF-K						2901						3.4									
2022-11-01	FS_INF-S						3408						3.4									
2022-11-01	FS_INF-K																					
2022-11-01	FS_INF-S																					
2022-11-01	FS_BPO	< 0.010	< 0.010	< 0.020	< 0.020	25.3	3039		0.268	0.281			14.5	< 0.020	< 0.020	< 0.00020	< 0.00020	< 0.60	< 0.60	2400		3.9
2022-11-01	FS_INF-K			< 0.020	< 0.020	10.0	2915		0.363	0.333			3.6	0.044	0.034	< 0.00020	< 0.00020	< 0.60	< 0.60	2260		1.3
2022-11-01	FS_INF-S			< 0.020	< 0.020	2.22	3408		0.244	0.215			3.3	0.058	0.049	< 0.00020	< 0.00020	< 0.60	< 0.60	2960		6.9
2022-11-01	FS_INF-K																					
2022-11-01	FS_INF-S																					
2022-11-01	FR_FRABCH			< 0.010	< 0.010	4.41	1310.00		0.186	0.174		378	5.00	< 0.010	< 0.010	< 0.00010	< 0.00010	< 0.30	< 0.30	934	0.732	1.7
2022-11-01	FS_INF-K																					
2022-11-01	FS_INF-S																					
2022-11-01	FR_FRABCH																					
2022-11-01	FS_BPO						3037						14									
2022-11-02	FR_FRABCH						1265						2.8									
2022-11-02	FR_SCOUTDS						1442						2.1									
2022-11-02	FR_FRABCH																					
2022-11-02	FR_SCOUTDS																					
2022-11-02	FS_BPO						3021						10.9							2470		1.7
2022-11-02	FS_INF-K						2906						6.4							2250		< 1.0
2022-11-02	FS_INF-S						3422						2.7							2960		14.2
2022-11-02	FS_BPO																					
2022-11-02	FS_INF-K																					
2022-11-02	FS_INF-S																					
2022-11-03	FS_BPO						3018						10.5									
2022-11-03	FS_INF-K																					
2022-11-03	FS_INF-S																					
2022-11-03	FS_INF-K																					
2022-11-03	FS_INF-S																					
2022-11-03	FS_BPO	< 0.010	< 0.010				3076						11.1							2590		2.8
2022-11-03	FS_INF-K						2941						3							2530		1.1
2022-11-03	FS_INF-S						3445						2.1							3040		3.0
2022-11-03	FR_SCOUTDS	< 0.010	< 0.010	< 0.010	< 0.010	9.34	1395		0.192	0.197	< 0.0015	466	1.4	< 0.010	< 0.010	< 0.00010	< 0.00010	< 0.30	< 0.30	1030	0.453	2.4
2022-11-03	FS_INF-K																					
2022-11-03	FS_INF-S																					
2022-11-03	FS_INF-K																					
2022-11-03	FS_INF-S																					
2022-11-03	FS_INF-K																					
2022-11-03	FS_INF-S																					
2022-11-03	FS_INF-K																					
2022-11-03	FS_INF-S																					
2022-11-03	FS_INF-K																					
2022-11-03	FS_INF-S																					
2022-11-04	FS_INF-K																					
2022-11-04	FS_INF-S																					
2022-11-04	FS_INF-K																					
2022-11-04	FS_INF-S																					
2022-11-04	FS_BPO						3143						12.1							2550		2.9
2022-11-04	FS_INF-K						2946						3.4							2340		2.3
2022-11-04	FS_INF-S						3462						2.6							3040		2.4
2022-11-04	FS_INF-K																					
2022-11-04	FS_INF-S																					
2022-11-04	FS_INF-K																					
2022-11-04	FS_INF-S																					
2022-11-04	FS_INF-K																					
2022-11-04	FS_INF-K																					
2022-11-04	FS_INF-S																					
2022-11-04	FS_INF-K																					
2022-11-04	FS_INF-S																					
2022-11-05	FS_INF-K																					
2022-11-05	FS_INF-S																					
2022-11-05	FS_INF-K																					
2022-11-05	FS_INF-S																					

	Parameter	Selenosulfate, SeSO3	SeMe – selenomethionine CH3SeCH2CH2CH(NH2)CO2H	Silver	Silver	Sodium	Specific conductivity, temperature corrected value (25 C)	Specific conductivity, temperature corrected value (25 C)	Strontium	Strontium	SULFIDE (as S)	Sulphate (As SO4)	Temperature, Field	Thallium	Thallium	Tin	Tin	Titanium	Titanium	Total Dissolved Solids (Residue, Filterable)	Total Kjeldahl Nitrogen	Total Suspended Solids, Lab
	Fraction	D	D	D	T	T	N	N	D	T	T	D	N	D	T	D	T	D	T	N	N	N
	Unit	ug/l	ug/l	mg/l	mg/l	mg/l	us/cm	uS/cm at 25 C	mg/l	mg/l	mg/l	mg/l	deg c	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-11-05	FS_BPO						3157						12.5							2700		2.6
2022-11-05	FS_INF-K						2945						3.5							2180		< 1.0
2022-11-05	FS_INF-S						3478						8							3090		2.2
2022-11-05	FS_INF-K																					
2022-11-05	FS_INF-S																					
2022-11-05	FS_INF-K																					
2022-11-05	FS_INF-S																					
2022-11-05	FS_INF-K																					
2022-11-05	FS_INF-S																					
2022-11-05	FS_INF-K																					
2022-11-05	FS_INF-S																					
2022-11-05	FS_INF-K																					
2022-11-05	FS_INF-S																					
2022-11-06	FS_INF-K																					
2022-11-06	FS_INF-S																					
2022-11-06	FS_INF-K																					
2022-11-06	FS_INF-S																					
2022-11-06	FS_BPO	< 0.010	< 0.010				3138						12.7							2680		2.6
2022-11-06	FS_INF-K						2971						2.6							2220		1.4
2022-11-06	FS_INF-S						3495						2.9							2980		2.6
2022-11-06	FS_INF-K																					
2022-11-06	FS_INF-S																					
2022-11-06	FS_INF-K																					
2022-11-06	FS_INF-S																					
2022-11-06	FS_INF-K																					
2022-11-06	FS_INF-S																					
2022-11-06	FS_INF-K																					
2022-11-06	FS_INF-S																					
2022-11-06	FS_INF-K																					
2022-11-06	FS_INF-S																					
2022-11-07	FS_INF-K																					
2022-11-07	FS_INF-S																					
2022-11-07	FS_INF-K																					
2022-11-07	FS_INF-S																					
2022-11-07	FS_BPO			< 0.020			3122		0.266		< 0.0015	1480	10.7	< 0.020		< 0.00020		< 0.60		2820	0.448	3.2
2022-11-07	FS_INF-K			< 0.020			2983		0.348			952	1.7	0.044		< 0.00020		< 0.60		2450	< 0.050	2.3
2022-11-07	FS_INF-S			< 0.020			3510		0.242			1800	2.9	0.063		< 0.00020		< 0.60		3220	1.02	5.4
2022-11-07	FS_INF-K																					
2022-11-07	FS_INF-S																					
2022-11-07	FS_INF-K																					
2022-11-07	FS_INF-S																					
2022-11-07	FS_INF-K																					
2022-11-07	FS_INF-S																					
2022-11-07	FS_INF-K																					
2022-11-07	FS_INF-S																					
2022-11-07	FS_INF-K																					
2022-11-07	FS_INF-S																					
2022-11-08	FS_INF-K																					
2022-11-08	FS_INF-S																					
2022-11-08	FS_INF-K																					
2022-11-08	FS_INF-S																					
2022-11-08	FS_BPO	< 0.010	< 0.010	< 0.020	< 0.020	23.9	3105		0.268	0.266			12	< 0.020	< 0.020	< 0.00020	< 0.00020	< 0.60	< 0.60	2600		< 1.0
2022-11-08	FS_INF-K	< 0.010	< 0.010	< 0.020	< 0.020	10.7	2986		0.354	0.355			2.7	0.041	0.041	< 0.00020	< 0.00020	< 0.60	< 0.60	2290		1.8
2022-11-08	FS_INF-S	< 0.010	< 0.010	< 0.020	< 0.020	2.55	3526		0.254	0.244			2.7	0.064	0.061	< 0.00020	< 0.00020	< 0.60	< 0.60	3010		< 1.0
2022-11-08	FR_FRABCH			< 0.010	< 0.010	3.99	1332		0.192	0.179		368	1.40	< 0.010	< 0.010	< 0.00010	< 0.00010	< 0.30	< 0.30	885	< 0.050	34.6
2022-11-08	FS_INF-K																					
2022-11-08	FS_INF-S																					
2022-11-08	FR_FRABCH																					
2022-11-08	FS_INF-K																					
2022-11-08	FS_INF-S																					
2022-11-08	FS_INF-K																					
2022-11-08	FS_INF-S																					
2022-11-08	FS_INF-K																					
2022-11-08	FS_INF-S																					
2022-11-08	FS_INF-K																					
2022-11-08	FS_INF-S																					
2022-11-09	FS_INF-K																					
2022-11-09	FS_INF-S																					
2022-11-09	FS_INF-K																					
2022-11-09	FS_INF-S																					
2022-11-09	FS_BPO						3094						12.9							2590		1.7
2022-11-09	FS_INF-K						2990						2.7							2280		1.1
2022-11-09	FS_INF-S						3538						2.5							3110		1.4
2022-11-09	FS_INF-K																					
2022-11-09	FS_INF-S																					
2022-11-09	FS_INF-K																					
2022-11-09	FS_INF-S																					
2022-11-10	FS_INF-K																					
2022-11-10	FS_INF-S																					
2022-11-10	FS_INF-K																					
2022-11-10	FS_INF-S																					

Parameter		Selenosulfate, SeSO3	SeMe – selenomethionine CH3SeCH2CH2CH(NH2)CO2H	Silver	Silver	Sodium	Specific conductivity, temperature corrected value (25 C)	Specific conductivity, temperature corrected value (25 C)	Strontium	Strontium	SULFIDE (as S)	Sulphate (As SO4)	Temperature, Field	Thallium	Thallium	Tin	Tin	Titanium	Titanium	Total Dissolved Solids (Residue, Filterable)	Total Kjeldahl Nitrogen	Total Suspended Solids, Lab
Fraction		D	D	D	T	T	N	N	D	T	T	D	N	D	T	D	T	D	T	N	N	N
Unit		ug/l	ug/l	mg/l	mg/l	mg/l	us/cm	uS/cm at 25 C	mg/l	mg/l	mg/l	mg/l	deg c	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-11-10	FS_BPO	< 0.010	< 0.010				3092						12.8							2580		4.6
2022-11-10	FS_INF-K						2999						2.7							2290		< 1.0
2022-11-10	FS_INF-S						3556						2.4							3130		1.3
2022-11-10	FR_SCOUTDS						1680						1									
2022-11-10	FR_SCOUTDS	< 0.010	< 0.010																			
2022-11-10	FS_INF-K																					
2022-11-10	FS_INF-S																					
2022-11-10	FS_INF-K																					
2022-11-10	FS_INF-S																					
2022-11-10	FS_INF-K																					
2022-11-10	FS_INF-S																					
2022-11-10	FS_INF-K																					
2022-11-10	FS_INF-S																					
2022-11-10	FS_INF-K																					
2022-11-10	FS_INF-S																					
2022-11-11	FS_INF-K																					
2022-11-11	FS_INF-S																					
2022-11-11	FS_INF-K																					
2022-11-11	FS_INF-S																					
2022-11-11	FS_BPO						3080						13.3							2640		1.5
2022-11-11	FS_INF-K						3008						2.6							2390		< 1.0
2022-11-11	FS_INF-S						3554						2.4							3180		1.6
2022-11-11	FS_INF-K																					
2022-11-11	FS_INF-S																					
2022-11-11	FS_INF-K																					
2022-11-11	FS_INF-S																					
2022-11-11	FS_INF-K																					
2022-11-11	FS_INF-S																					
2022-11-11	FS_INF-K																					
2022-11-11	FS_INF-S																					
2022-11-11	FS_INF-K																					
2022-11-11	FS_INF-S																					
2022-11-12	FS_INF-K																					
2022-11-12	FS_INF-S																					
2022-11-12	FS_INF-K																					
2022-11-12	FS_INF-S																					
2022-11-12	FS_INF-K																					
2022-11-12	FS_INF-S																					
2022-11-12	FS_BPO						3085						13.4							2530		2.9
2022-11-12	FS_INF-K						2975						2.8							2300		1.3
2022-11-12	FS_INF-S						3507						2.4							3100		3.3
2022-11-12	FS_INF-K																					
2022-11-12	FS_INF-S																					
2022-11-12	FS_INF-K																					
2022-11-12	FS_INF-S																					
2022-11-12	FS_INF-K																					
2022-11-12	FS_INF-S																					
2022-11-13	FS_BPO	< 0.010	< 0.010				3091						13.6							2670		2.5
2022-11-13	FS_INF-K						3026						2.9							2310		< 1.0
2022-11-13	FS_INF-S						3570						2.5							2920		1.5
2022-11-13	FS_INF-K																					
2022-11-13	FS_INF-S																					
2022-11-13	FS_INF-K																					
2022-11-13	FS_INF-S																					
2022-11-13	FS_INF-K																					
2022-11-13	FS_INF-S																					
2022-11-13	FS_INF-K																					
2022-11-13	FS_INF-S																					
2022-11-14	FS_INF-K																					
2022-11-14	FS_INF-S																					
2022-11-14	FS_INF-K																					
2022-11-14	FS_INF-S																					
2022-11-14	FS_BPO			< 0.020			3106		0.272		< 0.0015	1380	13.9	< 0.020		< 0.00020		< 0.60		2620	0.382	1.0
2022-11-14	FS_INF-K			< 0.020			3028		0.341			948	3	0.037		< 0.00020		< 0.60		2390	< 0.050	1.8
2022-11-14	FS_INF-S			< 0.020			3565		0.238			1800	2.6	0.058		< 0.00020		< 0.60		3190	< 0.050	1.8
2022-11-14	FS_BPO																					
2022-11-14	FS_INF-K																					
2022-11-14	FS_INF-S																					
2022-11-14	FS_INF-K																					
2022-11-14	FS_INF-S																					
2022-11-14	FS_INF-K																					
2022-11-14	FS_INF-S																					
2022-11-14	FS_INF-K																					
2022-11-14	FS_INF-S																					
2022-11-14	FS_INF-K																					
2022-11-14	FS_INF-S																					
2022-11-15	FS_INF-K																					
2022-11-15	FS_INF-S																					
2022-11-15	FS_INF-K																					
2022-11-15	FS_INF-S																					
2022-11-15	FS_BPO	< 0.010	< 0.010	< 0.020	< 0.020	19.4	3086		0.269	0.291			12.9	< 0.020	< 0.020	< 0.00020	< 0.00020	< 0.60	< 0.60	2590		< 1.0

Parameter		Selenosulfate, SeSO3	SeMe – selenomethionine CH3SeCH2CH2CH(NH2)CO2H	Silver	Silver	Sodium	Specific conductivity, temperature corrected value (25 C)	Specific conductivity, temperature corrected value (25 C)	Strontium	Strontium	SULFIDE (as S)	Sulphate (As SO4)	Temperature, Field	Thallium	Thallium	Tin	Tin	Titanium	Titanium	Total Dissolved Solids (Residue, Filterable)	Total Kjeldahl Nitrogen	Total Suspended Solids, Lab
Fraction		D	D	D	T	T	N	N	D	T	T	D	N	D	T	D	T	D	T	N	N	N
Unit		ug/l	ug/l	mg/l	mg/l	mg/l	us/cm	uS/cm at 25 C	mg/l	mg/l	mg/l	mg/l	deg c	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-11-15	FS_INF-K			< 0.020	< 0.020	10.3	3050		0.369	0.353			3	0.046	0.043	< 0.00020	< 0.00020	< 0.60	< 0.60	3160		2.9
2022-11-15	FS_INF-S			< 0.020	< 0.020	2.64	3582		0.255	0.246			2.4	0.067	0.057	< 0.00020	< 0.00020	< 0.60	< 0.60	3240		< 1.0
2022-11-15	FS_INF-K																					
2022-11-15	FS_INF-S																					
2022-11-16	FR_SCOUTDS						1574						0.1									
2022-11-16	FR_FRABCH																					
2022-11-16	FR_SCOUTDS																					
2022-11-16	FR_FRABCH						1259						0									
2022-11-16	FS_BPO						3054						10.1							2800		12.2
2022-11-16	FS_INF-K						3039						3.5							2490		2.4
2022-11-16	FS_INF-S						3589						2.5							3370		5.4
2022-11-16	FS_INF-K																					
2022-11-16	FS_INF-S																					
2022-11-16	FS_INF-K																					
2022-11-16	FS_INF-S																					
2022-11-16	FS_INF-K																					
2022-11-16	FS_INF-S																					
2022-11-16	FS_INF-K																					
2022-11-16	FS_INF-S																					
2022-11-17	FS_INF-K																					
2022-11-17	FS_INF-S																					
2022-11-17	FS_INF-K																					
2022-11-17	FS_INF-S																					
2022-11-17	FS_BPO	< 0.010	< 0.010				3091						7.7							2290		26.4
2022-11-17	FS_INF-K						3059						2.5							2340		3.4
2022-11-17	FS_INF-S						3593						2.3							3140		1.6
2022-11-17	FR_SCOUTDS	< 0.010	< 0.010	< 0.010	< 0.010	7.26	1581		0.241	0.228	< 0.0015	578	0.7	< 0.010	< 0.010	< 0.00010	< 0.00010	< 0.30	< 0.30	1130	< 0.050	2.4
2022-11-17	FS_INF-K																					
2022-11-17	FS_INF-S																					
2022-11-17	FS_INF-K																					
2022-11-17	FS_INF-S																					
2022-11-17	FS_INF-K																					
2022-11-17	FS_INF-S																					
2022-11-18	FS_BPO						3163						5.7							2680		14.7
2022-11-18	FS_INF-K						3062						2.8							2420		1.1
2022-11-18	FS_INF-S						3511						2.5							3590		3.8
2022-11-18	FS_INF-K																					
2022-11-18	FS_INF-S																					
2022-11-18	FS_INF-K																					
2022-11-18	FS_INF-S																					
2022-11-18	FS_INF-K																					
2022-11-18	FS_INF-S																					
2022-11-18	FS_INF-K																					
2022-11-18	FS_INF-S																					
2022-11-18	FS_BPO						3196						5.6									
2022-11-18	FS_INF-K																					
2022-11-18	FS_INF-S																					
2022-11-19	FS_INF-K																					
2022-11-19	FS_INF-S																					
2022-11-19	FS_INF-K																					
2022-11-19	FS_INF-S																					
2022-11-19	FS_BPO						3159						5.1							2610		2.8
2022-11-19	FS_INF-K						3065						2.6							2410		< 1.0
2022-11-19	FS_INF-S						3605						2.4							3190		2.5
2022-11-19	FS_INF-K																					
2022-11-19	FS_INF-S																					
2022-11-19	FS_INF-K																					
2022-11-19	FS_INF-S																					
2022-11-19	FS_INF-K																					
2022-11-19	FS_INF-S																					
2022-11-19	FS_INF-K																					
2022-11-19	FS_INF-S																					
2022-11-19	FS_INF-K																					
2022-11-19	FS_INF-S																					
2022-11-20	FS_INF-K																					
2022-11-20	FS_INF-S																					
2022-11-20	FS_INF-K																					
2022-11-20	FS_INF-S																					
2022-11-20	FS_BPO	< 0.010	< 0.010				3103						5							2630		2.2
2022-11-20	FS_INF-K						3072						2.8							2330		2.8
2022-11-20	FS_INF-S						3611						2.2							2860		1.6
2022-11-20	FS_INF-K																					
2022-11-20	FS_INF-S																					
2022-11-20	FS_INF-K																					
2022-11-20	FS_INF-S																					
2022-11-20	FS_INF-K																					
2022-11-20	FS_INF-S																					
2022-11-20	FS_INF-K																					
2022-11-20	FS_INF-S																					
2022-11-20	FS_INF-K																					
2022-11-20	FS_INF-S																					
2022-11-21	FS_INF-K																					
2022-11-21	FS_INF-S																					
2022-11-21	FS_INF-K																					

Parameter		Selenosulfate, SeSO3	SeMe – selenomethionine CH3SeCH2CH2CH(NH2)CO2H	Silver	Silver	Sodium	Specific conductivity, temperature corrected value (25 C)	Specific conductivity, temperature corrected value (25 C)	Strontium	Strontium	SULFIDE (as S)	Sulphate (As SO4)	Temperature, Field	Thallium	Thallium	Tin	Tin	Titanium	Titanium	Total Dissolved Solids (Residue, Filterable)	Total Kjeldahl Nitrogen	Total Suspended Solids, Lab
Fraction		D	D	D	T	T	N	N	D	T	T	D	N	D	T	D	T	D	T	N	N	N
Unit		ug/l	ug/l	mg/l	mg/l	mg/l	us/cm	uS/cm at 25 C	mg/l	mg/l	mg/l	mg/l	deg c	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-11-21	FS_INF-S																					
2022-11-21	FS_BPO						3015				< 0.0015	1340	5.3							2520	0.342	2.5
2022-11-21	FS_INF-K						3076					976	2.9							2400	0.310	3.0
2022-11-21	FS_INF-S						3616					1850	2.3							3240	0.427	2.0
2022-11-21	FS_INF-K																					
2022-11-21	FS_INF-S																					
2022-11-21	FS_INF-K																					
2022-11-21	FS_INF-S																					
2022-11-21	FS_INF-K																					
2022-11-21	FS_INF-S																					
2022-11-21	FS_INF-K																					
2022-11-21	FS_INF-S																					
2022-11-21	FS_INF-K																					
2022-11-21	FS_INF-S																					
2022-11-22	FS_INF-K																					
2022-11-22	FS_INF-S																					
2022-11-22	FS_INF-K																					
2022-11-22	FS_INF-S																					
2022-11-22	FS_BPO	< 0.010	< 0.010	< 0.020	< 0.020	21.5	3056		0.314	0.312			5.9	< 0.020	< 0.020	< 0.00020	< 0.00020	< 0.60	< 0.60	2570		3.1
2022-11-22	FS_INF-K	< 0.010	< 0.010	< 0.020	< 0.020	11.0	3075		0.391	0.395			3.4	0.043	0.042	< 0.00020	< 0.00020	< 0.60	< 0.60	2280		3.1
2022-11-22	FS_INF-S	< 0.010	< 0.010	< 0.020	< 0.020	2.85	3616		0.269	0.289			8.3	0.066	0.063	< 0.00020	< 0.00020	< 0.60	< 0.60	3520		2.6
2022-11-22	FS_INF-K																					
2022-11-22	FS_INF-S																					
2022-11-22	FS_INF-K																					
2022-11-22	FS_INF-S																					
2022-11-22	FS_INF-K																					
2022-11-22	FS_INF-S																					
2022-11-22	FS_INF-K																					
2022-11-22	FS_INF-S																					
2022-11-22	FS_INF-K																					
2022-11-22	FS_INF-S																					
2022-11-23	FS_INF-K																					
2022-11-23	FS_INF-S																					
2022-11-23	FS_BPO						3040						6.7							2590		3.1
2022-11-23	FS_INF-K						3082						3.3							2360		4.3
2022-11-23	FS_INF-S						3608						2.4							3350		3.1
2022-11-23	FS_INF-K																					
2022-11-23	FS_INF-S																					
2022-11-23	FS_INF-K																					
2022-11-23	FS_INF-S																					
2022-11-23	FS_INF-K																					
2022-11-23	FS_INF-S																					
2022-11-23	FS_INF-K																					
2022-11-24	FS_INF-K																					
2022-11-24	FS_INF-S																					
2022-11-24	FS_INF-S																					
2022-11-24	FS_BPO	< 0.010	< 0.010				3047						6.4							2980		< 1.0
2022-11-24	FS_INF-K						3095						3.4							2510		1.7
2022-11-24	FS_INF-S						3608						2.65							3120		1.8
2022-11-24	FR_SCOUTDS	< 0.010	< 0.010	< 0.020	< 0.010	6.51	1582		0.249	0.255	< 0.0015	564	2	< 0.020	< 0.010	< 0.00020	< 0.00010	< 0.60	< 0.30	1140	< 0.050	1.4
2022-11-24	FS_INF-K																					
2022-11-24	FS_INF-S																					
2022-11-24	FS_INF-K																					
2022-11-24	FS_INF-S																					
2022-11-24	FS_INF-K																					
2022-11-24	FS_INF-S																					
2022-11-24	FS_INF-K																					
2022-11-24	FS_INF-S																					
2022-11-24	FS_INF-K																					
2022-11-24	FS_INF-S																					
2022-11-25	FS_INF-K																					
2022-11-25	FS_INF-S																					
2022-11-25	FS_INF-K																					
2022-11-25	FS_INF-S																					
2022-11-25	FS_BPO						3047						6.5							2920		2.6
2022-11-25	FS_INF-K						3103						3.4							2580		2.2
2022-11-25	FS_INF-S						3611						2.7							3780		4.8
2022-11-25	FS_INF-K																					
2022-11-25	FS_INF-S																					
2022-11-25	FS_INF-K																					
2022-11-25	FS_INF-S																					
2022-11-25	FS_INF-K																					
2022-11-25	FS_INF-S																					
2022-11-25	FS_INF-K																					
2022-11-25	FS_INF-S																					
2022-11-25	FS_INF-K																					
2022-11-25	FS_INF-S																					
2022-11-26	FS_INF-K																					

Parameter		Selenosulfate, SeSO3	SeMe – selenomethionine CH3SeCH2CH2CH(NH2)CO2H	Silver	Silver	Sodium	Specific conductivity, temperature corrected value (25 C)	Specific conductivity, temperature corrected value (25 C)	Strontium	Strontium	SULFIDE (as S)	Sulphate (As SO4)	Temperature, Field	Thallium	Thallium	Tin	Tin	Titanium	Titanium	Total Dissolved Solids (Residue, Filterable)	Total Kjeldahl Nitrogen	Total Suspended Solids, Lab
Fraction		D	D	D	T	T	N	N	D	T	T	D	N	D	T	D	T	D	T	N	N	N
Unit		ug/l	ug/l	mg/l	mg/l	mg/l	us/cm	uS/cm at 25 C	mg/l	mg/l	mg/l	mg/l	deg c	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-11-26	FS_INF-S																					
2022-11-26	FS_INF-K																					
2022-11-26	FS_INF-S																					
2022-11-26	FS_BPO						3047 3042						6.5 6.4							2670		3.6
2022-11-26	FS_INF-K						3112						3							2500		4.4
2022-11-26	FS_INF-S						3615						2.6							3200		2.1
2022-11-26	FS_INF-K																					
2022-11-26	FS_INF-S																					
2022-11-26	FS_INF-K																					
2022-11-26	FS_INF-S																					
2022-11-26	FS_INF-K																					
2022-11-26	FS_INF-S																					
2022-11-26	FS_INF-K																					
2022-11-26	FS_INF-S																					
2022-11-26	FS_INF-K																					
2022-11-26	FS_INF-S																					
2022-11-27	FS_INF-K																					
2022-11-27	FS_INF-S																					
2022-11-27	FS_INF-K																					
2022-11-27	FS_INF-S																					
2022-11-27	FS_BPO	0.018	< 0.010				3057 3063						6.1 6.2							2680		1.8
2022-11-27	FS_INF-K						3105						3.3							2440		< 1.0
2022-11-27	FS_INF-S						3613						2.6							3740		< 1.0
2022-11-27	FS_INF-K																					
2022-11-27	FS_INF-S																					
2022-11-27	FS_INF-K																					
2022-11-27	FS_INF-S																					
2022-11-27	FS_INF-K																					
2022-11-27	FS_INF-S																					
2022-11-27	FS_INF-K																					
2022-11-27	FS_INF-S																					
2022-11-27	FS_INF-K																					
2022-11-27	FS_INF-S																					
2022-11-28	FS_INF-K																					
2022-11-28	FS_INF-S																					
2022-11-28	FS_BPO						3082				< 0.0015	1390	5.7							2540	0.354	3.6
2022-11-28	FS_INF-K						3113					983	3							2320	< 0.050	3.2
2022-11-28	FS_INF-S						3622					1760	2.3							2960	0.434	1.6
2022-11-28	FS_INF-K																					
2022-11-28	FS_INF-S																					
2022-11-28	FS_INF-K																					
2022-11-28	FS_INF-S																					
2022-11-28	FS_INF-K																					
2022-11-28	FS_INF-S																					
2022-11-28	FS_INF-K																					
2022-11-28	FS_INF-S																					
2022-11-28	FS_INF-K																					
2022-11-28	FS_INF-S																					
2022-11-29	FS_INF-K																					
2022-11-29	FS_INF-S																					
2022-11-29	FS_INF-K																					
2022-11-29	FS_INF-S																					
2022-11-29	FS_BPO	< 0.010	< 0.010	< 0.020	< 0.020	25.4	2961		0.278	0.299			4.5	< 0.020	< 0.020	< 0.00020	< 0.00020	< 0.60	< 0.60	2580		1.9
2022-11-29	FS_INF-K			< 0.020	< 0.020	10.0	2987		0.355	0.360			2.5	0.044	0.041	< 0.00020	< 0.00020	< 0.60	< 0.60	2330		2.5
2022-11-29	FS_INF-S			< 0.020	< 0.020	2.53	3467		0.242	0.242			2.3	0.070	0.067	< 0.00020	< 0.00020	< 0.60	< 0.60	3150		1.9
2022-11-29	FS_INF-K																					
2022-11-29	FS_INF-S																					
2022-11-29	FS_INF-K																					
2022-11-29	FS_INF-S																					
2022-11-29	FS_BPO						2966						4.5									
2022-11-29	FS_INF-K																					
2022-11-29	FS_INF-S																					
2022-11-29	FS_INF-K																					
2022-11-29	FS_INF-S																					
2022-11-29	FS_BPO						2963						4.2									
2022-11-29	FS_BPO						2964 3086						4.5									
2022-11-29	FS_INF-K																					
2022-11-29	FS_INF-S																					
2022-11-30	FS_INF-K																					
2022-11-30	FS_INF-S																					
2022-11-30	FS_BPO						2971						4.9									
2022-11-30	FS_INF-K																					
2022-11-30	FS_INF-S																					
2022-11-30	FS_BPO						2963						4.3							2420		2.6
2022-11-30	FS_INF-K						2988						2.9							2300		1.9
2022-11-30	FS_INF-S						3468						2.5							3100		2.2
2022-11-30	FS_INF-K																					
2022-11-30	FS_INF-S																					
2022-11-30	FS_INF-K																					

Parameter		Selenosulfate, SeSO3	SeMe – selenomethionine CH3SeCH2CH2CH(NH2)CO2H	Silver	Silver	Sodium	Specific conductivity, temperature corrected value (25 C)	Specific conductivity, temperature corrected value (25 C)	Strontium	Strontium	SULFIDE (as S)	Sulphate (As SO4)	Temperature, Field	Thallium	Thallium	Tin	Tin	Titanium	Titanium	Total Dissolved Solids (Residue, Filterable)	Total Kjeldahl Nitrogen	Total Suspended Solids, Lab
Fraction		D	D	D	T	T	N	N	D	T	T	D	N	D	T	D	T	D	T	N	N	N
Unit		ug/l	ug/l	mg/l	mg/l	mg/l	us/cm	uS/cm at 25 C	mg/l	mg/l	mg/l	mg/l	deg c	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-11-30	FS_INF-S																					
2022-11-30	FS_INF-K																					
2022-11-30	FS_INF-S																					
2022-11-30	FS_INF-K																					
2022-11-30	FS_INF-S																					
2022-11-30	FS_INF-K																					
2022-11-30	FS_INF-S																					
2022-12-01	FS_INF-K																					
2022-12-01	FS_INF-S																					
2022-12-01	FS_INF-K																					
2022-12-01	FS_INF-S																					
2022-12-01	FS_BPO	< 0.010	< 0.010				2948						5.3							2550		2.4
2022-12-01	FS_INF-K						2980						3.4							2380		1.7
2022-12-01	FS_INF-S						3479						2.2							3170		2.5
2022-12-01	FR_SCOUTDS	< 0.010	< 0.010	< 0.010	< 0.010	8.11	1782		0.240	0.252	< 0.0015	714	0.8	< 0.010	< 0.010	< 0.00010	< 0.00010	< 0.30	< 0.30	1400	0.531	2.0
2022-12-01	FS_INF-K																					
2022-12-01	FS_INF-S																					
2022-12-01	FS_INF-S																					
2022-12-01	FS_INF-S																					
2022-12-01	FS_INF-S																					
2022-12-01	FS_INF-S																					
2022-12-02	FS_INF-S																					
2022-12-02	FS_INF-S																					
2022-12-02	FS_BPO						2983						3.9							2610		4.8
2022-12-02	FS_INF-S						3479						2.2							3170		2.7
2022-12-02	FS_INF-S																					
2022-12-02	FS_BPO						2983						3.7									
2022-12-02	FS_INF-S																					
2022-12-02	FS_INF-S																					
2022-12-02	FS_INF-S																					
2022-12-02	FS_INF-S																					
2022-12-03	FS_INF-S																					
2022-12-03	FS_INF-S																					
2022-12-03	FS_BPO						3184						4.6							2780		4.0
2022-12-03	FS_INF-S						3479						2.2							3160		3.9
2022-12-03	FS_INF-S																					
2022-12-03	FS_INF-S																					
2022-12-03	FS_INF-S																					
2022-12-03	FS_INF-S																					
2022-12-03	FS_INF-S																					
2022-12-04	FS_INF-S																					
2022-12-04	FS_INF-S																					
2022-12-04	FS_BPO	< 0.010	< 0.010				3210						4.4							2740		1.9
2022-12-04	FS_INF-S						3478						2.3							3200		2.9
2022-12-04	FS_INF-S																					
2022-12-04	FS_INF-S																					
2022-12-04	FS_INF-S																					
2022-12-04	FS_INF-S																					
2022-12-04	FS_INF-S																					
2022-12-05	FS_INF-S																					
2022-12-05	FS_INF-S																					
2022-12-05	FS_BPO						3301				< 0.0015	1740	4.7							2900	0.548	2.7
2022-12-05	FS_INF-S						3482					1910	2.2							3360	< 0.500	2.2
2022-12-05	FS_INF-S																					
2022-12-05	FS_INF-S																					
2022-12-05	FS_INF-S																					
2022-12-05	FS_INF-S																					
2022-12-05	FS_INF-S																					
2022-12-06	FS_INF-S																					
2022-12-06	FS_INF-S																					
2022-12-06	FS_BPO	< 0.010	< 0.010	< 0.020	< 0.020	19.9	3286		0.264	0.270			4.5	< 0.020	< 0.020	< 0.00020	< 0.00020	< 0.60	< 0.60	3050		1.4
2022-12-06	FS_INF-S	< 0.010	< 0.010	< 0.020	< 0.020	2.67	3474		0.244	0.257			2.4	0.046	0.044	< 0.00020	< 0.00020	< 0.60	< 0.60	3150		2.5
2022-12-06	FS_INF-S																					
2022-12-06	FS_INF-S																					
2022-12-06	FS_INF-S																					
2022-12-06	FS_INF-S																					
2022-12-06	FS_INF-S																					
2022-12-07	FS_INF-S																					
2022-12-07	FS_INF-S																					
2022-12-07	FS_BPO						3294						2.9							3000		6.3
2022-12-07	FS_INF-K						2901						3							2360		4.8
2022-12-07	FS_INF-S						3479						2.3							3390		8.2
2022-12-07	FS_INF-S																					
2022-12-07	FS_INF-K																					
2022-12-07	FS_INF-S																					
2022-12-07	FS_INF-K																					
2022-12-07	FS_INF-S																					
2022-12-08	FS_BPO	< 0.010	< 0.010				3358						4.4							3200		2.8
2022-12-08	FS_INF-K						3007						3.1							2510		2.5
2022-12-08	FS_INF-S						3434						2.3							3630		3.5

Parameter		Selenosulfate, SeSO3	SeMe – selenomethionine CH3SeCH2CH2CH(NH2)CO2H	Silver	Silver	Sodium	Specific conductivity, temperature corrected value (25 C)	Specific conductivity, temperature corrected value (25 C)	Strontium	Strontium	SULFIDE (as S)	Sulphate (As SO4)	Temperature, Field	Thallium	Thallium	Tin	Tin	Titanium	Titanium	Total Dissolved Solids (Residue, Filterable)	Total Kjeldahl Nitrogen	Total Suspended Solids, Lab
Fraction		D	D	D	T	T	N	N	D	T	T	D	N	D	T	D	T	D	T	N	N	N
Unit		ug/l	ug/l	mg/l	mg/l	mg/l	us/cm	uS/cm at 25 C	mg/l	mg/l	mg/l	mg/l	deg c	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-12-08	FR_SCOUTDS	< 0.010	< 0.010	< 0.010	< 0.010	6.21	1662		0.224	0.215	< 0.0015	644	0.6	< 0.010	< 0.010	< 0.00010	< 0.00010	< 0.30	< 0.30	1360	0.450	2.1
2022-12-08	FS_INF-K																					
2022-12-08	FS_INF-S																					
2022-12-08	FS_INF-K																					
2022-12-08	FS_INF-S																					
2022-12-08	FS_BPO												3.9									
2022-12-08	FS_INF-K																					
2022-12-08	FS_INF-S																					
2022-12-08	FS_INF-K																					
2022-12-08	FS_INF-S																					
2022-12-08	FS_INF-K																					
2022-12-08	FS_INF-S																					
2022-12-09	FS_INF-K																					
2022-12-09	FS_INF-S																					
2022-12-09	FS_INF-K																					
2022-12-09	FS_INF-S																					
2022-12-09	FS_BPO						3342						3.8							3230		2.6
2022-12-09	FS_INF-K						3004						3.3							2510		2.5
2022-12-09	FS_INF-S						3475						2.4							3420		3.8
2022-12-09	FS_INF-K																					
2022-12-09	FS_INF-S																					
2022-12-09	FS_INF-K																					
2022-12-09	FS_INF-S																					
2022-12-09	FS_INF-K																					
2022-12-09	FS_INF-S																					
2022-12-09	FS_INF-K																					
2022-12-09	FS_INF-S																					
2022-12-09	FS_INF-K																					
2022-12-09	FS_INF-S																					
2022-12-10	FS_INF-K																					
2022-12-10	FS_INF-S																					
2022-12-10	FS_INF-K																					
2022-12-10	FS_INF-S																					
2022-12-10	FS_BPO						3241						4.7							3030		4.0
2022-12-10	FS_INF-K						3011						3.1							2250		2.1
2022-12-10	FS_INF-S						3474						2.2							3420		3.2
2022-12-10	FS_INF-K																					
2022-12-10	FS_INF-S																					
2022-12-10	FS_INF-K																					
2022-12-10	FS_INF-S																					
2022-12-10	FS_INF-K																					
2022-12-10	FS_INF-S																					
2022-12-10	FS_INF-K																					
2022-12-10	FS_INF-S																					
2022-12-11	FS_INF-K																					
2022-12-11	FS_INF-S																					
2022-12-11	FS_INF-K																					
2022-12-11	FS_INF-S																					
2022-12-11	FS_BPO	< 0.010	< 0.010				3390						5.3							2680		6.5
2022-12-11	FS_INF-K						3182						3.2							2550		6.7
2022-12-11	FS_INF-S						3687						2.2							3240		7.3
2022-12-11	FS_INF-K																					
2022-12-11	FS_INF-S																					
2022-12-11	FS_INF-K																					
2022-12-11	FS_INF-S																					
2022-12-11	FS_INF-K																					
2022-12-11	FS_INF-S																					
2022-12-11	FS_INF-K																					
2022-12-11	FS_INF-S																					
2022-12-11	FS_INF-K																					
2022-12-11	FS_INF-S																					
2022-12-12	FS_INF-K																					
2022-12-12	FS_INF-S																					
2022-12-12	FS_INF-K																					
2022-12-12	FS_INF-S																					
2022-12-12	FS_BPO						3323				< 0.0015	1550	5.8							2920	0.386	1.5
2022-12-12	FS_INF-K						3192					1020	3.2							2540	1.80	< 1.0
2022-12-12	FS_INF-S						3676					1920	2.5							3320	1.83	2.7
2022-12-12	FS_INF-K																					
2022-12-12	FS_INF-S																					
2022-12-12	FR_FRABCH						1371						2.3									
2022-12-12	FS_INF-K																					
2022-12-12	FS_INF-S																					
2022-12-12	FS_INF-K																					
2022-12-12	FS_INF-S																					
2022-12-12	FS_INF-K																					
2022-12-12	FS_INF-S																					
2022-12-13	FS_INF-K																					
2022-12-13	FS_INF-S																					
2022-12-13	FS_INF-K																					
2022-12-13	FS_INF-S																					

	Parameter	Selenosulfate, SeSO3	SeMe – selenomethionine CH3SeCH2CH2CH(NH2)CO2H	Silver	Silver	Sodium	Specific conductivity, temperature corrected value (25 C)	Specific conductivity, temperature corrected value (25 C)	Strontium	Strontium	SULFIDE (as S)	Sulphate (As SO4)	Temperature, Field	Thallium	Thallium	Tin	Tin	Titanium	Titanium	Total Dissolved Solids (Residue, Filterable)	Total Kjeldahl Nitrogen	Total Suspended Solids, Lab
	Fraction	D	D	D	T	T	N	N	D	T	T	D	N	D	T	D	T	D	T	N	N	N
	Unit	ug/l	ug/l	mg/l	mg/l	mg/l	us/cm	uS/cm at 25 C	mg/l	mg/l	mg/l	mg/l	deg c	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-12-13	FS_BPO	< 0.010	< 0.010	< 0.020	< 0.020	22.6	3264		0.271	0.286			5.3	< 0.020	< 0.020	< 0.00020	< 0.00020	< 0.60	< 0.60	2860		1.9
2022-12-13	FS_INF-K	< 0.010	< 0.010	< 0.020	< 0.020	10.7	3198		0.389	0.354			2.8	0.044	0.041	< 0.00020	< 0.00020	< 0.60	< 0.60	2450		< 1.0
2022-12-13	FS_INF-S	< 0.010	< 0.010	< 0.020	< 0.020	2.76	3686		0.261	0.251			2.4	0.063	0.058	< 0.00020	< 0.00020	< 0.60	< 0.60	3350		3.1
2022-12-13	FR_SCOUTDS						1842						0.8									
2022-12-13	FS_INF-K																					
2022-12-13	FS_INF-S																					
2022-12-13	FS_INF-K																					
2022-12-13	FS_INF-S																					
2022-12-13	FS_INF-K																					
2022-12-13	FS_INF-S																					
2022-12-13	FS_INF-K																					
2022-12-13	FS_INF-S																					
2022-12-13	FS_INF-K																					
2022-12-14	FS_INF-K																					
2022-12-14	FS_INF-S																					
2022-12-14	FS_INF-K																					
2022-12-14	FS_INF-S																					
2022-12-14	FS_BPO						3203						6							2520		4.8
2022-12-14	FS_INF-K						3195						3.1							2350		1.9
2022-12-14	FS_INF-S						3684						2.5							3250		1.0
2022-12-14	FS_INF-K																					
2022-12-14	FS_INF-S																					
2022-12-14	FS_INF-K																					
2022-12-14	FS_INF-S																					
2022-12-14	FS_INF-K																					
2022-12-14	FS_INF-S																					
2022-12-14	FS_INF-K																					
2022-12-14	FS_INF-S																					
2022-12-14	FS_INF-K																					
2022-12-14	FS_INF-S																					
2022-12-15	FS_INF-K																					
2022-12-15	FS_INF-S																					
2022-12-15	FS_INF-K																					
2022-12-15	FS_INF-S																					
2022-12-15	FS_INF-K																					
2022-12-15	FS_INF-S																					
2022-12-15	FS_BPO	< 0.010	< 0.010				3195						6.3							2480		1.3
2022-12-15	FS_INF-K						3326						2.6							2440		< 1.0
2022-12-15	FS_INF-S						3691						2.4							2710		1.7
2022-12-15	FR_SCOUTDS	< 0.010	< 0.010	< 0.010	< 0.010	6.65	1670		0.244	0.253	< 0.0015	584	0.7	< 0.010	< 0.010	< 0.00010	< 0.00010	< 0.30	< 0.30	1180	0.440	1.5
2022-12-15	FS_INF-K																					
2022-12-15	FS_INF-S																					
2022-12-15	FS_INF-K																					
2022-12-15	FS_INF-S																					
2022-12-15	FS_INF-K																					
2022-12-15	FS_INF-S																					
2022-12-15	FS_INF-K																					
2022-12-15	FS_INF-S																					
2022-12-15	FS_INF-K																					
2022-12-16	FS_INF-K																					
2022-12-16	FS_INF-S																					
2022-12-16	FS_INF-K																					
2022-12-16	FS_INF-S																					
2022-12-16	FS_BPO						3181						5.7							2600		6.5
2022-12-16	FS_INF-K						3194						2.6							2680		2.0
2022-12-16	FS_INF-S						3695						2.4							3370		5.8
2022-12-16	FS_INF-K																					
2022-12-16	FS_INF-S																					
2022-12-16	FR_FRABCH	< 0.010	< 0.010	< 0.010	< 0.010	4.75	1318.00		0.214	0.181		404	1.60	< 0.010	< 0.010	< 0.00010	< 0.00010	< 0.30	< 0.30	482	< 0.050	< 1.0
2022-12-16	FS_INF-K																					
2022-12-16	FS_INF-S																					
2022-12-16	FS_INF-K																					
2022-12-16	FS_INF-S																					
2022-12-16	FS_INF-K																					
2022-12-16	FS_INF-S																					
2022-12-16	FS_INF-K																					
2022-12-16	FS_INF-S																					
2022-12-17	FS_INF-K																					
2022-12-17	FS_INF-S																					
2022-12-17	FS_INF-K																					
2022-12-17	FS_INF-S																					
2022-12-17	FS_BPO						3124						5.9							2560		3.6
2022-12-17	FS_INF-K						3249						2.9							3030		1.5
2022-12-17	FS_INF-S						36.22						2.3							3590		1.5
2022-12-17	FS_INF-K																					
2022-12-17	FS_INF-S																					
2022-12-17	FS_INF-K																					
2022-12-17	FS_INF-S																					
2022-12-17	FS_INF-K																					
2022-12-17	FS_INF-S																					
2022-12-17	FS_INF-K																					
2022-12-17	FS_INF-S																					
2022-12-17	FS_INF-K																					

Parameter		Selenosulfate, SeSO3	SeMe – selenomethionine CH3SeCH2CH2CH(NH2)CO2H	Silver	Silver	Sodium	Specific conductivity, temperature corrected value (25 C)	Specific conductivity, temperature corrected value (25 C)	Strontium	Strontium	SULFIDE (as S)	Sulphate (As SO4)	Temperature, Field	Thallium	Thallium	Tin	Tin	Titanium	Titanium	Total Dissolved Solids (Residue, Filterable)	Total Kjeldahl Nitrogen	Total Suspended Solids, Lab
Fraction		D	D	D	T	T	N	N	D	T	T	D	N	D	T	D	T	D	T	N	N	N
Unit		ug/l	ug/l	mg/l	mg/l	mg/l	us/cm	uS/cm at 25 C	mg/l	mg/l	mg/l	mg/l	deg c	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-12-17	FS_INF-S																					
2022-12-18	FS_INF-K																					
2022-12-18	FS_INF-S																					
2022-12-18	FS_INF-K																					
2022-12-18	FS_INF-S																					
2022-12-18	FS_BPO	< 0.010	< 0.010				3133						4.8							2580		3.1
2022-12-18	FS_INF-K						3150						2.3							3390		2.3
2022-12-18	FS_INF-S						3622						2							3250		2.2
2022-12-18	FS_INF-K																					
2022-12-18	FS_INF-S																					
2022-12-18	FS_INF-K																					
2022-12-18	FS_INF-S																					
2022-12-18	FS_INF-K																					
2022-12-18	FS_INF-S																					
2022-12-19	FS_INF-K																					
2022-12-19	FS_INF-S																					
2022-12-19	FS_INF-K																					
2022-12-19	FS_INF-S																					
2022-12-19	FS_BPO						3145				< 0.0015	1370	4.1							2350	0.400	3.2
2022-12-19	FS_INF-K						3159					1010	2.1							2340	1.78	1.5
2022-12-19	FS_INF-S						3630					1870	1.8							3060	2.10	1.8
2022-12-19	FS_INF-K																					
2022-12-19	FS_INF-S																					
2022-12-19	FS_INF-K																					
2022-12-19	FS_INF-S																					
2022-12-19	FS_INF-K																					
2022-12-19	FS_INF-S																					
2022-12-19	FS_INF-K																					
2022-12-19	FS_INF-S																					
2022-12-19	FS_INF-K																					
2022-12-19	FS_INF-S																					
2022-12-20	FS_INF-K																					
2022-12-20	FS_INF-S																					
2022-12-20	FS_INF-K																					
2022-12-20	FS_INF-S																					
2022-12-20	FS_BPO	< 0.010	< 0.010	< 0.020	< 0.020	23.3	3136		0.303	0.298			4.3	< 0.020	< 0.020	< 0.00020	< 0.00020	< 0.60	< 0.60	2720		4.6
2022-12-20	FS_INF-K	< 0.010	< 0.010	< 0.020	< 0.020	10.6	3156		0.360	0.357			2.3	0.043	0.038	< 0.00020	< 0.00020	< 0.60	< 0.60	2600		2.2
2022-12-20	FS_INF-S	< 0.010	< 0.010	< 0.020	< 0.020	2.60	3630		0.249	0.250			1.9	0.062	0.057	< 0.00020	< 0.00020	< 0.60	< 0.60	3320		2.8
2022-12-20	FS_INF-K																					
2022-12-20	FS_INF-S																					
2022-12-20	FS_INF-K																					
2022-12-20	FS_INF-S																					
2022-12-20	FS_INF-K																					
2022-12-20	FS_INF-S																					
2022-12-20	FS_INF-K																					
2022-12-20	FS_INF-S																					
2022-12-20	FS_INF-K																					
2022-12-20	FS_INF-S																					
2022-12-21	FS_INF-K																					
2022-12-21	FS_INF-S																					
2022-12-21	FS_INF-K																					
2022-12-21	FS_INF-S																					
2022-12-21	FS_BPO						3151						3.8							2530		< 1.0
2022-12-21	FS_INF-K						3166						2							2590		< 1.0
2022-12-21	FS_INF-S						3636						1.8							3310		1.8
2022-12-21	FS_INF-K																					
2022-12-21	FS_INF-S																					
2022-12-21	FR_FRABCH						1325						-0.1									
2022-12-21	FR_FRABCH																					
2022-12-21	FS_INF-K																					
2022-12-21	FS_INF-S																					
2022-12-21	FS_INF-K																					
2022-12-21	FS_INF-S																					
2022-12-21	FS_INF-K																					
2022-12-21	FS_INF-S																					
2022-12-21	FS_INF-K																					
2022-12-21	FS_INF-S																					
2022-12-22	FS_INF-K																					
2022-12-22	FS_INF-S																					
2022-12-22	FS_INF-K																					
2022-12-22	FS_INF-S																					
2022-12-22	FS_BPO	< 0.010	< 0.010				3160						3.7							2500		5.1
2022-12-22	FS_INF-K						3172						2.2							2370		< 1.0
2022-12-22	FS_INF-S						3636						1.8							3020		3.2
2022-12-22	FR_SCOUTDS	< 0.010	< 0.010	< 0.010	< 0.010	3.92	1467		0.246	0.252	0.0022	686	0	0.018	0.017	< 0.00010	< 0.00010	< 0.30	< 0.30	1510	0.111	1.7
2022-12-22	FR_SCOUTDS																					
2022-12-23	FS_BPO																			2690		6.4
2022-12-23	FS_INF-K																			2540		2.0
2022-12-23	FS_INF-S																			3420		1.3
2022-12-23	FS_BPO						2576						0.6									

Parameter		Selenosulfate, SeSO3	SeMe – selenomethionine CH3SeCH2CH2CH(NH2)CO2H	Silver	Silver	Sodium	Specific conductivity, temperature corrected value (25 C)	Specific conductivity, temperature corrected value (25 C)	Strontium	Strontium	SULFIDE (as S)	Sulphate (As SO4)	Temperature, Field	Thallium	Thallium	Tin	Tin	Titanium	Titanium	Total Dissolved Solids (Residue, Filterable)	Total Kjeldahl Nitrogen	Total Suspended Solids, Lab
Fraction		D	D	D	T	T	N	N	D	T	T	D	N	D	T	D	T	D	T	N	N	N
Unit		ug/l	ug/l	mg/l	mg/l	mg/l	us/cm	uS/cm at 25 C	mg/l	mg/l	mg/l	mg/l	deg c	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-12-23	FR_FRABCH						1366						0									
2022-12-23	FR_SCOUTDS						1836						0.3									
2022-12-23	FS_BPO						3171						3.3									
2022-12-23	FS_INF-K						3162						2.8									
2022-12-23	FS_INF-S						3643						1.8									
2022-12-23	FR_SCOUTDS																					
2022-12-23	FS_INF-K																					
2022-12-23	FS_INF-S																					
2022-12-23	FS_INF-K																					
2022-12-23	FS_INF-S																					
2022-12-23	FS_INF-K																					
2022-12-23	FS_INF-S																					
2022-12-24	FS_INF-K																					
2022-12-24	FS_INF-S																					
2022-12-24	FS_INF-K																					
2022-12-24	FS_INF-S																					
2022-12-24	FS_BPO						3220						4.3							2670		3.1
2022-12-24	FS_INF-K						3168						2.6							2410		1.3
2022-12-24	FS_INF-S						3637						1.9							3310		1.3
2022-12-24	FS_INF-K																					
2022-12-24	FS_INF-S																					
2022-12-24	FS_INF-K																					
2022-12-24	FS_INF-S																					
2022-12-24	FS_BPO																					
2022-12-24	FS_INF-K																					
2022-12-24	FS_INF-S																					
2022-12-25	FS_BPO						3269						5.1									
2022-12-25	FS_INF-K																					
2022-12-25	FS_INF-S																					
2022-12-25	FS_INF-K																					
2022-12-25	FS_INF-S																					
2022-12-25	FS_BPO	< 0.010	< 0.010				3250						4.5							2550		3.2
2022-12-25	FS_INF-K						3203						2.7							2310		3.1
2022-12-25	FS_INF-S						3625						2							3170		3.2
2022-12-25	FS_INF-K																					
2022-12-25	FS_INF-S																					
2022-12-25	FS_INF-K																					
2022-12-25	FS_INF-S																					
2022-12-25	FS_INF-K																					
2022-12-25	FS_INF-S																					
2022-12-25	FS_INF-K																					
2022-12-25	FS_INF-S																					
2022-12-26	FS_INF-K																					
2022-12-26	FS_INF-S																					
2022-12-26	FS_INF-K																					
2022-12-26	FS_INF-S																					
2022-12-26	FS_BPO						3256				< 0.0015	1470	4.8							2840	0.467	1.0
2022-12-26	FS_INF-K						3620					1060	2.1							2660	< 0.050	5.5
2022-12-26	FS_INF-S						3179					1900	3.3							3350	0.587	2.8
2022-12-26	FS_INF-K																					
2022-12-26	FS_INF-S																					
2022-12-26	FS_INF-K																					
2022-12-26	FS_INF-S																					
2022-12-26	FS_INF-K																					
2022-12-26	FS_INF-S																					
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2022-12-26	FS_INF-S																					
2022-12-26	FS_INF-K																					
2022-12-26	FS_INF-S																					
2022-12-27	FS_INF-K																					
2022-12-27	FS_INF-S																					
2022-12-27	FS_INF-K																					
2022-12-27	FS_INF-S																					
2022-12-27	FS_BPO	< 0.010	< 0.010	< 0.020	< 0.020	25.5	3160 3186 3155		0.282	0.283			6.4	< 0.020	< 0.020	< 0.00020	< 0.00020	< 0.60	< 0.60	2660		< 1.0
2022-12-27	FS_INF-K			< 0.020	< 0.020	12.4	3157		0.370	0.364			3.8	0.047	0.045	< 0.00020	< 0.00020	< 0.60	< 0.60	2600		2.9
2022-12-27	FS_INF-S			< 0.020	< 0.020	2.66	3592		0.246	0.247			2.4	0.060	0.053	< 0.00020	< 0.00020	< 0.60	< 0.60	3380		3.5
2022-12-27	FS_INF-K																					
2022-12-27	FS_INF-S																					
2022-12-27	FS_INF-K																					
2022-12-27	FS_INF-S																					
2022-12-27	FS_INF-K																					
2022-12-27	FS_INF-S																					
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2022-12-27	FS_INF-S																					
2022-12-27	FS_INF-K																					
2022-12-27	FS_INF-S																					
2022-12-28	FS_INF-K																					
2022-12-28	FS_INF-S																					
2022-12-28	FS_INF-K																					
2022-12-28	FS_INF-S																					

Parameter		Selenosulfate, SeSO3	SeMe – selenomethionine CH3SeCH2CH2CH(NH2)CO2H	Silver	Silver	Sodium	Specific conductivity, temperature corrected value (25 C)	Specific conductivity, temperature corrected value (25 C)	Strontium	Strontium	SULFIDE (as S)	Sulphate (As SO4)	Temperature, Field	Thallium	Thallium	Tin	Tin	Titanium	Titanium	Total Dissolved Solids (Residue, Filterable)	Total Kjeldahl Nitrogen	Total Suspended Solids, Lab
Fraction		D	D	D	T	T	N	N	D	T	T	D	N	D	T	D	T	D	T	N	N	N
Unit		ug/l	ug/l	mg/l	mg/l	mg/l	us/cm	uS/cm at 25 C	mg/l	mg/l	mg/l	mg/l	deg c	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-12-28	FS_BPO						3115						7							2780		5.8
2022-12-28	FS_INF-K						3137						3.4							2780		4.0
2022-12-28	FS_INF-S						3562						2.3							3430		1.9
2022-12-28	FS_INF-K																					
2022-12-28	FS_INF-S																					
2022-12-28	FS_INF-K																					
2022-12-28	FS_INF-S																					
2022-12-28	FS_INF-K																					
2022-12-28	FS_INF-S																					
2022-12-28	FS_INF-K																					
2022-12-28	FS_INF-S																					
2022-12-28	FS_INF-K																					
2022-12-28	FS_INF-S																					
2022-12-29	FS_INF-K																					
2022-12-29	FS_INF-S																					
2022-12-29	FS_INF-K																					
2022-12-29	FS_INF-S																					
2022-12-29	FS_BPO	< 0.010	< 0.010				3123						7.1							2640		2.5
2022-12-29	FS_INF-K						3142						3.3							2410		4.3
2022-12-29	FS_INF-S						3562						2.5							3420		3.2
2022-12-29	FR_SCOUTDS	< 0.010	< 0.010	< 0.010	< 0.010	6.60	1626		0.230	0.242	< 0.0015	590	1	< 0.010	< 0.010	< 0.00010	< 0.00010	< 0.30	< 0.30	1280	0.250	4.7
2022-12-29	FS_INF-K																					
2022-12-29	FS_INF-S																					
2022-12-29	FS_INF-K																					
2022-12-29	FS_INF-S																					
2022-12-29	FS_INF-K																					
2022-12-29	FS_INF-S																					
2022-12-29	FS_INF-K																					
2022-12-29	FS_INF-S																					
2022-12-29	FS_INF-K																					
2022-12-29	FS_INF-S																					
2022-12-30	FS_INF-K																					
2022-12-30	FS_INF-S																					
2022-12-30	FS_INF-K																					
2022-12-30	FS_INF-K																					
2022-12-30	FS_INF-S																					
2022-12-30	FS_BPO						3047						7							2720		3.6
2022-12-30	FS_INF-K						3147						3							2410		3.0
2022-12-30	FS_INF-S						3567						2.4							3250		1.9
2022-12-30	FS_INF-K																					
2022-12-30	FS_INF-S																					
2022-12-30	FS_INF-K																					
2022-12-30	FS_INF-S																					
2022-12-30	FS_INF-K																					
2022-12-30	FS_INF-S																					
2022-12-30	FS_INF-K																					
2022-12-30	FS_INF-S																					
2022-12-30	FS_INF-K																					
2022-12-30	FS_INF-S																					
2022-12-31	FS_INF-K																					
2022-12-31	FS_INF-S																					
2022-12-31	FS_INF-K																					
2022-12-31	FS_INF-S																					
2022-12-31	FS_BPO						3090						6.9							2720		6.0
2022-12-31	FS_INF-K						3153						3							2520		2.4
2022-12-31	FS_INF-S						3566						2.4							3090		4.9
2022-12-31	FS_BPO																					
2022-12-31	FS_INF-K																					
2022-12-31	FS_INF-S																					
2022-12-31	FS_INF-K																					
2022-12-31	FS_INF-S																					
2022-12-31	FS_INF-K																					
2022-12-31	FS_INF-S																					
2022-12-31	FS_INF-K																					
2022-12-31	FS_INF-S																					

				Unknown selenium species – all other selenium species which elute from the applied chromatographic column and are not identified through retention time matching with known standards						
Parameter		TURBIDITY, FIELD	Turbidity, Lab		Uranium	Uranium	Vanadium	Vanadium	Zinc	Zinc
Fraction		N	N	D	D	T	D	T	D	T
Unit		ntu	ntu	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-01-01	FS_BPO									
2022-01-01	FS_BPO									
2022-01-01	FS_BPO		0.92	< 0.010						
2022-01-01	FS_INF-S		0.56							
2022-01-01	FS_BPO									
2022-01-01	FS_BPO									
2022-01-01	FS_BPO									
2022-01-01	FS_BPO									
2022-01-01	FS_BPO									
2022-01-01	FS_INF-S									
2022-01-02	FS_BPO		1.12	< 0.010						
2022-01-02	FS_INF-S		0.69							
2022-01-02	FS_BPO									
2022-01-02	FS_BPO									
2022-01-02	FS_BPO									
2022-01-02	FS_INF-S									
2022-01-03	FS_BPO		1.41	< 0.010						
2022-01-03	FS_INF-S		0.73							
2022-01-03	FS_BPO									
2022-01-03	FS_BPO									
2022-01-03	FS_INF-S									
2022-01-04	FS_BPO		0.76	< 0.010	13.9	13.6	< 1.00	< 1.00	24.7	25.6
2022-01-04	FS_INF-S		0.46	< 0.010						
2022-01-04	FS_BPO									
2022-01-04	FS_INF-S									
2022-01-05	FS_BPO		1.06	< 0.010						
2022-01-05	FS_INF-S		0.70							
2022-01-05	FS_BPO									
2022-01-05	FS_INF-S									
2022-01-06	FR_SCOUTDS			< 0.010						
2022-01-06	FS_BPO		1.00	< 0.010						
2022-01-06	FS_INF-S		0.83							
2022-01-06	FS_BPO									
2022-01-06	FR_FRABCH									
2022-01-06	FR_SCOUTDS		0.30		6.36	6.84	< 0.50	< 0.50	5.5	5.6
2022-01-06	FR_FRABCH		0.60		3.81	4.26	< 0.50	< 0.50	1.6	9.6
2022-01-06	FR_SCOUTDS									
2022-01-06	FS_INF-S									
2022-01-07	FS_BPO		0.86	< 0.010						
2022-01-07	FS_INF-S		0.67							
2022-01-07	FS_BPO									
2022-01-07	FS_INF-S									
2022-01-08	FS_BPO		0.72	< 0.010						
2022-01-08	FS_INF-S		0.63							
2022-01-08	FS_BPO									
2022-01-08	FS_INF-S									
2022-01-09	FS_BPO		0.58	< 0.010						
2022-01-09	FS_INF-S		0.52							
2022-01-09	FS_BPO									
2022-01-09	FS_INF-S									
2022-01-10	FS_BPO		0.43	< 0.010						
2022-01-10	FS_INF-S		0.78							
2022-01-10	FS_BPO									
2022-01-10	FS_INF-S									
2022-01-10	FS_BPO									
2022-01-10	FS_INF-S									
2022-01-11	FS_BPO		0.40	< 0.010						
2022-01-11	FS_INF-S		0.66	< 0.010						
2022-01-11	FS_BPO									
2022-01-11	FS_INF-S									
2022-01-12	FS_BPO		0.46	< 0.010						
2022-01-12	FS_INF-S		0.69							
2022-01-12	FS_BPO									
2022-01-12	FS_INF-S									
2022-01-13	FR_SCOUTDS			< 0.010						
2022-01-13	FS_BPO		0.39	< 0.010						
2022-01-13	FS_INF-S		0.76		19.6	16.9	< 1.00	< 1.00	25.9	27.2
2022-01-13	FS_BPO									
2022-01-13	FR_SCOUTDS		2.05		5.44	6.08	< 0.50	< 0.50	4.0	5.8
2022-01-13	FS_INF-S									
2022-01-14	FS_BPO		0.34	< 0.010						

	Parameter	TURBIDITY, FIELD	Turbidity, Lab	Unknown selenium species – all other selenium species which elute from the applied chromatographic column and are not identified through retention time matching with known standards	Uranium	Uranium	Vanadium	Vanadium	Zinc	Zinc
	Fraction	N	N	D	D	T	D	T	D	T
	Unit	ntu	ntu	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-01-14	FS_INF-S		0.78							
2022-01-14	FS_BPO									
2022-01-14	FS_INF-S									
2022-01-15	FS_BPO		0.43	< 0.010						
2022-01-15	FS_INF-S		0.62							
2022-01-15	FS_BPO									
2022-01-15	FS_INF-S									
2022-01-16	FS_BPO		0.36	< 0.010						
2022-01-16	FS_INF-S		0.59							
2022-01-16	FS_BPO									
2022-01-16	FS_INF-S									
2022-01-17	FS_BPO		0.39	< 0.010						
2022-01-17	FS_INF-S		0.59							
2022-01-17	FS_BPO									
2022-01-17	FS_BPO									
2022-01-17	FS_BPO									
2022-01-17	FR_FRABCH		0.13		3.86	4.09	< 0.50	< 0.50	1.0	< 3.0
2022-01-17	FS_BPO									
2022-01-17	FS_INF-S									
2022-01-18	FS_BPO		0.41	< 0.010	16.1	14.7	< 1.00	< 1.00	< 6.0	< 6.0
2022-01-18	FS_INF-S		0.65	< 0.010	15.6	16.9	< 2.50	< 1.00	32.3	34.0
2022-01-18	FS_BPO									
2022-01-18	FS_INF-S									
2022-01-19	FS_BPO		0.35	< 0.010						
2022-01-19	FS_INF-S		0.62							
2022-01-19	FS_BPO									
2022-01-19	FS_INF-S									
2022-01-20	FR_SCOUTDS			< 0.010						
2022-01-20	FS_BPO		0.35	< 0.010						
2022-01-20	FS_INF-S		0.59							
2022-01-20	FS_BPO									
2022-01-20	FR_SCOUTDS		0.29		5.92	6.62	< 0.50	< 0.50	7.9	5.1
2022-01-20	FS_BPO									
2022-01-20	FS_BPO									
2022-01-21	FS_BPO									
2022-01-21	FS_INF-S									
2022-01-21	FS_BPO		0.41	< 0.010						
2022-01-21	FS_INF-S		0.60							
2022-01-21	FS_BPO									
2022-01-21	FS_BPO									
2022-01-21	FS_BPO									
2022-01-21	FS_INF-S									
2022-01-21	FS_INF-S									
2022-01-22	FS_BPO		0.31							
2022-01-22	FS_INF-S		0.45							
2022-01-22	FS_BPO			< 0.010						
2022-01-22	FS_BPO									
2022-01-22	FS_BPO									
2022-01-22	FS_INF-S									
2022-01-23	FS_BPO		0.32	< 0.010						
2022-01-23	FS_INF-S		0.46							
2022-01-23	FS_BPO									
2022-01-23	FS_INF-S									
2022-01-24	FS_BPO		0.29	< 0.010						
2022-01-24	FS_INF-S		0.48							
2022-01-24	FS_BPO									
2022-01-24	FS_BPO									
2022-01-24	FS_BPO									
2022-01-24	FS_INF-S									
2022-01-24	FS_INF-S									
2022-01-25	FS_BPO		0.32	< 0.010						
2022-01-25	FS_INF-S		0.52	< 0.010	17.7	16.6	< 1.00	< 2.50	26.0	25.1
2022-01-25	FS_BPO									
2022-01-25	FS_INF-S									
2022-01-26	FS_BPO		0.38	< 0.010						
2022-01-26	FS_INF-S		0.51							
2022-01-26	FS_BPO									
2022-01-26	FS_INF-S									
2022-01-27	FR_SCOUTDS			< 0.010						
2022-01-27	FS_BPO		0.48	< 0.010						
2022-01-27	FS_INF-S		0.51							
2022-01-27	FS_BPO									
2022-01-27	FR_FRABCH									
2022-01-27	FR_SCOUTDS		0.34		6.12	7.04	< 0.50	< 0.50	4.1	4.7

				Unknown selenium species – all other selenium species which elute from the applied chromatographic column and are not identified through retention time matching with known standards						
Parameter		TURBIDITY, FIELD	Turbidity, Lab		Uranium	Uranium	Vanadium	Vanadium	Zinc	Zinc
Fraction		N	N	D	D	T	D	T	D	T
Unit		ntu	ntu	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-01-27	FR_FRABCH		0.40		3.74	3.69	< 0.50	< 0.50	1.0	< 3.0
2022-01-27	FS_BPO									
2022-01-27	FS_INF-S									
2022-01-28	FS_BPO		0.51							
2022-01-28	FS_INF-S		0.46							
2022-01-28	FS_BPO									
2022-01-29	FS_BPO		0.46	< 0.010						
2022-01-29	FS_INF-S		0.48							
2022-01-29	FS_BPO									
2022-01-30	FS_BPO		0.36							
2022-01-30	FS_INF-S		0.51							
2022-01-30	FS_BPO									
2022-01-31	FS_BPO		0.34							
2022-01-31	FS_INF-S		0.55							
2022-01-31	FS_BPO									
2022-01-31	FS_BPO									
2022-02-01	FS_BPO		0.42	< 0.010						
2022-02-01	FS_INF-S		0.49							
2022-02-01	FS_BPO									
2022-02-01	FR_FRABCH		0.17		3.92	3.83	< 0.50	< 0.50	1.4	< 3.0
2022-02-02	FS_BPO		0.40							
2022-02-02	FS_INF-S		0.41							
2022-02-02	FS_BPO									
2022-02-03	FR_SCOUTDS			< 0.010						
2022-02-03	FS_BPO		0.33	< 0.010						
2022-02-03	FS_INF-S		0.46							
2022-02-03	FS_BPO									
2022-02-03	FR_SCOUTDS		0.25		6.81	6.94	< 0.50	< 0.50	4.8	5.9
2022-02-04	FS_BPO		0.31							
2022-02-04	FS_INF-S		0.42							
2022-02-04	FS_BPO									
2022-02-05	FS_BPO		0.26	< 0.010						
2022-02-05	FS_INF-S		0.33							
2022-02-05	FS_BPO									
2022-02-05	FS_BPO									
2022-02-06	FS_BPO		0.32							
2022-02-06	FS_INF-S		0.60							
2022-02-06	FS_BPO									
2022-02-06	FS_BPO									
2022-02-06	FS_INF-S									
2022-02-07	FS_BPO		0.26							
2022-02-07	FS_INF-S		1.29							
2022-02-07	FS_BPO									
2022-02-07	FS_BPO									
2022-02-08	FR_SCOUTDS			< 0.010						
2022-02-08	FS_BPO		0.33	< 0.010	15.9	17.5	< 1.00	< 1.00	< 6.0	< 6.0
2022-02-08	FS_INF-S		0.40	< 0.010	17.5	19.3	< 1.00	< 1.00	34.4	27.2
2022-02-08	FS_BPO									
2022-02-09	FS_BPO		0.26							
2022-02-09	FS_INF-S		0.37							
2022-02-09	FS_BPO									
2022-02-09	FR_FRABCH	0.11								
2022-02-10	FR_SCOUTDS			< 0.010						
2022-02-10	FS_BPO		0.52	< 0.010						
2022-02-10	FS_INF-S		0.45		18.7	20.3	< 1.00	< 1.00	30.4	29.5
2022-02-10	FS_BPO									
2022-02-10	FR_SCOUTDS		0.68		5.96	6.42	< 0.50	< 0.50	4.2	5.6
2022-02-11	FS_BPO		0.57							
2022-02-11	FS_INF-S		0.34							
2022-02-11	FS_BPO									
2022-02-12	FS_BPO		0.44	< 0.010						
2022-02-12	FS_INF-S		0.43							
2022-02-12	FS_BPO									
2022-02-13	FS_BPO		0.34	< 0.010						
2022-02-13	FS_INF-S		0.44							
2022-02-13	FS_BPO									
2022-02-14	FS_BPO		0.44							
2022-02-14	FS_INF-S		0.52							

	Parameter	TURBIDITY, FIELD	Turbidity, Lab	Unknown selenium species – all other selenium species which elute from the applied chromatographic column and are not identified through retention time matching with known standards	Uranium	Uranium	Vanadium	Vanadium	Zinc	Zinc
	Fraction	N	N	D	D	T	D	T	D	T
	Unit	ntu	ntu	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-02-14	FS_BPO									
2022-02-14	FS_BPO									
2022-02-14	FS_INF-S									
2022-02-15	FS_BPO		0.43	< 0.010		16.8		< 2.50		< 15.0
2022-02-15	FS_INF-S		0.50		16.6	19.0	< 1.00	< 2.50	30.0	38.4
2022-02-15	FS_BPO									
2022-02-15	FR_FRABCH									
2022-02-15	FS_BPO									
2022-02-16	FS_BPO									
2022-02-16	FS_INF-S									
2022-02-16	FS_BPO		0.37							
2022-02-16	FS_INF-S		0.48							
2022-02-16	FS_BPO									
2022-02-16	FR_FRABCH		0.20		3.98	4.02	< 0.50	< 0.50	< 1.0	< 3.0
2022-02-16	FS_BPO									
2022-02-16	FS_INF-S									
2022-02-17	FR_SCOUTDS			< 0.010						
2022-02-17	FS_BPO		0.48	< 0.010						
2022-02-17	FS_INF-S		0.36							
2022-02-17	FS_BPO									
2022-02-17	FR_SCOUTDS		0.58		5.88	6.46	< 0.50	< 0.50	8.8	6.0
2022-02-18	FS_BPO		0.39							
2022-02-18	FS_INF-S		0.45							
2022-02-18	FS_BPO									
2022-02-19	FS_BPO		0.43							
2022-02-19	FS_INF-S		0.41							
2022-02-19	FS_BPO									
2022-02-20	FS_BPO		0.40	< 0.010						
2022-02-20	FS_INF-S		0.39							
2022-02-20	FS_BPO									
2022-02-21	FS_BPO		0.57							
2022-02-21	FS_INF-S		0.48							
2022-02-21	FS_BPO									
2022-02-21	FS_BPO									
2022-02-21	FS_BPO									
2022-02-22	FS_BPO									
2022-02-22	FS_BPO		0.31	< 0.010						
2022-02-22	FS_INF-S		0.45		16.1	17.6	< 1.00	< 1.00	31.8	36.3
2022-02-22	FS_BPO									
2022-02-22	FR_FRABCH									
2022-02-22	FS_BPO									
2022-02-22	FS_BPO									
2022-02-22	FS_INF-S									
2022-02-23	FS_BPO									
2022-02-23	FS_BPO		0.25							
2022-02-23	FS_INF-S		0.37							
2022-02-23	FS_BPO									
2022-02-24	FR_SCOUTDS			< 0.010						
2022-02-24	FS_BPO		0.21	< 0.010						
2022-02-24	FS_INF-S		0.35							
2022-02-24	FS_BPO									
2022-02-24	FR_SCOUTDS		0.46		6.57	6.34	< 0.50	< 0.50	< 3.0	8.2
2022-02-25	FS_BPO		0.26							
2022-02-25	FS_INF-S		0.32							
2022-02-25	FS_BPO									
2022-02-25	FR_SCOUTDS									
2022-02-25	FS_INF-K		0.45							
2022-02-25	FS_INF-K									
2022-02-25	FS_INF-K									
2022-02-26	FS_BPO		0.33							
2022-02-26	FS_INF-K		< 0.10							
2022-02-26	FS_INF-S		0.31							
2022-02-26	FS_BPO									
2022-02-27	FS_BPO		0.33	< 0.010						
2022-02-27	FS_INF-K		0.22			17.7		< 1.00		15.0
2022-02-27	FS_INF-S		0.30							
2022-02-27	FS_BPO									
2022-02-28	FS_BPO		0.27							
2022-02-28	FS_INF-K		< 0.10		16.5		< 2.50		31.4	

	Parameter	TURBIDITY, FIELD	Turbidity, Lab	Unknown selenium species – all other selenium species which elute from the applied chromatographic column and are not identified through retention time matching with known standards	Uranium	Uranium	Vanadium	Vanadium	Zinc	Zinc
	Fraction	N	N	D	D	T	D	T	D	T
	Unit	ntu	ntu	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-02-28	FS_INF-S		0.32							
2022-02-28	FS_BPO									
2022-02-28	FS_BPO									
2022-03-01	FS_BPO		0.24	< 0.010	17.5	16.4	< 1.00	< 1.00	< 6.0	< 6.0
2022-03-01	FS_INF-K		< 0.10	< 0.010	16.9	16.6	< 1.00	< 1.00	33.8	33.3
2022-03-01	FS_INF-S		0.28	< 0.010	18.8	17.0	< 1.00	< 1.00	25.3	25.9
2022-03-01	FS_BPO									
2022-03-01	FR_FRABCH	0.28	0.70		3.61	3.66	< 0.50	< 0.50	2.0	< 3.0
2022-03-02	FS_BPO		0.25							
2022-03-02	FS_INF-K		0.16							
2022-03-02	FS_INF-S		1.01							
2022-03-02	FS_BPO									
2022-03-02	FR_FRABCH									
2022-03-03	FR_SCOUTDS			< 0.010						
2022-03-03	FS_BPO		0.31	< 0.010						
2022-03-03	FS_INF-K		< 0.10							
2022-03-03	FS_INF-S		0.39							
2022-03-03	FS_BPO									
2022-03-03	FR_SCOUTDS		0.52		6.50	5.75	< 0.50	< 0.50	4.2	4.4
2022-03-04	FS_BPO		0.47							
2022-03-04	FS_INF-K		0.11							
2022-03-04	FS_INF-S		0.56							
2022-03-04	FS_BPO									
2022-03-04	FS_BPO									
2022-03-05	FS_BPO		0.38							
2022-03-05	FS_INF-K		< 0.10							
2022-03-05	FS_INF-S		0.53							
2022-03-05	FS_BPO									
2022-03-06	FS_BPO		0.24	< 0.010						
2022-03-06	FS_INF-K		0.10							
2022-03-06	FS_INF-S		0.44							
2022-03-06	FS_BPO									
2022-03-07	FS_BPO		0.15							
2022-03-07	FS_INF-K		< 0.10							
2022-03-07	FS_INF-S		0.37							
2022-03-07	FS_BPO									
2022-03-07	FS_BPO									
2022-03-08	FS_BPO		0.39	< 0.010		16.8		< 1.00		< 6.0
2022-03-08	FS_INF-K		0.36	< 0.010	16.8	19.1	< 1.00	< 1.00	33.4	33.8
2022-03-08	FS_INF-S		0.38	< 0.010	16.5	19.3	< 1.00	< 1.00	30.9	27.5
2022-03-08	FS_BPO									
2022-03-08	FS_INF-S									
2022-03-08	FS_BPO									
2022-03-08	FR_FRABCH		0.10		4.04	4.35	< 0.50	< 0.50	8.2	< 3.0
2022-03-08	FS_BPO									
2022-03-08	FS_BPO									
2022-03-09	FS_BPO									
2022-03-09	FS_BPO		0.41							
2022-03-09	FS_INF-K		< 0.10							
2022-03-09	FS_INF-S		0.31							
2022-03-09	FS_BPO									
2022-03-10	FR_SCOUTDS			< 0.010						
2022-03-10	FS_BPO		0.35	< 0.010						
2022-03-10	FS_INF-K		< 0.10							
2022-03-10	FS_INF-S		0.38							
2022-03-10	FS_BPO									
2022-03-10	FR_SCOUTDS		0.49		6.01	6.90	< 0.50	< 0.50	4.1	4.6
2022-03-11	FS_BPO		0.39							
2022-03-11	FS_INF-K		< 0.10							
2022-03-11	FS_INF-S		0.45							
2022-03-11	FS_BPO									
2022-03-12	FS_BPO		0.47							
2022-03-12	FS_INF-K		< 0.10							
2022-03-12	FS_INF-S		0.35							
2022-03-12	FS_BPO									
2022-03-13	FS_BPO		0.41	< 0.010						
2022-03-13	FS_INF-K		< 0.10							
2022-03-13	FS_INF-S		0.31							
2022-03-13	FS_BPO									

				Unknown selenium species – all other selenium species which elute from the applied chromatographic column and are not identified through retention time matching with known standards						
Parameter		TURBIDITY, FIELD	Turbidity, Lab		Uranium	Uranium	Vanadium	Vanadium	Zinc	Zinc
Fraction		N	N	D	D	T	D	T	D	T
Unit		ntu	ntu	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-03-14	FS_BPO		0.50							
2022-03-14	FS_INF-K		< 0.10							
2022-03-14	FS_INF-S		1.02							
2022-03-14	FS_BPO									
2022-03-14	FS_BPO									
2022-03-15	FS_BPO		0.48	< 0.010		17.0		< 1.00		< 6.0
2022-03-15	FS_INF-K		< 0.10	< 0.010	18.1	18.2	< 1.00	< 1.00	34.4	34.2
2022-03-15	FS_INF-S		5.16	< 0.010	17.2	17.4	< 1.00	< 1.00	29.5	26.7
2022-03-15	FS_BPO									
2022-03-15	FR_FRABCH		0.22		3.41	4.22	< 0.50	< 0.50	36.7	15.7
2022-03-16	FS_BPO		0.41							
2022-03-16	FS_INF-K		1.26							
2022-03-16	FS_INF-S		6.28							
2022-03-16	FS_BPO									
2022-03-17	FR_SCOUTDS			< 0.010						
2022-03-17	FS_BPO		0.36	< 0.010						
2022-03-17	FS_INF-K		< 0.10							
2022-03-17	FS_INF-S		5.56							
2022-03-17	FS_BPO									
2022-03-17	FR_SCOUTDS		23.4		6.05	5.88	< 0.50	0.63	5.3	7.0
2022-03-18	FS_BPO		1.21							
2022-03-18	FS_INF-K		< 0.10							
2022-03-18	FS_INF-S		6.42							
2022-03-18	FS_BPO									
2022-03-19	FS_BPO		0.48							
2022-03-19	FS_INF-K		< 0.10							
2022-03-19	FS_INF-S		3.58							
2022-03-19	FS_BPO									
2022-03-20	FS_BPO		0.41	< 0.010						
2022-03-20	FS_INF-K		< 0.10							
2022-03-20	FS_INF-S		4.50							
2022-03-20	FS_BPO									
2022-03-21	FS_BPO		0.46							
2022-03-21	FS_INF-K		< 0.10							
2022-03-21	FS_INF-S		3.38							
2022-03-21	FS_BPO									
2022-03-21	FS_BPO									
2022-03-22	FS_BPO		0.36	< 0.010	15.3	15.6	< 1.00	< 1.00	< 6.0	< 6.0
2022-03-22	FS_INF-K		< 0.10		18.3	17.3	< 1.00	< 1.00	33.3	32.1
2022-03-22	FS_INF-S		3.21		15.9	15.0	< 1.00	< 1.00	28.1	26.3
2022-03-22	FS_BPO									
2022-03-23	FS_BPO		0.47							
2022-03-23	FS_INF-K		< 0.10							
2022-03-23	FS_INF-S		< 0.10							
2022-03-23	FS_BPO									
2022-03-23	FR_FRABCH	3.76	0.71		4.03	4.15	< 0.50	< 0.50	1.3	< 3.0
2022-03-23	FR_FRABCH									
2022-03-24	FR_SCOUTDS			< 0.010						
2022-03-24	FS_BPO		0.77	< 0.010						
2022-03-24	FS_INF-K		< 0.10							
2022-03-24	FS_INF-S		5.46							
2022-03-24	FS_BPO									
2022-03-24	FR_SCOUTDS		2.44		5.36	5.57	< 0.50	< 0.50	3.8	5.2
2022-03-25	FS_BPO		0.54							
2022-03-25	FS_INF-K		< 0.10							
2022-03-25	FS_INF-S		5.74							
2022-03-25	FS_BPO									
2022-03-26	FS_BPO		0.55							
2022-03-26	FS_INF-K		< 0.10							
2022-03-26	FS_INF-S		4.68							
2022-03-26	FS_BPO									
2022-03-27	FS_BPO		0.53	< 0.010						
2022-03-27	FS_INF-K		< 0.10							
2022-03-27	FS_INF-S		4.77							
2022-03-27	FS_BPO									
2022-03-28	FS_BPO		0.54							
2022-03-28	FS_INF-K		< 0.10							
2022-03-28	FS_INF-S		8.04							
2022-03-28	FS_BPO									

	Parameter	TURBIDITY, FIELD	Turbidity, Lab	Unknown selenium species – all other selenium species which elute from the applied chromatographic column and are not identified through retention time matching with known standards	Uranium	Uranium	Vanadium	Vanadium	Zinc	Zinc
	Fraction	N	N	D	D	T	D	T	D	T
	Unit	ntu	ntu	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-03-28	FS_BPO									
2022-03-29	FS_BPO		0.87	< 0.010	14.0	13.6	< 1.00	< 1.00	< 6.0	< 6.0
2022-03-29	FS_INF-K		< 0.10	< 0.010	18.3	18.1	< 1.00	< 1.00	35.6	32.6
2022-03-29	FS_INF-S		8.97	< 0.010	12.4	11.8	< 1.00	< 1.00	31.4	31.0
2022-03-29	FS_BPO									
2022-03-30	FS_BPO		0.80							
2022-03-30	FS_INF-K		< 0.10							
2022-03-30	FS_INF-S		7.60							
2022-03-30	FR_FRABCH	2.55	4.30		3.68	4.04	< 0.50	< 0.50	1.8	< 3.0
2022-03-30	FS_BPO									
2022-03-30	FS_BPO									
2022-03-31	FR_SCOUTDS			< 0.010						
2022-03-31	FS_BPO		0.60	< 0.010						
2022-03-31	FS_INF-K		< 0.10							
2022-03-31	FS_INF-S		4.65							
2022-03-31	FS_BPO									
2022-03-31	FR_SCOUTDS		5.13		4.52	4.26	< 0.50	0.54	7.5	16.1
2022-04-01	FS_BPO		1.01							
2022-04-01	FS_INF-K		< 0.10							
2022-04-01	FS_INF-S		4.21							
2022-04-01	FS_BPO									
2022-04-01	FR_FRABCH									
2022-04-02	FS_BPO		0.54							
2022-04-02	FS_INF-K		< 0.10							
2022-04-02	FS_INF-S		2.30							
2022-04-02	FS_BPO									
2022-04-02	FS_INF-S									
2022-04-03	FS_BPO		0.58	< 0.010						
2022-04-03	FS_INF-K		0.12							
2022-04-03	FS_INF-S		2.46							
2022-04-03	FS_BPO									
2022-04-04	FS_BPO		0.49							
2022-04-04	FS_INF-K		< 0.10							
2022-04-04	FS_INF-S		2.63							
2022-04-04	FS_BPO									
2022-04-04	FS_BPO									
2022-04-05	FS_BPO		0.51		14.7	15.4	< 1.00	< 1.00	< 6.0	< 6.0
2022-04-05	FS_INF-K		0.12		17.7	18.7	< 1.00	< 1.00	32.2	32.7
2022-04-05	FS_INF-S		2.05		15.3	15.3	< 1.00	< 1.00	38.8	40.6
2022-04-05	FS_BPO									
2022-04-05	FR_FRABCH		1.56		3.80	4.06	< 0.50	< 0.50	1.9	< 3.0
2022-04-06	FS_BPO			< 0.010						
2022-04-06	FS_INF-K			< 0.010						
2022-04-06	FS_INF-S			< 0.010						
2022-04-06	FS_BPO		0.48							
2022-04-06	FS_INF-K		< 0.10							
2022-04-06	FS_INF-S		0.34							
2022-04-06	FS_BPO									
2022-04-06	FR_FRABCH									
2022-04-07	FS_BPO		0.70	0.015						
2022-04-07	FS_INF-K		< 0.10							
2022-04-07	FS_INF-S		1.58							
2022-04-07	FS_BPO									
2022-04-07	FR_SCOUTDS		1.32	< 0.010	5.50	5.25	< 0.50	< 0.50	7.1	7.4
2022-04-08	FS_BPO		0.58							
2022-04-08	FS_INF-K		< 0.10							
2022-04-08	FS_INF-S		1.09							
2022-04-08	FS_BPO									
2022-04-09	FS_BPO		0.55							
2022-04-09	FS_INF-K		< 0.10							
2022-04-09	FS_INF-S		0.93							
2022-04-09	FS_BPO									
2022-04-10	FS_BPO		0.69	< 0.010						
2022-04-10	FS_INF-K		< 0.10							
2022-04-10	FS_INF-S		1.13							
2022-04-10	FS_BPO									
2022-04-11	FS_BPO		0.48							

	Parameter	TURBIDITY, FIELD	Turbidity, Lab	Unknown selenium species – all other selenium species which elute from the applied chromatographic column and are not identified through retention time matching with known standards	Uranium	Uranium	Vanadium	Vanadium	Zinc	Zinc
	Fraction	N	N	D	D	T	D	T	D	T
	Unit	ntu	ntu	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-04-11	FS_INF-K		0.10							
2022-04-11	FS_INF-S		1.17							
2022-04-11	FS_BPO									
2022-04-11	FS_BPO									
2022-04-12	FS_BPO		0.51	< 0.010	14.6	15.8	< 1.00	< 1.00	< 6.0	< 6.0
2022-04-12	FS_INF-K		0.16	< 0.010	17.2	17.8	< 1.00	< 1.00	30.8	30.6
2022-04-12	FS_INF-S		1.18	< 0.010	14.9	15.5	< 1.00	< 1.00	37.4	40.5
2022-04-12	FS_BPO									
2022-04-12	FR_FRABCH		1.63		4.26	4.63	< 0.50	< 0.50	3.1	3.7
2022-04-13	FS_BPO		0.50							
2022-04-13	FS_INF-K		0.17							
2022-04-13	FS_INF-S		1.21							
2022-04-13	FS_BPO									
2022-04-14	FS_BPO		0.60	< 0.010						
2022-04-14	FS_INF-K		< 0.10							
2022-04-14	FS_INF-S		1.06							
2022-04-14	FS_BPO									
2022-04-14	FR_SCOUTDS		1.75	< 0.010	5.70	5.70	< 0.50	< 0.50	10.5	10.7
2022-04-15	FS_BPO									
2022-04-15	FS_BPO									
2022-04-15	FS_BPO		0.54							
2022-04-15	FS_INF-K		< 0.10							
2022-04-15	FS_INF-S		0.89							
2022-04-15	FS_BPO									
2022-04-15	FS_BPO									
2022-04-15	FS_BPO									
2022-04-16	FS_BPO									
2022-04-16	FS_BPO									
2022-04-16	FS_BPO		0.95							
2022-04-16	FS_INF-K		< 0.10							
2022-04-16	FS_INF-S		0.63							
2022-04-16	FS_BPO									
2022-04-16	FS_BPO									
2022-04-17	FS_BPO		1.08	< 0.010						
2022-04-17	FS_INF-K		< 0.10							
2022-04-17	FS_INF-S		0.67							
2022-04-17	FS_BPO									
2022-04-18	FS_BPO		1.20							
2022-04-18	FS_INF-K		< 0.10							
2022-04-18	FS_INF-S		0.78							
2022-04-18	FS_BPO									
2022-04-18	FS_BPO									
2022-04-19	FS_BPO		1.05	< 0.010	16.0	16.4	< 1.00	< 1.00	< 6.0	< 6.0
2022-04-19	FS_INF-K		< 0.10		17.8	19.7	< 1.00	< 1.00	29.6	33.4
2022-04-19	FS_INF-S		0.51		16.3	16.9	< 1.00	< 1.00	33.6	36.0
2022-04-19	FS_BPO									
2022-04-20	FS_BPO									
2022-04-20	FR_FRABCH		0.44		4.40	4.54	< 0.50	< 0.50	3.1	< 3.0
2022-04-21	FR_SCOUTDS									
2022-04-21	FS_INF-K		< 0.10							
2022-04-21	FR_SCOUTDS		0.79	< 0.010	5.52	5.53	< 0.50	0.56	7.0	7.6
2022-04-21	FS_INF-K									
2022-04-22	FS_BPO		2.11							
2022-04-22	FS_INF-S		0.54							
2022-04-22	FR_SCOUTDS									
2022-04-22	FS_BPO									
2022-04-22	FR_FRABCH									
2022-04-22	FR_FRABCH									
2022-04-22	FS_BPO									
2022-04-22	FS_INF-S									
2022-04-22	FS_INF-S									
2022-04-22	FS_BPO									
2022-04-22	FS_BPO									
2022-04-22	FS_INF-S									
2022-04-22	FS_INF-S									
2022-04-23	FS_BPO		1.21							
2022-04-23	FS_INF-S		0.62							
2022-04-23	FS_BPO									
2022-04-23	FS_INF-S									
2022-04-24	FS_BPO		1.07	< 0.010						
2022-04-24	FS_INF-S		0.68							
2022-04-24	FS_BPO									

	Parameter	TURBIDITY, FIELD	Turbidity, Lab	Unknown selenium species – all other selenium species which elute from the applied chromatographic column and are not identified through retention time matching with known standards	Uranium	Uranium	Vanadium	Vanadium	Zinc	Zinc
	Fraction	N	N	D	D	T	D	T	D	T
	Unit	ntu	ntu	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-04-24	FS_INF-S									
2022-04-25	FS_BPO		1.24							
2022-04-25	FS_INF-S		0.71							
2022-04-25	FS_BPO									
2022-04-25	FS_BPO									
2022-04-26	FS_BPO		0.85	< 0.010						
2022-04-26	FS_INF-S		0.54	< 0.010	15.2	14.8	< 1.00	< 1.00	39.2	41.6
2022-04-26	FS_BPO									
2022-04-27	FS_BPO		1.65							
2022-04-27	FS_INF-S		1.04							
2022-04-27	FS_BPO									
2022-04-28	FS_BPO		0.67	< 0.010						
2022-04-28	FS_INF-S		0.67							
2022-04-28	FS_BPO									
2022-04-28	FR_SCOUTDS		2.18	< 0.010	3.93	3.67	< 0.50	< 0.50	9.0	9.1
2022-04-28	FR_FRABCH									
2022-04-29	FS_BPO		0.58							
2022-04-29	FS_INF-S		0.74							
2022-04-29	FS_BPO									
2022-04-30	FS_BPO		3.97							
2022-04-30	FS_INF-S		1.58							
2022-04-30	FS_BPO									
2022-05-01	FS_BPO		1.44	< 0.010						
2022-05-01	FS_INF-K		0.83							
2022-05-01	FS_INF-S		1.49							
2022-05-01	FS_BPO									
2022-05-01	FS_INF-K									
2022-05-01	FS_BPO									
2022-05-01	FS_BPO									
2022-05-02	FS_BPO		1.42							
2022-05-02	FS_INF-S		1.33							
2022-05-02	FS_BPO									
2022-05-02	FS_BPO									
2022-05-02	FS_BPO									
2022-05-02	FS_BPO									
2022-05-02	FS_INF-S									
2022-05-03	FS_BPO		1.50	< 0.010	13.8	12.9	< 1.00	< 1.00	< 6.0	< 6.0
2022-05-03	FS_INF-S		0.75		15.0	14.2	< 1.00	< 1.00	44.1	48.4
2022-05-03	FS_BPO									
2022-05-04	FS_BPO		0.67							
2022-05-04	FS_INF-S		1.56							
2022-05-04	FS_BPO									
2022-05-05	FS_BPO		1.36	< 0.010						
2022-05-05	FS_INF-K		< 0.10							
2022-05-05	FS_INF-S		0.67							
2022-05-05	FS_BPO									
2022-05-05	FR_SCOUTDS		1.36	< 0.010	2.82	2.94	< 0.50	< 0.50	6.5	7.2
2022-05-05	FR_FRABCH									
2022-05-06	FS_BPO		0.74							
2022-05-06	FS_INF-K		< 0.10							
2022-05-06	FS_INF-S		1.04							
2022-05-06	FS_BPO									
2022-05-07	FS_BPO		1.27							
2022-05-07	FS_INF-K		< 0.10							
2022-05-07	FS_INF-S		2.08							
2022-05-07	FS_BPO									
2022-05-07	FS_INF-S									
2022-05-08	FS_BPO		0.84	< 0.010						
2022-05-08	FS_INF-K		0.37							
2022-05-08	FS_INF-S		2.48							
2022-05-08	FS_BPO									
2022-05-08	FS_INF-S									
2022-05-08	FS_BPO									
2022-05-09	FS_INF-S									
2022-05-09	FS_INF-S									
2022-05-09	FS_BPO		0.70							
2022-05-09	FS_INF-K		< 0.10							
2022-05-09	FS_INF-S		2.45							
2022-05-09	FS_BPO									
2022-05-09	FS_BPO									
2022-05-10	FS_INF-S									
2022-05-10	FS_INF-S									

				Unknown selenium species – all other selenium species which elute from the applied chromatographic column and are not identified through retention time matching with known standards						
Parameter		TURBIDITY, FIELD	Turbidity, Lab		Uranium	Uranium	Vanadium	Vanadium	Zinc	Zinc
Fraction		N	N	D	D	T	D	T	D	T
Unit		ntu	ntu	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-05-10	FS_BPO		0.63	< 0.010	10.9	11.1	< 1.00	< 1.00	< 6.0	< 6.0
2022-05-10	FS_INF-K		< 0.10	< 0.010	16.9	16.2	< 1.00	< 1.00	28.1	25.0
2022-05-10	FS_INF-S		1.59	< 0.010	11.8	12.0	< 1.00	< 1.00	55.6	50.7
2022-05-10	FS_BPO									
2022-05-10	FR_FRABCH									
2022-05-11	FS_BPO		1.02							
2022-05-11	FS_INF-K		0.28							
2022-05-11	FS_INF-S		1.39							
2022-05-11	FS_BPO									
2022-05-12	FS_BPO		0.94	< 0.010						
2022-05-12	FS_INF-K		0.16							
2022-05-12	FS_INF-S		0.79							
2022-05-12	FS_BPO									
2022-05-12	FR_SCOUTDS		0.76	< 0.010	3.52	3.41	< 0.50	< 0.50	6.4	7.1
2022-05-12	FS_INF-K									
2022-05-12	FS_INF-S									
2022-05-12	FS_INF-K									
2022-05-12	FS_INF-S									
2022-05-12	FS_INF-K									
2022-05-12	FS_INF-S									
2022-05-12	FS_INF-K									
2022-05-12	FS_INF-S									
2022-05-12	FS_INF-K									
2022-05-12	FS_INF-S									
2022-05-13	FS_INF-K									
2022-05-13	FS_INF-S									
2022-05-13	FS_INF-K									
2022-05-13	FS_INF-S									
2022-05-13	FS_BPO		0.74							
2022-05-13	FS_INF-K		< 0.10							
2022-05-13	FS_INF-S		1.08							
2022-05-13	FS_BPO									
2022-05-13	FS_INF-K									
2022-05-13	FS_INF-S									
2022-05-13	FS_INF-K									
2022-05-13	FS_INF-S									
2022-05-13	FS_INF-K									
2022-05-13	FS_INF-S									
2022-05-13	FS_INF-K									
2022-05-13	FS_INF-S									
2022-05-13	FS_INF-K									
2022-05-13	FS_INF-S									
2022-05-14	FS_INF-K									
2022-05-14	FS_INF-S									
2022-05-14	FS_INF-K									
2022-05-14	FS_INF-S									
2022-05-14	FS_BPO		0.67							
2022-05-14	FS_INF-K		0.13							
2022-05-14	FS_INF-S		0.70							
2022-05-14	FS_BPO									
2022-05-14	FS_INF-K									
2022-05-14	FS_INF-S									
2022-05-14	FS_INF-K									
2022-05-14	FS_INF-S									
2022-05-14	FS_INF-K									
2022-05-14	FS_INF-S									
2022-05-14	FS_INF-K									
2022-05-14	FS_INF-S									
2022-05-14	FS_INF-K									
2022-05-14	FS_INF-S									
2022-05-15	FS_INF-K									
2022-05-15	FS_INF-S									
2022-05-15	FS_INF-K									
2022-05-15	FS_INF-S									
2022-05-15	FS_BPO		0.70	< 0.010						
2022-05-15	FS_INF-K		< 0.10							
2022-05-15	FS_INF-S		0.81							
2022-05-15	FS_BPO									
2022-05-15	FS_INF-K									
2022-05-15	FS_INF-S									
2022-05-15	FS_INF-K									
2022-05-15	FS_INF-S									
2022-05-15	FS_INF-K									
2022-05-15	FS_INF-S									
2022-05-15	FS_INF-K									
2022-05-15	FS_INF-S									
2022-05-16	FS_INF-K									
2022-05-16	FS_INF-S									
2022-05-16	FS_INF-K									
2022-05-16	FS_INF-S									
2022-05-16	FS_BPO		0.86							

				Unknown selenium species – all other selenium species which elute from the applied chromatographic column and are not identified through retention time matching with known standards						
Parameter		TURBIDITY, FIELD	Turbidity, Lab		Uranium	Uranium	Vanadium	Vanadium	Zinc	Zinc
Fraction		N	N	D	D	T	D	T	D	T
Unit		ntu	ntu	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-05-16	FS_INF-K		< 0.10							
2022-05-16	FS_INF-S		0.60							
2022-05-16	FS_BPO									
2022-05-16	FS_BPO									
2022-05-16	FS_INF-K									
2022-05-16	FS_INF-S									
2022-05-16	FS_INF-K									
2022-05-16	FS_INF-S									
2022-05-16	FS_INF-K									
2022-05-16	FS_INF-S									
2022-05-16	FS_INF-K									
2022-05-16	FS_INF-S									
2022-05-16	FS_INF-K									
2022-05-16	FS_INF-S									
2022-05-17	FS_INF-K									
2022-05-17	FS_INF-S									
2022-05-17	FS_INF-K									
2022-05-17	FS_INF-S									
2022-05-17	FS_BPO		0.76	< 0.010	12.2	13.1	< 1.00	< 1.00	< 6.0	< 6.0
2022-05-17	FS_INF-K		0.10		17.2	16.5	< 1.00	< 1.00	26.6	26.0
2022-05-17	FS_INF-S		0.49		14.0	13.3	< 1.00	< 1.00	53.4	51.2
2022-05-17	FS_BPO									
2022-05-17	FR_FRABCH		2.06		2.88	3.05	< 0.50	< 0.50	2.8	5.7
2022-05-17	FS_INF-K									
2022-05-17	FS_INF-S									
2022-05-17	FS_INF-K									
2022-05-17	FS_INF-S									
2022-05-17	FS_INF-K									
2022-05-17	FS_INF-S									
2022-05-17	FS_INF-K									
2022-05-17	FS_INF-S									
2022-05-17	FS_INF-K									
2022-05-17	FS_INF-S									
2022-05-18	FS_INF-K									
2022-05-18	FS_INF-S									
2022-05-18	FS_INF-K									
2022-05-18	FS_INF-S									
2022-05-18	FS_BPO		0.68							
2022-05-18	FS_INF-K		1.00							
2022-05-18	FS_INF-S		0.50							
2022-05-18	FS_BPO									
2022-05-18	FS_BPO									
2022-05-18	FS_INF-K									
2022-05-18	FS_INF-S									
2022-05-18	FS_INF-K									
2022-05-18	FS_INF-S									
2022-05-18	FS_INF-K									
2022-05-18	FS_INF-S									
2022-05-19	FS_INF-K									
2022-05-19	FS_INF-S									
2022-05-19	FS_INF-K									
2022-05-19	FS_INF-S									
2022-05-19	FS_BPO		0.58	< 0.010						
2022-05-19	FS_INF-K		< 0.10							
2022-05-19	FS_INF-S		0.69							
2022-05-19	FS_BPO									
2022-05-19	FR_SCOUTDS		0.68	< 0.010	2.72	2.56	< 0.50	< 0.50	5.2	6.1
2022-05-19	FS_INF-K									
2022-05-19	FS_INF-S									
2022-05-19	FS_INF-K									
2022-05-19	FS_INF-S									
2022-05-19	FS_INF-K									
2022-05-19	FS_INF-S									
2022-05-19	FS_INF-K									
2022-05-19	FS_INF-S									
2022-05-19	FS_INF-K									
2022-05-19	FS_INF-S									
2022-05-20	FS_INF-K									
2022-05-20	FS_INF-S									
2022-05-20	FS_INF-K									
2022-05-20	FS_INF-S									
2022-05-20	FS_BPO		0.72							
2022-05-20	FS_INF-K		< 0.10							
2022-05-20	FS_INF-S		1.09							
2022-05-20	FS_BPO									
2022-05-20	FS_INF-K									
2022-05-20	FS_INF-S									
2022-05-20	FS_INF-K									
2022-05-20	FS_INF-S									
2022-05-20	FS_INF-K									
2022-05-20	FS_INF-S									

	Parameter	TURBIDITY, FIELD	Turbidity, Lab	Unknown selenium species – all other selenium species which elute from the applied chromatographic column and are not identified through retention time matching with known standards	Uranium	Uranium	Vanadium	Vanadium	Zinc	Zinc
	Fraction	N	N	D	D	T	D	T	D	T
	Unit	ntu	ntu	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-05-20	FS_INF-K									
2022-05-20	FS_INF-S									
2022-05-21	FS_INF-K									
2022-05-21	FS_INF-S									
2022-05-21	FS_INF-K									
2022-05-21	FS_INF-S									
2022-05-21	FS_BPO		0.56							
2022-05-21	FS_INF-K		0.13							
2022-05-21	FS_INF-S		0.67							
2022-05-21	FS_BPO									
2022-05-21	FS_INF-K									
2022-05-21	FS_INF-S									
2022-05-21	FS_INF-K									
2022-05-21	FS_INF-S									
2022-05-21	FS_INF-K									
2022-05-21	FS_INF-S									
2022-05-21	FS_INF-K									
2022-05-21	FS_INF-S									
2022-05-22	FS_INF-K									
2022-05-22	FS_INF-S									
2022-05-22	FS_INF-K									
2022-05-22	FS_INF-S									
2022-05-22	FS_BPO		0.76	< 0.010						
2022-05-22	FS_INF-K		0.34							
2022-05-22	FS_INF-S		0.74							
2022-05-22	FS_BPO									
2022-05-22	FS_BPO									
2022-05-22	FS_BPO									
2022-05-22	FS_INF-K									
2022-05-22	FS_INF-S									
2022-05-22	FS_INF-K									
2022-05-22	FS_INF-S									
2022-05-22	FS_INF-K									
2022-05-22	FS_INF-S									
2022-05-23	FS_INF-K									
2022-05-23	FS_INF-S									
2022-05-23	FS_INF-K									
2022-05-23	FS_INF-S									
2022-05-23	FS_BPO		0.50							
2022-05-23	FS_INF-K		< 0.10							
2022-05-23	FS_INF-S		0.47							
2022-05-23	FS_BPO									
2022-05-23	FS_BPO									
2022-05-23	FR_FRABCH									
2022-05-23	FS_INF-K									
2022-05-23	FS_INF-S									
2022-05-23	FS_INF-K									
2022-05-23	FS_INF-S									
2022-05-23	FS_INF-K									
2022-05-23	FS_INF-S									
2022-05-23	FS_INF-K									
2022-05-23	FS_INF-S									
2022-05-23	FS_INF-K									
2022-05-24	FS_INF-K									
2022-05-24	FS_INF-S									
2022-05-24	FS_INF-K									
2022-05-24	FS_INF-S									
2022-05-24	FS_BPO		0.34	< 0.010	11.6	11.0	< 1.00	< 1.00	< 6.0	< 6.0
2022-05-24	FS_INF-K		< 0.10	0.034	14.8	15.4	< 1.00	< 0.50	18.3	25.2
2022-05-24	FS_INF-S		0.34	< 0.010	13.1	12.9	< 1.00	< 1.00	56.3	58.7
2022-05-24	FS_BPO									
2022-05-24	FR_FRABCH		0.63		3.40	3.42	< 0.50	< 0.50	2.4	3.4
2022-05-24	FS_INF-K									
2022-05-24	FS_INF-S									
2022-05-24	FS_INF-K									
2022-05-24	FS_INF-S									
2022-05-24	FS_INF-K									
2022-05-24	FS_INF-S									
2022-05-24	FS_INF-K									
2022-05-24	FS_INF-S									
2022-05-24	FS_INF-K									
2022-05-24	FS_INF-S									
2022-05-25	FS_INF-K									
2022-05-25	FS_INF-S									
2022-05-25	FS_INF-K									
2022-05-25	FS_INF-S									
2022-05-25	FS_BPO		0.58							
2022-05-25	FS_INF-K		1.44							
2022-05-25	FS_INF-S		0.64							
2022-05-25	FS_BPO									
2022-05-25	FS_INF-K									
2022-05-25	FS_INF-S									
2022-05-25	FS_INF-K									

	Parameter	TURBIDITY, FIELD	Turbidity, Lab	Unknown selenium species – all other selenium species which elute from the applied chromatographic column and are not identified through retention time matching with known standards	Uranium	Uranium	Vanadium	Vanadium	Zinc	Zinc
	Fraction	N	N	D	D	T	D	T	D	T
	Unit	ntu	ntu	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-05-25	FS_INF-S									
2022-05-25	FS_INF-K									
2022-05-25	FS_INF-S									
2022-05-25	FS_INF-K									
2022-05-25	FS_INF-S									
2022-05-25	FS_INF-K									
2022-05-25	FS_INF-S									
2022-05-26	FS_INF-K									
2022-05-26	FS_INF-S									
2022-05-26	FS_INF-K									
2022-05-26	FS_INF-S									
2022-05-26	FS_BPO		0.46	< 0.010						
2022-05-26	FS_INF-K		< 0.10							
2022-05-26	FS_INF-S		0.34							
2022-05-26	FS_BPO									
2022-05-26	FR_SCOUTDS		0.81	< 0.010	2.31	2.27	< 0.50	< 0.50	3.9	4.1
2022-05-26	FS_INF-K									
2022-05-26	FS_INF-S									
2022-05-26	FS_INF-K									
2022-05-26	FS_INF-S									
2022-05-26	FS_INF-K									
2022-05-26	FS_INF-S									
2022-05-26	FS_INF-K									
2022-05-26	FS_INF-S									
2022-05-26	FS_INF-K									
2022-05-26	FS_INF-S									
2022-05-27	FS_INF-K									
2022-05-27	FS_INF-S									
2022-05-27	FS_INF-K									
2022-05-27	FS_INF-S									
2022-05-27	FS_BPO		0.85							
2022-05-27	FS_INF-K		0.26							
2022-05-27	FS_INF-S		1.47							
2022-05-27	FS_INF-K									
2022-05-27	FS_INF-S									
2022-05-27	FS_INF-K									
2022-05-27	FS_INF-S									
2022-05-27	FS_INF-K									
2022-05-27	FS_INF-S									
2022-05-27	FS_INF-K									
2022-05-27	FS_INF-S									
2022-05-28	FS_INF-K									
2022-05-28	FS_INF-S									
2022-05-28	FS_INF-K									
2022-05-28	FS_INF-S									
2022-05-28	FS_BPO		0.67							
2022-05-28	FS_INF-K		0.11							
2022-05-28	FS_INF-S		1.46							
2022-05-28	FS_INF-K									
2022-05-28	FS_INF-S									
2022-05-28	FS_INF-K									
2022-05-28	FS_INF-S									
2022-05-28	FS_INF-K									
2022-05-28	FS_INF-S									
2022-05-28	FS_INF-K									
2022-05-28	FS_INF-S									
2022-05-28	FS_INF-K									
2022-05-28	FS_INF-S									
2022-05-29	FS_INF-K									
2022-05-29	FS_INF-S									
2022-05-29	FS_INF-K									
2022-05-29	FS_INF-S									
2022-05-29	FS_BPO		0.72	< 0.010						
2022-05-29	FS_INF-K		0.25							
2022-05-29	FS_INF-S		0.92							
2022-05-29	FS_BPO									
2022-05-29	FS_INF-K									
2022-05-29	FS_INF-S									
2022-05-29	FS_INF-K									
2022-05-29	FS_INF-S									
2022-05-29	FS_INF-K									
2022-05-29	FS_INF-S									
2022-05-29	FS_INF-K									
2022-05-29	FS_INF-S									
2022-05-29	FS_INF-K									
2022-05-29	FS_INF-S									
2022-05-30	FS_INF-K									
2022-05-30	FS_INF-S									
2022-05-30	FS_BPO		0.68							
2022-05-30	FS_INF-K		< 0.10							

				Unknown selenium species – all other selenium species which elute from the applied chromatographic column and are not identified through retention time matching with known standards						
Parameter		TURBIDITY, FIELD	Turbidity, Lab		Uranium	Uranium	Vanadium	Vanadium	Zinc	Zinc
Fraction		N	N	D	D	T	D	T	D	T
Unit		ntu	ntu	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-05-30	FS_INF-S		0.54							
2022-05-30	FS_BPO									
2022-05-30	FS_INF-K									
2022-05-30	FS_INF-S									
2022-05-30	FS_INF-K									
2022-05-30	FS_INF-S									
2022-05-30	FS_INF-K									
2022-05-30	FS_INF-S									
2022-05-30	FS_INF-K									
2022-05-30	FS_INF-S									
2022-05-30	FS_INF-K									
2022-05-30	FS_INF-S									
2022-05-31	FS_INF-K									
2022-05-31	FS_INF-S									
2022-05-31	FS_INF-K									
2022-05-31	FS_INF-S									
2022-05-31	FS_BPO		0.43	< 0.010	12.8	11.6	< 1.00	< 1.00	< 6.0	< 6.0
2022-05-31	FS_INF-K		< 0.10		16.6	15.6	< 0.50	< 1.00	23.5	21.3
2022-05-31	FS_INF-S		0.43		13.9	12.8	< 1.00	< 1.00	67.5	65.9
2022-05-31	FR_FRABCH		3.73		2.21	2.29	< 0.50	0.54	2.3	5.8
2022-05-31	FR_FRABCH									
2022-05-31	FS_INF-K									
2022-05-31	FS_INF-S									
2022-05-31	FS_INF-K									
2022-05-31	FS_INF-S									
2022-05-31	FS_INF-K									
2022-05-31	FS_INF-S									
2022-05-31	FS_INF-K									
2022-05-31	FS_INF-S									
2022-06-01	FS_INF-K									
2022-06-01	FS_INF-S									
2022-06-01	FS_BPO		0.45							
2022-06-01	FS_INF-K		< 0.10							
2022-06-01	FS_INF-S		0.34							
2022-06-01	FS_INF-K									
2022-06-01	FS_INF-S									
2022-06-01	FS_INF-K									
2022-06-01	FS_INF-S									
2022-06-01	FS_INF-K									
2022-06-01	FS_INF-S									
2022-06-01	FS_INF-K									
2022-06-01	FS_INF-S									
2022-06-02	FS_INF-K									
2022-06-02	FS_INF-S									
2022-06-02	FS_INF-K									
2022-06-02	FS_INF-S									
2022-06-02	FS_BPO		0.32	< 0.010						
2022-06-02	FS_INF-K		< 0.10							
2022-06-02	FS_INF-S		0.33							
2022-06-02	FR_SCOUTDS		0.59	< 0.010	1.45	1.67	< 0.50	0.51	3.2	3.3
2022-06-02	FS_INF-K									
2022-06-02	FS_INF-S									
2022-06-02	FS_INF-K									
2022-06-02	FS_INF-S									
2022-06-02	FS_INF-K									
2022-06-02	FS_INF-S									
2022-06-02	FS_BPO									
2022-06-02	FS_INF-K									
2022-06-02	FS_INF-S									
2022-06-02	FS_INF-K									
2022-06-02	FS_INF-S									
2022-06-03	FS_INF-K									
2022-06-03	FS_INF-S									
2022-06-03	FS_INF-K									
2022-06-03	FS_INF-S									
2022-06-03	FS_BPO		0.69							
2022-06-03	FS_INF-K		< 0.10							
2022-06-03	FS_INF-S		0.43							
2022-06-03	FS_INF-K									
2022-06-03	FS_INF-S									
2022-06-03	FS_INF-K									
2022-06-03	FS_INF-S									
2022-06-03	FS_INF-K									
2022-06-03	FS_INF-S									
2022-06-03	FS_INF-K									
2022-06-03	FS_INF-S									
2022-06-04	FS_INF-K									
2022-06-04	FS_INF-S									
2022-06-04	FS_INF-K									
2022-06-04	FS_INF-S									
2022-06-04	FS_BPO		0.51							

	Parameter	TURBIDITY, FIELD	Turbidity, Lab	Unknown selenium species – all other selenium species which elute from the applied chromatographic column and are not identified through retention time matching with known standards	Uranium	Uranium	Vanadium	Vanadium	Zinc	Zinc
	Fraction	N	N	D	D	T	D	T	D	T
	Unit	ntu	ntu	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-06-04	FS_INF-K		< 0.10							
2022-06-04	FS_INF-S		0.26							
2022-06-04	FS_INF-K									
2022-06-04	FS_INF-S									
2022-06-04	FS_INF-K									
2022-06-04	FS_INF-S									
2022-06-04	FS_INF-K									
2022-06-04	FS_INF-S									
2022-06-04	FS_INF-K									
2022-06-04	FS_INF-S									
2022-06-04	FS_INF-K									
2022-06-04	FS_INF-S									
2022-06-05	FS_INF-K									
2022-06-05	FS_INF-S									
2022-06-05	FS_INF-K									
2022-06-05	FS_INF-S									
2022-06-05	FS_BPO		0.62	< 0.010						
2022-06-05	FS_INF-K		0.11							
2022-06-05	FS_INF-S		0.59							
2022-06-05	FS_INF-K									
2022-06-05	FS_INF-S									
2022-06-05	FS_INF-K									
2022-06-05	FS_INF-S									
2022-06-05	FS_INF-K									
2022-06-05	FS_INF-S									
2022-06-05	FS_INF-K									
2022-06-05	FS_INF-S									
2022-06-05	FS_INF-K									
2022-06-05	FS_INF-S									
2022-06-05	FS_INF-K									
2022-06-05	FS_INF-S									
2022-06-06	FS_INF-K									
2022-06-06	FS_INF-S									
2022-06-06	FS_INF-K									
2022-06-06	FS_INF-S									
2022-06-06	FS_BPO		0.53							
2022-06-06	FS_INF-K		0.10							
2022-06-06	FS_INF-S		1.14							
2022-06-06	FS_BPO									
2022-06-06	FS_INF-K									
2022-06-06	FS_INF-S									
2022-06-06	FS_INF-K									
2022-06-06	FS_INF-S									
2022-06-06	FS_INF-K									
2022-06-06	FS_INF-S									
2022-06-06	FS_INF-K									
2022-06-06	FS_INF-S									
2022-06-07	FS_INF-K									
2022-06-07	FS_INF-S									
2022-06-07	FS_INF-K									
2022-06-07	FS_INF-S									
2022-06-07	FS_BPO		0.80	< 0.010	12.0	11.6	< 0.50	< 1.00	7.9	< 6.0
2022-06-07	FS_INF-K		0.13	< 0.010	12.8	12.3	< 0.50	< 0.50	20.0	19.6
2022-06-07	FS_INF-S		1.21	< 0.010	11.9	11.8	< 1.00	< 1.00	64.5	67.6
2022-06-07	FR_FRABCH	11.8	7.44	< 0.010	1.73	1.86	< 0.50	1.09	2.3	6.6
2022-06-07	FS_INF-K									
2022-06-07	FS_INF-S									
2022-06-07	FS_INF-K									
2022-06-07	FS_INF-S									
2022-06-07	FS_INF-K									
2022-06-07	FS_INF-S									
2022-06-07	FS_INF-K									
2022-06-07	FS_INF-S									
2022-06-07	FS_INF-K									
2022-06-07	FS_INF-S									
2022-06-08	FS_INF-K									
2022-06-08	FS_INF-S									
2022-06-08	FS_INF-K									
2022-06-08	FS_INF-S									
2022-06-08	FS_BPO		0.97							
2022-06-08	FS_INF-K		0.10							
2022-06-08	FS_INF-S		0.66							
2022-06-08	FS_INF-K									
2022-06-08	FS_INF-S									
2022-06-08	FS_INF-K									
2022-06-08	FS_INF-S									
2022-06-08	FS_INF-K									
2022-06-08	FS_INF-S									
2022-06-08	FS_INF-K									
2022-06-08	FS_INF-S									
2022-06-08	FS_INF-K									
2022-06-08	FS_INF-S									
2022-06-09	FS_INF-K									
2022-06-09	FS_INF-S									
2022-06-09	FS_INF-K									
2022-06-09	FS_INF-S									

	Parameter	TURBIDITY, FIELD	Turbidity, Lab	Unknown selenium species – all other selenium species which elute from the applied chromatographic column and are not identified through retention time matching with known standards	Uranium	Uranium	Vanadium	Vanadium	Zinc	Zinc
	Fraction	N	N	D	D	T	D	T	D	T
	Unit	ntu	ntu	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-06-09	FS_BPO		0.95	< 0.010						
2022-06-09	FS_INF-K		< 0.10							
2022-06-09	FS_INF-S		0.66							
2022-06-09	FR_SCOUTDS		1.97	< 0.010	1.14	1.20	< 0.50	0.54	4.7	4.2
2022-06-09	FS_INF-K									
2022-06-09	FS_INF-S									
2022-06-09	FR_FRABCH									
2022-06-09	FS_INF-K									
2022-06-09	FS_INF-S									
2022-06-09	FS_INF-K									
2022-06-09	FS_INF-S									
2022-06-09	FS_INF-K									
2022-06-09	FS_INF-S									
2022-06-09	FS_INF-K									
2022-06-09	FS_INF-S									
2022-06-10	FS_INF-K									
2022-06-10	FS_INF-S									
2022-06-10	FS_INF-K									
2022-06-10	FS_INF-S									
2022-06-10	FS_BPO		1.22							
2022-06-10	FS_INF-K		0.16							
2022-06-10	FS_INF-S		0.52							
2022-06-10	FS_INF-K									
2022-06-10	FS_INF-S									
2022-06-10	FS_INF-K									
2022-06-10	FS_INF-S									
2022-06-10	FS_INF-K									
2022-06-10	FS_INF-S									
2022-06-10	FS_INF-K									
2022-06-10	FS_INF-S									
2022-06-10	FS_INF-K									
2022-06-10	FS_INF-S									
2022-06-11	FS_INF-K									
2022-06-11	FS_INF-S									
2022-06-11	FS_INF-K									
2022-06-11	FS_INF-S									
2022-06-11	FS_BPO		1.41							
2022-06-11	FS_INF-K		0.15							
2022-06-11	FS_INF-S		0.44							
2022-06-11	FS_INF-K									
2022-06-11	FS_INF-S									
2022-06-11	FS_INF-K									
2022-06-11	FS_INF-S									
2022-06-11	FS_INF-K									
2022-06-11	FS_INF-S									
2022-06-11	FS_INF-K									
2022-06-11	FS_INF-S									
2022-06-12	FS_INF-K									
2022-06-12	FS_INF-S									
2022-06-12	FS_INF-K									
2022-06-12	FS_INF-S									
2022-06-12	FS_BPO		1.41	< 0.010						
2022-06-12	FS_INF-K		0.97							
2022-06-12	FS_INF-S		0.38							
2022-06-12	FS_INF-K									
2022-06-12	FS_INF-S									
2022-06-12	FS_INF-K									
2022-06-12	FS_INF-S									
2022-06-12	FS_INF-K									
2022-06-12	FS_INF-S									
2022-06-12	FS_INF-K									
2022-06-12	FS_INF-S									
2022-06-12	FS_INF-K									
2022-06-12	FS_INF-S									
2022-06-13	FS_INF-K									
2022-06-13	FS_INF-S									
2022-06-13	FS_INF-K									
2022-06-13	FS_INF-S									
2022-06-13	FS_BPO		1.08							
2022-06-13	FS_INF-K		0.22							
2022-06-13	FS_INF-S		0.53							
2022-06-13	FS_BPO									
2022-06-13	FS_INF-K									
2022-06-13	FS_INF-S									
2022-06-13	FS_INF-K									
2022-06-13	FS_INF-S									
2022-06-13	FS_INF-K									
2022-06-13	FS_INF-S									
2022-06-13	FS_INF-K									
2022-06-13	FS_INF-S									
2022-06-13	FS_INF-K									
2022-06-13	FS_INF-S									

	Parameter	TURBIDITY, FIELD	Turbidity, Lab	Unknown selenium species – all other selenium species which elute from the applied chromatographic column and are not identified through retention time matching with known standards	Uranium	Uranium	Vanadium	Vanadium	Zinc	Zinc
	Fraction	N	N	D	D	T	D	T	D	T
	Unit	ntu	ntu	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-06-14	FS_BPO									
2022-06-14	FR_FRABCH	8.76	5.07		2.01	2.16	< 0.50	1.14	2.6	12.1
2022-06-14	FS_BPO									
2022-06-14	FR_FRABCH									
2022-06-14	FS_BPO									
2022-06-14	FS_BPO									
2022-06-14	FS_INF-K									
2022-06-14	FS_INF-S									
2022-06-14	FS_BPO		0.94	< 0.010						
2022-06-14	FS_INF-K		0.46	< 0.010	7.65	7.66	< 1.00	< 1.00	19.6	17.6
2022-06-14	FS_INF-S		1.89	< 0.010	13.7	12.8	< 1.00	< 1.00	70.9	62.3
2022-06-15	FS_BPO									
2022-06-15	FS_BPO									
2022-06-15	FS_INF-K									
2022-06-15	FS_INF-S									
2022-06-15	FS_BPO		0.73							
2022-06-15	FS_INF-K		0.27							
2022-06-15	FS_INF-S		2.22							
2022-06-15	FS_INF-K									
2022-06-15	FS_INF-S									
2022-06-15	FS_BPO									
2022-06-15	FS_INF-K									
2022-06-15	FS_INF-S									
2022-06-15	FS_INF-K									
2022-06-15	FS_INF-S									
2022-06-15	FS_INF-K									
2022-06-15	FS_INF-S									
2022-06-15	FS_INF-K									
2022-06-15	FS_INF-S									
2022-06-16	FS_INF-K									
2022-06-16	FS_INF-S									
2022-06-16	FS_INF-K									
2022-06-16	FS_INF-S									
2022-06-16	FS_BPO		0.84	< 0.010						
2022-06-16	FS_INF-K		0.12							
2022-06-16	FS_INF-S		1.77							
2022-06-16	FR_SCOUTDS		3.52	< 0.010	1.38	1.38	< 0.50	0.53	3.5	5.0
2022-06-16	FS_INF-K									
2022-06-16	FS_INF-S									
2022-06-16	FR_SCOUTDS									
2022-06-16	FS_INF-K									
2022-06-16	FS_INF-S									
2022-06-16	FS_INF-K									
2022-06-16	FS_INF-S									
2022-06-16	FS_INF-K									
2022-06-16	FS_INF-S									
2022-06-16	FS_INF-K									
2022-06-16	FS_INF-S									
2022-06-17	FS_INF-K									
2022-06-17	FS_INF-S									
2022-06-17	FS_INF-K									
2022-06-17	FS_INF-S									
2022-06-17	FS_BPO		0.89							
2022-06-17	FS_INF-K		0.20							
2022-06-17	FS_INF-S		1.32							
2022-06-17	FS_INF-K									
2022-06-17	FS_INF-S									
2022-06-17	FS_INF-S									
2022-06-17	FS_INF-S									
2022-06-17	FS_INF-S									
2022-06-18	FS_INF-S									
2022-06-18	FS_INF-S									
2022-06-18	FS_BPO		1.12							
2022-06-18	FS_INF-S		0.99							
2022-06-18	FS_INF-S									
2022-06-18	FS_INF-S									
2022-06-18	FS_INF-S									
2022-06-18	FS_INF-S									
2022-06-18	FS_INF-S									
2022-06-19	FS_INF-S									
2022-06-19	FS_INF-S									
2022-06-19	FS_BPO		0.74	< 0.010						
2022-06-19	FS_INF-S		0.95							
2022-06-19	FS_INF-K									
2022-06-19	FS_INF-S									
2022-06-19	FS_INF-S									
2022-06-19	FS_INF-S									
2022-06-19	FS_INF-S									
2022-06-20	FS_INF-S									
2022-06-20	FS_INF-S									
2022-06-20	FS_BPO		1.02							
2022-06-20	FS_INF-K									

	Parameter	TURBIDITY, FIELD	Turbidity, Lab	Unknown selenium species – all other selenium species which elute from the applied chromatographic column and are not identified through retention time matching with known standards	Uranium	Uranium	Vanadium	Vanadium	Zinc	Zinc
	Fraction	N	N	D	D	T	D	T	D	T
	Unit	ntu	ntu	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-06-20	FS_INF-S		1.07							
2022-06-20	FS_BPO									
2022-06-20	FS_INF-S									
2022-06-20	FS_INF-S									
2022-06-20	FS_INF-S									
2022-06-20	FS_INF-S									
2022-06-21	FS_INF-S									
2022-06-21	FS_INF-S									
2022-06-21	FS_BPO		0.66	< 0.010	10.5	11.2	< 1.00	< 1.00	< 6.0	< 6.0
2022-06-21	FS_INF-S		0.93	< 0.010	11.4	11.9	< 1.00	< 1.00	62.4	65.3
2022-06-21	FR_FRABCH		8.05		1.52	2.17	< 0.50	1.14	2.1	7.9
2022-06-21	FS_INF-S									
2022-06-21	FS_INF-S									
2022-06-21	FS_INF-S									
2022-06-21	FS_INF-S									
2022-06-21	FS_INF-S									
2022-06-22	FS_INF-S									
2022-06-22	FS_INF-S									
2022-06-22	FS_BPO		1.05							
2022-06-22	FS_INF-S		0.66							
2022-06-22	FS_INF-K		0.22							
2022-06-22	FS_INF-S									
2022-06-22	FS_INF-K									
2022-06-22	FS_INF-S									
2022-06-22	FS_INF-K									
2022-06-22	FS_INF-S									
2022-06-22	FS_INF-K									
2022-06-22	FS_INF-S									
2022-06-22	FS_INF-K									
2022-06-22	FS_INF-S									
2022-06-23	FS_INF-K									
2022-06-23	FS_INF-S									
2022-06-23	FS_INF-K									
2022-06-23	FS_BPO		1.32	< 0.010						
2022-06-23	FS_INF-K		0.23							
2022-06-23	FS_INF-S		0.94							
2022-06-23	FR_SCOUTDS		4.90	< 0.010	1.13	1.09	< 0.50	0.68	4.1	7.4
2022-06-23	FS_INF-K									
2022-06-23	FS_INF-S									
2022-06-23	FS_INF-K									
2022-06-23	FS_INF-S									
2022-06-23	FS_INF-K									
2022-06-23	FS_INF-S									
2022-06-23	FS_INF-K									
2022-06-23	FS_INF-S									
2022-06-24	FS_INF-K									
2022-06-24	FS_INF-S									
2022-06-24	FS_INF-K									
2022-06-24	FS_INF-S									
2022-06-24	FS_BPO		1.44							
2022-06-24	FS_INF-K		0.29							
2022-06-24	FS_INF-S		0.53							
2022-06-24	FS_INF-K									
2022-06-24	FS_INF-S									
2022-06-24	FS_INF-K									
2022-06-24	FS_INF-S									
2022-06-24	FS_INF-K									
2022-06-24	FS_INF-S									
2022-06-24	FS_INF-K									
2022-06-24	FS_INF-S									
2022-06-24	FS_INF-K									
2022-06-24	FS_INF-S									
2022-06-25	FS_INF-K									
2022-06-25	FS_INF-S									
2022-06-25	FS_INF-K									
2022-06-25	FS_INF-S									
2022-06-25	FS_BPO		1.26							
2022-06-25	FS_INF-K		0.20							
2022-06-25	FS_INF-S		1.10							
2022-06-25	FS_INF-K									
2022-06-25	FS_INF-S									
2022-06-25	FS_INF-K									
2022-06-25	FS_INF-S									
2022-06-25	FS_INF-K									
2022-06-25	FS_INF-S									
2022-06-25	FS_INF-K									
2022-06-25	FS_INF-S									
2022-06-25	FS_INF-K									
2022-06-25	FS_INF-S									
2022-06-26	FS_INF-K									

	Parameter	TURBIDITY, FIELD	Turbidity, Lab	Unknown selenium species – all other selenium species which elute from the applied chromatographic column and are not identified through retention time matching with known standards	Uranium	Uranium	Vanadium	Vanadium	Zinc	Zinc
	Fraction	N	N	D	D	T	D	T	D	T
	Unit	ntu	ntu	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-06-26	FS_INF-S									
2022-06-26	FS_INF-K									
2022-06-26	FS_INF-S									
2022-06-26	FS_BPO		0.98	< 0.010						
2022-06-26	FS_INF-K		0.17							
2022-06-26	FS_INF-S		0.63							
2022-06-26	FS_INF-K									
2022-06-26	FS_INF-S									
2022-06-26	FS_INF-K									
2022-06-26	FS_INF-S									
2022-06-26	FS_INF-K									
2022-06-26	FS_INF-S									
2022-06-26	FS_INF-K									
2022-06-26	FS_INF-S									
2022-06-26	FS_INF-K									
2022-06-26	FS_INF-S									
2022-06-27	FS_INF-K									
2022-06-27	FS_INF-S									
2022-06-27	FS_INF-K									
2022-06-27	FS_INF-S									
2022-06-27	FS_BPO		0.40							
2022-06-27	FS_INF-K		< 0.10							
2022-06-27	FS_INF-S		0.36							
2022-06-27	FS_BPO									
2022-06-27	FS_INF-K									
2022-06-27	FS_INF-S									
2022-06-27	FS_INF-K									
2022-06-27	FS_INF-S									
2022-06-27	FS_INF-K									
2022-06-27	FS_INF-S									
2022-06-27	FS_INF-K									
2022-06-27	FS_BPO									
2022-06-27	FS_INF-K									
2022-06-27	FS_INF-S									
2022-06-28	FS_BPO									
2022-06-28	FS_INF-K									
2022-06-28	FS_INF-S									
2022-06-28	FS_INF-K									
2022-06-28	FS_INF-S									
2022-06-28	FS_BPO		0.54	< 0.010	9.58	9.26	< 1.00	< 1.00	< 6.0	< 6.0
2022-06-28	FS_INF-K		0.10		5.70	5.80	< 1.00	< 1.00	15.2	14.6
2022-06-28	FS_INF-S		0.39		12.6	12.4	< 1.00	< 1.00	63.2	63.2
2022-06-28	FR_FRABCH		6.27		1.98	1.98	< 0.50	0.61	3.4	7.9
2022-06-28	FR_FRABCH									
2022-06-28	FS_INF-K									
2022-06-28	FS_INF-S									
2022-06-28	FS_INF-K									
2022-06-28	FS_INF-S									
2022-06-28	FS_INF-K									
2022-06-28	FS_INF-S									
2022-06-28	FS_INF-K									
2022-06-28	FS_INF-S									
2022-06-28	FS_INF-K									
2022-06-28	FS_INF-S									
2022-06-29	FS_INF-K									
2022-06-29	FS_INF-S									
2022-06-29	FS_INF-K									
2022-06-29	FS_INF-S									
2022-06-29	FS_BPO		0.59							
2022-06-29	FS_INF-K		0.12							
2022-06-29	FS_INF-S		0.41							
2022-06-29	FS_INF-K									
2022-06-29	FS_INF-S									
2022-06-29	FS_INF-K									
2022-06-29	FS_INF-S									
2022-06-29	FS_BPO									
2022-06-29	FS_BPO		0.43		10.1	9.95	< 1.00	< 1.00	< 6.0	< 6.0
2022-06-29	FS_INF-K									
2022-06-29	FS_INF-S									
2022-06-29	FS_INF-K									
2022-06-29	FS_INF-S									
2022-06-29	FS_INF-K									
2022-06-29	FS_INF-S									
2022-06-30	FS_INF-K									
2022-06-30	FS_INF-S									
2022-06-30	FS_INF-K									
2022-06-30	FS_INF-S									
2022-06-30	FS_BPO		0.92	0.066	10.3	11.0	< 1.00	< 1.00	< 6.0	7.7
2022-06-30	FS_INF-K		0.11							
2022-06-30	FS_INF-S		0.40							
2022-06-30	FS_BPO									

Parameter		TURBIDITY, FIELD	Turbidity, Lab	Unknown selenium species – all other selenium species which elute from the applied chromatographic column and are not identified through retention time matching with known standards	Uranium	Uranium	Vanadium	Vanadium	Zinc	Zinc
Fraction		N	N	D	D	T	D	T	D	T
Unit		ntu	ntu	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-06-30	FR_SCOUTDS									
2022-06-30	FR_SCOUTDS		1.25	< 0.010	1.42	1.46	< 0.50	< 0.50	< 3.0	< 3.0
2022-06-30	FS_INF-K									
2022-06-30	FS_INF-S									
2022-06-30	FS_INF-K									
2022-06-30	FS_INF-S									
2022-06-30	FS_INF-K									
2022-06-30	FS_INF-S									
2022-06-30	FS_INF-K									
2022-06-30	FS_INF-S									
2022-06-30	FS_INF-K									
2022-06-30	FS_INF-S									
2022-07-01	FS_INF-K									
2022-07-01	FS_INF-S									
2022-07-01	FS_INF-K									
2022-07-01	FS_INF-S									
2022-07-01	FS_BPO		1.09							
2022-07-01	FS_INF-K		< 0.10							
2022-07-01	FS_INF-S		0.39							
2022-07-01	FS_INF-K									
2022-07-01	FS_INF-S									
2022-07-01	FS_INF-K									
2022-07-01	FS_INF-S									
2022-07-01	FS_INF-K									
2022-07-01	FS_INF-S									
2022-07-02	FS_BPO									
2022-07-02	FS_BPO									
2022-07-02	FR_SCOUTDS									
2022-07-02	FR_FRABCH									
2022-07-02	FS_BPO		1.15							
2022-07-02	FS_INF-K		0.12							
2022-07-02	FS_INF-S		0.40							
2022-07-02	FS_BPO									
2022-07-02	FS_INF-K									
2022-07-02	FS_INF-S									
2022-07-03	FS_INF-K									
2022-07-03	FS_INF-S									
2022-07-03	FS_INF-K									
2022-07-03	FS_INF-S									
2022-07-03	FS_INF-K									
2022-07-03	FS_INF-S									
2022-07-03	FS_BPO		1.42	< 0.010						
2022-07-03	FS_INF-K		0.14							
2022-07-03	FS_INF-S		0.39							
2022-07-03	FS_INF-K									
2022-07-03	FS_INF-S									
2022-07-03	FR_FRABCH									
2022-07-03	FS_INF-K									
2022-07-03	FS_INF-S									
2022-07-03	FS_INF-K									
2022-07-03	FS_INF-S									
2022-07-03	FS_INF-K									
2022-07-03	FS_INF-S									
2022-07-03	FS_INF-K									
2022-07-03	FS_INF-S									
2022-07-04	FS_INF-K									
2022-07-04	FS_INF-S									
2022-07-04	FS_INF-K									
2022-07-04	FS_INF-S									
2022-07-04	FS_BPO		0.93							
2022-07-04	FS_INF-K		0.28							
2022-07-04	FS_INF-S		0.30							
2022-07-04	FS_BPO									
2022-07-04	FS_INF-K									
2022-07-04	FS_INF-S									
2022-07-04	FS_INF-K									
2022-07-04	FS_INF-S									
2022-07-04	FS_INF-K									
2022-07-04	FS_INF-S									
2022-07-04	FS_INF-K									
2022-07-04	FS_INF-S									
2022-07-04	FS_INF-K									
2022-07-04	FS_INF-S									
2022-07-05	FS_INF-K									
2022-07-05	FS_INF-S									
2022-07-05	FS_INF-K									
2022-07-05	FS_INF-S									
2022-07-05	FS_BPO		0.87	0.062	10.3	10.5	< 1.00	< 1.00	< 6.0	< 6.0
2022-07-05	FS_INF-K		< 0.10	< 0.010	8.21	8.05	< 1.00	< 1.00	14.6	13.6
2022-07-05	FS_INF-S		2.90	< 0.010	13.0	13.3	< 1.00	< 1.00	65.5	61.2
2022-07-05	FR_FRABCH									
2022-07-05	FS_INF-K									
2022-07-05	FS_INF-S									
2022-07-05	FS_INF-K									
2022-07-05	FS_INF-S									
2022-07-05	FR_SCOUTDS		2.84		1.42	1.43	< 0.50	< 0.50	2.8	< 3.0
2022-07-05	FS_INF-K									

				Unknown selenium species – all other selenium species which elute from the applied chromatographic column and are not identified through retention time matching with known standards						
Parameter		TURBIDITY, FIELD	Turbidity, Lab		Uranium	Uranium	Vanadium	Vanadium	Zinc	Zinc
Fraction		N	N	D	D	T	D	T	D	T
Unit		ntu	ntu	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-07-05	FS_INF-S									
2022-07-05	FS_INF-K									
2022-07-05	FS_INF-S									
2022-07-05	FS_INF-K									
2022-07-05	FS_INF-S									
2022-07-06	FS_INF-K									
2022-07-06	FS_INF-S									
2022-07-06	FS_INF-K									
2022-07-06	FS_INF-S									
2022-07-06	FS_BPO		1.16							
2022-07-06	FS_INF-K		< 0.10							
2022-07-06	FS_INF-S		3.17							
2022-07-06	FR_SCOUTDS	3.00	1.57		1.51	1.49	< 0.50	< 0.50	4.3	3.0
2022-07-06	FS_INF-K									
2022-07-06	FS_INF-S									
2022-07-06	FS_INF-K									
2022-07-06	FS_INF-S									
2022-07-06	FS_INF-K									
2022-07-06	FS_INF-S									
2022-07-06	FS_INF-K									
2022-07-06	FS_INF-S									
2022-07-06	FS_INF-K									
2022-07-06	FS_INF-S									
2022-07-07	FS_INF-K									
2022-07-07	FS_INF-S									
2022-07-07	FS_INF-K									
2022-07-07	FS_INF-S									
2022-07-07	FS_BPO		0.72	< 0.010						
2022-07-07	FS_INF-K		0.63							
2022-07-07	FS_INF-S		1.54							
2022-07-07	FR_SCOUTDS		1.00	< 0.010	1.43	1.55	< 0.50	< 0.50	< 3.0	3.1
2022-07-07	FR_SCOUTDS		0.52		1.50	1.49	< 0.50	< 0.50	2.3	5.6
2022-07-07	FS_INF-K									
2022-07-07	FS_INF-S									
2022-07-07	FS_INF-K									
2022-07-07	FS_INF-S									
2022-07-07	FS_BPO									
2022-07-07	FS_INF-K									
2022-07-07	FS_INF-S									
2022-07-07	FS_BPO									
2022-07-07	FS_INF-K									
2022-07-07	FS_INF-S									
2022-07-08	FS_BPO									
2022-07-08	FS_INF-K									
2022-07-08	FS_INF-S									
2022-07-08	FS_BPO									
2022-07-08	FS_INF-K									
2022-07-08	FS_INF-S									
2022-07-08	FS_BPO		1.42							
2022-07-08	FS_INF-K		< 0.10							
2022-07-08	FS_INF-S		0.99							
2022-07-08	FR_SCOUTDS		1.19		1.42	1.38	< 0.50	< 0.50	2.6	3.1
2022-07-08	FS_BPO									
2022-07-08	FS_BPO									
2022-07-08	FS_INF-K									
2022-07-08	FS_INF-S									
2022-07-08	FS_BPO									
2022-07-08	FS_INF-K									
2022-07-08	FS_INF-S									
2022-07-08	FS_BPO									
2022-07-08	FS_INF-K									
2022-07-08	FS_INF-S									
2022-07-08	FS_INF-K									
2022-07-08	FS_INF-S									
2022-07-08	FS_INF-K									
2022-07-08	FS_INF-S									
2022-07-09	FS_INF-K									
2022-07-09	FS_INF-S									
2022-07-09	FS_INF-K									
2022-07-09	FS_INF-S									
2022-07-09	FS_BPO		1.41							
2022-07-09	FS_INF-K		< 0.10							
2022-07-09	FS_INF-S		0.63							
2022-07-09	FR_SCOUTDS		1.27		1.74	1.72	< 0.50	< 0.50	4.8	4.8
2022-07-09	FS_BPO									
2022-07-10	FS_BPO									
2022-07-10	FS_INF-K									
2022-07-10	FS_INF-S									
2022-07-10	FS_INF-K									
2022-07-10	FS_INF-S									
2022-07-10	FS_BPO		0.95	< 0.010						
2022-07-10	FS_INF-K		< 0.10							
2022-07-10	FS_INF-S		0.62							

	Parameter	TURBIDITY, FIELD	Turbidity, Lab	Unknown selenium species – all other selenium species which elute from the applied chromatographic column and are not identified through retention time matching with known standards	Uranium	Uranium	Vanadium	Vanadium	Zinc	Zinc
	Fraction	N	N	D	D	T	D	T	D	T
	Unit	ntu	ntu	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-07-10	FS_INF-K									
2022-07-10	FS_INF-S									
2022-07-10	FS_INF-K									
2022-07-10	FS_INF-S									
2022-07-10	FS_INF-K									
2022-07-10	FS_INF-S									
2022-07-10	FS_INF-K									
2022-07-10	FS_INF-S									
2022-07-10	FS_INF-K									
2022-07-10	FS_INF-S									
2022-07-11	FS_INF-K									
2022-07-11	FS_INF-S									
2022-07-11	FS_INF-K									
2022-07-11	FS_INF-S									
2022-07-11	FS_BPO		1.03							
2022-07-11	FS_INF-K		< 0.10							
2022-07-11	FS_INF-S		0.51							
2022-07-11	FS_BPO									
2022-07-11	FS_INF-K									
2022-07-11	FS_INF-S									
2022-07-11	FS_INF-K									
2022-07-11	FS_INF-S									
2022-07-11	FS_INF-K									
2022-07-11	FS_INF-S									
2022-07-11	FS_INF-K									
2022-07-11	FS_INF-S									
2022-07-11	FS_INF-K									
2022-07-11	FS_INF-S									
2022-07-12	FS_INF-K									
2022-07-12	FS_INF-S									
2022-07-12	FS_INF-K									
2022-07-12	FS_INF-S									
2022-07-12	FS_BPO		1.25	< 0.010	12.3	12.3	< 1.00	< 1.00	< 6.0	< 6.0
2022-07-12	FS_INF-K		0.39		9.05	9.44	< 1.00	< 1.00	16.4	15.8
2022-07-12	FS_INF-S		0.52		15.3	14.8	< 1.00	< 1.00	71.2	65.4
2022-07-12	FS_INF-K									
2022-07-12	FS_INF-S									
2022-07-12	FS_BPO									
2022-07-12	FS_INF-K									
2022-07-12	FS_INF-S									
2022-07-12	FS_INF-K									
2022-07-12	FS_INF-S									
2022-07-12	FS_INF-K									
2022-07-12	FS_INF-S									
2022-07-12	FS_INF-K									
2022-07-12	FS_INF-S									
2022-07-13	FS_INF-K									
2022-07-13	FS_INF-S									
2022-07-13	FS_INF-K									
2022-07-13	FS_INF-S									
2022-07-13	FS_BPO		0.86							
2022-07-13	FS_INF-K		0.15		9.29	9.34	< 1.00	< 1.00	15.9	16.4
2022-07-13	FS_INF-S		0.31		15.2	15.1	< 1.00	< 1.00	67.1	70.9
2022-07-13	FS_BPO									
2022-07-13	FS_INF-K									
2022-07-13	FS_INF-S									
2022-07-13	FR_FRABCH									
2022-07-13	FS_INF-K									
2022-07-13	FS_INF-S									
2022-07-13	FS_INF-K									
2022-07-13	FS_INF-S									
2022-07-13	FS_INF-K									
2022-07-13	FS_INF-S									
2022-07-13	FS_INF-K									
2022-07-13	FS_INF-S									
2022-07-14	FS_INF-K									
2022-07-14	FS_INF-S									
2022-07-14	FS_INF-K									
2022-07-14	FS_INF-S									
2022-07-14	FS_BPO		1.10	< 0.010						
2022-07-14	FS_INF-K		< 0.10							
2022-07-14	FS_INF-S		0.28							
2022-07-14	FR_SCOUTDS		1.04	< 0.010	1.76	1.73	< 0.50	< 0.50	< 3.0	3.4
2022-07-14	FS_INF-K									
2022-07-14	FS_INF-S									
2022-07-14	FS_INF-K									
2022-07-14	FS_INF-S									
2022-07-14	FS_INF-K									
2022-07-14	FS_INF-S									
2022-07-14	FS_INF-K									
2022-07-14	FS_INF-S									
2022-07-14	FS_INF-K									
2022-07-14	FS_INF-S									

	Parameter	TURBIDITY, FIELD	Turbidity, Lab	Unknown selenium species – all other selenium species which elute from the applied chromatographic column and are not identified through retention time matching with known standards	Uranium	Uranium	Vanadium	Vanadium	Zinc	Zinc
	Fraction	N	N	D	D	T	D	T	D	T
	Unit	ntu	ntu	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-07-15	FS_INF-K									
2022-07-15	FS_INF-S									
2022-07-15	FS_INF-K									
2022-07-15	FS_INF-S									
2022-07-15	FS_BPO		0.78							
2022-07-15	FS_INF-K		< 0.10							
2022-07-15	FS_INF-S		0.33							
2022-07-15	FS_INF-K									
2022-07-15	FS_INF-S									
2022-07-15	FS_INF-K									
2022-07-15	FS_INF-S									
2022-07-15	FS_INF-K									
2022-07-15	FS_INF-S									
2022-07-15	FS_INF-K									
2022-07-15	FS_INF-S									
2022-07-16	FS_INF-K									
2022-07-16	FS_INF-S									
2022-07-16	FS_INF-K									
2022-07-16	FS_INF-S									
2022-07-16	FS_BPO		0.53							
2022-07-16	FS_INF-K		0.20							
2022-07-16	FS_INF-S		0.21							
2022-07-16	FS_INF-K									
2022-07-16	FS_INF-S									
2022-07-16	FS_INF-K									
2022-07-16	FS_INF-S									
2022-07-16	FS_INF-K									
2022-07-16	FS_INF-K									
2022-07-16	FS_INF-K									
2022-07-17	FS_INF-K									
2022-07-17	FS_INF-K									
2022-07-17	FS_BPO		0.74	< 0.010						
2022-07-17	FS_INF-K		< 0.10							
2022-07-17	FS_INF-K									
2022-07-17	FS_INF-K									
2022-07-17	FS_INF-K									
2022-07-17	FS_INF-K									
2022-07-17	FS_INF-K									
2022-07-18	FS_INF-K									
2022-07-18	FS_INF-K									
2022-07-18	FS_BPO		0.60							
2022-07-18	FS_INF-K		< 0.10							
2022-07-18	FS_INF-S									
2022-07-18	FS_INF-S									
2022-07-18	FS_BPO									
2022-07-18	FS_INF-S		0.33							
2022-07-18	FS_INF-K									
2022-07-18	FS_INF-K									
2022-07-18	FS_INF-K									
2022-07-18	FS_INF-K									
2022-07-18	FS_INF-K									
2022-07-19	FS_INF-K									
2022-07-19	FS_INF-K									
2022-07-19	FS_BPO		0.54	< 0.010	8.38	9.57	< 1.00	< 1.00	< 6.0	< 6.0
2022-07-19	FS_INF-K		< 0.10	< 0.010	9.66	12.2	< 1.00	< 1.00	18.1	21.2
2022-07-19	FS_INF-S		0.21	< 0.010	15.2	17.0	< 1.00	< 1.00	72.8	77.3
2022-07-19	FS_INF-S									
2022-07-19	FS_INF-K									
2022-07-19	FS_INF-K									
2022-07-19	FS_INF-K									
2022-07-19	FS_INF-K									
2022-07-19	FS_INF-K									
2022-07-20	FS_INF-K									
2022-07-20	FS_INF-K									
2022-07-20	FS_BPO		0.95							
2022-07-20	FS_INF-K		< 0.10							
2022-07-20	FS_INF-S		0.32							
2022-07-20	FS_INF-K									
2022-07-20	FS_INF-S									
2022-07-20	FS_INF-K									
2022-07-20	FS_INF-K									
2022-07-20	FS_INF-K									
2022-07-20	FS_INF-K									
2022-07-21	FS_INF-K									
2022-07-21	FS_INF-K									
2022-07-21	FS_BPO		0.95	< 0.010						
2022-07-21	FS_INF-K		< 0.10							
2022-07-21	FS_INF-S		0.38							
2022-07-21	FR_SCOUTDS		0.69	< 0.010	2.12	2.14	< 0.50	< 0.50	5.1	5.5
2022-07-21	FS_INF-K									
2022-07-21	FS_INF-K									
2022-07-21	FS_INF-K									

	Parameter	TURBIDITY, FIELD	Turbidity, Lab	Unknown selenium species – all other selenium species which elute from the applied chromatographic column and are not identified through retention time matching with known standards	Uranium	Uranium	Vanadium	Vanadium	Zinc	Zinc
	Fraction	N	N	D	D	T	D	T	D	T
	Unit	ntu	ntu	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-07-21	FS_INF-K									
2022-07-21	FS_INF-K									
2022-07-22	FS_BPO									
2022-07-22	FS_INF-K									
2022-07-22	FS_INF-K									
2022-07-22	FS_INF-K									
2022-07-22	FS_INF-K									
2022-07-22	FS_BPO		0.89							
2022-07-22	FS_INF-K		< 0.10							
2022-07-22	FS_INF-S		1.71							
2022-07-22	FS_INF-K									
2022-07-22	FR_FRABCH									
2022-07-22	FR_SCOUTDS									
2022-07-22	FS_INF-S									
2022-07-22	FR_FRABCH									
2022-07-22	FS_BPO									
2022-07-22	FS_INF-S									
2022-07-23	FS_BPO		1.10							
2022-07-23	FS_INF-K		< 0.10							
2022-07-23	FS_INF-K									
2022-07-23	FS_INF-S		0.56							
2022-07-23	FS_BPO									
2022-07-23	FR_SCOUTDS									
2022-07-23	FS_BPO									
2022-07-23	FS_INF-S									
2022-07-23	FR_SCOUTDS									
2022-07-23	FR_FRABCH									
2022-07-24	FR_SCOUTDS									
2022-07-24	FR_FRABCH									
2022-07-24	FR_SCOUTDS									
2022-07-24	FS_INF-S									
2022-07-24	FS_BPO		1.87	< 0.010						
2022-07-24	FS_INF-K		< 0.10							
2022-07-24	FS_INF-S		0.88							
2022-07-24	FS_INF-K									
2022-07-24	FS_INF-K									
2022-07-25	FS_BPO									
2022-07-25	FS_INF-K									
2022-07-25	FS_INF-K									
2022-07-25	FS_BPO		2.31							
2022-07-25	FS_INF-K		< 0.10							
2022-07-25	FS_INF-S		1.05							
2022-07-25	FR_FRABCH		0.29		2.74	2.85	< 0.50	< 0.50	2.6	< 3.0
2022-07-25	FS_INF-S									
2022-07-25	FS_BPO									
2022-07-25	FS_INF-K									
2022-07-25	FS_INF-K									
2022-07-25	FS_INF-K									
2022-07-25	FS_INF-K									
2022-07-25	FS_INF-K									
2022-07-26	FS_INF-K									
2022-07-26	FS_INF-K									
2022-07-26	FS_BPO		2.33	< 0.010	9.68	10.5	< 0.50	< 1.00	< 3.0	< 6.0
2022-07-26	FS_INF-K		< 0.10		11.0	10.3	< 0.50	< 0.50	18.5	18.0
2022-07-26	FS_INF-S		1.87		16.5	16.1	< 0.50	< 0.50	71.9	74.0
2022-07-26	FR_FRABCH									
2022-07-26	FS_INF-K									
2022-07-26	FS_INF-K									
2022-07-26	FS_BPO									
2022-07-26	FS_INF-K									
2022-07-26	FS_INF-K									
2022-07-26	FS_INF-K									
2022-07-27	FS_INF-K									
2022-07-27	FS_INF-K									
2022-07-27	FS_BPO		6.13							
2022-07-27	FS_INF-K		< 0.10							
2022-07-27	FS_INF-S		1.92							
2022-07-27	FS_INF-K									
2022-07-27	FS_INF-K									
2022-07-27	FS_INF-K									
2022-07-27	FS_INF-K									
2022-07-27	FS_INF-K									
2022-07-28	FS_INF-K									
2022-07-28	FS_INF-K									
2022-07-28	FS_BPO		2.20	< 0.010						
2022-07-28	FS_INF-K		< 0.10							
2022-07-28	FS_INF-S		2.72							

				Unknown selenium species – all other selenium species which elute from the applied chromatographic column and are not identified through retention time matching with known standards						
Parameter		TURBIDITY, FIELD	Turbidity, Lab		Uranium	Uranium	Vanadium	Vanadium	Zinc	Zinc
Fraction		N	N	D	D	T	D	T	D	T
Unit		ntu	ntu	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-07-28	FR_SCOUTDS		0.51	< 0.010	2.84	2.80	< 0.50	< 0.50	7.0	7.7
2022-07-28	FS_INF-K									
2022-07-28	FS_INF-K									
2022-07-28	FS_INF-K									
2022-07-28	FS_INF-S									
2022-07-28	FS_INF-K									
2022-07-28	FS_INF-S									
2022-07-28	FS_INF-K									
2022-07-29	FS_INF-K									
2022-07-29	FS_INF-K									
2022-07-29	FS_BPO		1.43							
2022-07-29	FS_INF-K		0.17							
2022-07-29	FS_INF-S		0.44							
2022-07-29	FS_INF-K									
2022-07-29	FS_INF-K									
2022-07-29	FS_INF-K									
2022-07-29	FS_INF-K									
2022-07-29	FS_INF-K									
2022-07-30	FS_INF-K									
2022-07-30	FS_INF-K									
2022-07-30	FS_BPO		1.23							
2022-07-30	FS_INF-K		11.9							
2022-07-30	FS_INF-S		2.96							
2022-07-30	FS_INF-K									
2022-07-30	FS_INF-S									
2022-07-30	FS_INF-K									
2022-07-30	FS_INF-K									
2022-07-30	FS_INF-K									
2022-07-30	FS_INF-K									
2022-07-31	FS_INF-K									
2022-07-31	FS_INF-K									
2022-07-31	FS_BPO		0.98	< 0.010						
2022-07-31	FS_INF-K		< 0.10							
2022-07-31	FS_INF-S		0.36							
2022-07-31	FS_INF-K									
2022-07-31	FS_INF-S									
2022-07-31	FS_INF-K									
2022-07-31	FS_INF-K									
2022-07-31	FS_INF-K									
2022-08-01	FS_INF-K									
2022-08-01	FS_INF-K									
2022-08-01	FS_BPO		1.22							
2022-08-01	FS_INF-K		< 0.10							
2022-08-01	FS_INF-S		0.35							
2022-08-01	FS_INF-S									
2022-08-01	FS_BPO									
2022-08-01	FS_INF-K									
2022-08-01	FS_INF-K									
2022-08-01	FS_INF-K									
2022-08-01	FS_INF-K									
2022-08-01	FS_INF-K									
2022-08-02	FS_INF-K									
2022-08-02	FS_INF-K									
2022-08-02	FS_BPO		1.51	< 0.010	9.27	9.66	< 1.00	1.91	< 6.0	< 6.0
2022-08-02	FS_INF-K		0.16	< 0.010	10.4	10.6	< 1.00	< 1.00	20.5	20.2
2022-08-02	FS_INF-S		0.41	< 0.010	15.4	16.0	< 1.00	< 1.00	71.4	63.1
2022-08-02	FS_INF-K									
2022-08-02	FS_INF-S									
2022-08-02	FS_BPO									
2022-08-03	FS_BPO									
2022-08-03	FS_BPO									
2022-08-03	FS_BPO		1.26							
2022-08-03	FS_INF-K		0.20							
2022-08-03	FS_INF-S		1.91							
2022-08-03	FS_INF-S									
2022-08-03	FS_INF-K									
2022-08-03	FS_INF-K									
2022-08-03	FS_BPO									
2022-08-03	FS_INF-K									
2022-08-04	FS_INF-K									
2022-08-04	FS_BPO		2.64	< 0.010						
2022-08-04	FS_INF-K		< 0.10							
2022-08-04	FS_INF-S		0.54							
2022-08-04	FR_SCOUTDS		1.06	< 0.010	3.66	3.50	< 0.50	0.52	8.2	12.6
2022-08-04	FS_INF-K									
2022-08-04	FS_INF-K									
2022-08-04	FS_BPO									
2022-08-05	FS_BPO									
2022-08-05	FS_BPO									

	Parameter	TURBIDITY, FIELD	Turbidity, Lab	Unknown selenium species – all other selenium species which elute from the applied chromatographic column and are not identified through retention time matching with known standards	Uranium	Uranium	Vanadium	Vanadium	Zinc	Zinc
	Fraction	N	N	D	D	T	D	T	D	T
	Unit	ntu	ntu	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-08-05	FS_BPO		2.53							
2022-08-05	FS_INF-K		< 0.10							
2022-08-05	FS_INF-S									
2022-08-05	FS_INF-K									
2022-08-05	FS_INF-S		0.39							
2022-08-05	FS_INF-K									
2022-08-05	FS_INF-K									
2022-08-05	FS_INF-K									
2022-08-05	FS_INF-K									
2022-08-06	FS_INF-K									
2022-08-06	FS_INF-K									
2022-08-06	FS_BPO		1.74							
2022-08-06	FS_INF-K		< 0.10							
2022-08-06	FS_INF-S		0.30							
2022-08-06	FS_INF-K									
2022-08-06	FS_INF-K									
2022-08-06	FS_INF-S									
2022-08-06	FS_INF-K									
2022-08-06	FS_INF-K									
2022-08-06	FS_INF-K									
2022-08-07	FS_INF-K									
2022-08-07	FS_INF-K									
2022-08-07	FS_BPO		2.60	< 0.010						
2022-08-07	FS_INF-K		< 0.10							
2022-08-07	FS_INF-S		0.38							
2022-08-07	FS_INF-K									
2022-08-07	FS_INF-K									
2022-08-07	FS_INF-K									
2022-08-07	FS_INF-K									
2022-08-07	FS_INF-K									
2022-08-08	FS_INF-K									
2022-08-08	FS_INF-K									
2022-08-08	FS_BPO		1.68							
2022-08-08	FS_INF-K		< 0.10							
2022-08-08	FS_INF-S		0.38							
2022-08-08	FS_BPO									
2022-08-08	FS_INF-K									
2022-08-08	FS_INF-S									
2022-08-08	FS_INF-K									
2022-08-08	FS_INF-K									
2022-08-08	FS_INF-K									
2022-08-09	FS_INF-K									
2022-08-09	FS_INF-K									
2022-08-09	FS_BPO		0.92	< 0.010	9.91	10.5	< 0.50	< 0.50	< 3.0	< 3.0
2022-08-09	FS_INF-K		0.14	< 0.010	11.2	11.2	< 0.50	< 0.50	20.3	19.5
2022-08-09	FS_INF-S		0.49	< 0.010	16.3	17.0	< 0.50	< 0.50	69.5	70.9
2022-08-09	FS_INF-K									
2022-08-09	FS_INF-K									
2022-08-09	FS_INF-S									
2022-08-09	FS_INF-K									
2022-08-09	FS_INF-S									
2022-08-09	FS_INF-K									
2022-08-09	FS_INF-S									
2022-08-10	FS_INF-K									
2022-08-10	FS_INF-S									
2022-08-10	FS_INF-K									
2022-08-10	FS_INF-S									
2022-08-10	FS_BPO		1.29							
2022-08-10	FS_INF-K		< 0.10							
2022-08-10	FS_INF-S		0.67							
2022-08-10	FS_BPO									
2022-08-10	FS_INF-K									
2022-08-10	FS_INF-S									
2022-08-10	FS_INF-K									
2022-08-10	FS_INF-S									
2022-08-10	FS_INF-K									
2022-08-10	FS_INF-S									
2022-08-10	FS_INF-K									
2022-08-10	FS_INF-S									
2022-08-11	FS_INF-K									
2022-08-11	FS_INF-S									
2022-08-11	FS_INF-K									
2022-08-11	FS_INF-S									
2022-08-11	FS_BPO		0.84	< 0.010						
2022-08-11	FS_INF-K		< 0.10							
2022-08-11	FS_INF-S		0.58							
2022-08-11	FR_SCOUTDS		0.42	< 0.010	3.58	3.76	< 0.50	< 0.50	3.4	32.1
2022-08-11	FS_INF-K									
2022-08-11	FS_INF-S									
2022-08-11	FS_INF-K									

	Parameter	TURBIDITY, FIELD	Turbidity, Lab	Unknown selenium species – all other selenium species which elute from the applied chromatographic column and are not identified through retention time matching with known standards	Uranium	Uranium	Vanadium	Vanadium	Zinc	Zinc
	Fraction	N	N	D	D	T	D	T	D	T
	Unit	ntu	ntu	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-08-11	FS_INF-S									
2022-08-11	FS_INF-K									
2022-08-11	FS_INF-S									
2022-08-11	FS_INF-K									
2022-08-11	FS_INF-S									
2022-08-12	FS_INF-K									
2022-08-12	FS_INF-S									
2022-08-12	FS_INF-K									
2022-08-12	FS_INF-S									
2022-08-12	FS_BPO		1.06							
2022-08-12	FS_INF-K		< 0.10							
2022-08-12	FS_INF-S		0.46							
2022-08-12	FS_INF-K									
2022-08-12	FS_INF-S									
2022-08-12	FS_INF-K									
2022-08-12	FS_INF-S									
2022-08-12	FS_INF-K									
2022-08-12	FS_INF-S									
2022-08-12	FS_INF-K									
2022-08-12	FS_INF-S									
2022-08-12	FS_INF-K									
2022-08-13	FS_INF-S									
2022-08-13	FS_INF-K									
2022-08-13	FS_INF-S									
2022-08-13	FS_INF-K									
2022-08-13	FS_INF-S									
2022-08-13	FS_BPO		0.94							
2022-08-13	FS_INF-K		< 0.10							
2022-08-13	FS_INF-S		0.28							
2022-08-13	FS_INF-K									
2022-08-13	FS_INF-S									
2022-08-13	FS_INF-K									
2022-08-13	FS_INF-S									
2022-08-13	FS_INF-K									
2022-08-13	FS_INF-S									
2022-08-13	FS_INF-K									
2022-08-13	FS_INF-S									
2022-08-13	FS_INF-K									
2022-08-13	FS_INF-S									
2022-08-13	FS_INF-K									
2022-08-13	FS_INF-S									
2022-08-14	FS_INF-K									
2022-08-14	FS_INF-S									
2022-08-14	FS_INF-K									
2022-08-14	FS_INF-S									
2022-08-14	FS_BPO		0.87	< 0.010						
2022-08-14	FS_INF-K		< 0.10							
2022-08-14	FS_INF-S		0.29							
2022-08-14	FS_INF-K									
2022-08-14	FS_INF-S									
2022-08-14	FS_INF-K									
2022-08-14	FS_INF-S									
2022-08-14	FS_INF-K									
2022-08-14	FS_INF-S									
2022-08-14	FS_INF-K									
2022-08-14	FS_INF-S									
2022-08-14	FS_INF-K									
2022-08-14	FS_INF-S									
2022-08-15	FS_INF-K									
2022-08-15	FS_INF-S									
2022-08-15	FS_INF-K									
2022-08-15	FS_INF-S									
2022-08-15	FS_BPO		0.99							
2022-08-15	FS_INF-K		< 0.10							
2022-08-15	FS_INF-S		0.35							
2022-08-15	FS_BPO									
2022-08-15	FS_INF-K									
2022-08-15	FS_INF-S									
2022-08-15	FS_INF-K									
2022-08-15	FS_INF-S									
2022-08-15	FS_INF-K									
2022-08-15	FS_INF-S									
2022-08-15	FS_INF-K									
2022-08-15	FS_INF-S									
2022-08-15	FS_INF-K									
2022-08-15	FS_INF-S									
2022-08-16	FS_INF-K									
2022-08-16	FS_INF-S									
2022-08-16	FS_BPO		0.94	< 0.010	14.9	14.6	< 1.00	< 0.50	< 6.0	< 3.0
2022-08-16	FS_INF-K		0.20	< 0.010	11.7	11.3	< 1.00	< 0.50	20.5	20.1
2022-08-16	FS_INF-S		< 0.10	< 0.010	17.5	16.6	< 1.00	< 0.50	79.1	68.9
2022-08-16	FR_FRABCH	12.05	0.93		3.48	3.72	< 0.50	< 0.50	1.8	< 3.0
2022-08-16	FS_INF-K									

	Parameter	TURBIDITY, FIELD	Turbidity, Lab	Unknown selenium species – all other selenium species which elute from the applied chromatographic column and are not identified through retention time matching with known standards	Uranium	Uranium	Vanadium	Vanadium	Zinc	Zinc
	Fraction	N	N	D	D	T	D	T	D	T
	Unit	ntu	ntu	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-08-16	FS_INF-S									
2022-08-16	FS_INF-K									
2022-08-16	FS_INF-S									
2022-08-16	FS_INF-K									
2022-08-16	FS_INF-S									
2022-08-16	FS_INF-K									
2022-08-16	FS_INF-S									
2022-08-17	FS_INF-K									
2022-08-17	FS_INF-S									
2022-08-17	FS_INF-K									
2022-08-17	FS_INF-S									
2022-08-17	FS_BPO		0.81							
2022-08-17	FS_INF-K		< 0.10							
2022-08-17	FS_INF-S		0.17							
2022-08-17	FR_FRABCH		0.41		3.42	3.60	< 0.50	< 0.50	2.8	3.8
2022-08-17	FS_INF-K									
2022-08-17	FS_INF-S									
2022-08-17	FS_INF-K									
2022-08-17	FS_INF-S									
2022-08-17	FS_INF-K									
2022-08-17	FS_INF-S									
2022-08-17	FS_INF-K									
2022-08-17	FS_INF-S									
2022-08-17	FS_INF-K									
2022-08-17	FS_INF-S									
2022-08-18	FS_INF-K									
2022-08-18	FS_INF-S									
2022-08-18	FS_INF-K									
2022-08-18	FS_INF-S									
2022-08-18	FS_BPO		0.88	< 0.010						
2022-08-18	FS_INF-K		< 0.10							
2022-08-18	FS_INF-S		0.55							
2022-08-18	FR_SCOUTDS		0.49	< 0.010	4.14	4.11	0.56	< 0.50	3.0	3.2
2022-08-18	FS_INF-K									
2022-08-18	FS_INF-S									
2022-08-18	FS_INF-K									
2022-08-18	FS_INF-S									
2022-08-18	FS_INF-K									
2022-08-18	FS_INF-S									
2022-08-18	FS_INF-K									
2022-08-18	FS_INF-S									
2022-08-18	FS_INF-K									
2022-08-19	FS_INF-K									
2022-08-19	FS_INF-S									
2022-08-19	FS_INF-K									
2022-08-19	FS_INF-S									
2022-08-19	FS_BPO		0.20 0.53	< 0.010	12.4	13.7	< 1.00	< 1.00	< 6.0	< 6.0
2022-08-19	FS_INF-K		< 0.10							
2022-08-19	FS_INF-S		0.19							
2022-08-19	FS_INF-K									
2022-08-19	FS_INF-S									
2022-08-19	FS_INF-K									
2022-08-19	FS_INF-S									
2022-08-19	FS_INF-K									
2022-08-19	FS_INF-S									
2022-08-19	FS_INF-K									
2022-08-19	FS_INF-S									
2022-08-19	FS_INF-K									
2022-08-19	FS_INF-S									
2022-08-20	FS_INF-K									
2022-08-20	FS_INF-S									
2022-08-20	FS_INF-K									
2022-08-20	FS_INF-S									
2022-08-20	FS_BPO		0.51							
2022-08-20	FS_INF-K		< 0.10							
2022-08-20	FS_INF-S		0.22							
2022-08-20	FS_INF-K									
2022-08-20	FS_INF-S									
2022-08-20	FS_INF-K									
2022-08-20	FS_INF-S									
2022-08-20	FS_INF-K									
2022-08-20	FS_INF-S									
2022-08-20	FS_INF-K									
2022-08-20	FS_INF-S									
2022-08-20	FS_INF-K									
2022-08-20	FS_INF-S									
2022-08-21	FS_INF-K									
2022-08-21	FS_INF-S									
2022-08-21	FS_INF-K									
2022-08-21	FS_INF-S									
2022-08-21	FS_BPO		0.56	< 0.010						

Parameter		TURBIDITY, FIELD	Turbidity, Lab	Unknown selenium species – all other selenium species which elute from the applied chromatographic column and are not identified through retention time matching with known standards	Uranium	Uranium	Vanadium	Vanadium	Zinc	Zinc
Fraction		N	N	D	D	T	D	T	D	T
Unit		ntu	ntu	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-08-21	FS_INF-K		< 0.10							
2022-08-21	FS_INF-S		0.29							
2022-08-21	FS_INF-K									
2022-08-21	FS_INF-S									
2022-08-21	FS_INF-K									
2022-08-21	FS_INF-S									
2022-08-21	FS_INF-K									
2022-08-21	FS_INF-S									
2022-08-21	FS_INF-K									
2022-08-21	FS_INF-S									
2022-08-21	FS_INF-K									
2022-08-21	FS_INF-S									
2022-08-22	FS_INF-K									
2022-08-22	FS_INF-S									
2022-08-22	FS_INF-K									
2022-08-22	FS_INF-S									
2022-08-22	FS_BPO		0.48							
2022-08-22	FS_INF-K		< 0.10							
2022-08-22	FS_INF-S		0.90							
2022-08-22	FS_BPO									
2022-08-22	FS_INF-K									
2022-08-22	FS_INF-S									
2022-08-22	FS_INF-K									
2022-08-22	FS_INF-S									
2022-08-22	FS_INF-K									
2022-08-22	FS_INF-S									
2022-08-22	FS_INF-K									
2022-08-22	FS_INF-S									
2022-08-23	FS_INF-K									
2022-08-23	FS_INF-S									
2022-08-23	FS_INF-K									
2022-08-23	FS_INF-S									
2022-08-23	FS_BPO		0.42	< 0.010	13.6	13.5	< 1.00	< 0.50	< 6.0	< 3.0
2022-08-23	FS_INF-K		< 0.10		11.6	11.4	< 1.00	< 1.00	34.3	22.5
2022-08-23	FS_INF-S		1.42		17.7	17.4	< 1.00	< 1.00	79.0	73.1
2022-08-23	FR_FRABCH	2.25	6.19		3.34	3.50	< 0.50	< 0.50	1.2	< 3.0
2022-08-23	FS_BPO									
2022-08-23	FS_BPO									
2022-08-24	FS_INF-K									
2022-08-24	FS_INF-S									
2022-08-24	FS_BPO		0.44							
2022-08-24	FS_INF-K		< 0.10							
2022-08-24	FS_INF-S		1.69							
2022-08-24	FS_INF-K									
2022-08-24	FS_INF-S									
2022-08-24	FR_FRABCH									
2022-08-24	FR_SCOUTDS									
2022-08-24	FS_INF-K									
2022-08-24	FS_INF-S									
2022-08-24	FS_INF-K									
2022-08-24	FS_INF-S									
2022-08-24	FS_INF-K									
2022-08-24	FS_INF-S									
2022-08-24	FS_INF-K									
2022-08-24	FS_INF-S									
2022-08-25	FS_INF-K									
2022-08-25	FS_INF-S									
2022-08-25	FS_INF-K									
2022-08-25	FS_INF-S									
2022-08-25	FS_BPO		0.44	< 0.010						
2022-08-25	FS_INF-K		0.73							
2022-08-25	FS_INF-S		1.52							
2022-08-25	FR_SCOUTDS		0.59	< 0.010	3.80	3.74	0.74	< 0.50	4.4	5.2
2022-08-25	FS_INF-K									
2022-08-25	FS_INF-S									
2022-08-25	FS_INF-K									
2022-08-25	FS_INF-S									
2022-08-25	FS_INF-K									
2022-08-25	FS_INF-S									
2022-08-25	FS_INF-K									
2022-08-25	FS_INF-S									
2022-08-25	FS_INF-K									
2022-08-25	FS_INF-S									
2022-08-26	FS_INF-K									
2022-08-26	FS_INF-S									
2022-08-26	FS_INF-K									
2022-08-26	FS_INF-S									
2022-08-26	FS_BPO		0.49							
2022-08-26	FS_INF-K		0.16							
2022-08-26	FS_INF-S		0.87							
2022-08-26	FS_INF-K									

	Parameter	TURBIDITY, FIELD	Turbidity, Lab	Unknown selenium species – all other selenium species which elute from the applied chromatographic column and are not identified through retention time matching with known standards	Uranium	Uranium	Vanadium	Vanadium	Zinc	Zinc
	Fraction	N	N	D	D	T	D	T	D	T
	Unit	ntu	ntu	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-08-26	FS_INF-S									
2022-08-26	FS_INF-K									
2022-08-26	FS_INF-S									
2022-08-26	FS_INF-K									
2022-08-26	FS_INF-S									
2022-08-26	FS_INF-K									
2022-08-26	FS_INF-S									
2022-08-26	FS_INF-K									
2022-08-26	FS_INF-S									
2022-08-27	FS_INF-K									
2022-08-27	FS_INF-S									
2022-08-27	FS_INF-K									
2022-08-27	FS_INF-S									
2022-08-27	FS_BPO		0.57							
2022-08-27	FS_INF-K		< 0.10							
2022-08-27	FS_INF-S		1.81							
2022-08-27	FS_INF-K									
2022-08-27	FS_INF-S									
2022-08-27	FS_INF-K									
2022-08-27	FS_INF-S									
2022-08-27	FS_INF-K									
2022-08-27	FS_INF-S									
2022-08-27	FS_INF-K									
2022-08-27	FS_INF-S									
2022-08-28	FS_BPO		0.47	< 0.010						
2022-08-28	FS_INF-K		< 0.10							
2022-08-28	FS_INF-S		2.66							
2022-08-28	FR_FRABCH									
2022-08-28	FR_FRABCH									
2022-08-28	FR_SCOUTDS									
2022-08-28	FS_INF-K									
2022-08-28	FS_INF-S									
2022-08-29	FS_BPO									
2022-08-29	FS_BPO									
2022-08-29	FS_INF-K									
2022-08-29	FS_INF-S									
2022-08-29	FR_FRABCH									
2022-08-29	FR_SCOUTDS									
2022-08-29	FS_INF-K									
2022-08-29	FS_INF-S									
2022-08-29	FS_BPO									
2022-08-29	FS_BPO		1.51							
2022-08-29	FS_INF-K		0.18							
2022-08-29	FS_INF-S		2.04							
2022-08-29	FS_INF-S									
2022-08-30	FS_INF-S									
2022-08-30	FS_INF-S									
2022-08-30	FS_BPO		3.11	< 0.010	14.6	13.3	< 0.50	< 1.00	< 3.0	< 6.0
2022-08-30	FS_INF-K		< 0.10	< 0.010	11.4	12.1	< 1.00	< 1.00	23.8	24.0
2022-08-30	FS_INF-S		2.22	< 0.010	16.4	16.9	< 1.00	< 1.00	75.9	79.7
2022-08-30	FR_FRABCH	0.66	0.50		3.29	3.25	< 0.50	< 3.00	3.1	< 3.0
2022-08-30	FS_INF-K									
2022-08-30	FS_INF-S									
2022-08-30	FS_INF-S									
2022-08-30	FS_INF-S									
2022-08-30	FS_INF-S									
2022-08-30	FS_INF-S									
2022-08-31	FS_INF-S									
2022-08-31	FS_INF-S									
2022-08-31	FS_BPO		1.27							
2022-08-31	FS_INF-K		0.12							
2022-08-31	FS_INF-S		1.25							
2022-08-31	FS_INF-K									
2022-08-31	FS_INF-S									
2022-08-31	FS_INF-K									
2022-08-31	FS_INF-S									
2022-08-31	FS_INF-K									
2022-08-31	FS_INF-S									
2022-08-31	FS_INF-K									
2022-08-31	FS_INF-S									
2022-09-01	FS_INF-K									
2022-09-01	FS_INF-S									
2022-09-01	FS_INF-K									
2022-09-01	FS_INF-S									
2022-09-01	FS_BPO		0.82	< 0.010						
2022-09-01	FS_INF-K		0.12							
2022-09-01	FS_INF-S		0.99							
2022-09-01	FR_SCOUTDS		0.52	< 0.010	3.72	3.57	< 0.50	1.53	< 3.0	3.2
2022-09-01	FS_INF-K									
2022-09-01	FS_INF-S									
2022-09-01	FS_INF-K									
2022-09-01	FS_INF-S									

	Parameter	TURBIDITY, FIELD	Turbidity, Lab	Unknown selenium species – all other selenium species which elute from the applied chromatographic column and are not identified through retention time matching with known standards	Uranium	Uranium	Vanadium	Vanadium	Zinc	Zinc
	Fraction	N	N	D	D	T	D	T	D	T
	Unit	ntu	ntu	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-09-01	FS_INF-K									
2022-09-01	FS_INF-S									
2022-09-01	FS_INF-K									
2022-09-01	FS_INF-S									
2022-09-01	FS_INF-K									
2022-09-01	FS_INF-S									
2022-09-02	FS_INF-K									
2022-09-02	FS_INF-S									
2022-09-02	FS_INF-K									
2022-09-02	FS_INF-S									
2022-09-02	FS_BPO		0.83							
2022-09-02	FS_INF-K		0.18							
2022-09-02	FS_INF-S		0.98							
2022-09-02	FS_BPO									
2022-09-02	FS_INF-K									
2022-09-02	FS_INF-S									
2022-09-02	FS_INF-K									
2022-09-02	FS_INF-S									
2022-09-02	FS_INF-K									
2022-09-02	FS_INF-S									
2022-09-03	FS_INF-K									
2022-09-03	FS_INF-K									
2022-09-03	FS_BPO		1.01							
2022-09-03	FS_INF-K		0.31							
2022-09-03	FS_INF-S		0.61							
2022-09-03	FS_INF-K									
2022-09-03	FS_INF-K									
2022-09-03	FS_INF-K									
2022-09-03	FS_INF-K									
2022-09-03	FS_INF-K									
2022-09-04	FS_INF-K									
2022-09-04	FS_INF-K									
2022-09-04	FS_BPO		32.1	< 0.010						
2022-09-04	FS_INF-K		< 0.10							
2022-09-04	FS_INF-S		0.51							
2022-09-04	FS_INF-K									
2022-09-04	FS_INF-K									
2022-09-04	FS_INF-K									
2022-09-04	FS_INF-K									
2022-09-04	FS_INF-K									
2022-09-05	FS_INF-K									
2022-09-05	FS_INF-K									
2022-09-05	FS_BPO		33.2							
2022-09-05	FS_INF-K		< 0.10							
2022-09-05	FS_INF-S		0.59							
2022-09-05	FS_BPO									
2022-09-05	FS_INF-K									
2022-09-05	FS_INF-K									
2022-09-05	FS_INF-K									
2022-09-05	FS_INF-K									
2022-09-05	FS_INF-K									
2022-09-06	FS_INF-K									
2022-09-06	FS_BPO		4.80	< 0.010	12.5	11.6	< 0.50	< 0.50	< 3.0	< 3.0
2022-09-06	FS_INF-K		0.10		13.9	11.0	< 1.00	< 1.00	26.7	24.4
2022-09-06	FS_INF-S		0.30		20.0	15.8	< 1.00	< 1.00	85.2	78.5
2022-09-06	FR_FRABCH	2.30	0.29		3.81	3.57	< 0.50	< 1.00	1.9	< 3.0
2022-09-06	FS_INF-K									
2022-09-06	FS_INF-K									
2022-09-06	FR_FRABCH									
2022-09-06	FS_INF-K									
2022-09-06	FS_INF-K									
2022-09-06	FS_INF-K									
2022-09-07	FS_INF-K									
2022-09-07	FS_INF-K									
2022-09-07	FS_BPO		10.5							
2022-09-07	FS_INF-K		< 0.10							
2022-09-07	FS_INF-S		0.26							
2022-09-07	FS_INF-K									
2022-09-07	FS_INF-K									
2022-09-07	FS_INF-K									
2022-09-07	FS_BPO									
2022-09-07	FS_INF-K									
2022-09-07	FS_INF-K									
2022-09-08	FS_INF-K									
2022-09-08	FS_INF-S									
2022-09-08	FS_INF-K									
2022-09-08	FS_INF-S									
2022-09-08	FS_BPO		8.51	< 0.010						

	Parameter	TURBIDITY, FIELD	Turbidity, Lab	Unknown selenium species – all other selenium species which elute from the applied chromatographic column and are not identified through retention time matching with known standards	Uranium	Uranium	Vanadium	Vanadium	Zinc	Zinc
	Fraction	N	N	D	D	T	D	T	D	T
	Unit	ntu	ntu	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-09-08	FS_INF-K		1.80							
2022-09-08	FS_INF-S		0.38							
2022-09-08	FR_SCOUTDS		0.43	< 0.010	4.92	4.68	< 1.00	< 0.50	9.8	11.2
2022-09-08	FS_INF-K									
2022-09-08	FS_INF-S									
2022-09-08	FS_INF-K									
2022-09-08	FS_INF-S									
2022-09-08	FS_INF-K									
2022-09-08	FS_INF-S									
2022-09-08	FS_INF-K									
2022-09-08	FS_INF-S									
2022-09-08	FS_INF-K									
2022-09-08	FS_INF-S									
2022-09-09	FS_INF-K									
2022-09-09	FS_INF-S									
2022-09-09	FS_BPO		3.24							
2022-09-09	FS_INF-K		< 0.10							
2022-09-09	FS_INF-S		0.26							
2022-09-09	FS_INF-K									
2022-09-09	FS_INF-S									
2022-09-09	FS_INF-K									
2022-09-09	FS_INF-S									
2022-09-09	FS_INF-K									
2022-09-09	FS_INF-S									
2022-09-09	FS_INF-K									
2022-09-09	FS_INF-S									
2022-09-09	FS_INF-K									
2022-09-09	FS_INF-S									
2022-09-10	FS_INF-K									
2022-09-10	FS_INF-S									
2022-09-10	FS_INF-K									
2022-09-10	FS_INF-S									
2022-09-10	FS_BPO		1.52							
2022-09-10	FS_INF-K		< 0.10							
2022-09-10	FS_INF-S		0.25							
2022-09-10	FS_INF-K									
2022-09-10	FS_INF-S									
2022-09-10	FS_INF-K									
2022-09-10	FS_INF-S									
2022-09-10	FS_INF-K									
2022-09-10	FS_INF-S									
2022-09-10	FS_INF-K									
2022-09-10	FS_INF-S									
2022-09-11	FS_INF-K									
2022-09-11	FS_INF-S									
2022-09-11	FS_INF-K									
2022-09-11	FS_INF-S									
2022-09-11	FS_BPO		1.21	< 0.010						
2022-09-11	FS_INF-K		0.16							
2022-09-11	FS_INF-S		0.24							
2022-09-11	FS_INF-K									
2022-09-11	FS_INF-S									
2022-09-11	FS_INF-K									
2022-09-11	FS_INF-S									
2022-09-11	FS_INF-K									
2022-09-11	FS_INF-S									
2022-09-11	FS_INF-K									
2022-09-11	FS_INF-S									
2022-09-12	FS_INF-K									
2022-09-12	FS_INF-S									
2022-09-12	FS_INF-K									
2022-09-12	FS_INF-S									
2022-09-12	FS_BPO		0.58							
2022-09-12	FS_INF-K		< 0.10							
2022-09-12	FS_INF-S		0.31							
2022-09-12	FS_BPO									
2022-09-12	FS_INF-K									
2022-09-12	FS_INF-S									
2022-09-12	FS_INF-K									
2022-09-12	FS_INF-S									
2022-09-12	FS_INF-K									
2022-09-12	FS_INF-S									
2022-09-12	FS_INF-K									
2022-09-12	FS_INF-S									
2022-09-12	FS_INF-K									
2022-09-12	FS_INF-S									
2022-09-13	FS_INF-K									
2022-09-13	FS_INF-S									
2022-09-13	FS_INF-K									
2022-09-13	FS_INF-S									
2022-09-13	FS_BPO		0.47	< 0.010	15.2	15.7	< 1.00	< 0.50	< 6.0	< 3.0
2022-09-13	FS_INF-K		< 0.10	< 0.010	12.2	13.6	< 4.50	< 1.00	23.4	23.9

	Parameter	TURBIDITY, FIELD	Turbidity, Lab	Unknown selenium species – all other selenium species which elute from the applied chromatographic column and are not identified through retention time matching with known standards	Uranium	Uranium	Vanadium	Vanadium	Zinc	Zinc
	Fraction	N	N	D	D	T	D	T	D	T
	Unit	ntu	ntu	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-09-13	FS_INF-S		0.29	< 0.010	19.6	19.2	< 4.50	< 1.00	73.3	78.5
2022-09-13	FR_FRABCH	-3.75 0.96	0.34		4.04	3.70	< 0.50	0.60	1.2	< 3.0
2022-09-13	FS_INF-K									
2022-09-13	FS_INF-S									
2022-09-13	FS_INF-K									
2022-09-13	FS_INF-S									
2022-09-13	FS_INF-K									
2022-09-13	FS_INF-S									
2022-09-13	FR_FRABCH	0.96	0.46		3.46	3.72	< 0.50	< 0.50	1.2	< 3.0
2022-09-13	FS_INF-K									
2022-09-13	FS_INF-S									
2022-09-13	FS_INF-K									
2022-09-13	FS_INF-S									
2022-09-14	FS_INF-K									
2022-09-14	FS_INF-S									
2022-09-14	FS_INF-K									
2022-09-14	FS_INF-S									
2022-09-14	FS_BPO		0.68							
2022-09-14	FS_INF-K		< 0.10							
2022-09-14	FS_INF-S		0.43							
2022-09-14	FS_BPO									
2022-09-14	FS_INF-K									
2022-09-14	FS_INF-S									
2022-09-14	FS_INF-K									
2022-09-14	FS_INF-S									
2022-09-14	FS_INF-K									
2022-09-14	FS_INF-S									
2022-09-14	FS_INF-K									
2022-09-14	FS_INF-S									
2022-09-15	FS_INF-K									
2022-09-15	FS_INF-S									
2022-09-15	FS_INF-K									
2022-09-15	FS_INF-S									
2022-09-15	FS_BPO		0.91	< 0.010						
2022-09-15	FS_INF-K		0.14							
2022-09-15	FS_INF-S		0.50							
2022-09-15	FR_SCOUTDS		0.95	< 0.010	4.17	4.74	< 0.50	< 0.50	3.6	3.3
2022-09-15	FS_INF-K									
2022-09-15	FS_INF-S									
2022-09-15	FS_INF-K									
2022-09-15	FS_INF-S									
2022-09-15	FS_INF-K									
2022-09-15	FS_INF-S									
2022-09-15	FS_INF-K									
2022-09-15	FS_INF-S									
2022-09-15	FS_INF-K									
2022-09-15	FS_INF-S									
2022-09-16	FS_INF-K									
2022-09-16	FS_INF-S									
2022-09-16	FS_INF-K									
2022-09-16	FS_INF-S									
2022-09-16	FS_BPO		0.68							
2022-09-16	FS_INF-K		< 0.10							
2022-09-16	FS_INF-S		0.62							
2022-09-16	FS_INF-K									
2022-09-16	FS_INF-S									
2022-09-16	FS_INF-K									
2022-09-16	FS_INF-S									
2022-09-16	FS_INF-K									
2022-09-16	FS_INF-S									
2022-09-16	FS_INF-K									
2022-09-16	FS_INF-S									
2022-09-17	FS_INF-K									
2022-09-17	FS_INF-S									
2022-09-17	FS_INF-K									
2022-09-17	FS_INF-S									
2022-09-17	FS_BPO		0.70							
2022-09-17	FS_INF-K		0.27							
2022-09-17	FS_INF-S		0.64							
2022-09-17	FS_INF-K									
2022-09-17	FS_INF-S									
2022-09-17	FS_INF-K									
2022-09-17	FS_INF-S									
2022-09-17	FS_INF-K									
2022-09-17	FS_INF-S									
2022-09-17	FS_INF-K									
2022-09-17	FS_INF-S									
2022-09-17	FS_INF-K									
2022-09-18	FS_INF-K									
2022-09-18	FS_INF-S									
2022-09-18	FS_INF-K									

				Unknown selenium species – all other selenium species which elute from the applied chromatographic column and are not identified through retention time matching with known standards						
Parameter		TURBIDITY, FIELD	Turbidity, Lab		Uranium	Uranium	Vanadium	Vanadium	Zinc	Zinc
Fraction		N	N	D	D	T	D	T	D	T
Unit		ntu	ntu	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-09-18	FS_INF-S									
2022-09-18	FS_BPO		0.72	< 0.010						
2022-09-18	FS_INF-K		0.13							
2022-09-18	FS_INF-S		0.66							
2022-09-18	FS_INF-K									
2022-09-18	FS_INF-S									
2022-09-18	FS_INF-K									
2022-09-18	FS_INF-S									
2022-09-18	FS_INF-K									
2022-09-18	FS_INF-S									
2022-09-18	FS_INF-K									
2022-09-18	FS_INF-S									
2022-09-18	FS_INF-K									
2022-09-18	FS_INF-S									
2022-09-19	FS_INF-K									
2022-09-19	FS_INF-S									
2022-09-19	FS_INF-K									
2022-09-19	FS_INF-S									
2022-09-19	FS_BPO		0.62							
2022-09-19	FS_INF-K		0.21							
2022-09-19	FS_INF-S		0.36							
2022-09-19	FS_BPO									
2022-09-19	FS_INF-K									
2022-09-19	FS_INF-S									
2022-09-19	FS_INF-K									
2022-09-19	FS_INF-S									
2022-09-19	FS_INF-K									
2022-09-19	FS_INF-S									
2022-09-19	FS_INF-K									
2022-09-19	FS_INF-S									
2022-09-19	FS_BPO									
2022-09-19	FS_INF-K									
2022-09-19	FS_INF-S									
2022-09-20	FS_INF-K									
2022-09-20	FS_INF-S									
2022-09-20	FS_INF-K									
2022-09-20	FS_INF-S									
2022-09-20	FS_BPO		0.85	< 0.010	14.4	16.0	< 1.00	< 1.00	< 6.0	< 6.0
2022-09-20	FS_INF-K		0.18		13.9	12.2	< 0.50	< 1.00	23.4	24.5
2022-09-20	FS_INF-S		0.61		17.7	13.5	< 1.00	< 1.00	84.7	68.3
2022-09-20	FS_BPO									
2022-09-20	FS_INF-K									
2022-09-20	FS_INF-S									
2022-09-20	FS_BPO									
2022-09-20	FS_INF-K									
2022-09-20	FS_INF-S									
2022-09-20	FS_BPO									
2022-09-20	FS_INF-K									
2022-09-20	FS_INF-S									
2022-09-20	FS_BPO									
2022-09-20	FS_INF-K									
2022-09-20	FS_INF-S									
2022-09-21	FS_BPO									
2022-09-21	FS_INF-K									
2022-09-21	FS_INF-S									
2022-09-21	FS_BPO									
2022-09-21	FS_INF-K									
2022-09-21	FS_INF-S									
2022-09-21	FS_BPO		0.65							
2022-09-21	FS_INF-K		< 0.10							
2022-09-21	FS_INF-S		0.26							
2022-09-21	FS_BPO									
2022-09-21	FS_BPO									
2022-09-21	FS_INF-K									
2022-09-21	FS_INF-S									
2022-09-21	FS_BPO									
2022-09-21	FS_INF-K									
2022-09-21	FS_INF-S									
2022-09-21	FS_BPO									
2022-09-21	FS_INF-K									
2022-09-21	FS_INF-S									
2022-09-21	FS_INF-K									
2022-09-21	FS_INF-S									
2022-09-22	FS_INF-K									
2022-09-22	FS_INF-S									
2022-09-22	FS_INF-K									
2022-09-22	FS_INF-S									
2022-09-22	FS_BPO		0.58	< 0.010						
2022-09-22	FS_INF-K		0.24							
2022-09-22	FS_INF-S		0.32							
2022-09-22	FR_SCOUTDS									
2022-09-22	FS_INF-K									

	Parameter	TURBIDITY, FIELD	Turbidity, Lab	Unknown selenium species – all other selenium species which elute from the applied chromatographic column and are not identified through retention time matching with known standards	Uranium	Uranium	Vanadium	Vanadium	Zinc	Zinc
	Fraction	N	N	D	D	T	D	T	D	T
	Unit	ntu	ntu	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-09-22	FS_INF-S									
2022-09-22	FS_INF-K									
2022-09-22	FS_INF-S									
2022-09-22	FS_INF-K									
2022-09-22	FS_INF-S									
2022-09-22	FS_INF-K									
2022-09-22	FS_INF-S									
2022-09-22	FS_INF-K									
2022-09-22	FS_INF-S									
2022-09-23	FR_SCOUTDS		0.41	< 0.010	5.58	5.59	< 0.50	< 0.50	6.5	6.7
2022-09-23	FS_INF-K									
2022-09-23	FS_INF-S									
2022-09-23	FS_INF-K									
2022-09-23	FS_INF-S									
2022-09-23	FS_BPO		0.65							
2022-09-23	FS_INF-K		< 0.10							
2022-09-23	FS_INF-S		0.22							
2022-09-23	FS_INF-K									
2022-09-23	FS_INF-S									
2022-09-23	FS_INF-K									
2022-09-23	FS_INF-S									
2022-09-23	FS_INF-K									
2022-09-23	FS_INF-S									
2022-09-23	FS_INF-K									
2022-09-23	FS_INF-S									
2022-09-23	FS_INF-K									
2022-09-23	FS_INF-S									
2022-09-24	FS_INF-K									
2022-09-24	FS_INF-S									
2022-09-24	FS_INF-K									
2022-09-24	FS_INF-S									
2022-09-24	FS_BPO		0.43							
2022-09-24	FS_INF-K		< 0.10							
2022-09-24	FS_INF-S		0.15							
2022-09-24	FS_INF-K									
2022-09-24	FS_INF-S									
2022-09-24	FS_INF-K									
2022-09-24	FS_INF-S									
2022-09-24	FS_INF-K									
2022-09-24	FS_INF-S									
2022-09-24	FS_INF-K									
2022-09-24	FS_INF-S									
2022-09-24	FS_INF-K									
2022-09-24	FS_INF-S									
2022-09-25	FS_INF-K									
2022-09-25	FS_INF-S									
2022-09-25	FS_INF-K									
2022-09-25	FS_INF-S									
2022-09-25	FS_BPO		0.72	< 0.010						
2022-09-25	FS_INF-K		< 0.10							
2022-09-25	FS_INF-S		0.18							
2022-09-25	FS_INF-K									
2022-09-25	FS_INF-S									
2022-09-25	FS_INF-K									
2022-09-25	FS_INF-S									
2022-09-25	FS_INF-K									
2022-09-25	FS_INF-S									
2022-09-25	FS_INF-K									
2022-09-25	FS_INF-S									
2022-09-25	FS_INF-K									
2022-09-26	FS_INF-K									
2022-09-26	FS_INF-S									
2022-09-26	FS_INF-K									
2022-09-26	FS_INF-S									
2022-09-26	FS_BPO		1.50							
2022-09-26	FS_INF-K		0.11							
2022-09-26	FS_INF-S		0.40							
2022-09-26	FS_BPO									
2022-09-26	FS_INF-K									
2022-09-26	FS_INF-S									
2022-09-26	FS_INF-K									
2022-09-26	FS_INF-S									
2022-09-26	FS_INF-K									
2022-09-26	FS_INF-S									
2022-09-26	FS_INF-K									
2022-09-26	FS_INF-S									
2022-09-26	FS_INF-K									
2022-09-26	FS_INF-S									
2022-09-27	FS_INF-K									
2022-09-27	FS_INF-S									
2022-09-27	FS_INF-K									
2022-09-27	FS_INF-S									

				Unknown selenium species – all other selenium species which elute from the applied chromatographic column and are not identified through retention time matching with known standards						
Parameter		TURBIDITY, FIELD	Turbidity, Lab		Uranium	Uranium	Vanadium	Vanadium	Zinc	Zinc
Fraction		N	N	D	D	T	D	T	D	T
Unit		ntu	ntu	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-09-27	FS_BPO		1.83	< 0.010	12.9	14.9	< 0.50	< 1.00	< 3.0	< 6.0
2022-09-27	FS_INF-K		< 0.10	< 0.010	14.4	12.3	< 1.00	< 1.00	23.6	27.5
2022-09-27	FS_INF-S		0.22	< 0.010	18.5	19.0	< 1.00	< 1.00	71.0	94.6
2022-09-27	FS_INF-K									
2022-09-27	FS_INF-S									
2022-09-27	FS_INF-K									
2022-09-27	FS_INF-S									
2022-09-27	FS_INF-K									
2022-09-27	FS_INF-S									
2022-09-27	FS_INF-K									
2022-09-27	FS_INF-S									
2022-09-27	FS_INF-K									
2022-09-27	FS_INF-S									
2022-09-27	FS_INF-K									
2022-09-27	FS_INF-S									
2022-09-28	FS_INF-K									
2022-09-28	FS_INF-S									
2022-09-28	FS_BPO		1.35							
2022-09-28	FS_INF-K		< 0.10							
2022-09-28	FS_INF-S		0.28							
2022-09-28	FS_INF-K									
2022-09-28	FS_INF-S									
2022-09-28	FS_INF-K									
2022-09-28	FS_INF-S									
2022-09-28	FS_INF-K									
2022-09-28	FS_INF-S									
2022-09-28	FS_INF-K									
2022-09-28	FS_INF-S									
2022-09-29	FS_INF-K									
2022-09-29	FS_INF-S									
2022-09-29	FS_INF-K									
2022-09-29	FS_INF-S									
2022-09-29	FS_BPO		0.68	< 0.010						
2022-09-29	FS_INF-K		< 0.10							
2022-09-29	FS_INF-S		0.32							
2022-09-29	FR_SCOUTDS		0.67	< 0.010	5.98	5.97	< 0.50	< 0.50	9.1	11.1
2022-09-29	FS_BPO									
2022-09-29	FS_BPO									
2022-09-29	FS_INF-K									
2022-09-29	FS_INF-S									
2022-09-29	FS_BPO									
2022-09-29	FS_INF-K									
2022-09-29	FS_INF-S									
2022-09-29	FS_INF-K									
2022-09-29	FS_INF-S									
2022-09-29	FS_BPO									
2022-09-29	FS_INF-K									
2022-09-29	FS_INF-S									
2022-09-29	FS_INF-K									
2022-09-29	FS_INF-S									
2022-09-30	FS_BPO									
2022-09-30	FS_INF-K									
2022-09-30	FS_INF-S									
2022-09-30	FS_INF-K									
2022-09-30	FS_INF-S									
2022-09-30	FS_BPO		1.00							
2022-09-30	FS_INF-K		< 0.10							
2022-09-30	FS_INF-S		0.35							
2022-09-30	FS_INF-K									
2022-09-30	FS_INF-S									
2022-09-30	FS_INF-K									
2022-09-30	FS_INF-S									
2022-09-30	FS_INF-K									
2022-09-30	FS_INF-S									
2022-09-30	FS_INF-K									
2022-09-30	FS_INF-S									
2022-09-30	FS_INF-K									
2022-09-30	FS_INF-S									
2022-10-01	FS_INF-K									
2022-10-01	FS_INF-S									
2022-10-01	FS_INF-K									
2022-10-01	FS_INF-S									
2022-10-01	FS_BPO		1.40							
2022-10-01	FS_INF-K		< 0.10							
2022-10-01	FS_INF-S		16.1							
2022-10-01	FS_INF-K									
2022-10-01	FS_INF-S									
2022-10-01	FS_INF-K									
2022-10-01	FS_INF-S									
2022-10-01	FS_INF-K									
2022-10-01	FS_INF-S									
2022-10-01	FS_INF-K									
2022-10-01	FS_INF-S									
2022-10-01	FS_INF-K									
2022-10-01	FS_INF-S									

	Parameter	TURBIDITY, FIELD	Turbidity, Lab	Unknown selenium species – all other selenium species which elute from the applied chromatographic column and are not identified through retention time matching with known standards	Uranium	Uranium	Vanadium	Vanadium	Zinc	Zinc
	Fraction	N	N	D	D	T	D	T	D	T
	Unit	ntu	ntu	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-10-02	FS_INF-K									
2022-10-02	FS_INF-S									
2022-10-02	FS_INF-K									
2022-10-02	FS_INF-S									
2022-10-02	FS_BPO		0.75	< 0.010						
2022-10-02	FS_INF-K		< 0.10							
2022-10-02	FS_INF-S		0.45							
2022-10-02	FS_INF-K									
2022-10-02	FS_INF-S									
2022-10-02	FS_INF-K									
2022-10-02	FS_INF-S									
2022-10-02	FS_INF-K									
2022-10-02	FS_INF-S									
2022-10-02	FS_INF-K									
2022-10-02	FS_INF-S									
2022-10-02	FS_INF-K									
2022-10-02	FS_INF-S									
2022-10-03	FS_INF-K									
2022-10-03	FS_INF-S									
2022-10-03	FS_INF-K									
2022-10-03	FS_INF-S									
2022-10-03	FS_BPO		0.68							
2022-10-03	FS_INF-K		< 0.10							
2022-10-03	FS_INF-S		0.39							
2022-10-03	FS_BPO									
2022-10-03	FS_INF-K									
2022-10-03	FS_INF-S									
2022-10-03	FS_INF-K									
2022-10-03	FS_INF-S									
2022-10-03	FS_INF-K									
2022-10-03	FS_INF-S									
2022-10-03	FS_INF-K									
2022-10-03	FS_INF-S									
2022-10-03	FS_INF-K									
2022-10-03	FS_INF-S									
2022-10-04	FS_INF-K									
2022-10-04	FS_INF-S									
2022-10-04	FS_INF-K									
2022-10-04	FS_INF-S									
2022-10-04	FS_BPO		0.53	< 0.010	14.5	16.0	< 1.00	< 1.00	< 6.0	< 6.0
2022-10-04	FS_INF-K		0.16	< 0.010	13.7	13.9	< 1.00	< 1.00	28.7	27.1
2022-10-04	FS_INF-S		0.41	< 0.010	18.5	18.7	< 1.00	< 1.00	96.2	79.2
2022-10-04	FS_BPO									
2022-10-04	FS_INF-K									
2022-10-04	FS_INF-S									
2022-10-04	FS_INF-K									
2022-10-04	FS_INF-S									
2022-10-04	FS_INF-K									
2022-10-04	FS_INF-S									
2022-10-04	FS_INF-K									
2022-10-04	FS_INF-S									
2022-10-05	FS_INF-K									
2022-10-05	FS_INF-S									
2022-10-05	FS_INF-K									
2022-10-05	FS_INF-S									
2022-10-05	FS_BPO		0.67							
2022-10-05	FS_INF-K		0.12							
2022-10-05	FS_INF-S		0.25							
2022-10-05	FS_INF-K									
2022-10-05	FS_INF-S									
2022-10-05	FS_INF-K									
2022-10-05	FS_INF-S									
2022-10-05	FS_INF-K									
2022-10-05	FS_INF-S									
2022-10-05	FS_INF-K									
2022-10-05	FS_INF-S									
2022-10-05	FS_INF-K									
2022-10-05	FS_INF-S									
2022-10-06	FS_INF-K									
2022-10-06	FS_INF-S									
2022-10-06	FS_INF-K									
2022-10-06	FS_INF-S									
2022-10-06	FS_BPO		0.84	< 0.010						
2022-10-06	FS_INF-K		< 0.10							
2022-10-06	FS_INF-S		0.28							
2022-10-06	FR_SCOUTDS		0.55	< 0.010	5.21	6.09	< 0.50	< 0.50	< 3.0	3.5
2022-10-06	FS_INF-K									
2022-10-06	FS_INF-S									
2022-10-06	FS_INF-K									
2022-10-06	FS_INF-S									
2022-10-06	FS_INF-K									
2022-10-06	FS_INF-S									

	Parameter	TURBIDITY, FIELD	Turbidity, Lab	Unknown selenium species – all other selenium species which elute from the applied chromatographic column and are not identified through retention time matching with known standards	Uranium	Uranium	Vanadium	Vanadium	Zinc	Zinc
	Fraction	N	N	D	D	T	D	T	D	T
	Unit	ntu	ntu	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-10-06	FS_INF-K									
2022-10-06	FS_INF-S									
2022-10-06	FS_INF-K									
2022-10-06	FS_INF-S									
2022-10-07	FS_INF-K									
2022-10-07	FS_INF-S									
2022-10-07	FS_INF-K									
2022-10-07	FS_INF-S									
2022-10-07	FS_BPO		< 0.10							
2022-10-07	FS_INF-K		< 0.10							
2022-10-07	FS_INF-S		0.38							
2022-10-07	FS_INF-K									
2022-10-07	FS_INF-S									
2022-10-07	FS_INF-K									
2022-10-07	FS_INF-S									
2022-10-07	FS_INF-K									
2022-10-07	FS_INF-S									
2022-10-07	FS_INF-K									
2022-10-07	FS_INF-S									
2022-10-08	FS_INF-K									
2022-10-08	FS_INF-S									
2022-10-08	FS_INF-K									
2022-10-08	FS_INF-S									
2022-10-08	FS_BPO		0.50							
2022-10-08	FS_INF-K		< 0.10							
2022-10-08	FS_INF-S		0.32							
2022-10-08	FS_INF-K									
2022-10-08	FS_INF-S									
2022-10-08	FS_INF-K									
2022-10-08	FS_INF-S									
2022-10-08	FS_INF-K									
2022-10-08	FS_INF-S									
2022-10-08	FS_INF-K									
2022-10-08	FS_INF-S									
2022-10-09	FS_INF-K									
2022-10-09	FS_INF-S									
2022-10-09	FS_INF-K									
2022-10-09	FS_INF-S									
2022-10-09	FS_BPO		0.57	< 0.010						
2022-10-09	FS_INF-K		< 0.10							
2022-10-09	FS_INF-S		0.28							
2022-10-09	FS_INF-K									
2022-10-09	FS_INF-S									
2022-10-09	FS_INF-K									
2022-10-09	FS_INF-S									
2022-10-09	FS_INF-K									
2022-10-09	FS_INF-S									
2022-10-09	FS_INF-K									
2022-10-09	FS_INF-S									
2022-10-09	FS_INF-K									
2022-10-09	FS_INF-S									
2022-10-09	FS_INF-K									
2022-10-09	FS_INF-S									
2022-10-10	FS_INF-K									
2022-10-10	FS_INF-S									
2022-10-10	FS_INF-K									
2022-10-10	FS_INF-S									
2022-10-10	FS_BPO		0.68							
2022-10-10	FS_INF-K		< 0.10							
2022-10-10	FS_INF-S		0.25							
2022-10-10	FS_BPO									
2022-10-10	FS_INF-K									
2022-10-10	FS_INF-S									
2022-10-10	FS_INF-K									
2022-10-10	FS_INF-S									
2022-10-10	FS_INF-K									
2022-10-10	FS_INF-S									
2022-10-10	FS_INF-K									
2022-10-10	FS_INF-S									
2022-10-10	FS_INF-K									
2022-10-10	FS_INF-S									
2022-10-11	FS_INF-K									
2022-10-11	FS_INF-S									
2022-10-11	FS_INF-K									
2022-10-11	FS_INF-S									
2022-10-11	FS_BPO		0.64	< 0.010	17.2	17.5	< 1.00	< 1.00	< 6.0	< 6.0
2022-10-11	FS_INF-K		< 0.10	< 0.010	14.3	15.4	< 1.00	< 1.00	28.1	26.6
2022-10-11	FS_INF-S		0.23	< 0.010	19.4	21.0	< 1.00	< 1.00	91.6	81.3
2022-10-11	FS_INF-K									
2022-10-11	FS_INF-S									
2022-10-11	FR_FRABCH		0.23		3.84	3.16	< 0.50	< 0.50	< 1.0	< 3.0
2022-10-11	FS_INF-K									

	Parameter	TURBIDITY, FIELD	Turbidity, Lab	Unknown selenium species – all other selenium species which elute from the applied chromatographic column and are not identified through retention time matching with known standards	Uranium	Uranium	Vanadium	Vanadium	Zinc	Zinc
	Fraction	N	N	D	D	T	D	T	D	T
	Unit	ntu	ntu	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-10-11	FS_INF-S									
2022-10-11	FR_FRABCH									
2022-10-11	FS_INF-K									
2022-10-11	FS_INF-S									
2022-10-11	FS_INF-K									
2022-10-11	FS_INF-S									
2022-10-11	FS_INF-K									
2022-10-11	FS_INF-S									
2022-10-12	FS_INF-K									
2022-10-12	FS_INF-S									
2022-10-12	FS_INF-K									
2022-10-12	FS_INF-S									
2022-10-12	FS_BPO		0.55							
2022-10-12	FS_INF-K		< 0.10							
2022-10-12	FS_INF-S		0.28							
2022-10-12	FS_INF-K									
2022-10-12	FS_INF-S									
2022-10-12	FS_INF-K									
2022-10-12	FS_INF-S									
2022-10-12	FS_INF-K									
2022-10-12	FS_INF-S									
2022-10-12	FS_INF-K									
2022-10-12	FS_INF-S									
2022-10-12	FS_INF-K									
2022-10-12	FS_INF-S									
2022-10-13	FS_INF-K									
2022-10-13	FS_INF-S									
2022-10-13	FS_INF-K									
2022-10-13	FS_INF-S									
2022-10-13	FS_BPO		0.21	< 0.010						
2022-10-13	FS_INF-K		< 0.10							
2022-10-13	FS_INF-S		0.20							
2022-10-13	FR_SCOUTDS		0.54	< 0.010	6.15	5.71	< 0.50	< 0.50	12.5	11.9
2022-10-13	FS_INF-K									
2022-10-13	FS_INF-S									
2022-10-13	FS_INF-K									
2022-10-13	FS_INF-S									
2022-10-13	FS_INF-K									
2022-10-13	FS_INF-S									
2022-10-13	FS_INF-K									
2022-10-13	FS_INF-S									
2022-10-13	FS_INF-K									
2022-10-13	FS_INF-S									
2022-10-14	FS_INF-K									
2022-10-14	FS_INF-S									
2022-10-14	FS_INF-K									
2022-10-14	FS_INF-S									
2022-10-14	FS_BPO		0.61							
2022-10-14	FS_INF-K		< 0.10							
2022-10-14	FS_INF-S		0.20							
2022-10-14	FS_INF-K									
2022-10-14	FS_INF-S									
2022-10-14	FS_INF-K									
2022-10-14	FS_INF-S									
2022-10-14	FS_INF-K									
2022-10-14	FS_INF-S									
2022-10-14	FS_INF-K									
2022-10-14	FS_INF-S									
2022-10-14	FS_INF-K									
2022-10-14	FS_INF-S									
2022-10-15	FS_INF-K									
2022-10-15	FS_INF-S									
2022-10-15	FS_INF-K									
2022-10-15	FS_INF-S									
2022-10-15	FS_BPO		0.64							
2022-10-15	FS_INF-K		< 0.10							
2022-10-15	FS_INF-S		0.24							
2022-10-15	FS_INF-K									
2022-10-15	FS_INF-S									
2022-10-15	FS_INF-K									
2022-10-15	FS_INF-S									
2022-10-15	FS_INF-K									
2022-10-15	FS_INF-S									
2022-10-15	FS_INF-K									
2022-10-15	FS_INF-S									
2022-10-15	FS_INF-K									
2022-10-15	FS_INF-S									
2022-10-16	FS_INF-K									
2022-10-16	FS_INF-S									
2022-10-16	FS_INF-K									
2022-10-16	FS_INF-S									
2022-10-16	FS_BPO		0.68							
2022-10-16	FS_INF-K		< 0.10							
2022-10-16	FS_INF-S		0.29							

	Parameter	TURBIDITY, FIELD	Turbidity, Lab	Unknown selenium species – all other selenium species which elute from the applied chromatographic column and are not identified through retention time matching with known standards	Uranium	Uranium	Vanadium	Vanadium	Zinc	Zinc
	Fraction	N	N	D	D	T	D	T	D	T
	Unit	ntu	ntu	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-10-16	FS_INF-K									
2022-10-16	FS_INF-S									
2022-10-16	FS_INF-K									
2022-10-16	FS_INF-S									
2022-10-16	FS_INF-K									
2022-10-16	FS_INF-S									
2022-10-16	FS_INF-K									
2022-10-16	FS_INF-S									
2022-10-16	FS_INF-K									
2022-10-16	FS_INF-S									
2022-10-17	FS_INF-K									
2022-10-17	FS_INF-S									
2022-10-17	FS_INF-K									
2022-10-17	FS_INF-S									
2022-10-17	FS_BPO		0.53							
2022-10-17	FS_INF-K		< 0.10							
2022-10-17	FS_INF-S		0.23							
2022-10-17	FS_BPO									
2022-10-17	FS_INF-K									
2022-10-17	FS_INF-S									
2022-10-17	FS_INF-K									
2022-10-17	FS_INF-S									
2022-10-17	FS_INF-K									
2022-10-17	FS_INF-S									
2022-10-17	FS_INF-K									
2022-10-17	FS_INF-S									
2022-10-17	FS_INF-K									
2022-10-17	FS_INF-S									
2022-10-18	FS_INF-K									
2022-10-18	FS_INF-S									
2022-10-18	FS_INF-K									
2022-10-18	FS_INF-S									
2022-10-18	FS_BPO		0.52	< 0.010	16.3	15.9	< 1.00	< 1.00	< 6.0	< 6.0
2022-10-18	FS_INF-K		< 0.10		14.8	17.6	< 1.00	< 1.00	27.0	28.6
2022-10-18	FS_INF-S		0.31		18.5	19.8	< 1.00	< 1.00	80.9	79.5
2022-10-18	FR_FRABCH		2.25		3.38	3.92	< 0.50	< 0.50	< 1.0	< 3.0
2022-10-18	FS_INF-K									
2022-10-18	FS_INF-S									
2022-10-18	FS_INF-K									
2022-10-18	FS_INF-S									
2022-10-18	FS_INF-K									
2022-10-18	FS_INF-S									
2022-10-18	FS_INF-K									
2022-10-18	FS_INF-S									
2022-10-18	FS_INF-K									
2022-10-18	FS_INF-S									
2022-10-19	FS_INF-K									
2022-10-19	FS_INF-S									
2022-10-19	FS_INF-K									
2022-10-19	FS_INF-S									
2022-10-19	FS_BPO		0.48							
2022-10-19	FS_INF-K		< 0.10							
2022-10-19	FS_INF-S		0.22							
2022-10-19	FS_INF-K									
2022-10-19	FS_INF-S									
2022-10-19	FS_INF-K									
2022-10-19	FS_INF-S									
2022-10-19	FS_INF-K									
2022-10-19	FS_INF-S									
2022-10-19	FS_INF-K									
2022-10-19	FS_INF-S									
2022-10-19	FS_INF-K									
2022-10-19	FS_INF-S									
2022-10-20	FS_INF-K									
2022-10-20	FS_INF-S									
2022-10-20	FS_BPO		1.34							
2022-10-20	FS_INF-K		< 0.10							
2022-10-20	FS_INF-S		0.36							
2022-10-20	FS_BPO									
2022-10-20	FR_SCOUTDS		0.65	< 0.020	6.07	6.17	< 0.50	< 0.50	3.1	3.5
2022-10-20	FS_INF-K									
2022-10-20	FS_INF-S									
2022-10-20	FS_INF-K									
2022-10-20	FS_INF-S									
2022-10-20	FS_INF-K									
2022-10-20	FS_INF-S									
2022-10-20	FS_INF-K									
2022-10-20	FS_INF-S									
2022-10-20	FS_INF-K									
2022-10-20	FS_INF-S									
2022-10-21	FS_INF-K									
2022-10-21	FS_INF-S									
2022-10-21	FS_INF-K									

	Parameter	TURBIDITY, FIELD	Turbidity, Lab	Unknown selenium species – all other selenium species which elute from the applied chromatographic column and are not identified through retention time matching with known standards	Uranium	Uranium	Vanadium	Vanadium	Zinc	Zinc
	Fraction	N	N	D	D	T	D	T	D	T
	Unit	ntu	ntu	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-10-21	FS_INF-S									
2022-10-21	FS_BPO		0.54							
2022-10-21	FS_INF-K		< 0.10							
2022-10-21	FS_INF-S		0.43							
2022-10-21	FS_INF-K									
2022-10-21	FS_INF-S									
2022-10-21	FS_INF-K									
2022-10-21	FS_INF-S									
2022-10-21	FS_INF-K									
2022-10-21	FS_INF-S									
2022-10-21	FS_INF-K									
2022-10-21	FS_INF-S									
2022-10-21	FS_INF-K									
2022-10-21	FS_INF-S									
2022-10-21	FS_INF-K									
2022-10-22	FS_INF-K									
2022-10-22	FS_INF-S									
2022-10-22	FS_INF-K									
2022-10-22	FS_INF-S									
2022-10-22	FS_BPO		0.41							
2022-10-22	FS_INF-K		< 0.10							
2022-10-22	FS_INF-S		0.21							
2022-10-22	FS_INF-K									
2022-10-22	FS_INF-S									
2022-10-22	FS_INF-K									
2022-10-22	FS_INF-S									
2022-10-22	FS_INF-K									
2022-10-22	FS_INF-S									
2022-10-22	FS_INF-K									
2022-10-22	FS_INF-S									
2022-10-22	FS_INF-K									
2022-10-22	FS_INF-S									
2022-10-23	FS_INF-K									
2022-10-23	FS_INF-S									
2022-10-23	FS_INF-K									
2022-10-23	FS_INF-S									
2022-10-23	FS_BPO		0.34	< 0.010						
2022-10-23	FS_INF-K		< 0.10							
2022-10-23	FS_INF-S		0.19							
2022-10-23	FS_INF-K									
2022-10-23	FS_INF-S									
2022-10-23	FS_INF-K									
2022-10-23	FS_INF-S									
2022-10-23	FS_INF-K									
2022-10-23	FS_INF-S									
2022-10-23	FS_INF-K									
2022-10-23	FS_INF-S									
2022-10-23	FS_INF-K									
2022-10-23	FS_INF-S									
2022-10-24	FS_INF-K									
2022-10-24	FS_INF-S									
2022-10-24	FS_INF-K									
2022-10-24	FS_INF-S									
2022-10-24	FS_BPO		0.41							
2022-10-24	FS_INF-K		< 0.10							
2022-10-24	FS_INF-S		0.26							
2022-10-24	FS_BPO									
2022-10-24	FS_INF-K									
2022-10-24	FS_INF-S									
2022-10-24	FS_INF-K									
2022-10-24	FS_INF-S									
2022-10-24	FS_INF-K									
2022-10-24	FS_INF-S									
2022-10-24	FS_INF-K									
2022-10-24	FS_INF-S									
2022-10-24	FS_INF-K									
2022-10-24	FS_INF-S									
2022-10-25	FS_INF-K									
2022-10-25	FS_INF-S									
2022-10-25	FS_INF-K									
2022-10-25	FS_INF-S									
2022-10-25	FS_BPO		0.34	< 0.010	15.2	16.0	< 0.50	< 1.00	< 3.0	< 6.0
2022-10-25	FS_INF-K		< 0.10	< 0.010	15.5	16.0	< 1.00	< 1.00	29.5	29.8
2022-10-25	FS_INF-S		0.39	< 0.010	18.2	18.8	< 1.00	< 1.00	79.0	76.8
2022-10-25	FR_FRABCH		0.85		3.92	3.54	< 0.50	< 0.50	< 1.0	< 3.0
2022-10-25	FR_SCOUTDS									
2022-10-25	FS_INF-K									
2022-10-25	FS_INF-S									
2022-10-25	FS_INF-K									
2022-10-25	FS_INF-S									
2022-10-25	FS_INF-K									
2022-10-25	FS_INF-S									
2022-10-26	FS_INF-K									

	Parameter	TURBIDITY, FIELD	Turbidity, Lab	Unknown selenium species – all other selenium species which elute from the applied chromatographic column and are not identified through retention time matching with known standards	Uranium	Uranium	Vanadium	Vanadium	Zinc	Zinc
	Fraction	N	N	D	D	T	D	T	D	T
	Unit	ntu	ntu	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-10-26	FS_INF-S									
2022-10-26	FS_INF-K									
2022-10-26	FS_INF-S									
2022-10-26	FS_BPO		0.44							
2022-10-26	FS_INF-K		< 0.10							
2022-10-26	FS_INF-S		0.22							
2022-10-26	FS_INF-K									
2022-10-26	FS_INF-S									
2022-10-26	FS_INF-K									
2022-10-26	FS_INF-S									
2022-10-26	FS_INF-K									
2022-10-26	FS_INF-S									
2022-10-26	FS_INF-K									
2022-10-26	FS_INF-S									
2022-10-26	FS_INF-K									
2022-10-26	FS_INF-S									
2022-10-27	FS_INF-K									
2022-10-27	FS_INF-S									
2022-10-27	FS_INF-K									
2022-10-27	FS_INF-S									
2022-10-27	FS_BPO		0.56	< 0.010						
2022-10-27	FS_INF-K		< 0.10							
2022-10-27	FS_INF-S		0.38							
2022-10-27	FR_SCOUTDS		0.40	< 0.010	6.01	6.37	< 0.50	< 0.50	< 3.0	39.1
2022-10-27	FS_INF-K									
2022-10-27	FS_INF-S									
2022-10-27	FS_INF-K									
2022-10-27	FS_INF-S									
2022-10-27	FS_INF-K									
2022-10-27	FS_INF-S									
2022-10-27	FS_INF-K									
2022-10-27	FS_INF-S									
2022-10-27	FS_INF-K									
2022-10-27	FS_INF-S									
2022-10-28	FS_INF-K									
2022-10-28	FS_INF-S									
2022-10-28	FS_INF-K									
2022-10-28	FS_INF-S									
2022-10-28	FS_BPO		0.64							
2022-10-28	FS_INF-K		< 0.10							
2022-10-28	FS_INF-S		0.51							
2022-10-28	FS_INF-K									
2022-10-28	FS_INF-S									
2022-10-28	FS_INF-K									
2022-10-28	FS_INF-S									
2022-10-28	FS_INF-K									
2022-10-28	FS_INF-S									
2022-10-28	FS_INF-K									
2022-10-28	FS_INF-S									
2022-10-28	FS_INF-K									
2022-10-28	FS_INF-S									
2022-10-29	FS_INF-K									
2022-10-29	FS_INF-S									
2022-10-29	FS_INF-K									
2022-10-29	FS_INF-S									
2022-10-29	FS_BPO		0.75							
2022-10-29	FS_INF-K		< 0.10							
2022-10-29	FS_INF-S		0.25							
2022-10-29	FS_INF-K									
2022-10-29	FS_INF-S									
2022-10-29	FS_INF-K									
2022-10-29	FS_INF-S									
2022-10-29	FS_INF-K									
2022-10-29	FS_INF-S									
2022-10-29	FS_INF-K									
2022-10-29	FS_INF-S									
2022-10-29	FS_INF-K									
2022-10-29	FS_INF-S									
2022-10-30	FS_INF-K									
2022-10-30	FS_INF-S									
2022-10-30	FS_INF-K									
2022-10-30	FS_INF-S									
2022-10-30	FS_BPO		0.53	< 0.010						
2022-10-30	FS_INF-K		< 0.10							
2022-10-30	FS_INF-S		0.21							
2022-10-30	FS_BPO									
2022-10-30	FS_INF-K									
2022-10-30	FS_INF-S									
2022-10-30	FS_INF-K									
2022-10-30	FS_INF-S									
2022-10-30	FS_INF-K									
2022-10-30	FS_INF-S									
2022-10-30	FS_INF-K									
2022-10-30	FS_INF-S									

				Unknown selenium species – all other selenium species which elute from the applied chromatographic column and are not identified through retention time matching with known standards						
Parameter		TURBIDITY, FIELD	Turbidity, Lab		Uranium	Uranium	Vanadium	Vanadium	Zinc	Zinc
Fraction		N	N	D	D	T	D	T	D	T
Unit		ntu	ntu	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-10-30	FS_INF-K									
2022-10-30	FS_INF-S									
2022-10-31	FS_INF-K									
2022-10-31	FS_INF-S									
2022-10-31	FS_INF-S									
2022-10-31	FS_BPO		0.53							
2022-10-31	FS_INF-K		< 0.10							
2022-10-31	FS_INF-S		0.41							
2022-10-31	FS_BPO									
2022-10-31	FS_BPO									
2022-10-31	FS_INF-K									
2022-10-31	FS_INF-S									
2022-10-31	FS_INF-K									
2022-10-31	FS_INF-S									
2022-10-31	FS_BPO									
2022-11-01	FS_INF-K									
2022-11-01	FS_INF-S									
2022-11-01	FS_BPO									
2022-11-01	FS_INF-K									
2022-11-01	FS_INF-S									
2022-11-01	FS_INF-K									
2022-11-01	FS_INF-S									
2022-11-01	FS_BPO		0.47	< 0.010	14.3	15.1	< 1.00	< 1.00	< 6.0	< 6.0
2022-11-01	FS_INF-K		0.14		16.0	13.6	< 1.00	< 1.00	35.6	27.2
2022-11-01	FS_INF-S		1.30		18.5	16.1	< 1.00	< 1.00	73.6	65.0
2022-11-01	FS_INF-K									
2022-11-01	FS_INF-S									
2022-11-01	FR_FRABCH		0.46		3.79	3.81	< 0.50	< 0.50	1.3	< 3.0
2022-11-01	FS_INF-K									
2022-11-01	FS_INF-S									
2022-11-01	FR_FRABCH									
2022-11-01	FS_BPO									
2022-11-02	FR_FRABCH									
2022-11-02	FR_SCOUTDS									
2022-11-02	FR_FRABCH									
2022-11-02	FR_SCOUTDS									
2022-11-02	FS_BPO		0.51							
2022-11-02	FS_INF-K		< 0.10							
2022-11-02	FS_INF-S		5.95							
2022-11-02	FS_BPO									
2022-11-02	FS_INF-K									
2022-11-02	FS_INF-S									
2022-11-03	FS_BPO									
2022-11-03	FS_INF-K									
2022-11-03	FS_INF-S									
2022-11-03	FS_INF-K									
2022-11-03	FS_INF-S									
2022-11-03	FS_BPO		0.45	< 0.010						
2022-11-03	FS_INF-K		< 0.10							
2022-11-03	FS_INF-S		0.99							
2022-11-03	FR_SCOUTDS		0.52	< 0.010	5.27	5.32	< 0.50	< 0.50	3.6	4.0
2022-11-03	FS_INF-K									
2022-11-03	FS_INF-S									
2022-11-03	FS_INF-K									
2022-11-03	FS_INF-S									
2022-11-03	FS_INF-K									
2022-11-03	FS_INF-S									
2022-11-03	FS_INF-K									
2022-11-03	FS_INF-S									
2022-11-03	FS_INF-K									
2022-11-03	FS_INF-S									
2022-11-04	FS_INF-K									
2022-11-04	FS_INF-S									
2022-11-04	FS_INF-K									
2022-11-04	FS_INF-S									
2022-11-04	FS_BPO		0.46							
2022-11-04	FS_INF-K		< 0.10							
2022-11-04	FS_INF-S		0.89							
2022-11-04	FS_INF-K									
2022-11-04	FS_INF-S									
2022-11-04	FS_INF-K									
2022-11-04	FS_INF-S									
2022-11-04	FS_INF-K									
2022-11-04	FS_INF-S									
2022-11-04	FS_INF-K									
2022-11-04	FS_INF-S									
2022-11-04	FS_INF-K									
2022-11-05	FS_INF-S									
2022-11-05	FS_INF-K									
2022-11-05	FS_INF-S									

	Parameter	TURBIDITY, FIELD	Turbidity, Lab	Unknown selenium species – all other selenium species which elute from the applied chromatographic column and are not identified through retention time matching with known standards	Uranium	Uranium	Vanadium	Vanadium	Zinc	Zinc
	Fraction	N	N	D	D	T	D	T	D	T
	Unit	ntu	ntu	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-11-05	FS_BPO		0.26							
2022-11-05	FS_INF-K		< 0.10							
2022-11-05	FS_INF-S		0.48							
2022-11-05	FS_INF-K									
2022-11-05	FS_INF-S									
2022-11-05	FS_INF-K									
2022-11-05	FS_INF-S									
2022-11-05	FS_INF-K									
2022-11-05	FS_INF-S									
2022-11-05	FS_INF-K									
2022-11-05	FS_INF-S									
2022-11-05	FS_INF-K									
2022-11-05	FS_INF-S									
2022-11-06	FS_INF-K									
2022-11-06	FS_INF-S									
2022-11-06	FS_INF-K									
2022-11-06	FS_INF-S									
2022-11-06	FS_BPO		0.40	< 0.010						
2022-11-06	FS_INF-K		< 0.10							
2022-11-06	FS_INF-S		0.44							
2022-11-06	FS_INF-K									
2022-11-06	FS_INF-S									
2022-11-06	FS_INF-K									
2022-11-06	FS_INF-S									
2022-11-06	FS_INF-K									
2022-11-06	FS_INF-S									
2022-11-06	FS_INF-K									
2022-11-06	FS_INF-S									
2022-11-06	FS_INF-K									
2022-11-06	FS_INF-S									
2022-11-07	FS_INF-K									
2022-11-07	FS_INF-S									
2022-11-07	FS_INF-K									
2022-11-07	FS_INF-S									
2022-11-07	FS_BPO		0.26		16.1		< 1.00		< 2.0	
2022-11-07	FS_INF-K		< 0.10		16.1		< 1.00		28.5	
2022-11-07	FS_INF-S		0.44		18.7		< 1.00		67.2	
2022-11-07	FS_INF-K									
2022-11-07	FS_INF-S									
2022-11-07	FS_INF-K									
2022-11-07	FS_INF-S									
2022-11-07	FS_INF-K									
2022-11-07	FS_INF-S									
2022-11-07	FS_INF-K									
2022-11-07	FS_INF-S									
2022-11-07	FS_INF-K									
2022-11-07	FS_INF-S									
2022-11-08	FS_INF-K									
2022-11-08	FS_INF-S									
2022-11-08	FS_INF-K									
2022-11-08	FS_INF-S									
2022-11-08	FS_BPO		0.30	< 0.010	16.2	16.2	< 1.00	< 1.00	< 6.0	< 6.0
2022-11-08	FS_INF-K		< 0.10	< 0.010	15.9	15.9	< 1.00	< 1.00	31.9	30.9
2022-11-08	FS_INF-S		0.24	< 0.010	19.4	18.6	< 1.00	< 1.00	72.1	62.8
2022-11-08	FR_FRABCH		2.87		3.55	3.53	< 0.50	< 0.50	1.1	< 3.0
2022-11-08	FS_INF-K									
2022-11-08	FS_INF-S									
2022-11-08	FR_FRABCH									
2022-11-08	FS_INF-K									
2022-11-08	FS_INF-S									
2022-11-08	FS_INF-K									
2022-11-08	FS_INF-S									
2022-11-08	FS_INF-K									
2022-11-08	FS_INF-S									
2022-11-08	FS_INF-K									
2022-11-08	FS_INF-S									
2022-11-09	FS_INF-K									
2022-11-09	FS_INF-S									
2022-11-09	FS_INF-K									
2022-11-09	FS_INF-S									
2022-11-09	FS_BPO		0.50							
2022-11-09	FS_INF-K		0.16							
2022-11-09	FS_INF-S		0.26							
2022-11-09	FS_INF-K									
2022-11-09	FS_INF-S									
2022-11-09	FS_INF-K									
2022-11-09	FS_INF-S									
2022-11-10	FS_INF-K									
2022-11-10	FS_INF-S									
2022-11-10	FS_INF-K									
2022-11-10	FS_INF-S									

				Unknown selenium species – all other selenium species which elute from the applied chromatographic column and are not identified through retention time matching with known standards						
Parameter		TURBIDITY, FIELD	Turbidity, Lab		Uranium	Uranium	Vanadium	Vanadium	Zinc	Zinc
Fraction		N	N	D	D	T	D	T	D	T
Unit		ntu	ntu	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-11-10	FS_BPO		0.97	< 0.010						
2022-11-10	FS_INF-K		0.12							
2022-11-10	FS_INF-S		0.27							
2022-11-10	FR_SCOUTDS									
2022-11-10	FR_SCOUTDS			< 0.010						
2022-11-10	FS_INF-K									
2022-11-10	FS_INF-S									
2022-11-10	FS_INF-K									
2022-11-10	FS_INF-S									
2022-11-10	FS_INF-K									
2022-11-10	FS_INF-S									
2022-11-10	FS_INF-K									
2022-11-10	FS_INF-S									
2022-11-10	FS_INF-K									
2022-11-10	FS_INF-S									
2022-11-10	FS_INF-K									
2022-11-10	FS_INF-S									
2022-11-11	FS_INF-K									
2022-11-11	FS_INF-S									
2022-11-11	FS_INF-K									
2022-11-11	FS_INF-S									
2022-11-11	FS_BPO		0.48							
2022-11-11	FS_INF-K		< 0.10							
2022-11-11	FS_INF-S		0.18							
2022-11-11	FS_INF-K									
2022-11-11	FS_INF-S									
2022-11-11	FS_INF-K									
2022-11-11	FS_INF-S									
2022-11-11	FS_INF-K									
2022-11-11	FS_INF-S									
2022-11-11	FS_INF-K									
2022-11-11	FS_INF-S									
2022-11-11	FS_INF-K									
2022-11-11	FS_INF-S									
2022-11-12	FS_INF-K									
2022-11-12	FS_INF-S									
2022-11-12	FS_INF-K									
2022-11-12	FS_INF-S									
2022-11-12	FS_BPO		0.32							
2022-11-12	FS_INF-K		< 0.10							
2022-11-12	FS_INF-S		0.14							
2022-11-12	FS_INF-K									
2022-11-12	FS_INF-S									
2022-11-12	FS_INF-K									
2022-11-12	FS_INF-S									
2022-11-12	FS_INF-K									
2022-11-12	FS_INF-S									
2022-11-13	FS_BPO		0.37	< 0.010						
2022-11-13	FS_INF-K		< 0.10							
2022-11-13	FS_INF-S		0.13							
2022-11-13	FS_INF-K									
2022-11-13	FS_INF-S									
2022-11-13	FS_INF-K									
2022-11-13	FS_INF-S									
2022-11-13	FS_INF-K									
2022-11-13	FS_INF-S									
2022-11-13	FS_INF-K									
2022-11-13	FS_INF-S									
2022-11-13	FS_INF-K									
2022-11-13	FS_INF-S									
2022-11-14	FS_INF-K									
2022-11-14	FS_INF-S									
2022-11-14	FS_INF-K									
2022-11-14	FS_INF-S									
2022-11-14	FS_BPO		0.34		16.5		< 1.00		< 2.0	
2022-11-14	FS_INF-K		< 0.10		15.6		< 1.00		22.8	
2022-11-14	FS_INF-S		0.14		18.8		< 1.00		43.2	
2022-11-14	FS_BPO									
2022-11-14	FS_INF-K									
2022-11-14	FS_INF-S									
2022-11-14	FS_INF-K									
2022-11-14	FS_INF-S									
2022-11-14	FS_INF-K									
2022-11-14	FS_INF-S									
2022-11-14	FS_INF-K									
2022-11-14	FS_INF-S									
2022-11-14	FS_INF-K									
2022-11-15	FS_INF-K									
2022-11-15	FS_INF-S									
2022-11-15	FS_INF-K									
2022-11-15	FS_INF-S									
2022-11-15	FS_BPO		0.29	< 0.010	15.6	18.7	< 1.00	< 1.00	< 6.0	< 6.0

	Parameter	TURBIDITY, FIELD	Turbidity, Lab	Unknown selenium species – all other selenium species which elute from the applied chromatographic column and are not identified through retention time matching with known standards	Uranium	Uranium	Vanadium	Vanadium	Zinc	Zinc
	Fraction	N	N	D	D	T	D	T	D	T
	Unit	ntu	ntu	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-11-15	FS_INF-K		0.16		16.4	15.7	< 1.00	< 1.00	28.6	30.8
2022-11-15	FS_INF-S		0.18		19.8	19.1	< 1.00	< 1.00	48.9	56.6
2022-11-15	FS_INF-K									
2022-11-15	FS_INF-S									
2022-11-16	FR_SCOUTDS									
2022-11-16	FR_FRABCH									
2022-11-16	FR_SCOUTDS									
2022-11-16	FR_FRABCH									
2022-11-16	FS_BPO		0.35							
2022-11-16	FS_INF-K		< 0.10							
2022-11-16	FS_INF-S		0.30							
2022-11-16	FS_INF-K									
2022-11-16	FS_INF-S									
2022-11-16	FS_INF-K									
2022-11-16	FS_INF-S									
2022-11-16	FS_INF-K									
2022-11-16	FS_INF-S									
2022-11-16	FS_INF-K									
2022-11-16	FS_INF-S									
2022-11-17	FS_INF-K									
2022-11-17	FS_INF-S									
2022-11-17	FS_INF-K									
2022-11-17	FS_INF-S									
2022-11-17	FS_BPO		1.15	< 0.010						
2022-11-17	FS_INF-K		< 0.10							
2022-11-17	FS_INF-S		0.21							
2022-11-17	FR_SCOUTDS		0.52	< 0.010	6.72	6.44	< 0.50	< 0.50	3.4	3.3
2022-11-17	FS_INF-K									
2022-11-17	FS_INF-S									
2022-11-17	FS_INF-K									
2022-11-17	FS_INF-S									
2022-11-17	FS_INF-K									
2022-11-17	FS_INF-S									
2022-11-18	FS_BPO		0.78							
2022-11-18	FS_INF-K		< 0.10							
2022-11-18	FS_INF-S		0.20							
2022-11-18	FS_INF-K									
2022-11-18	FS_INF-S									
2022-11-18	FS_INF-K									
2022-11-18	FS_INF-S									
2022-11-18	FS_INF-K									
2022-11-18	FS_INF-S									
2022-11-18	FS_INF-K									
2022-11-18	FS_INF-S									
2022-11-18	FS_BPO									
2022-11-18	FS_INF-K									
2022-11-18	FS_INF-S									
2022-11-19	FS_INF-K									
2022-11-19	FS_INF-S									
2022-11-19	FS_INF-K									
2022-11-19	FS_INF-S									
2022-11-19	FS_BPO		0.63							
2022-11-19	FS_INF-K		< 0.10							
2022-11-19	FS_INF-S		0.13							
2022-11-19	FS_INF-K									
2022-11-19	FS_INF-S									
2022-11-19	FS_INF-K									
2022-11-19	FS_INF-S									
2022-11-19	FS_INF-K									
2022-11-19	FS_INF-S									
2022-11-19	FS_INF-K									
2022-11-19	FS_INF-S									
2022-11-19	FS_INF-K									
2022-11-19	FS_INF-S									
2022-11-20	FS_INF-K									
2022-11-20	FS_INF-S									
2022-11-20	FS_INF-K									
2022-11-20	FS_INF-S									
2022-11-20	FS_BPO		0.79	< 0.010						
2022-11-20	FS_INF-K		< 0.10							
2022-11-20	FS_INF-S		0.14							
2022-11-20	FS_INF-K									
2022-11-20	FS_INF-S									
2022-11-20	FS_INF-K									
2022-11-20	FS_INF-S									
2022-11-20	FS_INF-K									
2022-11-20	FS_INF-S									
2022-11-20	FS_INF-K									
2022-11-20	FS_INF-S									
2022-11-20	FS_INF-K									
2022-11-20	FS_INF-S									
2022-11-21	FS_INF-K									
2022-11-21	FS_INF-S									
2022-11-21	FS_INF-K									

Parameter		TURBIDITY, FIELD	Turbidity, Lab	Unknown selenium species – all other selenium species which elute from the applied chromatographic column and are not identified through retention time matching with known standards	Uranium	Uranium	Vanadium	Vanadium	Zinc	Zinc
Fraction		N	N	D	D	T	D	T	D	T
Unit		ntu	ntu	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-11-21	FS_INF-S									
2022-11-21	FS_BPO		0.69							
2022-11-21	FS_INF-K		0.12							
2022-11-21	FS_INF-S		0.21							
2022-11-21	FS_INF-K									
2022-11-21	FS_INF-S									
2022-11-21	FS_INF-K									
2022-11-21	FS_INF-S									
2022-11-21	FS_INF-K									
2022-11-21	FS_INF-S									
2022-11-21	FS_INF-K									
2022-11-21	FS_INF-S									
2022-11-21	FS_INF-K									
2022-11-21	FS_INF-S									
2022-11-22	FS_INF-K									
2022-11-22	FS_INF-S									
2022-11-22	FS_INF-K									
2022-11-22	FS_INF-S									
2022-11-22	FS_BPO		0.53	0.050	16.8	18.2	< 1.00	< 1.00	< 6.0	< 6.0
2022-11-22	FS_INF-K		< 0.10	< 0.010	17.0	18.8	< 1.00	< 1.00	32.8	33.4
2022-11-22	FS_INF-S		0.19	< 0.010	20.2	21.9	< 1.00	< 1.00	51.3	49.9
2022-11-22	FS_INF-K									
2022-11-22	FS_INF-S									
2022-11-22	FS_INF-K									
2022-11-22	FS_INF-S									
2022-11-22	FS_INF-K									
2022-11-22	FS_INF-S									
2022-11-22	FS_INF-K									
2022-11-22	FS_INF-S									
2022-11-22	FS_INF-K									
2022-11-22	FS_INF-S									
2022-11-23	FS_INF-K									
2022-11-23	FS_INF-S									
2022-11-23	FS_INF-K									
2022-11-23	FS_INF-S									
2022-11-23	FS_BPO		0.50							
2022-11-23	FS_INF-K		< 0.10							
2022-11-23	FS_INF-S		0.23							
2022-11-23	FS_INF-K									
2022-11-23	FS_INF-S									
2022-11-23	FS_INF-K									
2022-11-23	FS_INF-S									
2022-11-23	FS_INF-K									
2022-11-23	FS_INF-S									
2022-11-23	FS_INF-K									
2022-11-23	FS_INF-S									
2022-11-24	FS_INF-K									
2022-11-24	FS_INF-S									
2022-11-24	FS_INF-K									
2022-11-24	FS_INF-S									
2022-11-24	FS_BPO		0.53	< 0.010						
2022-11-24	FS_INF-K		< 0.10							
2022-11-24	FS_INF-S		0.22							
2022-11-24	FR_SCOUTDS		0.48	< 0.010	6.70	7.37	< 1.00	< 0.50	< 6.0	< 3.0
2022-11-24	FS_INF-K									
2022-11-24	FS_INF-S									
2022-11-24	FS_INF-K									
2022-11-24	FS_INF-S									
2022-11-24	FS_INF-K									
2022-11-24	FS_INF-S									
2022-11-24	FS_INF-K									
2022-11-24	FS_INF-S									
2022-11-24	FS_INF-K									
2022-11-24	FS_INF-S									
2022-11-25	FS_INF-K									
2022-11-25	FS_INF-S									
2022-11-25	FS_INF-K									
2022-11-25	FS_INF-S									
2022-11-25	FS_BPO		0.42							
2022-11-25	FS_INF-K		< 0.10							
2022-11-25	FS_INF-S		0.33							
2022-11-25	FS_INF-K									
2022-11-25	FS_INF-S									
2022-11-25	FS_INF-K									
2022-11-25	FS_INF-S									
2022-11-25	FS_INF-K									
2022-11-25	FS_INF-S									
2022-11-25	FS_INF-K									
2022-11-25	FS_INF-S									
2022-11-25	FS_INF-K									
2022-11-25	FS_INF-S									
2022-11-26	FS_INF-K									

	Parameter	TURBIDITY, FIELD	Turbidity, Lab	Unknown selenium species – all other selenium species which elute from the applied chromatographic column and are not identified through retention time matching with known standards	Uranium	Uranium	Vanadium	Vanadium	Zinc	Zinc
	Fraction	N	N	D	D	T	D	T	D	T
	Unit	ntu	ntu	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-11-26	FS_INF-S									
2022-11-26	FS_INF-K									
2022-11-26	FS_INF-S									
2022-11-26	FS_BPO		0.49							
2022-11-26	FS_INF-K		< 0.10							
2022-11-26	FS_INF-S		0.13							
2022-11-26	FS_INF-K									
2022-11-26	FS_INF-S									
2022-11-26	FS_INF-K									
2022-11-26	FS_INF-S									
2022-11-26	FS_INF-K									
2022-11-26	FS_INF-S									
2022-11-26	FS_INF-K									
2022-11-26	FS_INF-S									
2022-11-26	FS_INF-K									
2022-11-26	FS_INF-S									
2022-11-27	FS_INF-K									
2022-11-27	FS_INF-S									
2022-11-27	FS_INF-K									
2022-11-27	FS_INF-S									
2022-11-27	FS_BPO		0.63	< 0.010						
2022-11-27	FS_INF-K		< 0.10							
2022-11-27	FS_INF-S		0.20							
2022-11-27	FS_INF-K									
2022-11-27	FS_INF-S									
2022-11-27	FS_INF-K									
2022-11-27	FS_INF-S									
2022-11-27	FS_INF-K									
2022-11-27	FS_INF-S									
2022-11-27	FS_INF-K									
2022-11-27	FS_INF-S									
2022-11-27	FS_INF-K									
2022-11-27	FS_INF-S									
2022-11-28	FS_INF-K									
2022-11-28	FS_INF-S									
2022-11-28	FS_INF-K									
2022-11-28	FS_INF-S									
2022-11-28	FS_BPO		0.70							
2022-11-28	FS_INF-K		< 0.10							
2022-11-28	FS_INF-S		0.25							
2022-11-28	FS_INF-K									
2022-11-28	FS_INF-S									
2022-11-28	FS_INF-K									
2022-11-28	FS_INF-S									
2022-11-28	FS_INF-K									
2022-11-28	FS_INF-S									
2022-11-28	FS_INF-K									
2022-11-28	FS_INF-S									
2022-11-28	FS_INF-K									
2022-11-29	FS_INF-S									
2022-11-29	FS_INF-K									
2022-11-29	FS_INF-S									
2022-11-29	FS_INF-K									
2022-11-29	FS_INF-S									
2022-11-29	FS_BPO		0.55	< 0.010	17.5	17.2	< 1.00	< 1.00	< 6.0	< 6.0
2022-11-29	FS_INF-K		< 0.10		17.1	17.1	< 1.00	< 1.00	37.0	31.5
2022-11-29	FS_INF-S		0.20		20.8	20.0	< 1.00	< 1.00	56.7	46.5
2022-11-29	FS_INF-K									
2022-11-29	FS_INF-S									
2022-11-29	FS_INF-K									
2022-11-29	FS_INF-S									
2022-11-29	FS_BPO									
2022-11-29	FS_INF-K									
2022-11-29	FS_INF-S									
2022-11-29	FS_INF-K									
2022-11-29	FS_INF-S									
2022-11-29	FS_BPO									
2022-11-29	FS_BPO									
2022-11-29	FS_INF-K									
2022-11-29	FS_INF-S									
2022-11-30	FS_INF-K									
2022-11-30	FS_INF-S									
2022-11-30	FS_BPO									
2022-11-30	FS_INF-K									
2022-11-30	FS_INF-S									
2022-11-30	FS_BPO		0.64							
2022-11-30	FS_INF-K		< 0.10							
2022-11-30	FS_INF-S		0.23							
2022-11-30	FS_INF-K									
2022-11-30	FS_INF-S									
2022-11-30	FS_INF-K									

	Parameter	TURBIDITY, FIELD	Turbidity, Lab	Unknown selenium species – all other selenium species which elute from the applied chromatographic column and are not identified through retention time matching with known standards	Uranium	Uranium	Vanadium	Vanadium	Zinc	Zinc
	Fraction	N	N	D	D	T	D	T	D	T
	Unit	ntu	ntu	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-11-30	FS_INF-S									
2022-11-30	FS_INF-K									
2022-11-30	FS_INF-S									
2022-11-30	FS_INF-K									
2022-11-30	FS_INF-S									
2022-11-30	FS_INF-K									
2022-11-30	FS_INF-S									
2022-12-01	FS_INF-K									
2022-12-01	FS_INF-S									
2022-12-01	FS_INF-K									
2022-12-01	FS_INF-S									
2022-12-01	FS_BPO		0.55	< 0.010						
2022-12-01	FS_INF-K		< 0.10							
2022-12-01	FS_INF-S		0.25							
2022-12-01	FR_SCOUTDS		0.62	< 0.010	8.04	8.44	< 0.50	< 0.50	< 3.0	3.7
2022-12-01	FS_INF-K									
2022-12-01	FS_INF-S									
2022-12-01	FS_INF-S									
2022-12-01	FS_INF-S									
2022-12-01	FS_INF-S									
2022-12-01	FS_INF-S									
2022-12-02	FS_INF-S									
2022-12-02	FS_INF-S									
2022-12-02	FS_BPO		0.76							
2022-12-02	FS_INF-S		0.23							
2022-12-02	FS_INF-S									
2022-12-02	FS_BPO									
2022-12-02	FS_INF-S									
2022-12-02	FS_INF-S									
2022-12-02	FS_INF-S									
2022-12-02	FS_INF-S									
2022-12-03	FS_INF-S									
2022-12-03	FS_INF-S									
2022-12-03	FS_BPO		0.92							
2022-12-03	FS_INF-S		0.18							
2022-12-03	FS_INF-S									
2022-12-03	FS_INF-S									
2022-12-03	FS_INF-S									
2022-12-03	FS_INF-S									
2022-12-03	FS_INF-S									
2022-12-04	FS_INF-S									
2022-12-04	FS_INF-S									
2022-12-04	FS_BPO		0.85	< 0.010						
2022-12-04	FS_INF-S		0.14							
2022-12-04	FS_INF-S									
2022-12-04	FS_INF-S									
2022-12-04	FS_INF-S									
2022-12-04	FS_INF-S									
2022-12-04	FS_INF-S									
2022-12-05	FS_INF-S									
2022-12-05	FS_INF-S									
2022-12-05	FS_BPO		0.67							
2022-12-05	FS_INF-S		0.21							
2022-12-05	FS_INF-S									
2022-12-05	FS_INF-S									
2022-12-05	FS_INF-S									
2022-12-05	FS_INF-S									
2022-12-05	FS_INF-S									
2022-12-06	FS_INF-S									
2022-12-06	FS_INF-S									
2022-12-06	FS_BPO		0.59	< 0.010	18.3	18.2	< 1.00	< 1.00	< 6.0	< 6.0
2022-12-06	FS_INF-S		0.23	< 0.010	20.1	21.4	< 1.00	< 1.00	46.6	47.8
2022-12-06	FS_INF-S									
2022-12-06	FS_INF-S									
2022-12-06	FS_INF-S									
2022-12-06	FS_INF-S									
2022-12-06	FS_INF-S									
2022-12-07	FS_INF-S									
2022-12-07	FS_INF-S									
2022-12-07	FS_BPO		0.62							
2022-12-07	FS_INF-K		< 0.10							
2022-12-07	FS_INF-S		0.39							
2022-12-07	FS_INF-S									
2022-12-07	FS_INF-K									
2022-12-07	FS_INF-S									
2022-12-07	FS_INF-K									
2022-12-07	FS_INF-S									
2022-12-08	FS_BPO		0.70	< 0.010						
2022-12-08	FS_INF-K		0.16							
2022-12-08	FS_INF-S		0.12							

	Parameter	TURBIDITY, FIELD	Turbidity, Lab	Unknown selenium species – all other selenium species which elute from the applied chromatographic column and are not identified through retention time matching with known standards	Uranium	Uranium	Vanadium	Vanadium	Zinc	Zinc
	Fraction	N	N	D	D	T	D	T	D	T
	Unit	ntu	ntu	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-12-08	FR_SCOUTDS		0.39	< 0.010	7.09	7.14	< 0.50	< 0.50	< 3.0	< 3.0
2022-12-08	FS_INF-K									
2022-12-08	FS_INF-S									
2022-12-08	FS_INF-K									
2022-12-08	FS_INF-S									
2022-12-08	FS_BPO									
2022-12-08	FS_INF-K									
2022-12-08	FS_INF-S									
2022-12-08	FS_INF-K									
2022-12-08	FS_INF-S									
2022-12-08	FS_INF-K									
2022-12-08	FS_INF-S									
2022-12-09	FS_INF-K									
2022-12-09	FS_INF-S									
2022-12-09	FS_INF-K									
2022-12-09	FS_INF-S									
2022-12-09	FS_BPO		0.57							
2022-12-09	FS_INF-K		< 0.10							
2022-12-09	FS_INF-S		0.20							
2022-12-09	FS_INF-K									
2022-12-09	FS_INF-S									
2022-12-09	FS_INF-K									
2022-12-09	FS_INF-S									
2022-12-09	FS_INF-K									
2022-12-09	FS_INF-S									
2022-12-09	FS_INF-K									
2022-12-09	FS_INF-S									
2022-12-09	FS_INF-K									
2022-12-09	FS_INF-S									
2022-12-10	FS_INF-K									
2022-12-10	FS_INF-S									
2022-12-10	FS_INF-K									
2022-12-10	FS_INF-S									
2022-12-10	FS_BPO		0.44							
2022-12-10	FS_INF-K		< 0.10							
2022-12-10	FS_INF-S		0.22							
2022-12-10	FS_INF-K									
2022-12-10	FS_INF-S									
2022-12-10	FS_INF-K									
2022-12-10	FS_INF-S									
2022-12-10	FS_INF-K									
2022-12-10	FS_INF-S									
2022-12-10	FS_INF-K									
2022-12-10	FS_INF-S									
2022-12-11	FS_INF-K									
2022-12-11	FS_INF-S									
2022-12-11	FS_INF-K									
2022-12-11	FS_INF-S									
2022-12-11	FS_BPO		0.42	< 0.010						
2022-12-11	FS_INF-K		< 0.10							
2022-12-11	FS_INF-S		0.25							
2022-12-11	FS_INF-K									
2022-12-11	FS_INF-S									
2022-12-11	FS_INF-K									
2022-12-11	FS_INF-S									
2022-12-11	FS_INF-K									
2022-12-11	FS_INF-S									
2022-12-11	FS_INF-K									
2022-12-11	FS_INF-S									
2022-12-11	FS_INF-K									
2022-12-11	FS_INF-S									
2022-12-12	FS_INF-K									
2022-12-12	FS_INF-S									
2022-12-12	FS_INF-K									
2022-12-12	FS_INF-S									
2022-12-12	FS_BPO		0.77							
2022-12-12	FS_INF-K		< 0.10							
2022-12-12	FS_INF-S		1.41							
2022-12-12	FS_INF-K									
2022-12-12	FS_INF-S									
2022-12-12	FR_FRABCH									
2022-12-12	FS_INF-K									
2022-12-12	FS_INF-S									
2022-12-12	FS_INF-K									
2022-12-12	FS_INF-S									
2022-12-12	FS_INF-K									
2022-12-12	FS_INF-S									
2022-12-13	FS_INF-K									
2022-12-13	FS_INF-S									
2022-12-13	FS_INF-K									
2022-12-13	FS_INF-S									

	Parameter	TURBIDITY, FIELD	Turbidity, Lab	Unknown selenium species – all other selenium species which elute from the applied chromatographic column and are not identified through retention time matching with known standards	Uranium	Uranium	Vanadium	Vanadium	Zinc	Zinc
	Fraction	N	N	D	D	T	D	T	D	T
	Unit	ntu	ntu	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-12-13	FS_BPO		1.20	< 0.010	18.0	17.1	< 1.00	< 1.00	< 6.0	< 6.0
2022-12-13	FS_INF-K		0.18	< 0.010	17.5	14.6	< 1.00	< 1.00	37.9	39.6
2022-12-13	FS_INF-S		0.18	< 0.010	21.3	18.7	< 1.00	< 1.00	47.5	50.7
2022-12-13	FR_SCOUTDS									
2022-12-13	FS_INF-K									
2022-12-13	FS_INF-S									
2022-12-13	FS_INF-K									
2022-12-13	FS_INF-S									
2022-12-13	FS_INF-K									
2022-12-13	FS_INF-S									
2022-12-13	FS_INF-K									
2022-12-13	FS_INF-S									
2022-12-13	FS_INF-K									
2022-12-13	FS_INF-S									
2022-12-14	FS_INF-K									
2022-12-14	FS_INF-S									
2022-12-14	FS_INF-K									
2022-12-14	FS_INF-S									
2022-12-14	FS_BPO		1.51							
2022-12-14	FS_INF-K		< 0.10							
2022-12-14	FS_INF-S		0.13							
2022-12-14	FS_INF-K									
2022-12-14	FS_INF-S									
2022-12-14	FS_INF-K									
2022-12-14	FS_INF-S									
2022-12-14	FS_INF-K									
2022-12-14	FS_INF-S									
2022-12-14	FS_INF-K									
2022-12-14	FS_INF-S									
2022-12-14	FS_INF-K									
2022-12-14	FS_INF-S									
2022-12-15	FS_INF-K									
2022-12-15	FS_INF-S									
2022-12-15	FS_INF-K									
2022-12-15	FS_INF-S									
2022-12-15	FS_BPO		1.06	< 0.010						
2022-12-15	FS_INF-K		< 0.10							
2022-12-15	FS_INF-S		0.16							
2022-12-15	FR_SCOUTDS		0.37	< 0.010	6.66	7.73	< 0.50	< 0.50	< 3.0	17.1
2022-12-15	FS_INF-K									
2022-12-15	FS_INF-S									
2022-12-15	FS_INF-K									
2022-12-15	FS_INF-S									
2022-12-15	FS_INF-K									
2022-12-15	FS_INF-S									
2022-12-15	FS_INF-K									
2022-12-15	FS_INF-S									
2022-12-15	FS_INF-K									
2022-12-15	FS_INF-S									
2022-12-16	FS_INF-K									
2022-12-16	FS_INF-S									
2022-12-16	FS_INF-K									
2022-12-16	FS_INF-S									
2022-12-16	FS_BPO		0.81							
2022-12-16	FS_INF-K		0.37							
2022-12-16	FS_INF-S		0.30							
2022-12-16	FS_INF-K									
2022-12-16	FS_INF-S									
2022-12-16	FR_FRABCH		0.21	< 0.010	4.66	3.79	< 0.50	< 0.50	< 1.0	< 3.0
2022-12-16	FS_INF-K									
2022-12-16	FS_INF-S									
2022-12-16	FS_INF-K									
2022-12-16	FS_INF-S									
2022-12-16	FS_INF-K									
2022-12-16	FS_INF-S									
2022-12-16	FS_INF-K									
2022-12-16	FS_INF-S									
2022-12-17	FS_INF-K									
2022-12-17	FS_INF-S									
2022-12-17	FS_INF-K									
2022-12-17	FS_INF-S									
2022-12-17	FS_BPO		1.04							
2022-12-17	FS_INF-K		< 0.10							
2022-12-17	FS_INF-S		0.37							
2022-12-17	FS_INF-K									
2022-12-17	FS_INF-S									
2022-12-17	FS_INF-K									
2022-12-17	FS_INF-S									
2022-12-17	FS_INF-K									
2022-12-17	FS_INF-S									
2022-12-17	FS_INF-K									
2022-12-17	FS_INF-S									
2022-12-17	FS_INF-K									

	Parameter	TURBIDITY, FIELD	Turbidity, Lab	Unknown selenium species – all other selenium species which elute from the applied chromatographic column and are not identified through retention time matching with known standards	Uranium	Uranium	Vanadium	Vanadium	Zinc	Zinc
	Fraction	N	N	D	D	T	D	T	D	T
	Unit	ntu	ntu	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-12-17	FS_INF-S									
2022-12-18	FS_INF-K									
2022-12-18	FS_INF-S									
2022-12-18	FS_INF-K									
2022-12-18	FS_INF-S									
2022-12-18	FS_BPO		1.14	< 0.010						
2022-12-18	FS_INF-K		0.36							
2022-12-18	FS_INF-S		0.17							
2022-12-18	FS_INF-K									
2022-12-18	FS_INF-S									
2022-12-18	FS_INF-K									
2022-12-18	FS_INF-S									
2022-12-18	FS_INF-K									
2022-12-18	FS_INF-S									
2022-12-19	FS_INF-K									
2022-12-19	FS_INF-S									
2022-12-19	FS_INF-K									
2022-12-19	FS_INF-S									
2022-12-19	FS_BPO		0.73							
2022-12-19	FS_INF-K		< 0.10							
2022-12-19	FS_INF-S		0.17							
2022-12-19	FS_INF-K									
2022-12-19	FS_INF-S									
2022-12-19	FS_INF-K									
2022-12-19	FS_INF-S									
2022-12-19	FS_INF-K									
2022-12-19	FS_INF-S									
2022-12-19	FS_INF-K									
2022-12-19	FS_INF-S									
2022-12-19	FS_INF-K									
2022-12-19	FS_INF-S									
2022-12-20	FS_INF-K									
2022-12-20	FS_INF-S									
2022-12-20	FS_INF-K									
2022-12-20	FS_INF-S									
2022-12-20	FS_BPO		0.74	< 0.010	16.8	17.0	< 1.00	< 1.00	< 6.0	< 6.0
2022-12-20	FS_INF-K		< 0.10	< 0.010	16.2	15.7	< 1.00	< 1.00	36.3	35.5
2022-12-20	FS_INF-S		0.16	< 0.010	20.7	20.1	< 1.00	< 1.00	42.4	41.9
2022-12-20	FS_INF-K									
2022-12-20	FS_INF-S									
2022-12-20	FS_INF-K									
2022-12-20	FS_INF-S									
2022-12-20	FS_INF-K									
2022-12-20	FS_INF-S									
2022-12-20	FS_INF-K									
2022-12-20	FS_INF-S									
2022-12-20	FS_INF-K									
2022-12-20	FS_INF-S									
2022-12-21	FS_INF-K									
2022-12-21	FS_INF-S									
2022-12-21	FS_INF-K									
2022-12-21	FS_INF-S									
2022-12-21	FS_BPO		0.68							
2022-12-21	FS_INF-K		< 0.10							
2022-12-21	FS_INF-S		0.21							
2022-12-21	FS_INF-K									
2022-12-21	FS_INF-S									
2022-12-21	FR_FRABCH									
2022-12-21	FR_FRABCH									
2022-12-21	FS_INF-K									
2022-12-21	FS_INF-S									
2022-12-21	FS_INF-K									
2022-12-21	FS_INF-S									
2022-12-21	FS_INF-K									
2022-12-21	FS_INF-S									
2022-12-21	FS_INF-K									
2022-12-21	FS_INF-S									
2022-12-22	FS_INF-K									
2022-12-22	FS_INF-S									
2022-12-22	FS_INF-K									
2022-12-22	FS_INF-S									
2022-12-22	FS_BPO		1.32	< 0.010						
2022-12-22	FS_INF-K		0.16							
2022-12-22	FS_INF-S		0.24							
2022-12-22	FR_SCOUTDS		0.32	< 0.010	9.30	8.63	< 0.50	< 0.50	11.3	77.0
2022-12-22	FR_SCOUTDS									
2022-12-23	FS_BPO		1.45							
2022-12-23	FS_INF-K		0.15							
2022-12-23	FS_INF-S		0.33							
2022-12-23	FS_BPO									

				Unknown selenium species – all other selenium species which elute from the applied chromatographic column and are not identified through retention time matching with known standards						
Parameter		TURBIDITY, FIELD	Turbidity, Lab		Uranium	Uranium	Vanadium	Vanadium	Zinc	Zinc
Fraction		N	N	D	D	T	D	T	D	T
Unit		ntu	ntu	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-12-23	FR_FRABCH									
2022-12-23	FR_SCOUTDS									
2022-12-23	FS_BPO									
2022-12-23	FS_INF-K									
2022-12-23	FS_INF-S									
2022-12-23	FR_SCOUTDS									
2022-12-23	FS_INF-K									
2022-12-23	FS_INF-S									
2022-12-23	FS_INF-K									
2022-12-23	FS_INF-S									
2022-12-23	FS_INF-K									
2022-12-23	FS_INF-S									
2022-12-24	FS_INF-K									
2022-12-24	FS_INF-S									
2022-12-24	FS_INF-K									
2022-12-24	FS_INF-S									
2022-12-24	FS_BPO		2.19							
2022-12-24	FS_INF-K		0.26							
2022-12-24	FS_INF-S		0.32							
2022-12-24	FS_INF-K									
2022-12-24	FS_INF-S									
2022-12-24	FS_INF-K									
2022-12-24	FS_INF-S									
2022-12-24	FS_BPO									
2022-12-24	FS_INF-K									
2022-12-24	FS_INF-S									
2022-12-25	FS_BPO									
2022-12-25	FS_INF-K									
2022-12-25	FS_INF-S									
2022-12-25	FS_INF-K									
2022-12-25	FS_INF-S									
2022-12-25	FS_BPO		1.69	< 0.010						
2022-12-25	FS_INF-K		< 0.10							
2022-12-25	FS_INF-S		0.15							
2022-12-25	FS_INF-K									
2022-12-25	FS_INF-S									
2022-12-25	FS_INF-K									
2022-12-25	FS_INF-S									
2022-12-25	FS_INF-K									
2022-12-25	FS_INF-S									
2022-12-25	FS_INF-K									
2022-12-25	FS_INF-S									
2022-12-25	FS_INF-K									
2022-12-26	FS_INF-K									
2022-12-26	FS_INF-S									
2022-12-26	FS_INF-K									
2022-12-26	FS_INF-S									
2022-12-26	FS_BPO		1.37							
2022-12-26	FS_INF-K		< 0.10							
2022-12-26	FS_INF-S		0.17							
2022-12-26	FS_INF-K									
2022-12-26	FS_INF-S									
2022-12-26	FS_INF-K									
2022-12-26	FS_INF-S									
2022-12-26	FS_INF-K									
2022-12-26	FS_INF-S									
2022-12-26	FS_INF-K									
2022-12-26	FS_INF-S									
2022-12-26	FS_INF-K									
2022-12-26	FS_INF-S									
2022-12-27	FS_INF-K									
2022-12-27	FS_INF-S									
2022-12-27	FS_INF-K									
2022-12-27	FS_INF-S									
2022-12-27	FS_BPO		0.91	< 0.010	17.2	16.6	< 1.00	< 1.00	< 6.0	< 6.0
2022-12-27	FS_INF-K		< 0.10		16.5	16.5	< 1.00	< 1.00	38.4	39.8
2022-12-27	FS_INF-S		0.28		19.9	19.0	< 1.00	< 1.00	37.8	40.1
2022-12-27	FS_INF-K									
2022-12-27	FS_INF-S									
2022-12-27	FS_INF-K									
2022-12-27	FS_INF-S									
2022-12-27	FS_INF-K									
2022-12-27	FS_INF-S									
2022-12-27	FS_INF-K									
2022-12-27	FS_INF-S									
2022-12-27	FS_INF-K									
2022-12-27	FS_INF-S									
2022-12-28	FS_INF-K									
2022-12-28	FS_INF-S									
2022-12-28	FS_INF-K									
2022-12-28	FS_INF-S									

				Unknown selenium species – all other selenium species which elute from the applied chromatographic column and are not identified through retention time matching with known standards						
Parameter		TURBIDITY, FIELD	Turbidity, Lab		Uranium	Uranium	Vanadium	Vanadium	Zinc	Zinc
Fraction		N	N	D	D	T	D	T	D	T
Unit		ntu	ntu	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
Date	Location Code	Result	Result	Result	Result	Result	Result	Result	Result	Result
2022-12-28	FS_BPO		0.77							
2022-12-28	FS_INF-K		< 0.10							
2022-12-28	FS_INF-S		0.16							
2022-12-28	FS_INF-K									
2022-12-28	FS_INF-S									
2022-12-28	FS_INF-K									
2022-12-28	FS_INF-S									
2022-12-28	FS_INF-K									
2022-12-28	FS_INF-S									
2022-12-28	FS_INF-K									
2022-12-28	FS_INF-S									
2022-12-28	FS_INF-K									
2022-12-28	FS_INF-S									
2022-12-29	FS_INF-K									
2022-12-29	FS_INF-S									
2022-12-29	FS_INF-K									
2022-12-29	FS_INF-S									
2022-12-29	FS_BPO		0.72	< 0.010						
2022-12-29	FS_INF-K		0.20							
2022-12-29	FS_INF-S		0.20							
2022-12-29	FR_SCOUTDS		0.63	< 0.010	6.76	6.64	< 0.50	< 0.50	< 3.0	72.7
2022-12-29	FS_INF-K									
2022-12-29	FS_INF-S									
2022-12-29	FS_INF-K									
2022-12-29	FS_INF-S									
2022-12-29	FS_INF-K									
2022-12-29	FS_INF-S									
2022-12-29	FS_INF-K									
2022-12-29	FS_INF-S									
2022-12-29	FS_INF-K									
2022-12-29	FS_INF-S									
2022-12-30	FS_INF-K									
2022-12-30	FS_INF-S									
2022-12-30	FS_INF-K									
2022-12-30	FS_INF-S									
2022-12-30	FS_BPO		1.81							
2022-12-30	FS_INF-K		< 0.10							
2022-12-30	FS_INF-S		0.18							
2022-12-30	FS_INF-K									
2022-12-30	FS_INF-S									
2022-12-30	FS_INF-K									
2022-12-30	FS_INF-S									
2022-12-30	FS_INF-K									
2022-12-30	FS_INF-S									
2022-12-30	FS_INF-K									
2022-12-30	FS_INF-S									
2022-12-30	FS_INF-K									
2022-12-30	FS_INF-S									
2022-12-31	FS_INF-K									
2022-12-31	FS_INF-S									
2022-12-31	FS_INF-K									
2022-12-31	FS_INF-S									
2022-12-31	FS_BPO		1.14							
2022-12-31	FS_INF-K		< 0.10							
2022-12-31	FS_INF-S		0.15							
2022-12-31	FS_BPO									
2022-12-31	FS_INF-K									
2022-12-31	FS_INF-S									
2022-12-31	FS_INF-K									
2022-12-31	FS_INF-S									
2022-12-31	FS_INF-K									
2022-12-31	FS_INF-S									
2022-12-31	FS_INF-K									
2022-12-31	FS_INF-S									
2022-12-31	FS_INF-K									
2022-12-31	FS_INF-S									

Date and Time	Hourly Average Temperature (°C)			Comments
	FR_FR3	FR_SCOUTDS	FS_EFF-SC	
	E320693	E320695	E323231	
1-1-22 0:00	-0.27	-0.24	1.05	
1-1-22 1:00	-0.26	-0.25	1.10	
1-1-22 2:00	-0.27	-0.22	1.13	
1-1-22 3:00	-0.27	-0.23	1.18	
1-1-22 4:00	-0.28	-0.24	1.21	
1-1-22 5:00	-0.27	-0.24	1.25	
1-1-22 6:00	-0.27	-0.24	1.12	
1-1-22 7:00	-0.27	-0.22	1.18	
1-1-22 8:00	-0.27	-0.20	1.33	
1-1-22 9:00	-0.28	-0.20	1.31	
1-1-22 10:00	-0.25	-0.21	1.23	
1-1-22 11:00	-0.26	-0.18	1.34	
1-1-22 12:00	-0.24	-0.16	1.40	
1-1-22 13:00	-0.24	-0.18	1.37	
1-1-22 14:00	-0.25	-0.18	1.37	
1-1-22 15:00	-0.26	-0.18	1.39	
1-1-22 16:00	-0.25	-0.16	1.40	
1-1-22 17:00	-0.25	-0.19	1.43	
1-1-22 18:00	-0.24	-0.20	1.45	
1-1-22 19:00	-0.26	-0.17	1.46	
1-1-22 20:00	-0.26	-0.18	1.45	
1-1-22 21:00	-0.26	-0.20	1.51	
1-1-22 22:00	-0.26	-0.16	1.50	
1-1-22 23:00	-0.25	-0.18	1.47	
1-2-22 0:00	-0.26	-0.16	1.50	
1-2-22 1:00	-0.25	-0.16	1.50	
1-2-22 2:00	-0.24	-0.15	1.52	
1-2-22 3:00	-0.28	-0.17	1.53	
1-2-22 4:00	-0.25	-0.18	1.53	
1-2-22 5:00	-0.24	-0.16	1.53	
1-2-22 6:00	-0.25	-0.16	1.53	
1-2-22 7:00	-0.25	-0.17	1.55	
1-2-22 8:00	-0.26	-0.16	1.55	
1-2-22 9:00	-0.25	-0.17	1.54	
1-2-22 10:00	-0.26	-0.16	1.53	
1-2-22 11:00	-0.24	-0.16	1.56	
1-2-22 12:00	-0.26	-0.15	1.53	
1-2-22 13:00	-0.26	-0.13	1.57	
1-2-22 14:00	-0.27	-0.13	1.59	
1-2-22 15:00	-0.25	-0.14	1.59	
1-2-22 16:00	-0.26	-0.15	1.61	
1-2-22 17:00	-0.25	-0.14	1.63	
1-2-22 18:00	-0.25	-0.14	1.64	
1-2-22 19:00	-0.25	-0.17	1.68	
1-2-22 20:00	-0.25	-0.13	1.68	
1-2-22 21:00	-0.26	-0.13	1.70	
1-2-22 22:00	-0.25	-0.13	1.74	
1-2-22 23:00	-0.24	-0.11	1.74	
1-3-22 0:00	-0.24	-0.15	1.76	
1-3-22 1:00	-0.24	-0.15	1.78	
1-3-22 2:00	-0.26	-0.14	1.77	
1-3-22 3:00	-0.24	-0.13	1.78	
1-3-22 4:00	-0.23	-0.14	1.80	
1-3-22 5:00	-0.25	-0.14	1.80	
1-3-22 6:00	-0.25	-0.14	1.84	
1-3-22 7:00	-0.24	-0.14	1.85	
1-3-22 8:00	-0.23	-0.12	1.82	
1-3-22 9:00	-0.22	-0.12	1.81	
1-3-22 10:00	-0.25	-0.13	1.80	
1-3-22 11:00	-0.24	-0.13	1.47	
1-3-22 12:00	-0.24	-0.18	0.81	
1-3-22 13:00	-0.23	-0.16	0.75	
1-3-22 14:00	-0.26	-0.11	0.17	
1-3-22 15:00	-0.25	-0.12	-0.45	
1-3-22 16:00	-0.24	-0.15	-0.66	
1-3-22 17:00	-0.26	-0.15	-0.72	
1-3-22 18:00	-0.22	-0.13	-0.80	
1-3-22 19:00	-0.25	-0.14	-1.06	
1-3-22 20:00	-0.24	-0.15	-3.42	
1-3-22 21:00	-0.25	-0.13	-4.11	
1-3-22 22:00	-0.23	-0.12	-5.08	
1-3-22 23:00	-0.23	-0.15	-6.54	
1-4-22 0:00	-0.25	-0.12	-7.12	
1-4-22 1:00	-0.25	-0.13	-10.07	
1-4-22 2:00	-0.24	-0.12	-11.36	
1-4-22 3:00	-0.26	-0.12	-12.02	
1-4-22 4:00	-0.24	-0.14	-13.57	
1-4-22 5:00	-0.26	-0.15	-13.76	

Date and Time	Hourly Average Temperature (°C)			Comments
	FR_FR3	FR_SCOUTDS	FS_EFF-SC	
	E320693	E320695	E323231	
1-4-22 6:00	-0.27	-0.11	-14.27	
1-4-22 7:00	-0.26	-0.14	-14.07	
1-4-22 8:00	-0.26	-0.15	-15.22	
1-4-22 9:00	-0.24	-0.15	-15.11	
1-4-22 10:00	-0.26	-0.17	-14.55	
1-4-22 11:00	-0.25	-0.14	-14.73	
1-4-22 12:00	-0.28	-0.13	-14.22	
1-4-22 13:00	-0.27	-0.14	-12.47	
1-4-22 14:00	-0.24	-0.16	-13.42	
1-4-22 15:00	-0.26	-0.16	-13.75	
1-4-22 16:00	-0.25	-0.18	-13.81	
1-4-22 17:00	-0.24	-0.16	-13.91	
1-4-22 18:00	-0.28	-0.17	-14.98	
1-4-22 19:00	-0.25	-0.16	-14.25	
1-4-22 20:00	-0.24	-0.17	-14.48	
1-4-22 21:00	-0.22	-0.18	-15.25	
1-4-22 22:00	-0.27	-0.17	-15.13	
1-4-22 23:00	-0.27	-0.16	-14.30	
1-5-22 0:00	-0.27	-0.17	-14.25	
1-5-22 1:00	-0.26	-0.15	-13.71	
1-5-22 2:00	-0.26	-0.16	-13.73	
1-5-22 3:00	-0.29	-0.14	-15.30	
1-5-22 4:00	-0.26	-0.16	-14.27	
1-5-22 5:00	-0.26	-0.14	-15.56	
1-5-22 6:00	-0.26	-0.16	-16.58	
1-5-22 7:00	-0.26	-0.15	-18.67	
1-5-22 8:00	-0.28	-0.17	-18.86	
1-5-22 9:00	-0.28	-0.14	-18.89	
1-5-22 10:00	-0.23	-0.15	-13.20	
1-5-22 11:00	-0.27	-0.14	-11.86	
1-5-22 12:00	-0.25	-0.14	-10.74	
1-5-22 13:00	-0.25	-0.16	-10.38	
1-5-22 14:00	-0.24	-0.19	-10.66	
1-5-22 15:00	-0.26	-0.17	-9.80	
1-5-22 16:00	-0.26	-0.20	-10.20	
1-5-22 17:00	-0.24	-0.21	-13.71	
1-5-22 18:00	-0.28	-0.21	-14.56	
1-5-22 19:00	-0.25	-0.17	-14.48	
1-5-22 20:00	-0.26	-0.17	-15.87	
1-5-22 21:00	-0.27	-0.19	-16.60	
1-5-22 22:00	-0.25	-0.17	-16.01	
1-5-22 23:00	-0.27	-0.18	-16.33	
1-6-22 0:00	-0.26	-0.16	-14.47	
1-6-22 1:00	-0.25	-0.17	-12.47	
1-6-22 2:00	-0.25	-0.14	-9.81	
1-6-22 3:00	-0.25	-0.14	-10.63	
1-6-22 4:00	-0.27	-0.16	-8.25	
1-6-22 5:00	-0.26	-0.16	-6.96	
1-6-22 6:00	-0.25	-0.17	-6.51	
1-6-22 7:00	-0.25	-0.16	-5.09	
1-6-22 8:00	-0.26	-0.17	-5.08	
1-6-22 9:00	-0.26	-0.15	-5.07	
1-6-22 10:00	-0.24	-0.18	-2.90	
1-6-22 11:00	-0.25	-0.19	-2.61	
1-6-22 12:00	-0.25	-0.19	-2.02	
1-6-22 13:00	-0.25	-0.17	-2.11	
1-6-22 14:00	-0.26	-0.20	-2.52	
1-6-22 15:00	-0.24	-0.21	-2.18	
1-6-22 16:00	-0.26	-0.18	-2.09	
1-6-22 17:00	-0.26	-0.20	-2.10	
1-6-22 18:00	-0.25	-0.18	-2.20	
1-6-22 19:00	-0.24	-0.20	-2.35	
1-6-22 20:00	-0.23	-0.19	-2.55	
1-6-22 21:00	-0.24	-0.22	-2.28	
1-6-22 22:00	-0.25	-0.19	-1.85	
1-6-22 23:00	-0.23	-0.19	-1.84	
1-7-22 0:00	-0.24	-0.18	-1.88	
1-7-22 1:00	-0.23	-0.21	-1.51	
1-7-22 2:00	-0.23	-0.16	-1.54	
1-7-22 3:00	-0.24	-0.18	-1.27	
1-7-22 4:00	-0.24	-0.18	-0.89	
1-7-22 5:00	-0.25	-0.20	-0.57	
1-7-22 6:00	-0.25	-0.19	-0.94	
1-7-22 7:00	-0.23	-0.18	-0.82	
1-7-22 8:00	-0.25	-0.17	-0.78	
1-7-22 9:00	-0.24	-0.17	-0.15	
1-7-22 10:00	-0.23	-0.18	2.03	
1-7-22 11:00	-0.22	-0.17	2.07	

Date and Time	Hourly Average Temperature (°C)			Comments
	FR_FR3	FR_SCOUTDS	FS_EFF-SC	
	E320693	E320695	E323231	
1-7-22 12:00	-0.26	-0.19	2.13	
1-7-22 13:00	-0.25	-0.16	1.59	
1-7-22 14:00	-0.25	-0.24	0.88	
1-7-22 15:00	-0.23	-0.22	0.90	
1-7-22 16:00	-0.23	-0.21	1.08	
1-7-22 17:00	-0.22	-0.19	1.24	
1-7-22 18:00	-0.23	-0.16	1.42	
1-7-22 19:00	-0.21	-0.15	2.07	
1-7-22 20:00	-0.23	-0.15	2.17	
1-7-22 21:00	-0.25	-0.15	2.14	
1-7-22 22:00	-0.23	-0.16	1.94	
1-7-22 23:00	-0.25	-0.16	2.14	
1-8-22 0:00	-0.25	-0.15	2.19	
1-8-22 1:00	-0.24	-0.15	2.17	
1-8-22 2:00	-0.26	-0.16	2.22	
1-8-22 3:00	-0.25	-0.14	2.22	
1-8-22 4:00	-0.25	-0.14	2.25	
1-8-22 5:00	-0.21	-0.18	2.25	
1-8-22 6:00	-0.24	-0.16	2.28	
1-8-22 7:00	-0.26	-0.16	2.21	
1-8-22 8:00	-0.25	-0.18	2.25	
1-8-22 9:00	-0.24	-0.18	2.23	
1-8-22 10:00	-0.23	-0.15	2.30	
1-8-22 11:00	-0.26	-0.15	2.29	
1-8-22 12:00	-0.25	-0.14	2.29	
1-8-22 13:00	-0.23	-0.15	2.31	
1-8-22 14:00	-0.25	-0.16	2.28	
1-8-22 15:00	-0.24	-0.17	2.29	
1-8-22 16:00	-0.26	-0.18	2.31	
1-8-22 17:00	-0.23	-0.17	2.29	
1-8-22 18:00	-0.25	-0.19	2.33	
1-8-22 19:00	-0.23	-0.19	2.31	
1-8-22 20:00	-0.25	-0.17	2.33	
1-8-22 21:00	-0.25	-0.17	2.32	
1-8-22 22:00	-0.27	-0.20	2.32	
1-8-22 23:00	-0.26	-0.15	2.36	
1-9-22 0:00	-0.24	-0.17	2.35	
1-9-22 1:00	-0.28	-0.17	2.32	
1-9-22 2:00	-0.26	-0.18	2.36	
1-9-22 3:00	-0.23	-0.20	2.35	
1-9-22 4:00	-0.25	-0.18	2.40	
1-9-22 5:00	-0.24	-0.17	2.41	
1-9-22 6:00	-0.24	-0.17	2.39	
1-9-22 7:00	-0.29	-0.19	2.38	
1-9-22 8:00	-0.26	-0.18	2.41	
1-9-22 9:00	-0.25	-0.21	1.76	
1-9-22 10:00	-0.25	-0.19	1.41	
1-9-22 11:00	-0.24	-0.18	1.55	
1-9-22 12:00	-0.24	-0.15	2.30	
1-9-22 13:00	-0.24	-0.16	2.26	
1-9-22 14:00	-0.27	-0.16	2.21	
1-9-22 15:00	-0.25	-0.17	2.47	
1-9-22 16:00	-0.26	-0.15	2.52	
1-9-22 17:00	-0.25	-0.18	2.55	
1-9-22 18:00	-0.25	-0.19	2.56	
1-9-22 19:00	-0.24	-0.16	2.61	
1-9-22 20:00	-0.27	-0.20	2.60	
1-9-22 21:00	-0.25	-0.14	2.60	
1-9-22 22:00	-0.26	-0.17	2.60	
1-9-22 23:00	-0.25	-0.19	2.61	
1-10-22 0:00	-0.25	-0.17	2.62	
1-10-22 1:00	-0.24	-0.17	2.49	
1-10-22 2:00	-0.24	-0.19	2.33	
1-10-22 3:00	-0.23	-0.21	2.35	
1-10-22 4:00	-0.26	-0.20	2.56	
1-10-22 5:00	-0.26	-0.18	2.57	
1-10-22 6:00	-0.25	-0.21	2.62	
1-10-22 7:00	-0.25	-0.20	2.57	
1-10-22 8:00	-0.27	-0.19	2.57	
1-10-22 9:00	-0.26	-0.19	2.56	
1-10-22 10:00	-0.26	-0.17	2.61	
1-10-22 11:00	-0.24	-0.16	1.89	
1-10-22 12:00	-0.23	-0.13	2.64	
1-10-22 13:00	-0.23	-0.14	2.63	
1-10-22 14:00	-0.25	-0.19	1.40	
1-10-22 15:00	-0.24	-0.24	1.51	
1-10-22 16:00	-0.22	-0.17	2.27	
1-10-22 17:00	-0.24	-0.15	2.44	

Date and Time	Hourly Average Temperature (°C)			Comments
	FR_FR3	FR_SCOUTDS	FS_EFF-SC	
	E320693	E320695	E323231	
1-10-22 18:00	-0.22	-0.15	2.56	
1-10-22 19:00	-0.22	-0.16	2.52	
1-10-22 20:00	-0.25	-0.14	2.53	
1-10-22 21:00	-0.23	-0.16	2.57	
1-10-22 22:00	-0.25	-0.14	2.65	
1-10-22 23:00	-0.23	-0.15	2.69	
1-11-22 0:00	-0.24	-0.16	2.73	
1-11-22 1:00	-0.23	-0.16	2.67	
1-11-22 2:00	-0.24	-0.15	2.56	
1-11-22 3:00	-0.24	-0.15	2.69	
1-11-22 4:00	-0.21	-0.14	2.68	
1-11-22 5:00	-0.24	-0.15	2.68	
1-11-22 6:00	-0.23	-0.19	2.72	
1-11-22 7:00	-0.22	-0.11	2.72	
1-11-22 8:00	-0.21	-0.14	2.69	
1-11-22 9:00	-0.25	-0.13	2.71	
1-11-22 10:00	-0.23	-0.13	2.72	
1-11-22 11:00	-0.22	-0.12	2.74	
1-11-22 12:00	-0.23	-0.12	2.74	
1-11-22 13:00	-0.24	-0.13	2.79	
1-11-22 14:00	-0.23	-0.13	2.78	
1-11-22 15:00	-0.23	-0.14	2.77	
1-11-22 16:00	-0.24	-0.14	2.88	
1-11-22 17:00	-0.23	-0.14	3.04	
1-11-22 18:00	-0.24	-0.14	2.92	
1-11-22 19:00	-0.24	-0.13	2.84	
1-11-22 20:00	-0.23	-0.15	3.01	
1-11-22 21:00	-0.24	-0.14	2.68	
1-11-22 22:00	-0.24	-0.16	2.65	
1-11-22 23:00	-0.25	-0.13	2.91	
1-12-22 0:00	-0.22	-0.12	3.01	
1-12-22 1:00	-0.23	-0.12	3.02	
1-12-22 2:00	-0.22	-0.13	3.08	
1-12-22 3:00	-0.23	-0.14	3.04	
1-12-22 4:00	-0.23	-0.13	2.66	
1-12-22 5:00	-0.22	-0.14	2.56	
1-12-22 6:00	-0.23	-0.14	2.56	
1-12-22 7:00	-0.23	-0.10	3.00	
1-12-22 8:00	-0.23	-0.12	3.10	
1-12-22 9:00	-0.22	-0.13	3.07	
1-12-22 10:00	-0.24	-0.07	3.28	
1-12-22 11:00	-0.20	-0.09	3.33	
1-12-22 12:00	-0.24	-0.09	3.36	
1-12-22 13:00	-0.21	-0.08	3.30	
1-12-22 14:00	-0.21	-0.11	3.31	
1-12-22 15:00	-0.21	-0.11	3.35	
1-12-22 16:00	-0.22	-0.14	3.31	
1-12-22 17:00	-0.21	-0.14	3.23	
1-12-22 18:00	-0.23	-0.14	3.42	
1-12-22 19:00	-0.22	-0.12	3.46	
1-12-22 20:00	-0.20	-0.13	3.53	
1-12-22 21:00	-0.23	-0.09	3.55	
1-12-22 22:00	-0.24	-0.14	3.58	
1-12-22 23:00	-0.22	-0.11	3.55	
1-13-22 0:00	-0.20	-0.13	3.46	
1-13-22 1:00	-0.22	-0.09	3.54	
1-13-22 2:00	-0.22	-0.11	3.54	
1-13-22 3:00	-0.23	-0.13	3.53	
1-13-22 4:00	-0.24	-0.11	3.57	
1-13-22 5:00	-0.22	-0.15	3.60	
1-13-22 6:00	-0.21	-0.15	3.68	
1-13-22 7:00	-0.24	-0.14	3.63	
1-13-22 8:00	-0.23	-0.16	3.47	
1-13-22 9:00	-0.22	-0.14	3.64	
1-13-22 10:00	-0.24	-0.21	1.82	
1-13-22 11:00	-0.22	-0.18	1.30	
1-13-22 12:00	-0.22	-0.18	1.32	
1-13-22 13:00	-0.24	-0.18	1.28	
1-13-22 14:00	-0.22	-0.17	1.31	
1-13-22 15:00	-0.22	-0.20	1.30	
1-13-22 16:00	-0.21	-0.22	1.29	
1-13-22 17:00	-0.23	-0.21	1.28	
1-13-22 18:00	-0.21	-0.22	1.29	
1-13-22 19:00	-0.23	-0.19	1.33	
1-13-22 20:00	-0.21	-0.16	1.76	
1-13-22 21:00	-0.20	-0.14	2.78	
1-13-22 22:00	-0.22	-0.21	1.29	
1-13-22 23:00	-0.19	-0.22	1.33	

Date and Time	Hourly Average Temperature (°C)			Comments
	FR_FR3	FR_SCOUTDS	FS_EFF-SC	
	E320693	E320695	E323231	
1-14-22 0:00	-0.21	-0.18	1.81	
1-14-22 1:00	-0.19	-0.17	1.97	
1-14-22 2:00	-0.20	-0.16	2.76	
1-14-22 3:00	-0.21	-0.15	2.77	
1-14-22 4:00	-0.21	-0.19	2.78	
1-14-22 5:00	-0.21	-0.17	2.76	
1-14-22 6:00	-0.21	-0.13	2.77	
1-14-22 7:00	-0.20	-0.15	2.74	
1-14-22 8:00	-0.22	-0.13	2.88	
1-14-22 9:00	-0.18	-0.12	2.87	
1-14-22 10:00	-0.20	-0.11	2.91	
1-14-22 11:00	-0.20	-0.07	3.09	
1-14-22 12:00	-0.13	-0.01	3.13	
1-14-22 13:00	-0.15	0.03	3.27	
1-14-22 14:00	-0.12	0.04	3.46	
1-14-22 15:00	-0.09	0.05	3.45	
1-14-22 16:00	-0.08	0.04	3.57	
1-14-22 17:00	-0.04	0.06	3.70	
1-14-22 18:00	-0.05	0.05	3.54	
1-14-22 19:00	-0.07	0.05	3.65	
1-14-22 20:00	-0.07	0.01	3.69	
1-14-22 21:00	-0.08	0.00	3.71	
1-14-22 22:00	-0.08	-0.02	3.69	
1-14-22 23:00	-0.07	0.04	3.79	
1-15-22 0:00	-0.02	0.04	3.82	
1-15-22 1:00	-0.03	0.06	3.80	
1-15-22 2:00	-0.05	0.03	3.89	
1-15-22 3:00	-0.08	0.01	3.93	
1-15-22 4:00	-0.11	-0.01	3.90	
1-15-22 5:00	-0.08	-0.02	3.93	
1-15-22 6:00	-0.13	-0.02	3.96	
1-15-22 7:00	-0.08	0.02	3.88	
1-15-22 8:00	-0.06	0.04	4.14	
1-15-22 9:00	-0.01	0.09	4.03	
1-15-22 10:00	0.08	0.16	3.99	
1-15-22 11:00	0.07	0.21	4.04	
1-15-22 12:00	0.13	0.32	4.12	
1-15-22 13:00	0.29	0.44	4.08	
1-15-22 14:00	0.34	0.52	4.16	
1-15-22 15:00	0.42	0.52	4.09	
1-15-22 16:00	0.53	0.61	4.15	
1-15-22 17:00	0.53	0.65	4.14	
1-15-22 18:00	0.63	0.69	4.12	
1-15-22 19:00	0.58	0.67	4.10	
1-15-22 20:00	0.67	0.77	4.21	
1-15-22 21:00	0.67	0.79	4.29	
1-15-22 22:00	0.69	0.75	4.21	
1-15-22 23:00	0.61	0.70	4.26	
1-16-22 0:00	0.58	0.65	4.24	
1-16-22 1:00	0.50	0.54	4.11	
1-16-22 2:00	0.44	0.48	4.17	
1-16-22 3:00	0.34	0.40	4.12	
1-16-22 4:00	0.22	0.28	4.09	
1-16-22 5:00	0.04	0.15	4.04	
1-16-22 6:00	-0.10	0.06	4.01	
1-16-22 7:00	-0.20	-0.04	3.92	
1-16-22 8:00	-0.23	-0.09	3.90	
1-16-22 9:00	-0.20	-0.05	3.93	
1-16-22 10:00	-0.07	0.10	3.95	
1-16-22 11:00	0.18	0.32	3.87	
1-16-22 12:00	0.45	0.50	2.22	
1-16-22 13:00	0.75	0.74	1.90	
1-16-22 14:00	1.04	1.04	1.89	
1-16-22 15:00	1.11	1.22	2.90	
1-16-22 16:00	1.02	1.11	3.32	
1-16-22 17:00	0.90	1.03	3.95	
1-16-22 18:00	0.83	0.99	4.00	
1-16-22 19:00	0.78	0.94	3.89	
1-16-22 20:00	0.73	0.89	3.91	
1-16-22 21:00	0.65	0.78	4.04	
1-16-22 22:00	0.53	0.72	4.18	
1-16-22 23:00	0.50	0.68	4.39	
1-17-22 0:00	0.48	0.67	3.99	
1-17-22 1:00	0.47	0.67	3.99	
1-17-22 2:00	0.42	0.58	3.95	
1-17-22 3:00	0.38	0.58	3.95	
1-17-22 4:00	0.38	0.57	3.95	
1-17-22 5:00	0.40	0.55	3.96	

Date and Time	Hourly Average Temperature (°C)			Comments
	FR_FR3	FR_SCOUTDS	FS_EFF-SC	
	E320693	E320695	E323231	
1-17-22 6:00	0.39	0.56	4.14	
1-17-22 7:00	0.37	0.55	4.26	
1-17-22 8:00	0.35	0.53	4.08	
1-17-22 9:00	0.34	0.51	4.08	
1-17-22 10:00	0.38	0.54	3.39	
1-17-22 11:00	0.63	0.74	3.17	
1-17-22 12:00	1.04	1.15	3.21	
1-17-22 13:00	1.38	1.46	3.17	
1-17-22 14:00	1.57	1.67	3.21	
1-17-22 15:00	1.64	1.76	3.55	
1-17-22 16:00	1.56	1.66	3.55	
1-17-22 17:00	1.43	1.55	4.19	
1-17-22 18:00	1.31	1.52	5.25	
1-17-22 19:00	1.21	1.40	5.06	
1-17-22 20:00	1.18	1.36	4.73	
1-17-22 21:00	1.09	1.29	4.87	
1-17-22 22:00	1.00	1.18	5.07	
1-17-22 23:00	0.99	1.20	5.07	
1-18-22 0:00	0.94	1.14	5.02	
1-18-22 1:00	0.85	1.04	4.64	
1-18-22 2:00	0.77	0.96	4.71	
1-18-22 3:00	0.61	0.77	4.96	
1-18-22 4:00	0.25	0.43	4.99	
1-18-22 5:00	-0.21	0.00	4.36	
1-18-22 6:00	-0.26	-0.18	4.20	
1-18-22 7:00	-0.30	-0.11	4.21	
1-18-22 8:00	-0.29	-0.11	4.19	
1-18-22 9:00	-0.28	-0.13	4.09	
1-18-22 10:00	-0.31	-0.16	3.45	
1-18-22 11:00	-0.29	-0.18	3.34	
1-18-22 12:00	-0.30	-0.14	3.23	
1-18-22 13:00	-0.27	-0.12	3.19	
1-18-22 14:00	-0.10	0.07	3.13	
1-18-22 15:00	0.16	0.32	3.25	
1-18-22 16:00	0.16	0.28	3.07	
1-18-22 17:00	-0.06	0.09	3.57	
1-18-22 18:00	-0.28	-0.14	3.65	
1-18-22 19:00	-0.30	-0.18	3.62	
1-18-22 20:00	-0.28	-0.16	3.59	
1-18-22 21:00	-0.30	-0.14	3.45	
1-18-22 22:00	-0.30	-0.04	3.70	
1-18-22 23:00	-0.30	0.03	3.97	
1-19-22 0:00	-0.29	0.09	3.86	
1-19-22 1:00	-0.30	0.03	3.83	
1-19-22 2:00	-0.28	0.06	3.79	
1-19-22 3:00	-0.31	0.07	3.83	
1-19-22 4:00	-0.31	0.10	3.79	
1-19-22 5:00	-0.28	0.15	3.68	
1-19-22 6:00	-0.30	0.21	3.67	
1-19-22 7:00	-0.31	0.19	3.68	
1-19-22 8:00	-0.32	0.17	3.49	
1-19-22 9:00	-0.28	0.21	3.27	
1-19-22 10:00	-0.27	0.10	2.63	
1-19-22 11:00	-0.31	0.06	2.70	
1-19-22 12:00	-0.31	0.02	2.70	
1-19-22 13:00	-0.28	-0.11	2.67	
1-19-22 14:00	-0.31	-0.19	2.69	
1-19-22 15:00	-0.31	-0.24	2.69	
1-19-22 16:00	-0.30	-0.22	2.77	
1-19-22 17:00	-0.29	-0.25	2.73	
1-19-22 18:00	-0.30	-0.22	2.99	
1-19-22 19:00	-0.29	-0.21	3.22	
1-19-22 20:00	-0.32	-0.17	3.22	
1-19-22 21:00	-0.31	-0.18	3.22	
1-19-22 22:00	-0.31	-0.13	3.40	
1-19-22 23:00	-0.32	-0.12	3.45	
1-20-22 0:00	-0.31	-0.11	3.40	
1-20-22 1:00	-0.30	-0.11	3.49	
1-20-22 2:00	-0.31	-0.09	3.53	
1-20-22 3:00	-0.30	-0.09	3.52	
1-20-22 4:00	-0.31	-0.07	3.56	
1-20-22 5:00	-0.29	-0.03	3.57	
1-20-22 6:00	-0.30	-0.06	3.55	
1-20-22 7:00	-0.30	-0.06	3.51	
1-20-22 8:00	-0.31	0.00	3.99	
1-20-22 9:00	-0.30	-0.03	3.31	
1-20-22 10:00	-0.29	-0.06	2.90	
1-20-22 11:00	-0.28	-0.04	2.92	

Date and Time	Hourly Average Temperature (°C)			Comments
	FR_FR3	FR_SCOUTDS	FS_EFF-SC	
	E320693	E320695	E323231	
1-20-22 12:00	-0.28	-0.02	2.97	
1-20-22 13:00	-0.27	-0.07	2.20	
1-20-22 14:00	-0.31	-0.17	1.09	
1-20-22 15:00	-0.30	-0.20	1.05	
1-20-22 16:00	-0.28	-0.20	1.06	
1-20-22 17:00	-0.29	-0.18	1.16	
1-20-22 18:00	-0.27	-0.24	1.11	
1-20-22 19:00	-0.33	-0.23	1.12	
1-20-22 20:00	-0.25	-0.21	1.12	
1-20-22 21:00	-0.26	-0.20	1.13	
1-20-22 22:00	-0.30	-0.22	1.10	
1-20-22 23:00	-0.30	-0.25	1.14	
1-21-22 0:00	-0.29	-0.22	1.10	
1-21-22 1:00	-0.30	-0.22	1.14	
1-21-22 2:00	-0.29	-0.22	1.12	
1-21-22 3:00	-0.30	-0.22	1.13	
1-21-22 4:00	-0.28	-0.23	1.12	
1-21-22 5:00	-0.31	-0.23	1.15	
1-21-22 6:00	-0.30	-0.28	1.09	
1-21-22 7:00	-0.28	-0.27	1.11	
1-21-22 8:00	-0.28	-0.26	1.13	
1-21-22 9:00	-0.28	-0.24	1.12	
1-21-22 10:00	-0.28	-0.22	1.14	
1-21-22 11:00	-0.28	-0.14	1.14	
1-21-22 12:00	-0.27	-0.17	1.17	
1-21-22 13:00	-0.30	-0.19	1.28	
1-21-22 14:00	-0.28	-0.11	2.48	
1-21-22 15:00	-0.29	-0.13	2.86	
1-21-22 16:00	-0.27	-0.13	2.91	
1-21-22 17:00	-0.28	-0.15	2.81	
1-21-22 18:00	-0.28	-0.14	2.94	
1-21-22 19:00	-0.29	-0.15	2.78	
1-21-22 20:00	-0.28	-0.16	2.79	
1-21-22 21:00	-0.31	-0.17	2.76	
1-21-22 22:00	-0.30	-0.18	2.77	
1-21-22 23:00	-0.31	-0.16	2.88	
1-22-22 0:00	-0.30	-0.17	3.04	
1-22-22 1:00	-0.30	-0.18	3.11	
1-22-22 2:00	-0.29	-0.18	2.94	
1-22-22 3:00	-0.30	-0.16	3.09	
1-22-22 4:00	-0.30	-0.17	3.21	
1-22-22 5:00	-0.30	-0.18	3.15	
1-22-22 6:00	-0.31	-0.18	3.12	
1-22-22 7:00	-0.31	-0.17	3.12	
1-22-22 8:00	-0.30	-0.20	1.84	
1-22-22 9:00	-0.31	-0.23	1.16	
1-22-22 10:00	-0.30	-0.23	1.15	
1-22-22 11:00	-0.30	-0.19	1.16	
1-22-22 12:00	-0.29	-0.18	1.15	
1-22-22 13:00	-0.29	-0.19	1.17	
1-22-22 14:00	-0.29	-0.21	1.16	
1-22-22 15:00	-0.29	-0.18	1.47	
1-22-22 16:00	-0.29	-0.16	2.70	
1-22-22 17:00	-0.29	-0.19	1.54	
1-22-22 18:00	-0.30	-0.19	2.06	
1-22-22 19:00	-0.31	-0.18	2.69	
1-22-22 20:00	-0.29	-0.16	2.67	
1-22-22 21:00	-0.27	-0.14	2.72	
1-22-22 22:00	-0.28	-0.14	2.97	
1-22-22 23:00	-0.29	-0.14	3.00	
1-23-22 0:00	-0.28	-0.14	3.07	
1-23-22 1:00	-0.28	-0.14	3.11	
1-23-22 2:00	-0.28	-0.14	2.87	
1-23-22 3:00	-0.29	-0.16	3.05	
1-23-22 4:00	-0.28	-0.15	3.21	
1-23-22 5:00	-0.31	-0.15	3.24	
1-23-22 6:00	-0.29	-0.16	3.28	
1-23-22 7:00	-0.29	-0.17	3.29	
1-23-22 8:00	-0.28	-0.16	3.24	
1-23-22 9:00	-0.28	-0.14	3.14	
1-23-22 10:00	-0.29	-0.12	3.34	
1-23-22 11:00	-0.30	-0.11	3.38	
1-23-22 12:00	-0.31	-0.11	3.24	
1-23-22 13:00	-0.28	-0.10	3.39	
1-23-22 14:00	-0.31	-0.14	3.42	
1-23-22 15:00	-0.29	-0.17	3.09	
1-23-22 16:00	-0.30	-0.22	1.66	
1-23-22 17:00	-0.30	-0.14	3.38	

Date and Time	Hourly Average Temperature (°C)			Comments
	FR_FR3	FR_SCOUTDS	FS_EFF-SC	
	E320693	E320695	E323231	
1-23-22 18:00	-0.31	-0.15	3.40	
1-23-22 19:00	-0.30	-0.17	3.57	
1-23-22 20:00	-0.29	-0.15	3.63	
1-23-22 21:00	-0.30	-0.16	3.72	
1-23-22 22:00	-0.30	-0.15	3.72	
1-23-22 23:00	-0.29	-0.16	3.65	
1-24-22 0:00	-0.30	-0.15	3.66	
1-24-22 1:00	-0.28	-0.17	3.48	
1-24-22 2:00	-0.29	-0.14	3.64	
1-24-22 3:00	-0.28	-0.14	3.64	
1-24-22 4:00	-0.29	-0.22	1.44	
1-24-22 5:00	-0.31	-0.24	1.11	
1-24-22 6:00	-0.29	-0.24	1.13	
1-24-22 7:00	-0.28	-0.23	1.11	
1-24-22 8:00	-0.30	-0.25	1.13	
1-24-22 9:00	-0.31	-0.21	1.13	
1-24-22 10:00	-0.29	-0.25	1.11	
1-24-22 11:00	-0.28	-0.19	1.11	
1-24-22 12:00	-0.30	-0.20	1.15	
1-24-22 13:00	-0.29	-0.18	1.18	
1-24-22 14:00	-0.29	-0.16	1.73	
1-24-22 15:00	-0.29	-0.12	3.03	
1-24-22 16:00	-0.29	-0.14	2.79	
1-24-22 17:00	-0.29	-0.15	2.77	
1-24-22 18:00	-0.28	-0.16	2.74	
1-24-22 19:00	-0.29	-0.14	2.74	
1-24-22 20:00	-0.29	-0.16	2.77	
1-24-22 21:00	-0.29	-0.18	2.79	
1-24-22 22:00	-0.26	-0.18	2.67	
1-24-22 23:00	-0.27	-0.19	2.76	
1-25-22 0:00	-0.29	-0.18	2.89	
1-25-22 1:00	-0.25	-0.20	3.02	
1-25-22 2:00	-0.28	-0.15	3.29	
1-25-22 3:00	-0.27	-0.16	3.34	
1-25-22 4:00	-0.25	-0.14	3.27	
1-25-22 5:00		-0.11	3.56	FR_FR3 sensor malfunction.
1-25-22 6:00		-0.14	3.58	FR_FR3 sensor malfunction.
1-25-22 7:00		-0.13	3.55	FR_FR3 sensor malfunction.
1-25-22 8:00		-0.14	3.58	FR_FR3 sensor malfunction.
1-25-22 9:00		-0.14	3.56	FR_FR3 sensor malfunction.
1-25-22 10:00		-0.12	3.54	FR_FR3 sensor malfunction.
1-25-22 11:00		-0.03	3.68	FR_FR3 sensor malfunction.
1-25-22 12:00		-0.02	3.55	FR_FR3 sensor malfunction.
1-25-22 13:00		0.05	3.77	FR_FR3 sensor malfunction.
1-25-22 14:00		0.07	3.76	FR_FR3 sensor malfunction.
1-25-22 15:00		0.10	3.80	FR_FR3 sensor malfunction.
1-25-22 16:00		0.11	3.74	FR_FR3 sensor malfunction.
1-25-22 17:00		0.04	3.75	FR_FR3 sensor malfunction.
1-25-22 18:00		-0.05	3.81	FR_FR3 sensor malfunction.
1-25-22 19:00		-0.16	3.62	FR_FR3 sensor malfunction.
1-25-22 20:00		-0.17	3.70	FR_FR3 sensor malfunction.
1-25-22 21:00		-0.17	3.67	FR_FR3 sensor malfunction.
1-25-22 22:00		-0.14	3.50	FR_FR3 sensor malfunction.
1-25-22 23:00		-0.14	3.45	FR_FR3 sensor malfunction.
1-26-22 0:00		-0.12	3.37	FR_FR3 sensor malfunction.
1-26-22 1:00		-0.13	3.39	FR_FR3 sensor malfunction.
1-26-22 2:00		-0.13	3.34	FR_FR3 sensor malfunction.
1-26-22 3:00		-0.12	3.32	FR_FR3 sensor malfunction.
1-26-22 4:00		-0.11	3.09	FR_FR3 sensor malfunction.
1-26-22 5:00		-0.09	3.29	FR_FR3 sensor malfunction.
1-26-22 6:00		-0.08	3.28	FR_FR3 sensor malfunction.
1-26-22 7:00		-0.04	3.32	FR_FR3 sensor malfunction.
1-26-22 8:00		-0.06	3.23	FR_FR3 sensor malfunction.
1-26-22 9:00		-0.06	3.21	FR_FR3 sensor malfunction.
1-26-22 10:00		-0.08	3.26	FR_FR3 sensor malfunction.
1-26-22 11:00		-0.10	3.24	FR_FR3 sensor malfunction.
1-26-22 12:00		-0.10	3.19	FR_FR3 sensor malfunction.
1-26-22 13:00		-0.13	3.03	FR_FR3 sensor malfunction.
1-26-22 14:00		-0.06	3.26	FR_FR3 sensor malfunction.
1-26-22 15:00		-0.05	3.28	FR_FR3 sensor malfunction.
1-26-22 16:00		-0.06	3.23	FR_FR3 sensor malfunction.
1-26-22 17:00	-0.33	-0.07	3.05	
1-26-22 18:00	-0.32	-0.09	2.69	
1-26-22 19:00	-0.28	-0.06	2.72	
1-26-22 20:00	-0.30	-0.06	2.68	
1-26-22 21:00	-0.32	-0.08	2.67	
1-26-22 22:00	-0.33	-0.08	2.37	
1-26-22 23:00	-0.32	-0.08	2.62	

Date and Time	Hourly Average Temperature (°C)			Comments
	FR_FR3	FR_SCOUTDS	FS_EFF-SC	
	E320693	E320695	E323231	
1-27-22 0:00	-0.34	-0.09	2.55	
1-27-22 1:00	-0.34	-0.09	2.66	
1-27-22 2:00	-0.31	-0.07	2.72	
1-27-22 3:00	-0.31	-0.07	2.88	
1-27-22 4:00	-0.36	-0.05	2.97	
1-27-22 5:00	-0.34	-0.07	2.95	
1-27-22 6:00	-0.31	-0.07	3.00	
1-27-22 7:00	-0.37	-0.06	2.96	
1-27-22 8:00	-0.35	-0.05	3.00	
1-27-22 9:00	-0.32	-0.02	2.99	
1-27-22 10:00	-0.34	0.00	2.69	
1-27-22 11:00	-0.34	0.07	2.78	
1-27-22 12:00	-0.31	0.09	2.84	
1-27-22 13:00	-0.29	0.01	2.87	
1-27-22 14:00	-0.32	-0.07	2.88	
1-27-22 15:00	-0.36	-0.08	2.90	
1-27-22 16:00	-0.32	-0.10	2.87	
1-27-22 17:00	-0.32	-0.08	2.86	
1-27-22 18:00	-0.33	-0.08	2.83	
1-27-22 19:00	-0.29	-0.06	2.84	
1-27-22 20:00	-0.36	-0.06	2.69	
1-27-22 21:00	-0.30	-0.04	2.79	
1-27-22 22:00	-0.32	-0.04	2.72	
1-27-22 23:00	-0.32	-0.06	2.71	
1-28-22 0:00	-0.31	-0.07	2.68	
1-28-22 1:00	-0.31	-0.06	2.70	
1-28-22 2:00	-0.32	-0.04	2.72	
1-28-22 3:00	-0.33	-0.05	2.73	
1-28-22 4:00	-0.33	-0.05	2.77	
1-28-22 5:00	-0.34	-0.01	2.77	
1-28-22 6:00	-0.32	-0.03	2.80	
1-28-22 7:00	-0.33	-0.06	2.68	
1-28-22 8:00	-0.31	-0.07	2.81	
1-28-22 9:00	-0.30	-0.02	2.84	
1-28-22 10:00	-0.30	0.02	2.94	
1-28-22 11:00	-0.31	0.10	2.83	
1-28-22 12:00	-0.33	0.02	1.90	
1-28-22 13:00	-0.32	0.01	2.93	
1-28-22 14:00	-0.32	-0.05	2.93	
1-28-22 15:00	-0.33	-0.07	2.89	
1-28-22 16:00	-0.30	-0.08	3.02	
1-28-22 17:00	-0.35	-0.06	3.04	
1-28-22 18:00	-0.34	-0.06	3.00	
1-28-22 19:00	-0.33	-0.06	3.04	
1-28-22 20:00	-0.31	-0.05	3.03	
1-28-22 21:00	-0.34	-0.06	2.99	
1-28-22 22:00	-0.33	-0.06	3.00	
1-28-22 23:00	-0.31	-0.02	3.06	
1-29-22 0:00	-0.34	-0.06	3.06	
1-29-22 1:00	-0.30	-0.02	3.06	
1-29-22 2:00	-0.34	-0.05	3.04	
1-29-22 3:00	-0.33	-0.03	3.08	
1-29-22 4:00	-0.37	-0.04	3.05	
1-29-22 5:00	-0.32	-0.01	3.07	
1-29-22 6:00	-0.28	0.00	3.05	
1-29-22 7:00	-0.35	0.02	3.04	
1-29-22 8:00	-0.28	0.07	3.12	
1-29-22 9:00	-0.35	0.07	2.95	
1-29-22 10:00	-0.32	0.09	3.02	
1-29-22 11:00	-0.32	0.12	2.83	
1-29-22 12:00	-0.33	0.06	3.01	
1-29-22 13:00	-0.31	0.05	2.85	
1-29-22 14:00	-0.33	-0.01	3.08	
1-29-22 15:00	-0.33	-0.05	3.12	
1-29-22 16:00	-0.32	-0.06	3.02	
1-29-22 17:00	-0.32	-0.05	3.01	
1-29-22 18:00	-0.31	-0.06	2.98	
1-29-22 19:00	-0.33	-0.04	2.93	
1-29-22 20:00	-0.33	-0.05	2.83	
1-29-22 21:00	-0.32	-0.03	2.91	
1-29-22 22:00	-0.29	-0.05	2.72	
1-29-22 23:00	-0.31	-0.04	2.95	
1-30-22 0:00	-0.32	-0.12	1.40	
1-30-22 1:00	-0.31	-0.08	2.23	
1-30-22 2:00	-0.40	-0.03	2.98	
1-30-22 3:00	-0.37	-0.01	2.99	
1-30-22 4:00	-0.32	-0.02	3.00	
1-30-22 5:00	-0.32	0.00	2.99	

Date and Time	Hourly Average Temperature (°C)			Comments
	FR_FR3	FR_SCOUTDS	FS_EFF-SC	
	E320693	E320695	E323231	
1-30-22 6:00	-0.31	0.00	3.01	
1-30-22 7:00	-0.32	-0.01	2.95	
1-30-22 8:00	-0.33	0.01	2.96	
1-30-22 9:00	-0.31	0.01	2.97	
1-30-22 10:00	-0.31	0.06	2.93	
1-30-22 11:00	-0.32	0.08	3.00	
1-30-22 12:00	-0.32	0.05	2.50	
1-30-22 13:00	-0.30	-0.03	1.86	
1-30-22 14:00	-0.31	-0.01	2.84	
1-30-22 15:00	-0.33	-0.01	3.08	
1-30-22 16:00	-0.30	-0.04	3.14	
1-30-22 17:00	-0.34	-0.05	2.91	
1-30-22 18:00	-0.33	-0.04	2.96	
1-30-22 19:00	-0.29	-0.02	3.10	
1-30-22 20:00	-0.27	-0.01	3.15	
1-30-22 21:00	-0.28	-0.01	3.14	
1-30-22 22:00	-0.36	-0.01	3.16	
1-30-22 23:00	-0.22	-0.05	3.25	
1-31-22 0:00	-0.26	-0.01	3.25	
1-31-22 1:00	-0.28	-0.02	3.29	
1-31-22 2:00	-0.34	-0.01	3.15	
1-31-22 3:00	-0.29	-0.01	3.13	
1-31-22 4:00	-0.37	-0.03	3.08	
1-31-22 5:00	-0.20	-0.01	3.06	
1-31-22 6:00	-0.27	-0.03	3.04	
1-31-22 7:00	-0.30	0.00	3.10	
1-31-22 8:00	-0.33	-0.05	3.05	
1-31-22 9:00	-0.30	-0.04	3.03	
1-31-22 10:00	-0.28	0.00	3.02	
1-31-22 11:00	-0.29	-0.03	3.06	
1-31-22 12:00	-0.31	0.02	3.03	
1-31-22 13:00	-0.33	-0.01	3.23	
1-31-22 14:00	-0.30	-0.01	3.20	
1-31-22 15:00	-0.29	-0.05	3.63	
1-31-22 16:00	-0.36	-0.13	2.97	
1-31-22 17:00	-0.34	-0.17	2.29	
1-31-22 18:00	-0.27	-0.07	3.45	
1-31-22 19:00	-0.29	-0.04	3.68	
1-31-22 20:00	-0.31	-0.04	4.24	
1-31-22 21:00	-0.33	-0.07	3.88	
1-31-22 22:00	-0.29	-0.03	-1.14	
1-31-22 23:00	-0.32	-0.05	-0.50	
2-1-22 0:00	-0.30	-0.04	-0.53	
2-1-22 1:00	-0.32	-0.03	-0.47	
2-1-22 2:00	-0.31	-0.05	-0.42	
2-1-22 3:00	-0.32	-0.08	-0.39	
2-1-22 4:00	-0.33	-0.05	-0.66	
2-1-22 5:00	-0.30	-0.04	-0.41	
2-1-22 6:00	-0.30	-0.04	-0.43	
2-1-22 7:00	-0.33	-0.02	-0.76	
2-1-22 8:00	-0.29	-0.05	-0.79	
2-1-22 9:00	-0.31	-0.04	-0.62	
2-1-22 10:00	-0.32	-0.10	-0.29	
2-1-22 11:00	-0.32	-0.08	-0.25	
2-1-22 12:00	-0.32	-0.03	-0.16	
2-1-22 13:00	-0.32	-0.07	0.02	
2-1-22 14:00	-0.30	-0.09	-0.02	
2-1-22 15:00	-0.32	-0.09	-0.06	
2-1-22 16:00	-0.29	-0.13	-0.10	
2-1-22 17:00	-0.30	-0.12	-0.20	
2-1-22 18:00	-0.31	-0.13	-0.17	
2-1-22 19:00	-0.34	-0.10	-0.31	
2-1-22 20:00	-0.30	-0.12	0.03	
2-1-22 21:00	-0.30	-0.09	-0.03	
2-1-22 22:00	-0.34	-0.06	-0.86	
2-1-22 23:00	-0.33	-0.05	-0.28	
2-2-22 0:00	-0.33	-0.01	-0.17	
2-2-22 1:00	-0.32	-0.04	-0.93	
2-2-22 2:00	-0.33	-0.11	-1.97	
2-2-22 3:00	-0.32	-0.08	-1.72	
2-2-22 4:00	-0.33	-0.01	-1.74	
2-2-22 5:00	-0.34	-0.02	-1.29	
2-2-22 6:00	-0.32	0.03	-1.44	
2-2-22 7:00	-0.32	0.06	-1.63	
2-2-22 8:00	-0.33	0.09	-1.59	
2-2-22 9:00	-0.32	0.10	-1.48	
2-2-22 10:00	-0.30	0.02	-2.37	
2-2-22 11:00	-0.29	-0.01	-2.96	

Date and Time	Hourly Average Temperature (°C)			Comments
	FR_FR3	FR_SCOUTDS	FS_EFF-SC	
	E320693	E320695	E323231	
2-2-22 12:00	-0.29	0.07	-1.56	
2-2-22 13:00	-0.33	0.07	-0.78	
2-2-22 14:00	-0.33	-0.02	-0.68	
2-2-22 15:00	-0.31	-0.05	-0.35	
2-2-22 16:00	-0.33	-0.06	-0.07	
2-2-22 17:00	-0.29	-0.17	-0.81	
2-2-22 18:00	-0.31	-0.19	-0.68	
2-2-22 19:00	-0.30	-0.18	-0.19	
2-2-22 20:00	-0.30	-0.11	1.09	
2-2-22 21:00	-0.32	-0.08	1.50	
2-2-22 22:00	-0.33	-0.07	1.55	
2-2-22 23:00	-0.31	-0.06	1.67	
2-3-22 0:00	-0.29	-0.03	1.83	
2-3-22 1:00	-0.30	-0.09	1.82	
2-3-22 2:00	-0.30	-0.09	1.95	
2-3-22 3:00	-0.34	-0.09	2.02	
2-3-22 4:00	-0.36	-0.09	2.03	
2-3-22 5:00	-0.30	-0.07	2.12	
2-3-22 6:00	-0.35	-0.07	2.12	
2-3-22 7:00	-0.34	-0.07	2.18	
2-3-22 8:00	-0.30	-0.09	2.34	
2-3-22 9:00	-0.31	-0.06	2.39	
2-3-22 10:00	-0.30	0.00	2.44	
2-3-22 11:00	-0.30	0.02	2.47	
2-3-22 12:00	-0.32	-0.03	2.51	
2-3-22 13:00	-0.29	0.00	2.56	
2-3-22 14:00	-0.33	-0.07	1.88	
2-3-22 15:00	-0.31	-0.15	1.19	
2-3-22 16:00	-0.31	-0.10	2.02	
2-3-22 17:00	-0.30	-0.13	1.79	
2-3-22 18:00	-0.29	-0.18	1.56	
2-3-22 19:00	-0.27	-0.13	1.71	
2-3-22 20:00	-0.29	-0.09	2.56	
2-3-22 21:00	-0.31	-0.09	2.47	
2-3-22 22:00	-0.31	-0.10	2.49	
2-3-22 23:00	-0.30	-0.13	2.42	
2-4-22 0:00	-0.31	-0.21	1.18	
2-4-22 1:00	-0.31	-0.19	1.20	
2-4-22 2:00	-0.32	-0.15	2.06	
2-4-22 3:00	-0.30	-0.09	2.49	
2-4-22 4:00	-0.30	-0.11	2.53	
2-4-22 5:00	-0.27	-0.10	2.48	
2-4-22 6:00	-0.27	-0.10	2.48	
2-4-22 7:00	-0.30	-0.11	2.77	
2-4-22 8:00	-0.28	-0.10	2.85	
2-4-22 9:00	-0.31	-0.08	2.80	
2-4-22 10:00	-0.33	-0.08	3.02	
2-4-22 11:00	-0.30	0.00	2.86	
2-4-22 12:00	-0.30	-0.02	3.11	
2-4-22 13:00	-0.31	-0.05	2.94	
2-4-22 14:00	-0.27	-0.01	3.23	
2-4-22 15:00	-0.30	0.01	3.29	
2-4-22 16:00	-0.29	-0.07	2.43	
2-4-22 17:00	-0.28	-0.11	1.42	
2-4-22 18:00	-0.29	-0.10	2.03	
2-4-22 19:00	-0.27	-0.08	3.09	
2-4-22 20:00	-0.35	-0.05	3.20	
2-4-22 21:00	-0.24	-0.08	3.32	
2-4-22 22:00	-0.22	-0.05	3.63	
2-4-22 23:00	-0.35	-0.07	3.61	
2-5-22 0:00	-0.31	-0.06	3.61	
2-5-22 1:00	-0.28	0.00	3.98	
2-5-22 2:00	-0.28	-0.05	4.04	
2-5-22 3:00	-0.30	-0.05	4.10	
2-5-22 4:00	-0.26	-0.07	4.32	
2-5-22 5:00	-0.29	-0.04	4.33	
2-5-22 6:00	-0.29	-0.07	5.08	
2-5-22 7:00	-0.29	-0.05	4.88	
2-5-22 8:00	-0.27	-0.08	4.28	
2-5-22 9:00	-0.30	-0.06	3.71	
2-5-22 10:00	-0.33	-0.03	3.35	
2-5-22 11:00	-0.28	0.03	2.93	
2-5-22 12:00	(null)	(null)	(null)	
2-5-22 13:00	-0.18	-0.07	0.46	
2-5-22 14:00	-0.30	-0.14	0.80	
2-5-22 15:00	-0.31	-0.12	0.85	
2-5-22 16:00	-0.30	-0.12	0.97	
2-5-22 17:00	-0.29	-0.17	0.77	

Date and Time	Hourly Average Temperature (°C)			Comments
	FR_FR3	FR_SCOUTDS	FS_EFF-SC	
	E320693	E320695	E323231	
2-5-22 18:00	-0.30	-0.17	0.80	
2-5-22 19:00	-0.31	-0.16	0.86	
2-5-22 20:00	-0.27	-0.17	0.90	
2-5-22 21:00	-0.27	-0.17	-0.09	
2-5-22 22:00	-0.29	-0.17	-0.77	
2-5-22 23:00	-0.30	-0.19	-0.33	
2-6-22 0:00	-0.31	-0.18	0.10	
2-6-22 1:00	-0.29	-0.17	-0.53	
2-6-22 2:00	-0.31	-0.16	-0.61	
2-6-22 3:00	-0.30	-0.20	-0.88	
2-6-22 4:00	-0.29	-0.19	-1.28	
2-6-22 5:00	-0.31	-0.19	-0.71	
2-6-22 6:00	-0.30	-0.19	-0.27	
2-6-22 7:00	-0.29	-0.16	0.04	
2-6-22 8:00	-0.31	-0.15	0.00	
2-6-22 9:00	-0.30	-0.16	0.16	
2-6-22 10:00	-0.33	-0.09	-0.13	
2-6-22 11:00	-0.30	-0.09	-0.43	
2-6-22 12:00	-0.28	-0.02	-0.04	
2-6-22 13:00	-0.30	0.00	1.09	
2-6-22 14:00	-0.27	-0.02	0.99	
2-6-22 15:00	-0.30	-0.06	0.99	
2-6-22 16:00	-0.29	-0.07	1.30	
2-6-22 17:00	-0.27	-0.09	1.47	
2-6-22 18:00	-0.31	-0.08	1.55	
2-6-22 19:00	-0.30	-0.11	1.45	
2-6-22 20:00	-0.26	-0.08	1.47	
2-6-22 21:00	-0.30	-0.10	1.70	
2-6-22 22:00	-0.29	-0.08	2.02	
2-6-22 23:00	-0.30	-0.10	2.31	
2-7-22 0:00	-0.29	-0.11	2.31	
2-7-22 1:00	-0.26	-0.07	2.33	
2-7-22 2:00	-0.31	-0.13	2.54	
2-7-22 3:00	-0.28	-0.08	2.52	
2-7-22 4:00	-0.22	-0.07	2.59	
2-7-22 5:00	-0.28	-0.08	2.60	
2-7-22 6:00	-0.30	-0.07	2.60	
2-7-22 7:00	-0.28	-0.09	2.47	
2-7-22 8:00	-0.32	-0.09	2.57	
2-7-22 9:00	-0.30	-0.05	2.38	
2-7-22 10:00	-0.29	-0.01	2.29	
2-7-22 11:00	-0.28	-0.02	2.59	
2-7-22 12:00	-0.30	0.02	3.14	
2-7-22 13:00	-0.30	-0.02	2.88	
2-7-22 14:00	-0.27	0.01	3.24	
2-7-22 15:00	-0.29	-0.07	1.71	
2-7-22 16:00	-0.29	-0.05	2.52	
2-7-22 17:00	-0.26	-0.04	3.49	
2-7-22 18:00	-0.26	-0.07	3.60	
2-7-22 19:00	-0.28	-0.06	3.46	
2-7-22 20:00	-0.31	-0.06	3.24	
2-7-22 21:00	-0.31	-0.05	3.81	
2-7-22 22:00	-0.30	-0.04	3.82	
2-7-22 23:00	-0.28	-0.03	3.71	
2-8-22 0:00	-0.32	-0.04	3.54	
2-8-22 1:00	-0.28	-0.03	3.38	
2-8-22 2:00	-0.35	-0.05	3.60	
2-8-22 3:00	-0.33	-0.05	3.81	
2-8-22 4:00	-0.29	-0.06	3.75	
2-8-22 5:00	-0.30	-0.05	3.44	
2-8-22 6:00	-0.31	-0.04	3.38	
2-8-22 7:00	-0.28	-0.05	2.84	
2-8-22 8:00	-0.29	-0.04	2.05	
2-8-22 9:00	-0.29	-0.04	0.57	
2-8-22 10:00	-0.31	-0.02	0.13	
2-8-22 11:00	-0.29	0.00	0.54	
2-8-22 12:00	-0.29	0.02	0.17	
2-8-22 13:00	-0.28	0.00	0.39	
2-8-22 14:00	-0.29	-0.03	0.51	
2-8-22 15:00	-0.30	0.00	2.57	
2-8-22 16:00	-0.30	-0.02	2.84	
2-8-22 17:00	-0.29	-0.05	2.96	
2-8-22 18:00	-0.26	-0.01	2.90	
2-8-22 19:00	-0.29	-0.02	3.29	
2-8-22 20:00	-0.27	-0.05	3.25	
2-8-22 21:00	-0.28	-0.03	3.22	
2-8-22 22:00	-0.29	-0.02	3.20	
2-8-22 23:00	-0.25	-0.01	3.30	

Date and Time	Hourly Average Temperature (°C)			Comments
	FR_FR3	FR_SCOUTDS	FS_EFF-SC	
	E320693	E320695	E323231	
2-9-22 0:00	-0.34	0.00	3.26	
2-9-22 1:00	-0.28	-0.05	3.29	
2-9-22 2:00	-0.27	-0.04	3.30	
2-9-22 3:00	-0.28	-0.03	3.20	
2-9-22 4:00	-0.33	-0.06	3.40	
2-9-22 5:00	-0.36	-0.03	3.40	
2-9-22 6:00	-0.25	-0.03	3.40	
2-9-22 7:00	-0.28	-0.04	3.34	
2-9-22 8:00	-0.29	-0.02	3.33	
2-9-22 9:00	-0.28	0.01	3.38	
2-9-22 10:00	-0.30	0.03		
2-9-22 11:00	-0.30	0.08		
2-9-22 12:00	-0.30	0.03	4.05	
2-9-22 13:00	-0.28	0.07	4.42	
2-9-22 14:00	-0.28	-0.05	2.23	
2-9-22 15:00	-0.26	-0.02	3.24	
2-9-22 16:00	-0.27	0.02	4.52	
2-9-22 17:00	-0.25	0.04	4.51	
2-9-22 18:00	-0.25	0.03	4.58	
2-9-22 19:00	-0.26	0.01	4.63	
2-9-22 20:00	-0.26	0.03	4.61	
2-9-22 21:00	-0.27	0.01	4.63	
2-9-22 22:00	-0.26	0.05	4.63	
2-9-22 23:00	-0.24	0.07	4.31	
2-10-22 0:00	-0.22	0.08	4.71	
2-10-22 1:00	-0.24	0.07	4.67	
2-10-22 2:00	-0.22	0.09	4.65	
2-10-22 3:00	-0.25	0.10	4.62	
2-10-22 4:00	-0.22	0.13	4.65	
2-10-22 5:00	-0.13	0.14	4.70	
2-10-22 6:00	-0.13	0.14	4.66	
2-10-22 7:00	-0.21	0.15	4.36	
2-10-22 8:00	-0.11	0.20	4.72	
2-10-22 9:00	-0.11	0.25	4.77	
2-10-22 10:00	-0.02	0.32	4.69	
2-10-22 11:00	0.07	0.42	4.77	
2-10-22 12:00	0.23	0.58	4.77	
2-10-22 13:00	0.37	0.66	4.76	
2-10-22 14:00	0.52	0.68	4.55	
2-10-22 15:00	0.89	1.04	4.43	
2-10-22 16:00	0.82	1.01	4.73	
2-10-22 17:00	0.72	0.96	4.65	
2-10-22 18:00	0.65	0.89	4.56	
2-10-22 19:00	0.61	0.86	4.58	
2-10-22 20:00	0.55	0.79	4.65	
2-10-22 21:00	0.41	0.70	4.58	
2-10-22 22:00	0.35	0.58	4.68	
2-10-22 23:00	0.20	0.48	4.53	
2-11-22 0:00	0.03	0.30	4.27	
2-11-22 1:00	-0.05	0.18	4.50	
2-11-22 2:00	-0.19	0.09	4.45	
2-11-22 3:00	-0.30	-0.05	4.39	
2-11-22 4:00	-0.32	-0.04	4.46	
2-11-22 5:00	-0.32	0.05	4.43	
2-11-22 6:00	-0.31	-0.01	4.34	
2-11-22 7:00	-0.28	0.04	4.37	
2-11-22 8:00	-0.31	0.07	4.12	
2-11-22 9:00	-0.29	0.08	4.20	
2-11-22 10:00	-0.27	-0.01	4.32	
2-11-22 11:00		0.03	4.37	
2-11-22 12:00	-0.33	0.05	4.29	
2-11-22 13:00	-0.06	0.35	4.13	
2-11-22 14:00	0.80	1.13	4.18	
2-11-22 15:00	1.01	1.31	4.22	
2-11-22 16:00	0.91	1.24	4.20	
2-11-22 17:00	0.65	0.99	4.13	
2-11-22 18:00	0.40	0.70	4.60	
2-11-22 19:00	0.27	0.59	4.80	
2-11-22 20:00	0.09	0.40	4.79	
2-11-22 21:00	-0.12	0.25	4.65	
2-11-22 22:00	-0.22	0.07	4.88	
2-11-22 23:00	-0.34	-0.03	4.96	
2-12-22 0:00	-0.31	-0.06	4.82	
2-12-22 1:00	-0.30	0.01	4.74	
2-12-22 2:00	-0.31	0.25	4.28	
2-12-22 3:00	-0.37	0.12	4.58	
2-12-22 4:00	-0.34	0.12	4.53	
2-12-22 5:00	-0.33	0.13	4.52	

Date and Time	Hourly Average Temperature (°C)			Comments
	FR_FR3	FR_SCOUTDS	FS_EFF-SC	
	E320693	E320695	E323231	
2-12-22 6:00	-0.35	0.20	4.41	
2-12-22 7:00	-0.33	0.12	4.39	
2-12-22 8:00	-0.38	0.13	4.35	
2-12-22 9:00	-0.33	0.10	4.38	
2-12-22 10:00	-0.29	0.02	4.10	
2-12-22 11:00	-0.28	0.13	4.27	
2-12-22 12:00	-0.31	0.07	4.30	
2-12-22 13:00	-0.30	0.02	4.25	
2-12-22 14:00	-0.29	-0.04	4.26	
2-12-22 15:00	-0.31	-0.01	4.18	
2-12-22 16:00	-0.32	0.01	4.51	
2-12-22 17:00	-0.30	0.00	4.52	
2-12-22 18:00	-0.31	-0.02	4.63	
2-12-22 19:00	-0.12	0.21	4.66	
2-12-22 20:00	-0.02	0.27	4.60	
2-12-22 21:00	-0.09	0.22	4.62	
2-12-22 22:00	-0.16	0.13	4.32	
2-12-22 23:00	-0.23	0.05	4.60	
2-13-22 0:00	-0.23	0.03	4.62	
2-13-22 1:00	-0.31	-0.03	4.71	
2-13-22 2:00	-0.34	-0.08	4.65	
2-13-22 3:00	-0.33	-0.06	4.28	
2-13-22 4:00	-0.34	-0.11	2.91	
2-13-22 5:00	-0.30	-0.02	4.78	
2-13-22 6:00	-0.29	-0.01	4.75	
2-13-22 7:00	-0.34	-0.02	4.75	
2-13-22 8:00	-0.35	-0.01	4.40	
2-13-22 9:00	-0.30	0.03	4.24	
2-13-22 10:00	-0.28	0.00	4.01	
2-13-22 11:00	-0.30	0.00	3.65	
2-13-22 12:00	-0.29	-0.03	1.56	
2-13-22 13:00	0.69	1.01	1.51	
2-13-22 14:00	1.50	1.66	1.53	
2-13-22 15:00	1.74	1.88	1.53	
2-13-22 16:00	1.61	1.76	1.51	
2-13-22 17:00	1.44	1.58	1.53	
2-13-22 18:00	1.20	1.32	1.53	
2-13-22 19:00	1.09	1.16	1.52	
2-13-22 20:00	0.92	0.97	1.55	
2-13-22 21:00	0.77	0.81	1.54	
2-13-22 22:00	0.61	0.71	1.56	
2-13-22 23:00	0.46	0.67	2.64	
2-14-22 0:00	0.36	0.59	4.21	
2-14-22 1:00	0.21	0.48	4.24	
2-14-22 2:00	0.11	0.35	4.24	
2-14-22 3:00	0.01	0.28	4.28	
2-14-22 4:00	-0.07	0.21	4.37	
2-14-22 5:00	-0.22	0.08	4.07	
2-14-22 6:00	-0.31	-0.16	1.93	
2-14-22 7:00	-0.35	-0.10	3.45	
2-14-22 8:00	-0.33	-0.07	4.23	
2-14-22 9:00	-0.32	-0.05	4.23	
2-14-22 10:00	-0.33	-0.01	3.23	
2-14-22 11:00	-0.27	-0.03	3.21	
2-14-22 12:00	0.12	0.46	4.36	
2-14-22 13:00	0.61	0.81	2.42	
2-14-22 14:00	0.79	0.97	2.99	
2-14-22 15:00	0.89	1.11	4.25	
2-14-22 16:00	0.86	1.08	4.17	
2-14-22 17:00	0.78	1.00	4.26	
2-14-22 18:00	0.70	0.96	4.23	
2-14-22 19:00	0.69	0.93	4.24	
2-14-22 20:00	0.57	0.85	4.23	
2-14-22 21:00	0.45	0.72	4.30	
2-14-22 22:00	0.49	0.67	4.28	
2-14-22 23:00	0.52	0.70	4.27	
2-15-22 0:00	0.58	0.69	4.23	
2-15-22 1:00	0.44	0.65	4.03	
2-15-22 2:00	0.43	0.66	4.29	
2-15-22 3:00	0.41	0.65	4.18	
2-15-22 4:00	0.31	0.50	4.25	
2-15-22 5:00	0.16	0.41	4.21	
2-15-22 6:00	0.08	0.34	4.18	
2-15-22 7:00	0.07	0.33	4.15	
2-15-22 8:00	0.11	0.37	4.30	
2-15-22 9:00	0.22	0.45	4.47	
2-15-22 10:00	0.43	0.71	4.29	
2-15-22 11:00	0.76	0.98	4.19	

Date and Time	Hourly Average Temperature (°C)			Comments
	FR_FR3	FR_SCOUTDS	FS_EFF-SC	
	E320693	E320695	E323231	
2-15-22 12:00	1.19	1.41	4.14	
2-15-22 13:00	1.51	1.77	4.15	
2-15-22 14:00	1.86	2.08	4.22	
2-15-22 15:00	1.98	2.15	4.30	
2-15-22 16:00	1.93	2.11	4.48	
2-15-22 17:00	1.76	1.96	4.54	
2-15-22 18:00	1.57	1.75	4.40	
2-15-22 19:00	1.38	1.56	4.43	
2-15-22 20:00	1.19	1.41	4.47	
2-15-22 21:00	1.01	1.28	4.46	
2-15-22 22:00	0.96	1.13	4.48	
2-15-22 23:00	0.80	0.97	4.46	
2-16-22 0:00	0.63	0.89	4.49	
2-16-22 1:00	0.57	0.79	4.43	
2-16-22 2:00	0.49	0.59	1.91	
2-16-22 3:00	0.36	0.41	1.67	
2-16-22 4:00	0.17	0.25	1.69	
2-16-22 5:00	-0.10	0.05	1.69	
2-16-22 6:00	-0.28	-0.14	1.71	
2-16-22 7:00	-0.28	-0.16	1.73	
2-16-22 8:00	-0.31	-0.15	1.71	
2-16-22 9:00	-0.28	-0.16	1.69	
2-16-22 10:00	-0.27	-0.13	1.72	
2-16-22 11:00	0.02	0.19	1.70	
2-16-22 12:00	0.37	0.50	1.72	
2-16-22 13:00	0.68	0.80	1.72	
2-16-22 14:00	0.88	0.98	1.72	
2-16-22 15:00	0.95	1.08	1.74	
2-16-22 16:00	0.90	0.98	1.73	
2-16-22 17:00	0.74	0.86	1.71	
2-16-22 18:00	0.54	0.65	1.73	
2-16-22 19:00	0.36	0.46	1.74	
2-16-22 20:00	0.19	0.35	1.71	
2-16-22 21:00	0.03	0.17	1.72	
2-16-22 22:00	-0.10	0.04	1.70	
2-16-22 23:00	-0.21	-0.09	2.04	
2-17-22 0:00	-0.29	-0.10	2.55	
2-17-22 1:00	-0.28	-0.06	3.98	
2-17-22 2:00	-0.29	-0.08	4.17	
2-17-22 3:00	-0.30	-0.03	4.09	
2-17-22 4:00	-0.29	0.03	4.04	
2-17-22 5:00	-0.27	0.02	4.03	
2-17-22 6:00	-0.29	0.06	4.04	
2-17-22 7:00	-0.27	0.02	4.00	
2-17-22 8:00	-0.29	0.02	3.96	
2-17-22 9:00	-0.29	-0.01	4.08	
2-17-22 10:00	-0.26	-0.02	4.16	
2-17-22 11:00	-0.33	-0.07	4.15	
2-17-22 12:00	-0.26	0.02	4.15	
2-17-22 13:00	-0.02	0.30	4.20	
2-17-22 14:00	1.53	1.77	4.17	
2-17-22 15:00	1.92	2.07	3.77	
2-17-22 16:00	1.90	1.96	1.95	
2-17-22 17:00	1.72	1.78	2.44	
2-17-22 18:00	1.48	1.64	4.17	
2-17-22 19:00	1.25	1.43	4.55	
2-17-22 20:00	1.03	1.25	4.30	
2-17-22 21:00	0.90	1.15	4.63	
2-17-22 22:00	0.87	1.07	4.66	
2-17-22 23:00	0.78	1.01	4.55	
2-18-22 0:00	0.75	0.90	4.80	
2-18-22 1:00	0.69	0.87	4.66	
2-18-22 2:00	0.56	0.86	4.92	
2-18-22 3:00	0.48	0.78	5.05	
2-18-22 4:00	0.48	0.70	5.00	
2-18-22 5:00	0.36	0.67	4.98	
2-18-22 6:00	0.30	0.65	4.98	
2-18-22 7:00	0.33	0.65	5.14	
2-18-22 8:00	0.41	0.63	4.92	
2-18-22 9:00	0.41	0.75	5.18	
2-18-22 10:00	0.63	0.94	5.26	
2-18-22 11:00	0.95	1.22	5.38	
2-18-22 12:00	1.29	1.56	5.47	
2-18-22 13:00	1.67	1.93	5.70	
2-18-22 14:00	1.98	2.24	5.42	
2-18-22 15:00	2.13	2.37	5.65	
2-18-22 16:00	2.02	2.25	5.67	
2-18-22 17:00	1.93	2.18	5.64	

Date and Time	Hourly Average Temperature (°C)			Comments
	FR_FR3	FR_SCOUTDS	FS_EFF-SC	
	E320693	E320695	E323231	
2-18-22 18:00	1.77	2.01	5.75	
2-18-22 19:00	1.61	1.85	5.26	
2-18-22 20:00	1.48	1.72	5.42	
2-18-22 21:00	1.36	1.60	5.60	
2-18-22 22:00	1.23	1.54	5.27	
2-18-22 23:00	1.14	1.44	5.37	
2-19-22 0:00	1.07	1.34	5.88	
2-19-22 1:00	0.98	1.21	5.43	
2-19-22 2:00	0.89	1.10	5.19	
2-19-22 3:00	0.80	1.09	5.85	
2-19-22 4:00	0.80	1.07	5.71	
2-19-22 5:00	0.80	1.10	5.93	
2-19-22 6:00	0.74	1.06	5.90	
2-19-22 7:00	0.63	0.93	5.79	
2-19-22 8:00	0.59	0.90	5.61	
2-19-22 9:00	0.66	0.95	5.62	
2-19-22 10:00	0.76	1.06	5.47	
2-19-22 11:00	0.87	1.10	5.01	
2-19-22 12:00	0.90	1.13	4.71	
2-19-22 13:00	0.93	1.09	2.72	
2-19-22 14:00	0.96	1.14	2.69	
2-19-22 15:00	0.96	1.13	3.38	
2-19-22 16:00	0.86	1.09	4.44	
2-19-22 17:00	0.71	0.97	4.93	
2-19-22 18:00	0.52	0.84	5.10	
2-19-22 19:00	0.43	0.70	5.08	
2-19-22 20:00	0.31	0.63	5.08	
2-19-22 21:00	0.27	0.56	5.10	
2-19-22 22:00	0.16	0.52	5.24	
2-19-22 23:00	0.08	0.41	5.04	
2-20-22 0:00	0.04	0.36	5.25	
2-20-22 1:00	0.32	0.40	5.36	
2-20-22 2:00	0.18	0.37	5.48	
2-20-22 3:00	0.49	0.38	5.08	
2-20-22 4:00	0.21	0.40	4.94	
2-20-22 5:00	0.00	0.29	4.85	
2-20-22 6:00	-0.18	0.10	4.79	
2-20-22 7:00	-0.28	-0.10	4.87	
2-20-22 8:00	-0.27	-0.13	5.00	
2-20-22 9:00	-0.30	-0.05	4.61	
2-20-22 10:00	-0.30	-0.08	4.19	
2-20-22 11:00	-0.28	-0.06	4.30	
2-20-22 12:00	-0.29	-0.03	4.08	
2-20-22 13:00	-0.26	0.03	3.96	
2-20-22 14:00	0.13	0.31	3.76	
2-20-22 15:00	0.21	0.34	2.54	
2-20-22 16:00	0.09	0.23	2.45	
2-20-22 17:00	-0.18	-0.03	3.42	
2-20-22 18:00	-0.28	-0.20	3.21	
2-20-22 19:00	-0.28	-0.24	3.09	
2-20-22 20:00	-0.27	-0.27	2.86	
2-20-22 21:00	-0.29	-0.25	2.68	
2-20-22 22:00	-0.26	-0.25	2.53	
2-20-22 23:00	-0.26	-0.22	2.42	
2-21-22 0:00	-0.26	-0.15	2.33	
2-21-22 1:00	-0.28	-0.17	2.19	
2-21-22 2:00	-0.29	-0.16	2.18	
2-21-22 3:00	-0.23	-0.15	1.97	
2-21-22 4:00	-0.26	-0.12	1.77	
2-21-22 5:00	-0.29	-0.16	1.62	
2-21-22 6:00	-0.29	-0.17	1.47	
2-21-22 7:00	-0.30	-0.20	1.32	
2-21-22 8:00	-0.29	-0.18	1.13	
2-21-22 9:00	-0.32	-0.19	0.98	
2-21-22 10:00	-0.31	-0.18	0.88	
2-21-22 11:00	-0.32	-0.17	0.85	
2-21-22 12:00	-0.35	-0.14	0.84	
2-21-22 13:00	-0.32	-0.11	0.84	
2-21-22 14:00	-0.32	-0.14	0.80	
2-21-22 15:00	-0.34	-0.20	0.86	
2-21-22 16:00	-0.33	-0.23	0.81	
2-21-22 17:00	-0.34	-0.25	0.73	
2-21-22 18:00	-0.34	-0.26	0.74	
2-21-22 19:00	-0.34	-0.26	0.83	
2-21-22 20:00	-0.34	-0.23	0.84	
2-21-22 21:00	-0.34	-0.24	0.82	
2-21-22 22:00	-0.28	-0.29	1.03	
2-21-22 23:00	-0.32	-0.23	1.52	

Date and Time	Hourly Average Temperature (°C)			Comments
	FR_FR3	FR_SCOUTDS	FS_EFF-SC	
	E320693	E320695	E323231	
2-22-22 0:00	-0.30	-0.18	1.62	
2-22-22 1:00	-0.35	-0.17	1.57	
2-22-22 2:00	-0.31	-0.21	1.43	
2-22-22 3:00	-0.33	-0.17	1.48	
2-22-22 4:00	-0.34	-0.16	1.66	
2-22-22 5:00	-0.34	-0.16	1.68	
2-22-22 6:00	-0.33	-0.15	1.77	
2-22-22 7:00	-0.33	-0.14	1.84	
2-22-22 8:00	-0.34	-0.16	1.73	
2-22-22 9:00	-0.34	-0.15	1.61	
2-22-22 10:00	-0.33	-0.09	1.98	
2-22-22 11:00	-0.32	-0.08	1.90	
2-22-22 12:00	-0.32	-0.09	1.97	
2-22-22 13:00	-0.32	-0.08	1.56	
2-22-22 14:00	-0.33	-0.11	1.56	
2-22-22 15:00	-0.34	-0.16	1.55	
2-22-22 16:00	-0.33	-0.16	1.52	
2-22-22 17:00	-0.32	-0.16	1.50	
2-22-22 18:00	-0.31	-0.17	1.80	
2-22-22 19:00	-0.33	-0.18	1.84	
2-22-22 20:00	-0.34	-0.19	1.79	
2-22-22 21:00	-0.32	-0.22	1.88	
2-22-22 22:00	-0.32	-0.24	1.90	
2-22-22 23:00	-0.38	-0.23	1.80	
2-23-22 0:00	-0.35	-0.23	1.67	
2-23-22 1:00	-0.37	-0.23	1.50	
2-23-22 2:00	-0.35	-0.24	1.41	
2-23-22 3:00	-0.32	-0.25	1.35	
2-23-22 4:00	-0.35	-0.25	1.33	
2-23-22 5:00	-0.37	-0.26	1.41	
2-23-22 6:00	-0.34	-0.27	1.64	
2-23-22 7:00	-0.37	-0.28	1.88	
2-23-22 8:00	-0.34	-0.23	1.97	
2-23-22 9:00	-0.32	-0.22	2.13	
2-23-22 10:00	-0.32	-0.15	2.19	
2-23-22 11:00	-0.29	-0.12	2.30	
2-23-22 12:00	-0.30	-0.04	2.39	
2-23-22 13:00	-0.32	-0.02	2.50	
2-23-22 14:00	-0.33	-0.08	2.58	
2-23-22 15:00	-0.33	-0.16	2.63	
2-23-22 16:00	-0.29	-0.20	2.76	
2-23-22 17:00	-0.29	-0.23	2.80	
2-23-22 18:00	-0.33	-0.28	2.86	
2-23-22 19:00	-0.29	-0.30	2.88	
2-23-22 20:00	-0.32	-0.33	2.83	
2-23-22 21:00	-0.34	-0.37	2.88	
2-23-22 22:00	-0.33	-0.41	2.90	
2-23-22 23:00	-0.33	-0.45	3.03	
2-24-22 0:00	-0.30	-0.48	3.07	
2-24-22 1:00	-0.31	-0.52	3.11	
2-24-22 2:00	-0.24	-0.57	3.16	
2-24-22 3:00	-0.37	-0.63	3.18	
2-24-22 4:00	-0.29	-0.67	3.22	
2-24-22 5:00	-0.32	-0.74	3.23	
2-24-22 6:00	-0.33	-0.83	3.28	
2-24-22 7:00	-0.32	-0.85	3.27	
2-24-22 8:00	-0.32	-0.91	3.29	
2-24-22 9:00	-0.34	-0.91	3.28	
2-24-22 10:00	-0.33	-0.86	3.36	
2-24-22 11:00	-0.28	-0.77	3.39	
2-24-22 12:00	-0.29	-0.66	3.57	
2-24-22 13:00	-0.30	-0.53	3.70	
2-24-22 14:00	-0.33	-0.46	3.89	
2-24-22 15:00	-0.33	-0.48	4.03	
2-24-22 16:00	-0.30	-0.49	4.04	
2-24-22 17:00	-0.33	-0.61	4.03	
2-24-22 18:00	-0.31	-0.71	4.09	
2-24-22 19:00	-0.29	-0.88	4.24	
2-24-22 20:00	-0.34	-1.02	4.25	
2-24-22 21:00	-0.31	-1.18	4.29	
2-24-22 22:00	-0.31	-1.30	4.29	
2-24-22 23:00	-0.33	-1.43	4.25	
2-25-22 0:00	-0.34	-1.54	4.20	
2-25-22 1:00	-0.33	-1.65	4.15	
2-25-22 2:00	-0.36	-1.75	4.09	
2-25-22 3:00	-0.31	-1.83	4.03	
2-25-22 4:00	-0.33	-1.94	4.01	
2-25-22 5:00	-0.29	-2.04	3.95	

Date and Time	Hourly Average Temperature (°C)			Comments
	FR_FR3	FR_SCOUTDS	FS_EFF-SC	
	E320693	E320695	E323231	
2-25-22 6:00	-0.39	-2.10	3.82	
2-25-22 7:00	-0.34	-2.21	1.44	
2-25-22 8:00	-0.32	-2.26	1.55	
2-25-22 9:00	-0.29	-2.21	3.32	
2-25-22 10:00	-0.31	-2.00	3.87	
2-25-22 11:00	-0.31	-1.61	3.84	
2-25-22 12:00	-0.35	-1.18	2.62	
2-25-22 13:00	-0.30	-0.84	2.33	
2-25-22 14:00	-0.28	-0.69	2.35	
2-25-22 15:00	-0.29	-0.71	2.44	
2-25-22 16:00	-0.28	-0.83	2.62	
2-25-22 17:00	-0.33	-0.99	2.93	
2-25-22 18:00	-0.31	-1.20	2.93	
2-25-22 19:00	-0.33	-1.36	2.91	
2-25-22 20:00	-0.29	-1.49	2.80	
2-25-22 21:00	-0.31	-1.69	2.75	
2-25-22 22:00	-0.33	-1.84	2.66	
2-25-22 23:00	-0.34	-2.00	2.70	
2-26-22 0:00	-0.31	-2.12	2.68	
2-26-22 1:00	-0.33	-2.21	2.70	
2-26-22 2:00	-0.31	-2.30	2.69	
2-26-22 3:00	-0.30	-2.36	2.65	
2-26-22 4:00	-0.33	-2.38	2.68	
2-26-22 5:00	-0.32	-2.41	2.80	
2-26-22 6:00	-0.33	-2.38	2.81	
2-26-22 7:00	-0.34	-2.31	2.77	
2-26-22 8:00	-0.31	-2.22	2.82	
2-26-22 9:00	-0.29	-2.08	2.81	
2-26-22 10:00	-0.30	-1.79	2.74	
2-26-22 11:00	-0.32	-1.47	2.32	
2-26-22 12:00	-0.30	-1.13	2.40	
2-26-22 13:00	-0.31	-0.79	2.76	
2-26-22 14:00	-0.32	-0.58	2.73	
2-26-22 15:00	-0.31	-0.52	2.79	
2-26-22 16:00	-0.35	-0.50	2.80	
2-26-22 17:00	-0.28	-0.55	2.90	
2-26-22 18:00	-0.31	-0.66	3.11	
2-26-22 19:00	-0.31	-0.83	3.24	
2-26-22 20:00	-0.31	-1.01	3.26	
2-26-22 21:00	-0.31	-1.11	3.36	
2-26-22 22:00	-0.30	-1.18	3.53	
2-26-22 23:00	-0.30	-1.19	3.63	
2-27-22 0:00	-0.30	-1.26	3.72	
2-27-22 1:00	-0.34	-1.30	3.74	
2-27-22 2:00	-0.29	-1.26	3.72	
2-27-22 3:00	-0.33	-1.25	3.73	
2-27-22 4:00	-0.32	-1.20	3.80	
2-27-22 5:00	-0.29	-1.18	3.88	
2-27-22 6:00	-0.31	-1.10	3.80	
2-27-22 7:00	-0.29	-1.02	3.80	
2-27-22 8:00	-0.30	-0.99	3.75	
2-27-22 9:00	-0.31	-0.88	3.86	
2-27-22 10:00	-0.27	-0.72	3.97	
2-27-22 11:00	-0.31	-0.63	3.82	
2-27-22 12:00	-0.31	-0.55	3.67	
2-27-22 13:00	-0.31	-0.46	4.02	
2-27-22 14:00	-0.32	-0.40	4.12	
2-27-22 15:00	-0.33	-0.40	4.36	
2-27-22 16:00	-0.31	-0.36	4.36	
2-27-22 17:00	-0.30	-0.36	4.29	
2-27-22 18:00	-0.34	-0.36	4.34	
2-27-22 19:00	-0.36	-0.37	4.39	
2-27-22 20:00	-0.32	-0.35	4.59	
2-27-22 21:00	-0.25	-0.33	4.43	
2-27-22 22:00	-0.37	-0.32	4.46	
2-27-22 23:00	-0.34	-0.26	4.49	
2-28-22 0:00	-0.12	-0.12	4.53	
2-28-22 1:00	-0.29	-0.04	4.49	
2-28-22 2:00	-0.33	-0.01	4.48	
2-28-22 3:00	-0.30	0.01	4.48	
2-28-22 4:00	-0.24	0.05	4.60	
2-28-22 5:00	-0.27	0.03	4.56	
2-28-22 6:00	-0.30	0.02	4.48	
2-28-22 7:00	-0.31	0.01	4.46	
2-28-22 8:00	-0.31	0.00	4.18	
2-28-22 9:00	-0.34	-0.03	3.33	
2-28-22 10:00	-0.31	-0.03	3.89	
2-28-22 11:00	-0.32	0.00	4.59	

Date and Time	Hourly Average Temperature (°C)			Comments
	FR_FR3	FR_SCOUTDS	FS_EFF-SC	
	E320693	E320695	E323231	
2-28-22 12:00	-0.31	0.03	4.65	
2-28-22 13:00	-0.32	0.04	4.65	
2-28-22 14:00	-0.29	0.07	4.80	
2-28-22 15:00	-0.29	0.07	4.98	
2-28-22 16:00	-0.27	0.06	5.08	
2-28-22 17:00	-0.30	0.07	5.11	
2-28-22 18:00	-0.34	0.05	5.16	
2-28-22 19:00	-0.29	0.05	5.16	
2-28-22 20:00	-0.30	0.07	5.10	
2-28-22 21:00	-0.28	0.04	5.08	
2-28-22 22:00	-0.32	0.10	5.31	
2-28-22 23:00	-0.28	0.11	5.35	
3-1-22 0:00	-0.32	0.16	5.39	
3-1-22 1:00	-0.25	0.09	5.34	
3-1-22 2:00	-0.32	0.13	5.29	
3-1-22 3:00	-0.35	0.06	5.35	
3-1-22 4:00	-0.36	0.05	5.35	
3-1-22 5:00	-0.30	0.10	5.53	
3-1-22 6:00	-0.29	0.03	5.42	
3-1-22 7:00	-0.30	0.09	5.71	
3-1-22 8:00	-0.34	0.09	5.67	
3-1-22 9:00	-0.35	0.10	5.62	
3-1-22 10:00	-0.28	0.08	5.58	
3-1-22 11:00	-0.30	0.11	5.55	
3-1-22 12:00	-0.33	0.14	5.64	
3-1-22 13:00	-0.26	0.12	5.64	
3-1-22 14:00	-0.28	0.10	5.68	
3-1-22 15:00	-0.31	0.10	5.78	
3-1-22 16:00	-0.30	0.08	5.78	
3-1-22 17:00	-0.28	0.12	5.89	
3-1-22 18:00	-0.29	0.11	6.05	
3-1-22 19:00	-0.37	0.13	5.97	
3-1-22 20:00	-0.27	0.13	5.33	
3-1-22 21:00	-0.37	0.11	5.24	
3-1-22 22:00	-0.32	0.07	5.18	
3-1-22 23:00	-0.33	0.08	5.28	
3-2-22 0:00	-0.32	0.06	5.36	
3-2-22 1:00	-0.32	0.12	5.45	
3-2-22 2:00	-0.28	0.10	5.44	
3-2-22 3:00	-0.35	0.04	5.47	
3-2-22 4:00	-0.24	0.12	5.41	
3-2-22 5:00	-0.27	0.07	5.35	
3-2-22 6:00	-0.34	0.07	5.28	
3-2-22 7:00	-0.28	0.07	5.16	
3-2-22 8:00	-0.29	0.05	5.20	
3-2-22 9:00	-0.31	0.07	5.19	
3-2-22 10:00	-0.30	0.11	5.15	
3-2-22 11:00	-0.31	0.14	5.04	
3-2-22 12:00	-0.30	0.09	4.99	
3-2-22 13:00	-0.28	0.09	4.95	
3-2-22 14:00	-0.32	0.08	5.01	
3-2-22 15:00	-0.30	0.06	4.98	
3-2-22 16:00	-0.28	0.08	4.86	
3-2-22 17:00	-0.30	0.07	4.73	
3-2-22 18:00	-0.29	0.06	4.79	
3-2-22 19:00	-0.26	0.05	4.77	
3-2-22 20:00	-0.27	0.04	4.78	
3-2-22 21:00	-0.28	0.08	4.76	
3-2-22 22:00	-0.29	0.06	4.71	
3-2-22 23:00	-0.31	0.07	4.70	
3-3-22 0:00	-0.31	0.04	4.72	
3-3-22 1:00	-0.32	0.06	4.65	
3-3-22 2:00	-0.31	0.07	4.67	
3-3-22 3:00	-0.32	0.09	4.76	
3-3-22 4:00	-0.28	0.00	4.76	
3-3-22 5:00	-0.30	0.01	4.75	
3-3-22 6:00	-0.29	0.04	4.78	
3-3-22 7:00	-0.29	0.05	4.76	
3-3-22 8:00	-0.26	0.08	4.80	
3-3-22 9:00	-0.29	0.10	4.81	
3-3-22 10:00	-0.27	0.09	4.82	
3-3-22 11:00	-0.28	0.12	4.86	
3-3-22 12:00	-0.28	0.15	4.94	
3-3-22 13:00	-0.24	0.14	5.06	
3-3-22 14:00	-0.26	0.18	5.19	
3-3-22 15:00	-0.21	0.17	5.26	
3-3-22 16:00	-0.16	0.21	5.37	
3-3-22 17:00	-0.15	0.21	5.37	

Date and Time	Hourly Average Temperature (°C)			Comments
	FR_FR3	FR_SCOUTDS	FS_EFF-SC	
	E320693	E320695	E323231	
3-3-22 18:00	-0.21	0.14	5.38	
3-3-22 19:00	-0.18	0.03	5.33	
3-3-22 20:00	-0.36	-0.01	5.17	
3-3-22 21:00	-0.16	-0.07	5.06	
3-3-22 22:00	-0.02	0.03	5.09	
3-3-22 23:00	-0.24	-0.03	5.03	
3-4-22 0:00	-1.09	-0.10	4.98	
3-4-22 1:00	-0.42	0.04	4.92	
3-4-22 2:00	-0.24	-0.03	4.43	
3-4-22 3:00	-0.30	0.06	4.45	
3-4-22 4:00	-0.33	0.01	4.48	
3-4-22 5:00	-0.28	-0.02	4.38	
3-4-22 6:00	-0.29	-0.03	4.43	
3-4-22 7:00	-0.31	-0.01	4.40	
3-4-22 8:00	-0.34	-0.01	4.24	
3-4-22 9:00	-0.31	0.03	4.27	
3-4-22 10:00	-0.30	0.01	4.39	
3-4-22 11:00	-0.31	0.02	4.42	
3-4-22 12:00	-0.30	0.08	4.75	
3-4-22 13:00	-0.28	0.06	4.91	
3-4-22 14:00	-0.27	0.07	4.90	
3-4-22 15:00	-0.17	0.18	4.91	
3-4-22 16:00	0.03	0.27	4.90	
3-4-22 17:00	0.05	0.34	5.01	
3-4-22 18:00	0.07	0.36	5.05	
3-4-22 19:00	-0.08	0.35	4.99	
3-4-22 20:00	-0.19	0.34	4.92	
3-4-22 21:00	-0.02	0.36	4.90	
3-4-22 22:00	0.06	0.35	4.91	
3-4-22 23:00	-0.02	0.32	4.91	
3-5-22 0:00	-0.14	0.20	4.90	
3-5-22 1:00	-0.25	0.04	4.90	
3-5-22 2:00	-0.31	-0.03	4.84	
3-5-22 3:00	-0.32	-0.01	4.78	
3-5-22 4:00	-0.30	-0.02	4.67	
3-5-22 5:00	-0.32	0.02	4.62	
3-5-22 6:00	-0.30	0.02	4.66	
3-5-22 7:00	-0.30	0.07	4.58	
3-5-22 8:00	-0.33	0.04	4.45	
3-5-22 9:00	-0.32	0.04	4.41	
3-5-22 10:00	-0.27	0.04	4.46	
3-5-22 11:00	-0.32	0.00	4.43	
3-5-22 12:00	-0.35	-0.03	4.47	
3-5-22 13:00	-0.24	0.11	4.47	
3-5-22 14:00	0.19	0.44	4.54	
3-5-22 15:00	0.75	1.09	4.70	
3-5-22 16:00	0.93	1.22	4.82	
3-5-22 17:00	0.78	1.09	5.11	
3-5-22 18:00	0.56	0.89	5.28	
3-5-22 19:00	0.32	0.68	5.25	
3-5-22 20:00	0.31	0.60	5.21	
3-5-22 21:00	0.20	0.51	5.22	
3-5-22 22:00	0.08	0.47	5.20	
3-5-22 23:00	-0.02	0.36	5.19	
3-6-22 0:00	-0.10	0.27	5.10	
3-6-22 1:00	-0.16	0.19	5.06	
3-6-22 2:00	-0.31	-0.02	4.97	
3-6-22 3:00	-0.36	-0.06	4.89	
3-6-22 4:00	-0.38	-0.03	4.83	
3-6-22 5:00	-0.35	0.02	4.79	
3-6-22 6:00	-0.42	0.11	4.73	
3-6-22 7:00	-0.34	0.16	4.67	
3-6-22 8:00	-0.33	0.10	4.67	
3-6-22 9:00	-0.32	0.03	4.66	
3-6-22 10:00	-0.33	0.09	4.66	
3-6-22 11:00	-0.31	0.02	4.68	
3-6-22 12:00	-0.34	0.05	4.74	
3-6-22 13:00	0.02	0.44	4.69	
3-6-22 14:00	1.14	1.44	5.01	
3-6-22 15:00	1.74	2.03	5.19	
3-6-22 16:00	1.86	2.13	5.17	
3-6-22 17:00	1.53	1.82	5.20	
3-6-22 18:00	1.09	1.34	5.36	
3-6-22 19:00	0.59	0.89	5.38	
3-6-22 20:00	0.28	0.61	5.41	
3-6-22 21:00	0.06	0.36	5.34	
3-6-22 22:00	-0.15	0.20	5.30	
3-6-22 23:00	-0.30	0.08	5.26	

Date and Time	Hourly Average Temperature (°C)			Comments
	FR_FR3	FR_SCOUTDS	FS_EFF-SC	
	E320693	E320695	E323231	
3-7-22 0:00	-0.35	-0.04	5.24	
3-7-22 1:00	-0.30	-0.01	5.18	
3-7-22 2:00	-0.31	-0.01	5.13	
3-7-22 3:00	-0.35	0.03	5.07	
3-7-22 4:00	-0.31	0.11	5.01	
3-7-22 5:00	-0.35	0.15	5.00	
3-7-22 6:00	-0.37	0.16	4.94	
3-7-22 7:00	-0.33	0.15	4.90	
3-7-22 8:00	-0.33	0.11	4.86	
3-7-22 9:00	-0.34	0.01	4.89	
3-7-22 10:00	-0.33	-0.01	4.93	
3-7-22 11:00	-0.32	0.01	4.93	
3-7-22 12:00	-0.33	-0.01	4.98	
3-7-22 13:00	-0.24	0.20	4.99	
3-7-22 14:00	0.86	1.16	4.26	
3-7-22 15:00	1.55	1.74	2.99	
3-7-22 16:00	1.54	1.74	3.69	
3-7-22 17:00	1.13	1.39	4.44	
3-7-22 18:00	0.57	0.85	4.31	
3-7-22 19:00	0.14	0.49	4.28	
3-7-22 20:00	-0.01	0.24	4.21	
3-7-22 21:00	-0.20	0.10	4.19	
3-7-22 22:00	-0.31	0.01	4.15	
3-7-22 23:00	-0.32	-0.06	4.03	
3-8-22 0:00	-0.37	-0.09	3.88	
3-8-22 1:00	-0.30	-0.08	3.89	
3-8-22 2:00	-0.33	-0.10	3.82	
3-8-22 3:00	-0.38	-0.07	3.80	
3-8-22 4:00	-0.31	-0.05	3.69	
3-8-22 5:00	-0.34	-0.06	3.55	
3-8-22 6:00	-0.35	-0.09	3.41	
3-8-22 7:00	-0.32	-0.12	3.33	
3-8-22 8:00	-0.37	-0.09	3.23	
3-8-22 9:00	-0.33	-0.07	3.19	
3-8-22 10:00	-0.32	-0.08	3.14	
3-8-22 11:00	-0.34	-0.07	3.21	
3-8-22 12:00	-0.32	0.04	3.33	
3-8-22 13:00	-0.33	0.07	3.53	
3-8-22 14:00	-0.29	0.13	3.66	
3-8-22 15:00	0.47	0.67	3.76	
3-8-22 16:00	1.30	1.48	3.84	
3-8-22 17:00	1.18	1.37	3.90	
3-8-22 18:00	0.67	0.92	3.99	
3-8-22 19:00	0.20	0.45	4.02	
3-8-22 20:00	-0.24	0.00	3.94	
3-8-22 21:00	-0.32	-0.10	3.97	
3-8-22 22:00	-0.35	-0.09	4.15	
3-8-22 23:00	-0.35	-0.07	4.11	
3-9-22 0:00	-0.33	-0.04	4.10	
3-9-22 1:00	-0.35	-0.05	4.01	
3-9-22 2:00	-0.39	-0.03	3.95	
3-9-22 3:00	-0.34	0.01	3.87	
3-9-22 4:00	-0.37	0.01	3.80	
3-9-22 5:00	-0.35	-0.01	3.68	
3-9-22 6:00	-0.36	0.02	3.57	
3-9-22 7:00	-0.38	0.05	3.48	
3-9-22 8:00	-0.37	0.13	3.36	
3-9-22 9:00	-0.34	0.33	3.37	
3-9-22 10:00	-0.32	0.34	3.39	
3-9-22 11:00	-0.34	0.21	3.38	
3-9-22 12:00	-0.34	0.03	3.45	
3-9-22 13:00	-0.33	0.00	2.85	
3-9-22 14:00	-0.33	-0.09	3.12	
3-9-22 15:00	-0.31	-0.06	4.03	
3-9-22 16:00	-0.35	-0.07	4.27	
3-9-22 17:00	-0.36	-0.08	4.32	
3-9-22 18:00	-0.38	-0.08	4.33	
3-9-22 19:00	-0.35	-0.13	4.18	
3-9-22 20:00	-0.35	-0.08	4.13	
3-9-22 21:00	-0.36	-0.07	4.11	
3-9-22 22:00	-0.37	-0.03	4.07	
3-9-22 23:00	-0.32	-0.05	4.02	
3-10-22 0:00	-0.35	-0.04	3.97	
3-10-22 1:00	-0.36	-0.03	3.89	
3-10-22 2:00	-0.33	0.03	3.84	
3-10-22 3:00	-0.33	0.04	3.79	
3-10-22 4:00	-0.34	0.05	3.72	
3-10-22 5:00	-0.28	0.02	3.64	

Date and Time	Hourly Average Temperature (°C)			Comments
	FR_FR3	FR_SCOUTDS	FS_EFF-SC	
	E320693	E320695	E323231	
3-10-22 6:00	-0.36	0.01	3.56	
3-10-22 7:00	-0.35	0.00	3.45	
3-10-22 8:00	-0.37	0.02	3.41	
3-10-22 9:00	-0.34	0.14	3.44	
3-10-22 10:00	-0.33	0.11	3.45	
3-10-22 11:00	-0.34	0.10	3.48	
3-10-22 12:00	-0.35	0.10	3.56	
3-10-22 13:00	-0.38	0.02	3.54	
3-10-22 14:00	-0.32	-0.04	3.76	
3-10-22 15:00	-0.30	-0.10	3.83	
3-10-22 16:00	-0.34	-0.10	4.07	
3-10-22 17:00	-0.34	-0.07	4.42	
3-10-22 18:00	-0.33	-0.04	4.52	
3-10-22 19:00	-0.34	-0.03	4.46	
3-10-22 20:00	-0.34	-0.06	4.35	
3-10-22 21:00	-0.35	-0.04	4.23	
3-10-22 22:00	-0.37	-0.04	4.20	
3-10-22 23:00	-0.37	-0.04	4.13	
3-11-22 0:00	-0.33	-0.04	4.10	
3-11-22 1:00	-0.30	-0.06	4.06	
3-11-22 2:00	-0.37	-0.06	3.99	
3-11-22 3:00	-0.32	-0.02	3.95	
3-11-22 4:00	-0.34	-0.04	3.88	
3-11-22 5:00	-0.40	-0.01	3.84	
3-11-22 6:00	-0.34	-0.03	3.80	
3-11-22 7:00	-0.32	-0.02	3.73	
3-11-22 8:00	-0.36	-0.02	3.71	
3-11-22 9:00	-0.34	0.08	3.73	
3-11-22 10:00	-0.35	0.11	3.73	
3-11-22 11:00	-0.33	0.10	3.76	
3-11-22 12:00	-0.34	0.04	3.84	
3-11-22 13:00	-0.31	0.07	3.97	
3-11-22 14:00	-0.35	0.06	4.03	
3-11-22 15:00	-0.34	0.06	4.28	
3-11-22 16:00	-0.32	0.04	4.48	
3-11-22 17:00	-0.33	0.01	4.65	
3-11-22 18:00	-0.33	0.05	4.70	
3-11-22 19:00	-0.36	0.06	4.71	
3-11-22 20:00	-0.31	0.07	4.68	
3-11-22 21:00	-0.36	0.02	4.71	
3-11-22 22:00	-0.31	0.03	4.69	
3-11-22 23:00	-0.33	0.03	4.72	
3-12-22 0:00	-0.36	0.00	4.68	
3-12-22 1:00	-0.30	0.03	4.65	
3-12-22 2:00	-0.45	0.06	4.61	
3-12-22 3:00	-0.49	0.03	4.61	
3-12-22 4:00	-0.35	0.02	4.60	
3-12-22 5:00	-0.43	0.02	4.60	
3-12-22 6:00	-0.31	0.05	4.61	
3-12-22 7:00	-0.32	0.04	4.65	
3-12-22 8:00	-0.36	0.07	4.61	
3-12-22 9:00	-0.34	0.10	4.58	
3-12-22 10:00	-0.31	0.13	4.55	
3-12-22 11:00	-0.32	0.15	4.43	
3-12-22 12:00	-0.38	0.08	4.45	
3-12-22 13:00	-0.33	0.06	4.57	
3-12-22 14:00	-0.33	0.10	4.68	
3-12-22 15:00	-0.30	0.10	4.76	
3-12-22 16:00	-0.33	0.11	4.84	
3-12-22 17:00	-0.36	0.07	4.89	
3-12-22 18:00	-0.32	0.07	4.83	
3-12-22 19:00	-0.32	0.07	4.83	
3-12-22 20:00	-0.24	0.13	4.89	
3-12-22 21:00	-0.28	0.13	4.79	
3-12-22 22:00	-0.23	0.15	4.85	
3-12-22 23:00	-0.23	0.17	4.88	
3-13-22 0:00	-0.30	0.15	4.81	
3-13-22 1:00	-0.06	0.16	4.77	
3-13-22 3:00	-0.07	0.20	4.74	
3-13-22 4:00	-0.33	0.20	4.74	
3-13-22 5:00	-0.11	0.24	4.70	
3-13-22 6:00	-0.11	0.22	4.66	
3-13-22 7:00	-0.15	0.18	4.69	
3-13-22 8:00	-0.19	0.17	4.64	
3-13-22 9:00	-0.16	0.23	4.55	
3-13-22 10:00	-0.04	0.36	4.55	
3-13-22 11:00	0.35	0.73	4.63	
3-13-22 12:00	0.92	1.33	4.80	

Date and Time	Hourly Average Temperature (°C)			Comments
	FR_FR3	FR_SCOUTDS	FS_EFF-SC	
	E320693	E320695	E323231	
3-13-22 13:00	1.79	2.16	5.02	
3-13-22 14:00	2.54	2.85	5.02	
3-13-22 15:00	3.10	3.32	5.11	
3-13-22 16:00	3.13	3.37	5.26	
3-13-22 17:00	2.87	3.08	5.25	
3-13-22 18:00	2.57	2.80	5.14	
3-13-22 19:00	2.26	2.44	5.04	
3-13-22 20:00	1.95	2.19	5.03	
3-13-22 21:00	1.67	1.91	5.02	
3-13-22 22:00	1.41	1.68	4.98	
3-13-22 23:00	1.18	1.46	4.96	
3-14-22 0:00	1.00	1.32	5.07	
3-14-22 1:00	0.85	1.16	4.98	
3-14-22 2:00	0.67	0.99	4.99	
3-14-22 3:00	0.58	0.89	4.91	
3-14-22 4:00	0.54	0.85	4.89	
3-14-22 5:00	0.50	0.83	4.83	
3-14-22 6:00	0.52	0.75	3.86	
3-14-22 7:00	0.44	0.70	3.69	
3-14-22 8:00	0.43	0.74	5.05	
3-14-22 9:00	0.51	0.85	4.98	
3-14-22 10:00	0.69	0.95	3.13	
3-14-22 11:00	1.11	1.29	2.44	
3-14-22 12:00	1.60	1.83	4.30	
3-14-22 13:00	2.17	2.34	3.48	
3-14-22 14:00	2.50	2.68	3.42	
3-14-22 15:00	2.63	2.78	3.65	
3-14-22 16:00	2.50	2.64	3.10	
3-14-22 17:00	2.33	2.36	2.26	
3-14-22 18:00	2.01	2.19	4.43	
3-14-22 19:00	1.79	2.08	5.58	
3-14-22 20:00	1.58	1.89	5.49	
3-14-22 21:00	1.40	1.73	5.64	
3-14-22 22:00	1.21	1.56	5.70	
3-14-22 23:00	1.11	1.46	5.68	
3-15-22 0:00	0.98	1.34	5.61	
3-15-22 1:00	0.82	1.20	5.62	
3-15-22 2:00	0.64	1.03	5.76	
3-15-22 3:00	0.56	0.93	5.77	
3-15-22 4:00	0.52	0.88	5.88	
3-15-22 5:00	0.51	0.88	5.71	
3-15-22 6:00	0.51	0.89	5.22	
3-15-22 7:00	0.55	0.87	5.22	
3-15-22 8:00	0.49	0.84	5.14	
3-15-22 9:00	0.66	0.97	5.10	
3-15-22 10:00	0.83	1.17	5.46	
3-15-22 11:00	1.01	1.33	5.61	
3-15-22 12:00	1.39	1.61	2.52	
3-15-22 13:00	2.12	2.30	3.23	
3-15-22 14:00	2.76	3.00	4.82	
3-15-22 15:00	2.98	3.18	4.31	
3-15-22 16:00	2.91	2.94	2.71	
3-15-22 17:00	2.58	2.79	4.90	
3-15-22 18:00	2.25	2.50	5.12	
3-15-22 19:00	1.98	2.25	5.12	
3-15-22 20:00	1.60	1.88	5.07	
3-15-22 21:00	1.27	1.55	5.03	
3-15-22 22:00	1.03	1.28	4.95	
3-15-22 23:00	0.85	1.17	5.04	
3-16-22 0:00	0.80	1.13	5.16	
3-16-22 1:00	0.71	1.02	5.44	
3-16-22 2:00	0.55	0.91	5.49	
3-16-22 3:00	0.39	0.75	5.49	
3-16-22 4:00	0.37	0.67	5.53	
3-16-22 5:00	0.28	0.61	5.59	
3-16-22 6:00	0.24	0.52	5.55	
3-16-22 7:00	0.12	0.44	5.54	
3-16-22 8:00	0.00	0.34	5.53	
3-16-22 9:00	0.06	0.42	5.52	
3-16-22 10:00	0.29	0.69	5.48	
3-16-22 11:00	0.64	1.02	5.50	
3-16-22 12:00	1.10	1.43	5.51	
3-16-22 13:00	1.64	1.94	5.52	
3-16-22 14:00	2.86	3.16	5.98	
3-16-22 15:00	3.59	3.88	6.17	
3-16-22 16:00	3.70	3.86	5.17	
3-16-22 17:00	3.30	3.49	4.89	
3-16-22 18:00	2.85	3.12	5.95	

Date and Time	Hourly Average Temperature (°C)			Comments
	FR_FR3	FR_SCOUTDS	FS_EFF-SC	
	E320693	E320695	E323231	
3-16-22 19:00	2.40	2.66	5.73	
3-16-22 20:00	1.95	2.21	5.70	
3-16-22 21:00	1.53	1.81	5.55	
3-16-22 22:00	1.37	1.56	5.59	
3-16-22 23:00	0.94	1.26	5.62	
3-17-22 0:00	0.62	0.93	5.52	
3-17-22 1:00	0.30	0.62	5.71	
3-17-22 2:00	0.02	0.42	5.69	
3-17-22 3:00	-0.24	0.14	5.84	
3-17-22 4:00	-0.35	0.00	5.84	
3-17-22 5:00	-0.35	0.05	5.68	
3-17-22 6:00	-0.34	0.04	5.67	
3-17-22 7:00	-0.32	0.08	5.50	
3-17-22 8:00	-0.33	0.13	5.45	
3-17-22 9:00	-0.32	0.09	5.41	
3-17-22 10:00	-0.31	-0.02	3.91	
3-17-22 11:00	-0.32	-0.07	2.08	
3-17-22 12:00	-0.03	0.34	4.09	
3-17-22 13:00	1.31	1.52	3.94	
3-17-22 14:00	2.21	2.41	3.99	
3-17-22 15:00	3.06	3.20	4.12	
3-17-22 16:00	3.10	3.26	3.80	
3-17-22 17:00	2.70	2.72	2.16	
3-17-22 18:00	2.35	2.41	2.56	
3-17-22 19:00	2.18	2.41	5.01	
3-17-22 20:00	2.04	2.32	6.66	
3-17-22 21:00	1.69	1.90	4.44	
3-17-22 22:00	1.36	1.64	6.07	
3-17-22 23:00	1.15	1.45	6.27	
3-18-22 0:00	1.03	1.37	6.43	
3-18-22 1:00	0.92	1.22	6.14	
3-18-22 2:00	0.80	1.14	5.97	
3-18-22 3:00	0.72	1.06	5.93	
3-18-22 4:00	0.64	1.00	5.87	
3-18-22 5:00	0.60	0.91	6.18	
3-18-22 6:00	0.52	0.85	6.10	
3-18-22 7:00	0.46	0.82	5.69	
3-18-22 8:00	0.51	0.80	5.62	
3-18-22 9:00	0.55	0.76	2.93	
3-18-22 10:00	0.78	0.99	2.81	
3-18-22 11:00	1.18	1.41	3.59	
3-18-22 12:00	1.62	1.78	3.00	
3-18-22 13:00	2.08	2.33	4.62	
3-18-22 14:00	2.51	2.65	4.01	
3-18-22 15:00	2.81	2.92	2.32	
3-18-22 16:00	3.14	3.23	3.91	
3-18-22 17:00	2.97	3.22	5.54	
3-18-22 18:00	2.72	2.97	5.73	
3-18-22 19:00	2.38	2.64	5.71	
3-18-22 20:00	2.02	2.28	5.93	
3-18-22 21:00	1.75	1.95	5.57	
3-18-22 22:00	1.49	1.71	5.60	
3-18-22 23:00	1.21	1.53	5.23	
3-19-22 0:00	1.05	1.33	5.62	
3-19-22 1:00	0.92	1.20	5.79	
3-19-22 2:00	0.77	1.06	5.47	
3-19-22 3:00	0.80	1.00	5.51	
3-19-22 4:00	0.57	0.91	5.50	
3-19-22 5:00	0.52	0.74	5.44	
3-19-22 6:00	0.41	0.64	5.29	
3-19-22 7:00	0.27	0.59	5.19	
3-19-22 8:00	0.21	0.49	5.12	
3-19-22 9:00	0.19	0.55	5.13	
3-19-22 10:00	0.62	0.92	5.13	
3-19-22 11:00	1.43	1.75	5.27	
3-19-22 12:00	2.59	2.83	5.57	
3-19-22 13:00	3.38	3.60	5.84	
3-19-22 14:00	3.80	4.04	6.05	
3-19-22 15:00	3.89	4.14	6.35	
3-19-22 16:00	3.86	4.12	5.57	
3-19-22 17:00	3.34	3.55	5.59	
3-19-22 18:00	3.01	3.22	5.70	
3-19-22 19:00	2.66	2.93	5.65	
3-19-22 20:00	2.34	2.53	5.44	
3-19-22 21:00	2.04	2.28	5.43	
3-19-22 22:00	1.80	2.08	5.41	
3-19-22 23:00	1.24	1.57	5.24	
3-20-22 0:00	0.89	1.08	5.06	

Date and Time	Hourly Average Temperature (°C)			Comments
	FR_FR3	FR_SCOUTDS	FS_EFF-SC	
	E320693	E320695	E323231	
3-20-22 1:00	0.56	0.82	4.97	
3-20-22 2:00	0.58	0.82	4.88	
3-20-22 3:00	0.57	0.77	4.82	
3-20-22 4:00	0.32	0.64	4.63	
3-20-22 5:00	0.45	0.51	4.46	
3-20-22 6:00	0.05	0.38	4.47	
3-20-22 7:00	-0.05	0.22	4.15	
3-20-22 8:00	-0.14	0.16	3.84	
3-20-22 9:00	-0.03	0.23	3.73	
3-20-22 10:00	0.23	0.51	4.02	
3-20-22 11:00	0.77	1.06	4.75	
3-20-22 12:00	1.57	1.83	5.13	
3-20-22 13:00	2.48	2.64	5.40	
3-20-22 14:00	2.99	3.14	5.46	
3-20-22 15:00	3.41	3.58	5.58	
3-20-22 16:00	3.61	3.75	5.60	
3-20-22 17:00	3.62	3.81	5.61	
3-20-22 18:00	3.08	3.29	5.59	
3-20-22 19:00	2.50	2.70	5.52	
3-20-22 20:00	1.94	2.16	5.47	
3-20-22 21:00	1.47	1.70	5.44	
3-20-22 22:00	0.97	1.25	5.36	
3-20-22 23:00	0.53	0.85	5.36	
3-21-22 0:00	0.25	0.52	5.41	
3-21-22 1:00	-0.02	0.23	5.36	
3-21-22 2:00	-0.31	-0.01	5.28	
3-21-22 3:00	-0.34	-0.05	5.15	
3-21-22 4:00	-0.35	-0.02	5.10	
3-21-22 5:00	-0.31	-0.02	5.08	
3-21-22 6:00	-0.34	0.02	5.00	
3-21-22 7:00	-0.29	0.03	4.92	
3-21-22 8:00	-0.32	0.04	4.91	
3-21-22 9:00	-0.31	0.01	4.65	
3-21-22 10:00	-0.32	-0.08	2.35	
3-21-22 11:00	-0.30	0.08	5.05	
3-21-22 12:00	1.01	1.32	5.15	
3-21-22 13:00	1.93	2.20	5.29	
3-21-22 14:00	2.73	2.92	5.33	
3-21-22 15:00	3.30	3.49	5.32	
3-21-22 16:00	3.69	3.84	5.38	
3-21-22 17:00	3.67	3.83	5.46	
3-21-22 18:00	3.48	3.61	5.47	
3-21-22 19:00	3.10	3.30	5.46	
3-21-22 20:00	2.70	2.86	5.41	
3-21-22 21:00	2.19	2.45	5.74	
3-21-22 22:00	1.77	2.04	5.86	
3-21-22 23:00	1.30	1.67	5.85	
3-22-22 0:00	1.16	1.32	5.81	
3-22-22 1:00	0.60	0.94	5.82	
3-22-22 2:00	0.45	0.70	5.82	
3-22-22 3:00	0.20	0.44	5.86	
3-22-22 4:00	-0.04	0.28	5.80	
3-22-22 5:00	-0.20	0.14	5.75	
3-22-22 6:00	-0.34	0.01	5.66	
3-22-22 7:00	-0.37	-0.06	5.59	
3-22-22 8:00	-0.33	-0.01	5.48	
3-22-22 9:00	-0.33	-0.03	3.80	
3-22-22 10:00	-0.32	-0.06	2.48	
3-22-22 11:00	0.25	0.65	5.53	
3-22-22 12:00	1.96	2.30	6.33	
3-22-22 13:00	3.22	3.47	6.63	
3-22-22 14:00	3.87	4.16	6.84	
3-22-22 15:00	4.10	4.26	4.91	
3-22-22 16:00	4.30	4.34	2.18	
3-22-22 17:00	3.93	3.99	3.14	
3-22-22 18:00	3.59	3.79	6.54	
3-22-22 19:00	3.28	3.41	4.23	
3-22-22 20:00	2.91	3.11	5.40	
3-22-22 21:00	2.52	2.63	3.06	
3-22-22 22:00	2.15	2.38	5.08	
3-22-22 23:00	1.79	2.08	5.85	
3-23-22 0:00	1.58	1.78	5.93	
3-23-22 1:00	1.26	1.55	5.96	
3-23-22 2:00	1.20	1.36	5.82	
3-23-22 3:00	0.99	1.26	5.61	
3-23-22 4:00	0.90	1.18	5.54	
3-23-22 5:00	0.89	1.11	5.49	
3-23-22 6:00	0.89	1.15	5.48	

Date and Time	Hourly Average Temperature (°C)			Comments
	FR_FR3	FR_SCOUTDS	FS_EFF-SC	
	E320693	E320695	E323231	
3-23-22 7:00	0.83	1.10	5.43	
3-23-22 8:00	0.84	1.09	5.38	
3-23-22 9:00	0.98	1.23	5.36	
3-23-22 10:00	1.22	1.50	5.37	
3-23-22 11:00	1.74	2.04	5.31	
3-23-22 12:00	3.04	3.28	5.07	
3-23-22 13:00	4.19	4.50	6.45	
3-23-22 14:00	4.87	5.17	6.11	
3-23-22 15:00	5.27	5.51	5.75	
3-23-22 16:00	5.11	5.35	5.95	
3-23-22 17:00	4.75	5.00	5.83	
3-23-22 18:00	4.44	4.70	5.64	
3-23-22 19:00	3.99	4.23	5.68	
3-23-22 20:00	3.43	3.65	5.73	
3-23-22 21:00	2.98	3.16	5.80	
3-23-22 22:00	2.61	2.87	5.87	
3-23-22 23:00	2.43	2.68	5.96	
3-24-22 0:00	2.22	2.49	5.94	
3-24-22 1:00	2.02	2.27	5.85	
3-24-22 2:00	1.78	2.08	5.80	
3-24-22 3:00	1.67	1.98	5.78	
3-24-22 4:00	1.61	1.91	5.84	
3-24-22 5:00	1.46	1.75	5.70	
3-24-22 6:00	1.45	1.66	5.65	
3-24-22 7:00	1.29	1.50	5.62	
3-24-22 8:00	1.09	1.36	5.57	
3-24-22 9:00	0.99	1.33	5.72	
3-24-22 10:00	1.31	1.49	3.19	
3-24-22 11:00	1.96	2.11	2.56	
3-24-22 12:00	2.94	3.09	3.74	
3-24-22 13:00	4.04	4.30	5.96	
3-24-22 14:00	4.80	5.04	6.14	
3-24-22 15:00	5.30	5.50	6.18	
3-24-22 16:00	5.42	5.60	6.12	
3-24-22 17:00	5.07	5.30	6.25	
3-24-22 18:00	4.52	4.73	5.99	
3-24-22 19:00	3.73	3.97	5.97	
3-24-22 20:00	2.91	3.18	6.05	
3-24-22 21:00	2.24	2.55	6.07	
3-24-22 22:00	1.79	2.03	6.03	
3-24-22 23:00	1.29	1.55	5.98	
3-25-22 0:00	0.83	1.10	5.87	
3-25-22 1:00	0.47	0.78	5.69	
3-25-22 2:00	0.16	0.48	5.63	
3-25-22 3:00	-0.10	0.25	5.53	
3-25-22 4:00	-0.28	0.06	5.40	
3-25-22 5:00	-0.34	-0.03	5.43	
3-25-22 6:00	-0.33	0.03	5.32	
3-25-22 7:00	-0.34	0.03	5.36	
3-25-22 8:00	-0.33	0.05	5.27	
3-25-22 9:00	-0.36	0.01	5.18	
3-25-22 10:00	0.02	0.41	4.73	
3-25-22 11:00	1.18	1.52	5.15	
3-25-22 12:00	2.41	2.67	5.20	
3-25-22 13:00	3.51	3.78	5.75	
3-25-22 14:00	4.44	4.68	6.00	
3-25-22 15:00	4.97	5.19	5.98	
3-25-22 16:00	5.13	5.38	5.84	
3-25-22 17:00	4.97	5.18	5.86	
3-25-22 18:00	4.65	4.86	5.78	
3-25-22 19:00	4.05	4.28	5.93	
3-25-22 20:00	3.41	3.65	6.08	
3-25-22 21:00	2.89	3.15	6.10	
3-25-22 22:00	2.41	2.67	6.19	
3-25-22 23:00	1.98	2.29	6.21	
3-26-22 0:00	1.71	1.94	6.15	
3-26-22 1:00	1.24	1.56	6.10	
3-26-22 2:00	0.94	1.30	6.06	
3-26-22 3:00	0.74	1.07	6.00	
3-26-22 4:00	0.58	0.89	5.85	
3-26-22 5:00	0.37	0.69	5.49	
3-26-22 6:00	0.27	0.60	5.28	
3-26-22 7:00	0.23	0.53	5.00	
3-26-22 8:00	0.28	0.58	4.90	
3-26-22 9:00	0.49	0.75	4.91	
3-26-22 10:00	0.93	1.21	5.03	
3-26-22 11:00	1.78	2.07	5.12	
3-26-22 12:00	3.07	3.31	5.14	

Date and Time	Hourly Average Temperature (°C)			Comments
	FR_FR3	FR_SCOUTDS	FS_EFF-SC	
	E320693	E320695	E323231	
3-26-22 13:00	3.89	4.09	4.87	
3-26-22 14:00	4.50	4.71	5.66	
3-26-22 15:00	4.83	5.01	5.84	
3-26-22 16:00	4.76	5.03	5.93	
3-26-22 17:00	4.43	4.66	6.02	
3-26-22 18:00	4.08	4.31	6.01	
3-26-22 19:00	3.72	3.93	6.04	
3-26-22 20:00	3.33	3.58	6.12	
3-26-22 21:00	2.97	3.25	6.08	
3-26-22 22:00	2.54	2.82	6.10	
3-26-22 23:00	2.12	2.39	6.04	
3-27-22 0:00	1.75	2.02	6.19	
3-27-22 1:00	1.52	1.77	6.10	
3-27-22 2:00	1.19	1.47	6.00	
3-27-22 3:00	0.85	1.26	6.01	
3-27-22 4:00	0.74	1.08	5.88	
3-27-22 5:00	0.62	0.94	5.79	
3-27-22 6:00	0.50	0.83	5.77	
3-27-22 7:00	0.44	0.72	5.64	
3-27-22 8:00	0.37	0.65	5.57	
3-27-22 9:00	0.50	0.86	5.50	
3-27-22 10:00	1.17	1.49	5.56	
3-27-22 11:00	2.16	2.46	5.48	
3-27-22 12:00	3.34	3.62	5.59	
3-27-22 13:00	4.38	4.68	5.70	
3-27-22 14:00	5.12	5.41	5.73	
3-27-22 15:00	5.62	5.94	6.12	
3-27-22 16:00	5.85	6.08	6.44	
3-27-22 17:00	5.73	5.94	6.18	
3-27-22 18:00	5.29	5.49	6.07	
3-27-22 19:00	4.62	4.83	6.27	
3-27-22 20:00	3.86	4.06	6.42	
3-27-22 21:00	3.11	3.38	6.26	
3-27-22 22:00	2.57	2.86	6.24	
3-27-22 23:00	2.18	2.42	5.80	
3-28-22 0:00	1.85	2.17	5.95	
3-28-22 1:00	1.66	1.91	6.30	
3-28-22 2:00	1.45	1.72	6.32	
3-28-22 3:00	1.26	1.59	6.29	
3-28-22 4:00	1.21	1.45	6.28	
3-28-22 5:00	1.15	1.34	6.21	
3-28-22 6:00	0.93	1.26	6.12	
3-28-22 7:00	0.91	1.17	6.01	
3-28-22 8:00	0.89	1.19	5.92	
3-28-22 9:00	1.10	1.41	6.19	
3-28-22 10:00	1.51	1.82	6.13	
3-28-22 11:00	2.44	2.70	6.09	
3-28-22 12:00	3.53	3.78	5.97	
3-28-22 13:00	4.44	4.69	6.03	
3-28-22 14:00	4.81	5.03	6.13	
3-28-22 15:00	4.49	4.72	6.33	
3-28-22 16:00	4.29	4.53	6.49	
3-28-22 17:00	4.34	4.56	6.30	
3-28-22 18:00	3.84	4.06	6.07	
3-28-22 19:00	3.39	3.61	6.11	
3-28-22 20:00	2.92	3.12	6.22	
3-28-22 21:00	2.58	2.85	6.18	
3-28-22 22:00	2.30	2.53	6.26	
3-28-22 23:00	2.00	2.20	5.89	
3-29-22 0:00	1.42	1.68	5.87	
3-29-22 1:00	0.76	1.03	5.48	
3-29-22 2:00	0.68	0.96	5.05	
3-29-22 3:00	0.69	0.98	4.83	
3-29-22 4:00	0.83	1.02	4.67	
3-29-22 5:00	0.93	1.21	5.79	
3-29-22 6:00	0.98	1.23	6.05	
3-29-22 7:00	1.03	1.09	6.00	
3-29-22 8:00	0.74	0.99	5.84	
3-29-22 9:00	0.76	1.00	5.75	
3-29-22 10:00	1.34	1.61	5.80	
3-29-22 11:00	2.26	2.56	5.84	
3-29-22 12:00	3.48	3.82	5.87	
3-29-22 13:00	4.54	4.86	5.93	
3-29-22 14:00	4.97	5.19	6.01	
3-29-22 15:00	5.70	5.90	6.17	
3-29-22 16:00	5.97	6.13	6.12	
3-29-22 17:00	5.79	5.90	6.25	
3-29-22 18:00	5.13	5.23	6.44	

Date and Time	Hourly Average Temperature (°C)			Comments
	FR_FR3	FR_SCOUTDS	FS_EFF-SC	
	E320693	E320695	E323231	
3-29-22 19:00	4.29	4.42	6.52	
3-29-22 20:00	3.43	3.58	6.56	
3-29-22 21:00	2.69	2.88	6.61	
3-29-22 22:00	2.15	2.38	6.66	
3-29-22 23:00	1.82	2.03	6.49	
3-30-22 0:00	1.59	1.78	6.59	
3-30-22 1:00	1.38	1.62	6.56	
3-30-22 2:00	1.23	1.54	6.54	
3-30-22 3:00	1.15	1.41	6.51	
3-30-22 4:00	1.17	1.26	6.53	
3-30-22 5:00	0.91	1.15	6.50	
3-30-22 6:00	0.82	1.04	6.43	
3-30-22 7:00	0.70	0.93	6.31	
3-30-22 8:00	0.66	0.88	5.61	
3-30-22 9:00	0.84	0.99	3.14	
3-30-22 10:00	1.21	1.42	3.11	
3-30-22 11:00	1.94	2.19	3.19	
3-30-22 12:00	3.03	3.31	5.20	
3-30-22 13:00	4.14	4.49	6.62	
3-30-22 14:00	5.06	5.35	6.58	
3-30-22 15:00	5.38	5.62	6.53	
3-30-22 16:00	5.22	5.41	6.48	
3-30-22 17:00	4.78	4.93	6.44	
3-30-22 18:00	4.08	4.20	6.48	
3-30-22 19:00	3.29	3.45	6.51	
3-30-22 20:00	2.53	2.68	6.59	
3-30-22 21:00	2.08	2.28	5.66	
3-30-22 22:00	1.73	1.95	5.40	
3-30-22 23:00	1.50	1.70	5.38	
3-31-22 0:00	1.40	1.64	5.42	
3-31-22 1:00	1.32	1.51	5.38	
3-31-22 2:00	1.23	1.47	5.35	
3-31-22 3:00	1.12	1.36	5.31	
3-31-22 4:00	1.05	1.31	5.31	
3-31-22 5:00	1.01	1.23	5.30	
3-31-22 6:00	0.97	1.15	5.26	
3-31-22 7:00	0.92	1.05	5.28	
3-31-22 8:00	0.78	1.03	5.25	
3-31-22 9:00	0.92	1.21	5.22	
3-31-22 10:00	1.27	1.48	5.24	
3-31-22 11:00	1.60	1.83	5.25	
3-31-22 12:00	2.20	2.53	5.39	
3-31-22 13:00	2.90	3.22	5.37	
3-31-22 14:00	3.62	3.86	5.53	
3-31-22 15:00	3.92	4.16	5.34	
3-31-22 16:00	4.06	4.22	5.38	
3-31-22 17:00	3.96	4.10	5.31	
3-31-22 18:00	3.54	3.69	5.30	
3-31-22 19:00	3.20	3.32	5.33	
3-31-22 20:00	2.65	2.77	5.26	
3-31-22 21:00	2.02	2.18	5.24	
3-31-22 22:00	1.67	1.81	5.30	
3-31-22 23:00	1.38	1.56	5.27	
4-1-22 0:00	1.21	1.42	5.22	
4-1-22 1:00	1.10	1.29	5.20	
4-1-22 2:00	0.97	1.21	5.15	
4-1-22 3:00	0.97	1.19	5.12	
4-1-22 4:00	0.83	0.98	5.07	
4-1-22 5:00	0.55	0.79	5.03	
4-1-22 6:00	0.42	0.63	4.97	
4-1-22 7:00	0.27	0.53	4.93	
4-1-22 8:00	0.29	0.50	4.83	
4-1-22 9:00	0.50	0.74	4.86	
4-1-22 10:00	1.05	1.34	4.87	
4-1-22 11:00	1.86	2.20	4.97	
4-1-22 12:00	3.05	3.37	5.15	
4-1-22 13:00	4.29	4.56	5.22	
4-1-22 14:00	4.82	5.06	5.30	
4-1-22 15:00	5.30	5.49	5.43	
4-1-22 16:00	5.58	5.73	5.35	
4-1-22 17:00	5.20	5.30	5.31	
4-1-22 18:00	4.68	4.79	5.30	
4-1-22 19:00	4.10	4.20	5.35	
4-1-22 20:00	3.34	3.43	5.24	
4-1-22 21:00	2.69	2.83	5.18	
4-1-22 22:00	2.22	2.42	5.09	
4-1-22 23:00	1.97	2.17	5.11	
4-2-22 0:00	1.73	1.93	5.10	

Date and Time	Hourly Average Temperature (°C)			Comments
	FR_FR3	FR_SCOUTDS	FS_EFF-SC	
	E320693	E320695	E323231	
4-2-22 1:00	1.50	1.69	5.16	
4-2-22 2:00	1.33	1.53	5.13	
4-2-22 3:00	1.22	1.43	5.14	
4-2-22 4:00	1.19	1.39	5.14	
4-2-22 5:00	1.12	1.35	5.10	
4-2-22 6:00	1.03	1.28	5.06	
4-2-22 7:00	1.02	1.23	5.04	
4-2-22 8:00	1.04	1.31	5.04	
4-2-22 9:00	1.29	1.60	5.09	
4-2-22 10:00	1.98	2.22	5.15	
4-2-22 11:00	2.42	2.68	5.27	
4-2-22 12:00	2.90	3.16	5.44	
4-2-22 13:00	4.10	4.42	5.60	
4-2-22 14:00	5.14	5.32	5.67	
4-2-22 15:00	4.89	5.08	5.73	
4-2-22 16:00	4.37	4.47	5.50	
4-2-22 17:00	3.52	3.66	5.37	
4-2-22 18:00	3.08	3.25	5.35	
4-2-22 19:00	2.72	2.85	5.35	
4-2-22 20:00	2.21	2.36	5.32	
4-2-22 21:00	1.83	2.02	5.28	
4-2-22 22:00	1.52	1.69	5.27	
4-2-22 23:00	1.22	1.43	5.28	
4-3-22 0:00	1.00	1.21	5.27	
4-3-22 1:00	0.75	1.01	5.22	
4-3-22 2:00	0.59	0.80	5.16	
4-3-22 3:00	0.42	0.64	5.08	
4-3-22 4:00	0.27	0.50	5.07	
4-3-22 5:00	0.16	0.40	4.96	
4-3-22 6:00	0.09	0.29	5.05	
4-3-22 7:00	0.05	0.27	5.13	
4-3-22 8:00	0.05	0.25	5.07	
4-3-22 9:00	0.33	0.58	5.12	
4-3-22 10:00	1.10	1.49	5.14	
4-3-22 11:00	2.33	2.66	5.31	
4-3-22 12:00	3.51	3.84	4.77	
4-3-22 13:00	4.22	4.39	4.55	
4-3-22 14:00	4.33	4.50	4.28	
4-3-22 15:00	4.44	4.68	5.92	
4-3-22 16:00	4.45	4.63	5.65	
4-3-22 17:00	3.73	3.88	5.56	
4-3-22 18:00	3.07	3.26	5.53	
4-3-22 19:00	2.63	2.82	5.55	
4-3-22 20:00	2.23	2.39	5.60	
4-3-22 21:00	1.83	2.08	5.61	
4-3-22 22:00	1.55	1.76	5.53	
4-3-22 23:00	1.28	1.53	5.50	
4-4-22 0:00	1.18	1.44	5.57	
4-4-22 1:00	1.21	1.45	5.54	
4-4-22 2:00	1.20	1.44	5.53	
4-4-22 3:00	1.16	1.40	5.46	
4-4-22 4:00	1.19	1.41	5.45	
4-4-22 5:00	1.19	1.47	5.39	
4-4-22 6:00	1.21	1.41	5.37	
4-4-22 7:00	1.08	1.35	5.34	
4-4-22 8:00	1.08	1.35	5.28	
4-4-22 9:00	1.33	1.59	5.26	
4-4-22 10:00	1.85	2.08	5.36	
4-4-22 11:00	2.27	2.51	5.34	
4-4-22 12:00	2.63	2.88	5.38	
4-4-22 13:00	3.02	3.33	5.36	
4-4-22 14:00	3.55	3.75	5.37	
4-4-22 15:00	3.83	4.05	5.37	
4-4-22 16:00	3.89	4.05	5.47	
4-4-22 17:00	3.41	3.58	5.51	
4-4-22 18:00	2.75	2.93	5.49	
4-4-22 19:00	2.52	2.66	5.47	
4-4-22 20:00	2.09	2.24	5.46	
4-4-22 21:00	1.55	1.76	5.45	
4-4-22 22:00	1.22	1.41	5.43	
4-4-22 23:00	1.01	1.23	5.39	
4-5-22 0:00	0.81	1.06	5.39	
4-5-22 1:00	0.73	0.94	5.32	
4-5-22 2:00	0.64	0.84	5.34	
4-5-22 3:00	0.57	0.84	5.28	
4-5-22 4:00	0.57	0.82	5.25	
4-5-22 5:00	0.59	0.84	5.18	
4-5-22 6:00	0.55	0.79	5.18	

Date and Time	Hourly Average Temperature (°C)			Comments
	FR_FR3	FR_SCOUTDS	FS_EFF-SC	
	E320693	E320695	E323231	
4-5-22 7:00	0.55	0.80	5.12	
4-5-22 8:00	0.62	0.89	5.10	
4-5-22 9:00	0.83	1.09	5.13	
4-5-22 10:00	1.10	1.39	5.13	
4-5-22 11:00	1.66	1.93	5.15	
4-5-22 12:00	2.32	2.61	5.28	
4-5-22 13:00	3.10	3.35	5.28	
4-5-22 14:00	3.73	3.98	5.31	
4-5-22 15:00	4.05	4.25	5.43	
4-5-22 16:00	3.83	3.99	5.44	
4-5-22 17:00	3.63	3.82	5.44	
4-5-22 18:00	3.70	3.85	5.52	
4-5-22 19:00	3.15	3.28	5.41	
4-5-22 20:00	2.36	2.52	5.41	
4-5-22 21:00	1.84	1.98	5.43	
4-5-22 22:00	1.38	1.63	5.55	
4-5-22 23:00	1.12	1.28	5.48	
4-6-22 0:00	0.73	0.97	5.40	
4-6-22 1:00	0.43	0.67	5.41	
4-6-22 2:00	0.22	0.47	5.35	
4-6-22 3:00	0.08	0.35	5.30	
4-6-22 4:00	-0.05	0.22	5.26	
4-6-22 5:00	-0.13	0.14	5.18	
4-6-22 6:00	-0.25	0.06	5.17	
4-6-22 7:00	-0.31	-0.02	5.06	
4-6-22 8:00	-0.16	0.13	4.56	
4-6-22 9:00	0.22	0.56	4.78	
4-6-22 10:00	1.05	1.42	4.83	
4-6-22 11:00	2.06	2.47	5.09	
4-6-22 12:00	3.35	3.67	5.24	
4-6-22 13:00	4.94	5.23	5.35	
4-6-22 14:00	5.90	6.16	5.46	
4-6-22 15:00	6.36	6.53	5.60	
4-6-22 16:00	6.50	6.62	5.78	
4-6-22 17:00	6.34	6.53	5.85	
4-6-22 18:00	5.73	5.82	5.93	
4-6-22 19:00	4.75	4.88	6.09	
4-6-22 20:00	3.66	3.81	6.08	
4-6-22 21:00	2.73	2.95	6.10	
4-6-22 22:00	2.07	2.33	6.07	
4-6-22 23:00	1.78	1.84	6.07	
4-7-22 0:00	1.19	1.44	6.19	
4-7-22 1:00	0.87	1.15	6.05	
4-7-22 2:00	0.70	0.97	6.01	
4-7-22 3:00	0.55	0.82	5.98	
4-7-22 4:00	0.40	0.68	5.95	
4-7-22 5:00	0.30	0.60	5.86	
4-7-22 6:00	0.19	0.47	5.91	
4-7-22 7:00	0.10	0.39	5.88	
4-7-22 8:00	0.13	0.45	6.00	
4-7-22 9:00	0.54	0.86	5.96	
4-7-22 10:00	1.56	1.93	5.72	
4-7-22 11:00	2.85	3.27	5.86	
4-7-22 12:00	4.22	4.60	6.19	
4-7-22 13:00	5.30	5.57	6.59	
4-7-22 14:00	6.17	6.42	6.51	
4-7-22 15:00	6.72	6.98	6.62	
4-7-22 16:00	6.90	7.09	6.91	
4-7-22 17:00	6.72	6.90	6.97	
4-7-22 18:00	6.15	6.31	6.94	
4-7-22 19:00	5.14	5.32	6.55	
4-7-22 20:00	4.25	4.35	5.11	
4-7-22 21:00	3.50	3.76	6.52	
4-7-22 22:00	2.89	3.11	6.88	
4-7-22 23:00	2.41	2.65	6.78	
4-8-22 0:00	2.05	2.32	6.64	
4-8-22 1:00	1.81	2.07	6.67	
4-8-22 2:00	1.64	1.90	6.53	
4-8-22 3:00	1.55	1.80	6.46	
4-8-22 4:00	1.49	1.72	6.48	
4-8-22 5:00	1.43	1.67	6.38	
4-8-22 6:00	1.39	1.64	6.23	
4-8-22 7:00	1.27	1.52	6.19	
4-8-22 8:00	1.30	1.55	6.15	
4-8-22 9:00	1.62	1.94	6.22	
4-8-22 10:00	2.64	3.01	6.33	
4-8-22 11:00	3.66	3.94	6.52	
4-8-22 12:00	3.94	4.17	6.59	

Date and Time	Hourly Average Temperature (°C)			Comments
	FR_FR3	FR_SCOUTDS	FS_EFF-SC	
	E320693	E320695	E323231	
4-8-22 13:00	4.15	4.34	6.73	
4-8-22 14:00	4.34	4.56	6.88	
4-8-22 15:00	4.89	5.13	6.83	
4-8-22 16:00	5.80	5.93	6.97	
4-8-22 17:00	5.57	5.74	7.16	
4-8-22 18:00	5.02	5.19	7.14	
4-8-22 19:00	4.29	4.49	7.17	
4-8-22 20:00	2.98	3.23	7.06	
4-8-22 21:00	2.18	2.48	6.98	
4-8-22 22:00	2.04	2.32	6.84	
4-8-22 23:00	1.82	2.08	6.81	
4-9-22 0:00	1.55	1.80	6.70	
4-9-22 1:00	1.43	1.72	6.65	
4-9-22 2:00	1.29	1.54	6.59	
4-9-22 3:00	1.16	1.41	6.54	
4-9-22 4:00	1.15	1.39	6.55	
4-9-22 5:00	1.08	1.34	6.52	
4-9-22 6:00	1.08	1.34	6.36	
4-9-22 7:00	1.05	1.30	6.38	
4-9-22 8:00	1.06	1.33	6.33	
4-9-22 9:00	1.25	1.55	6.24	
4-9-22 10:00	1.74	2.03	6.29	
4-9-22 11:00	2.17	2.41	6.28	
4-9-22 12:00	2.56	2.91	6.26	
4-9-22 13:00	3.51	3.91	6.37	
4-9-22 14:00	4.55	4.78	5.79	
4-9-22 15:00	4.18	4.36	5.82	
4-9-22 16:00	3.82	4.03	6.05	
4-9-22 17:00	3.78	4.00	6.19	
4-9-22 18:00	3.67	3.87	6.13	
4-9-22 19:00	3.14	3.35	6.18	
4-9-22 20:00	2.45	2.64	6.04	
4-9-22 21:00	2.02	2.16	6.04	
4-9-22 22:00	1.46	1.70	5.88	
4-9-22 23:00	1.01	1.25	5.85	
4-10-22 0:00	0.66	0.88	5.72	
4-10-22 1:00	0.41	0.70	5.59	
4-10-22 2:00	0.20	0.47	5.51	
4-10-22 3:00	0.02	0.32	5.49	
4-10-22 4:00	-0.16	0.11	5.43	
4-10-22 5:00	-0.33	0.01	5.32	
4-10-22 6:00	-0.40	-0.10	5.29	
4-10-22 7:00	-0.39	-0.07	5.18	
4-10-22 8:00	-0.32	-0.03	5.25	
4-10-22 9:00	-0.33	0.07	5.21	
4-10-22 10:00	0.72	1.19	5.26	
4-10-22 11:00	1.93	2.27	5.39	
4-10-22 12:00	2.88	3.15	5.47	
4-10-22 13:00	4.05	4.31	5.62	
4-10-22 14:00	4.49	4.70	5.87	
4-10-22 15:00	4.82	5.01	6.02	
4-10-22 16:00	4.41	4.54	6.05	
4-10-22 17:00	4.53	4.73	6.18	
4-10-22 18:00	4.32	4.51	6.10	
4-10-22 19:00	3.73	3.88	5.99	
4-10-22 20:00	2.84	3.02	5.91	
4-10-22 21:00	2.23	2.41	5.90	
4-10-22 22:00	1.77	2.00	5.73	
4-10-22 23:00	1.38	1.58	5.47	
4-11-22 0:00	0.97	1.19	5.10	
4-11-22 1:00	0.66	0.90	5.06	
4-11-22 2:00	0.48	0.72	4.78	
4-11-22 3:00	0.40	0.65	4.69	
4-11-22 4:00	0.36	0.56	4.61	
4-11-22 5:00	0.14	0.40	4.54	
4-11-22 6:00	-0.03	0.21	4.53	
4-11-22 7:00	-0.16	0.12	4.49	
4-11-22 8:00	-0.14	0.12	4.41	
4-11-22 9:00	0.02	0.31	4.38	
4-11-22 10:00	0.54	0.87	4.43	
4-11-22 11:00	1.35	1.61	4.54	
4-11-22 12:00	2.27	2.54	4.66	
4-11-22 13:00	2.86	3.09	4.52	
4-11-22 14:00	3.37	3.55	5.16	
4-11-22 15:00	3.56	3.74	5.00	
4-11-22 16:00	3.46	3.61	4.99	
4-11-22 17:00	3.09	3.25	5.07	
4-11-22 18:00	2.52	2.67	5.02	

Date and Time	Hourly Average Temperature (°C)			Comments
	FR_FR3	FR_SCOUTDS	FS_EFF-SC	
	E320693	E320695	E323231	
4-11-22 19:00	1.94	2.12	4.93	
4-11-22 20:00	1.38	1.59	4.96	
4-11-22 21:00	0.92	1.15	4.93	
4-11-22 22:00	0.56	0.81	4.83	
4-11-22 23:00	0.27	0.51	4.84	
4-12-22 0:00	0.03	0.27	4.61	
4-12-22 1:00	-0.11	0.15	4.49	
4-12-22 2:00	-0.21	0.04	4.46	
4-12-22 3:00	-0.32	-0.09	4.40	
4-12-22 4:00	-0.35	-0.15	4.33	
4-12-22 5:00	-0.34	-0.16	4.40	
4-12-22 6:00	-0.37	-0.15	4.30	
4-12-22 7:00	-0.34	-0.17	4.19	
4-12-22 8:00	-0.32	-0.14	4.18	
4-12-22 9:00	-0.35	-0.14	4.17	
4-12-22 10:00	-0.33	-0.11	4.49	
4-12-22 11:00	-0.23	0.15	4.50	
4-12-22 12:00	0.93	1.29	4.57	
4-12-22 13:00	1.89	2.10	4.65	
4-12-22 14:00	2.51	2.71	4.81	
4-12-22 15:00	2.74	2.96	4.93	
4-12-22 16:00	3.07	3.24	4.95	
4-12-22 17:00	2.90	3.07	5.05	
4-12-22 18:00	2.44	2.60	5.07	
4-12-22 19:00	1.75	1.90	5.05	
4-12-22 20:00	0.98	1.17	5.05	
4-12-22 21:00	0.28	0.52	5.05	
4-12-22 22:00	-0.13	0.10	5.01	
4-12-22 23:00	-0.30	-0.15	4.96	
4-13-22 0:00	-0.35	-0.14	4.80	
4-13-22 1:00	-0.31	-0.16	4.73	
4-13-22 2:00	-0.32	-0.16	4.66	
4-13-22 3:00	-0.34	-0.14	4.56	
4-13-22 4:00	-0.35	-0.13	4.56	
4-13-22 5:00	-0.31	-0.12	4.45	
4-13-22 6:00	-0.30	-0.11	4.44	
4-13-22 7:00	-0.33	-0.09	4.42	
4-13-22 8:00	-0.32	-0.11	4.33	
4-13-22 9:00	-0.32	-0.08	4.40	
4-13-22 10:00	-0.32	-0.06	4.43	
4-13-22 11:00	-0.32	-0.09	4.42	
4-13-22 12:00	-0.33	-0.08	4.68	
4-13-22 13:00	0.02	0.36	4.90	
4-13-22 14:00	2.10	2.39	4.97	
4-13-22 15:00	3.33	3.56	5.15	
4-13-22 16:00	4.05	4.27	5.31	
4-13-22 17:00	4.00	4.14	5.33	
4-13-22 18:00	3.05	3.21	5.33	
4-13-22 19:00	1.97	2.14	5.36	
4-13-22 20:00	1.04	1.25	5.36	
4-13-22 21:00	0.28	0.52	5.29	
4-13-22 22:00	-0.15	0.13	5.22	
4-13-22 23:00	-0.34	-0.12	5.16	
4-14-22 0:00	-0.36	-0.12	5.15	
4-14-22 1:00	-0.36	-0.07	5.16	
4-14-22 2:00	-0.32	-0.10	5.25	
4-14-22 3:00	-0.36	-0.12	5.22	
4-14-22 4:00	-0.35	-0.10	5.20	
4-14-22 5:00	-0.31	-0.10	5.21	
4-14-22 6:00	-0.33	-0.08	5.25	
4-14-22 7:00	-0.35	-0.09	5.17	
4-14-22 8:00	-0.34	-0.06	5.13	
4-14-22 9:00	-0.33	-0.02	5.12	
4-14-22 10:00	-0.32	0.01	5.29	
4-14-22 11:00	-0.31	0.05	5.46	
4-14-22 12:00	-0.33	-0.01	5.56	
4-14-22 13:00	0.89	1.22	5.91	
4-14-22 14:00	3.71	3.96	6.15	
4-14-22 15:00	4.61	4.83	5.89	
4-14-22 16:00	4.14	4.31	5.89	
4-14-22 17:00	3.42	3.58	6.39	
4-14-22 18:00	2.57	2.79	6.34	
4-14-22 19:00	1.74	1.95	6.25	
4-14-22 20:00	0.83	1.08	6.16	
4-14-22 21:00	0.23	0.48	6.11	
4-14-22 22:00	-0.25	-0.02	6.09	
4-14-22 23:00	-0.32	-0.12	6.04	
4-15-22 0:00	-0.34	-0.11	5.99	

Date and Time	Hourly Average Temperature (°C)			Comments
	FR_FR3	FR_SCOUTDS	FS_EFF-SC	
	E320693	E320695	E323231	
4-15-22 1:00	-0.33	-0.13	5.89	
4-15-22 2:00	-0.33	-0.08	5.84	
4-15-22 3:00	-0.32	-0.10	5.83	
4-15-22 4:00	-0.32	-0.09	5.74	
4-15-22 5:00	-0.31	-0.04	5.70	
4-15-22 6:00	-0.33	-0.07	4.88	
4-15-22 7:00	-0.35	-0.14	3.26	
4-15-22 8:00	-0.33	-0.10	3.18	
4-15-22 9:00	-0.32	-0.07	3.38	
4-15-22 10:00	-0.31	-0.08	3.64	
4-15-22 11:00	-0.33	-0.05	4.42	
4-15-22 12:00	-0.30	0.00	5.26	
4-15-22 13:00	-0.31	0.02	5.55	
4-15-22 14:00	0.12	0.50	5.80	
4-15-22 15:00	2.07	2.26	3.50	
4-15-22 16:00	2.75	2.93	3.78	
4-15-22 17:00	2.82	3.00	5.20	
4-15-22 18:00	2.92	3.07	5.27	
4-15-22 19:00	2.45	2.65	5.28	
4-15-22 20:00	1.75	1.98	5.27	
4-15-22 21:00	1.09	1.30	5.33	
4-15-22 22:00	0.64	0.88	5.34	
4-15-22 23:00	0.36	0.60	5.36	
4-16-22 0:00	0.06	0.34	5.42	
4-16-22 1:00	-0.29	0.00	5.25	
4-16-22 2:00	-0.34	-0.13	4.18	
4-16-22 3:00	-0.34	-0.13	4.48	
4-16-22 4:00	-0.32	-0.10	4.97	
4-16-22 5:00	-0.36	-0.08	5.00	
4-16-22 6:00	-0.34	-0.09	4.86	
4-16-22 7:00	-0.34	-0.07	4.95	
4-16-22 8:00	-0.32	-0.07	5.01	
4-16-22 9:00	-0.32	-0.02	4.95	
4-16-22 10:00	-0.33	0.05	5.03	
4-16-22 11:00	-0.30	0.03	5.15	
4-16-22 12:00	0.41	0.85	5.33	
4-16-22 13:00	3.07	3.35	5.48	
4-16-22 14:00	4.52	4.77	5.74	
4-16-22 15:00	5.56	5.75	5.91	
4-16-22 16:00	5.49	5.63	6.00	
4-16-22 17:00	4.45	4.65	5.95	
4-16-22 18:00	3.53	3.71	6.07	
4-16-22 19:00	2.77	2.92	6.10	
4-16-22 20:00	2.00	2.20	6.02	
4-16-22 21:00	1.40	1.63	5.94	
4-16-22 22:00	0.96	1.25	5.95	
4-16-22 23:00	0.69	0.92	5.87	
4-17-22 0:00	0.47	0.66	5.84	
4-17-22 1:00	0.25	0.45	5.83	
4-17-22 2:00	0.08	0.33	5.80	
4-17-22 3:00	-0.04	0.19	5.71	
4-17-22 4:00	-0.21	0.05	5.53	
4-17-22 5:00	-0.33	-0.10	5.38	
4-17-22 6:00	-0.33	-0.13	5.39	
4-17-22 7:00	-0.31	-0.06	5.39	
4-17-22 8:00	-0.34	-0.05	5.37	
4-17-22 9:00	-0.29	0.00	5.47	
4-17-22 10:00	0.75	1.10	5.53	
4-17-22 11:00	1.67	1.94	5.72	
4-17-22 12:00	3.08	3.36	5.20	
4-17-22 13:00	4.50	4.70	5.22	
4-17-22 14:00	5.57	5.76	5.76	
4-17-22 15:00	5.76	5.93	5.93	
4-17-22 16:00	5.73	5.86	6.05	
4-17-22 17:00	5.51	5.68	6.23	
4-17-22 18:00	5.21	5.35	6.34	
4-17-22 19:00	4.16	4.30	6.37	
4-17-22 20:00	3.13	3.32	6.34	
4-17-22 21:00	2.27	2.50	6.40	
4-17-22 22:00	1.60	1.83	6.40	
4-17-22 23:00	1.10	1.36	6.41	
4-18-22 0:00	0.78	1.02	6.39	
4-18-22 1:00	0.60	0.85	6.33	
4-18-22 2:00	0.47	0.74	6.24	
4-18-22 3:00	0.32	0.60	6.22	
4-18-22 4:00	0.23	0.50	6.20	
4-18-22 5:00	0.19	0.45	6.18	
4-18-22 6:00	0.09	0.36	6.04	

Date and Time	Hourly Average Temperature (°C)			Comments
	FR_FR3	FR_SCOUTDS	FS_EFF-SC	
	E320693	E320695	E323231	
4-18-22 7:00	-0.01	0.30	5.98	
4-18-22 8:00	0.21	0.49	5.88	
4-18-22 9:00	0.79	1.10	5.93	
4-18-22 10:00	1.76	2.02	5.91	
4-18-22 11:00	2.86	3.13	5.21	
4-18-22 12:00	4.00	4.20	4.28	
4-18-22 13:00	4.76	4.87	4.50	
4-18-22 14:00	5.38	5.52	5.56	
4-18-22 15:00	5.47	5.60	5.97	
4-18-22 16:00	5.21	5.34	5.47	
4-18-22 17:00	4.79	4.92	5.10	
4-18-22 18:00	4.36	4.51	5.11	
4-18-22 19:00	3.82	3.96	5.13	
4-18-22 20:00	3.20	3.38	5.13	
4-18-22 21:00	2.67	2.88	5.08	
4-18-22 22:00	2.17	2.39	5.05	
4-18-22 23:00	1.79	2.01	5.01	
4-19-22 0:00	1.52	1.74	4.95	
4-19-22 1:00	1.45	1.70	4.98	
4-19-22 2:00	1.42	1.62	4.97	
4-19-22 3:00	1.30	1.54	4.93	
4-19-22 4:00	1.31	1.60	4.87	
4-19-22 5:00	1.25	1.49	4.86	
4-19-22 6:00	1.03	1.29	4.79	
4-19-22 7:00	0.98	1.21	4.79	
4-19-22 8:00	1.02	1.27	4.75	
4-19-22 9:00	1.08	1.34	4.70	
4-19-22 10:00	1.54	1.78	4.70	
4-19-22 11:00	2.08	2.36	4.65	
4-19-22 12:00	2.37	2.62	4.54	
4-19-22 13:00	2.55	2.83	4.69	
4-19-22 14:00	2.83	3.07	4.77	
4-19-22 15:00	2.97	3.15	4.78	
4-19-22 16:00	2.85	3.04	4.69	
4-19-22 17:00	2.90	3.09	4.67	
4-19-22 18:00	2.62	2.81	4.70	
4-19-22 19:00	2.29	2.48	4.65	
4-19-22 20:00	1.99	2.17	4.63	
4-19-22 21:00	1.68	1.92	4.57	
4-19-22 22:00	1.52	1.71	3.88	
4-19-22 23:00	1.33	1.52	3.82	
4-20-22 0:00	1.15	1.36	3.79	
4-20-22 1:00	0.96	1.17	3.76	
4-20-22 2:00	0.91	1.09	3.82	
4-20-22 3:00	0.75	0.92	3.68	
4-20-22 4:00	0.68	0.77	3.68	
4-20-22 5:00	0.63	0.73	3.70	
4-20-22 6:00	0.54	0.77	3.66	
4-20-22 7:00	0.57	0.82	3.64	
4-20-22 8:00	0.62	0.85	3.61	
4-20-22 9:00	0.85	1.09	3.63	
4-20-22 10:00	1.32	1.54	3.62	
4-20-22 11:00	2.12	2.32	3.63	
4-20-22 12:00	3.16	3.33	3.65	
4-20-22 13:00	3.87	3.96	3.72	
4-20-22 14:00	4.05	4.17	3.78	
4-20-22 15:00	3.91	4.02	3.84	
4-20-22 16:00	3.71	3.83	3.89	
4-20-22 17:00	3.48	3.61	3.95	
4-20-22 18:00	3.23	3.35	3.91	
4-20-22 19:00	2.99	3.08	3.89	
4-20-22 20:00	2.68	2.81	3.92	
4-20-22 21:00	2.25	2.40	3.86	
4-20-22 22:00	1.93	2.09	3.73	
4-20-22 23:00	1.68	1.85	3.74	
4-21-22 0:00	1.49	1.69	3.67	
4-21-22 1:00	1.31	1.48	3.63	
4-21-22 2:00	1.14	1.28	3.56	
4-21-22 3:00	0.85	1.10	3.58	
4-21-22 4:00	0.66	0.85	3.60	
4-21-22 5:00	0.50	0.73	3.59	
4-21-22 6:00	0.38	0.70	3.50	
4-21-22 7:00	0.46	0.72	3.41	
4-21-22 8:00	0.41	0.69	3.41	
4-21-22 9:00	0.75	1.05	3.47	
4-21-22 10:00	1.53	1.74	3.45	
4-21-22 11:00	2.63	2.81	3.52	
4-21-22 12:00	3.70	3.82	3.61	

Date and Time	Hourly Average Temperature (°C)			Comments
	FR_FR3	FR_SCOUTDS	FS_EFF-SC	
	E320693	E320695	E323231	
4-21-22 13:00	4.55	4.63	3.67	
4-21-22 14:00	5.02	5.08	3.76	
4-21-22 15:00	5.68	5.73	3.88	
4-21-22 16:00	5.87	5.88	3.92	
4-21-22 17:00	5.58	5.56	3.97	
4-21-22 18:00	5.10	5.15	4.02	
4-21-22 19:00	4.64	4.69	4.04	
4-21-22 20:00	4.13	4.18	4.01	
4-21-22 21:00	3.51	3.66	3.95	
4-21-22 22:00	3.07	3.22	3.96	
4-21-22 23:00	2.71	2.88	3.95	
4-22-22 0:00	2.43	2.61	3.90	
4-22-22 1:00	2.29	2.49	3.89	
4-22-22 2:00	2.20	2.35	3.85	
4-22-22 3:00	2.07	2.26	3.90	
4-22-22 4:00	1.99	2.16	3.82	
4-22-22 5:00	1.92	2.11	3.79	
4-22-22 6:00	1.86	2.02	3.81	
4-22-22 7:00	1.83	2.02	3.80	
4-22-22 8:00	1.91	2.11	3.76	
4-22-22 9:00	2.25	2.44	3.83	
4-22-22 10:00	2.76	2.92	3.91	
4-22-22 11:00	3.56	3.73	3.94	
4-22-22 12:00	5.45	5.63	4.14	
4-22-22 13:00	4.93	4.93	4.18	
4-22-22 14:00	4.16	4.29	4.28	
4-22-22 15:00	4.76	4.89	4.48	
4-22-22 16:00	5.60	5.66	4.53	
4-22-22 17:00	5.63	5.69	4.70	
4-22-22 18:00	5.20	5.30	5.39	
4-22-22 19:00	5.00	5.15	5.42	
4-22-22 20:00	4.36	4.53	5.41	
4-22-22 21:00	3.61	3.76	5.36	
4-22-22 22:00	3.13	3.30	5.34	
4-22-22 23:00	2.82	3.03	5.27	
4-23-22 0:00	2.57	2.78	5.24	
4-23-22 1:00	2.35	2.59	5.22	
4-23-22 2:00	2.21	2.43	5.18	
4-23-22 3:00	2.15	2.33	5.13	
4-23-22 4:00	2.01	2.21	5.09	
4-23-22 5:00	1.80	2.04	5.09	
4-23-22 6:00	1.60	1.85	5.13	
4-23-22 7:00	1.45	1.71	5.13	
4-23-22 8:00	1.44	1.69	5.09	
4-23-22 9:00	1.94	2.21	5.17	
4-23-22 10:00	3.08	3.38	5.31	
4-23-22 11:00	4.46	4.70	5.52	
4-23-22 12:00	5.74	5.91	5.30	
4-23-22 13:00	6.96	6.99	4.92	
4-23-22 14:00	7.56	7.55	5.12	
4-23-22 15:00	7.63	7.60	5.21	
4-23-22 16:00	7.21	7.25	5.63	
4-23-22 17:00	6.52	6.59	6.27	
4-23-22 18:00	6.20	6.35	6.55	
4-23-22 19:00	5.46	5.57	6.45	
4-23-22 20:00	4.59	4.75	6.20	
4-23-22 21:00	3.93	4.09	6.04	
4-23-22 22:00	3.31	3.49	5.92	
4-23-22 23:00	2.79	2.97	5.80	
4-24-22 0:00	2.51	2.73	5.75	
4-24-22 1:00	2.34	2.51	5.68	
4-24-22 2:00	2.03	2.27	5.87	
4-24-22 3:00	1.81	2.05	6.06	
4-24-22 4:00	1.54	1.85	5.97	
4-24-22 5:00	1.52	1.71	5.91	
4-24-22 6:00	1.30	1.56	5.89	
4-24-22 7:00	1.25	1.52	5.83	
4-24-22 8:00	1.40	1.68	5.78	
4-24-22 9:00	2.09	2.33	5.81	
4-24-22 10:00	3.16	3.41	6.04	
4-24-22 11:00	4.35	4.58	6.16	
4-24-22 12:00	4.84	5.04	6.38	
4-24-22 13:00	6.13	6.29	6.62	
4-24-22 14:00	7.38	7.56	7.04	
4-24-22 15:00	7.85	7.98	7.23	
4-24-22 16:00	8.08	8.20	7.35	
4-24-22 17:00	7.99	8.11	7.36	
4-24-22 18:00	7.48	7.59	7.22	

Date and Time	Hourly Average Temperature (°C)			Comments
	FR_FR3	FR_SCOUTDS	FS_EFF-SC	
	E320693	E320695	E323231	
4-24-22 19:00	6.49	6.63	7.06	
4-24-22 20:00	5.39	5.55	6.89	
4-24-22 21:00	4.38	4.53	6.72	
4-24-22 22:00	3.52	3.71	6.53	
4-24-22 23:00	2.85	3.03	6.44	
4-25-22 0:00	2.37	2.66	6.33	
4-25-22 1:00	1.96	2.29	6.31	
4-25-22 2:00	1.85	2.05	6.12	
4-25-22 3:00	1.67	1.92	5.94	
4-25-22 4:00	1.35	1.83	5.82	
4-25-22 5:00	1.38	1.63	5.89	
4-25-22 6:00	1.34	1.59	5.72	
4-25-22 7:00	1.37	1.61	5.69	
4-25-22 8:00	1.55	1.77	5.80	
4-25-22 9:00	1.91	2.15	5.72	
4-25-22 10:00	2.50	2.77	5.92	
4-25-22 11:00	3.35	3.58	6.15	
4-25-22 12:00	4.37	4.59	6.64	
4-25-22 13:00	4.98	5.18	7.04	
4-25-22 14:00	5.63	5.78	7.31	
4-25-22 15:00	6.46	6.63	7.58	
4-25-22 16:00	6.58	6.71	7.89	
4-25-22 17:00	6.22	6.38	7.39	
4-25-22 18:00	6.04	6.16	7.13	
4-25-22 19:00	5.57	5.72	7.25	
4-25-22 20:00	4.79	4.96	7.21	
4-25-22 21:00	4.13	4.32	7.15	
4-25-22 22:00	3.58	3.74	7.01	
4-25-22 23:00	3.07	3.32	7.30	
4-26-22 0:00	2.72	2.94	6.81	
4-26-22 1:00	2.42	2.66	6.66	
4-26-22 2:00	2.21	2.41	6.68	
4-26-22 3:00	2.00	2.26	6.72	
4-26-22 4:00	1.90	2.11	5.98	
4-26-22 5:00	1.87	2.08	5.76	
4-26-22 6:00	1.92	2.11	5.25	
4-26-22 7:00	2.01	2.17	5.29	
4-26-22 8:00	1.99	2.20	5.36	
4-26-22 9:00	2.09	2.33	5.39	
4-26-22 10:00	2.51	2.74	5.71	
4-26-22 11:00	3.55	3.80	5.99	
4-26-22 12:00	4.91	5.08	6.23	
4-26-22 13:00	5.94	6.03	6.70	
4-26-22 14:00	6.37	6.43	5.97	
4-26-22 15:00	6.30	6.36	5.99	
4-26-22 16:00	5.82	5.92	8.08	
4-26-22 17:00	5.36	5.51	8.61	
4-26-22 18:00	4.97	5.11	8.70	
4-26-22 19:00	4.24	4.39	8.41	
4-26-22 20:00	3.74	3.93	7.87	
4-26-22 21:00	3.23	3.44	7.42	
4-26-22 22:00	2.86	3.10	7.02	
4-26-22 23:00	2.64	2.88	7.02	
4-27-22 0:00	2.44	2.65	6.78	
4-27-22 1:00	2.26	2.48	6.57	
4-27-22 2:00	2.11	2.32	6.50	
4-27-22 3:00	2.03	2.24	6.41	
4-27-22 4:00	1.94	2.19	6.12	
4-27-22 5:00	1.87	2.10	6.26	
4-27-22 6:00	1.68	1.96	6.22	
4-27-22 7:00	1.67	1.92	6.22	
4-27-22 8:00	1.74	2.00	5.86	
4-27-22 9:00	2.25	2.55	5.96	
4-27-22 10:00	3.09	3.40	5.68	
4-27-22 11:00	3.92	4.18	6.17	
4-27-22 12:00	4.43	4.68	6.58	
4-27-22 13:00	4.82	5.03	7.08	
4-27-22 14:00	5.10	5.31	7.12	
4-27-22 15:00	5.06	5.27	6.96	
4-27-22 16:00	5.07	5.28	6.77	
4-27-22 17:00	5.14	5.31	6.79	
4-27-22 18:00	4.88	5.04	6.81	
4-27-22 19:00	4.17	4.41	6.72	
4-27-22 20:00	3.62	3.84	6.56	
4-27-22 21:00	3.29	3.51	6.36	
4-27-22 22:00	2.94	3.17	6.38	
4-27-22 23:00	2.73	2.98	6.12	
4-28-22 0:00	2.46	2.68	6.24	

Date and Time	Hourly Average Temperature (°C)			Comments
	FR_FR3	FR_SCOUTDS	FS_EFF-SC	
	E320693	E320695	E323231	
4-28-22 1:00	2.22	2.47	5.78	
4-28-22 2:00	2.00	2.23	5.81	
4-28-22 3:00	1.68	2.01	5.98	
4-28-22 4:00	1.58	1.87	5.99	
4-28-22 5:00	1.40	1.68	5.71	
4-28-22 6:00	1.36	1.60	5.55	
4-28-22 7:00	1.29	1.58	5.59	
4-28-22 8:00	1.41	1.70	5.48	
4-28-22 9:00	2.05	2.32	5.68	
4-28-22 10:00	2.83	3.13	6.14	
4-28-22 11:00	3.71	4.00	6.73	
4-28-22 12:00	4.77	5.00	7.32	
4-28-22 13:00	5.76	5.98	7.97	
4-28-22 14:00	6.32	6.49	8.48	
4-28-22 15:00	6.81	6.99	8.84	
4-28-22 16:00	6.88	7.10	8.91	
4-28-22 17:00	6.65	6.83	9.09	
4-28-22 18:00	6.34	6.54	8.76	
4-28-22 19:00	5.69	5.85	7.90	
4-28-22 20:00	4.74	4.81	5.45	
4-28-22 21:00	3.79	3.94	6.57	
4-28-22 22:00	3.12	3.30	6.91	
4-28-22 23:00	2.66	2.82	5.79	
4-29-22 0:00	2.26	2.42	4.81	
4-29-22 1:00	1.98	2.14	6.89	
4-29-22 2:00	1.77	1.92	6.75	
4-29-22 3:00	1.55	1.77	6.51	
4-29-22 4:00	1.38	1.64	6.53	
4-29-22 5:00	1.26	1.51	6.54	
4-29-22 6:00	1.09	1.37	6.10	
4-29-22 7:00	1.04	1.31	5.52	
4-29-22 8:00	1.18	1.41	4.75	
4-29-22 9:00	1.71	2.01	6.11	
4-29-22 10:00	2.71	3.03	6.53	
4-29-22 11:00	3.91	4.19	6.80	
4-29-22 12:00	5.03	5.22	7.28	
4-29-22 13:00	5.51	5.69	7.32	
4-29-22 14:00	6.44	6.63	8.05	
4-29-22 15:00	6.26	6.46	8.25	
4-29-22 16:00	6.80	7.00	8.30	
4-29-22 17:00	6.91	7.07	8.35	
4-29-22 18:00	6.41	6.58	8.34	
4-29-22 19:00	5.83	5.99	7.94	
4-29-22 20:00	4.97	5.15	8.15	
4-29-22 21:00	4.23	4.42	7.29	
4-29-22 22:00	3.53	3.78	7.05	
4-29-22 23:00	3.05	3.23	6.93	
4-30-22 0:00	2.62	2.87	6.74	
4-30-22 1:00	2.35	2.53	6.61	
4-30-22 2:00	2.18	2.31	6.47	
4-30-22 3:00	1.90	2.13	6.57	
4-30-22 4:00	1.80	2.02	6.40	
4-30-22 5:00	1.60	1.88	6.28	
4-30-22 6:00	1.44	1.77	6.42	
4-30-22 7:00	1.44	1.74	6.38	
4-30-22 8:00	1.64	1.94	6.29	
4-30-22 9:00	2.30	2.58	6.83	
4-30-22 10:00	3.27	3.55	6.83	
4-30-22 11:00	4.07	4.34	7.20	
4-30-22 12:00	4.18	4.44	7.66	
4-30-22 13:00	4.47	4.72	8.13	
4-30-22 14:00	5.07	5.29	8.00	
4-30-22 15:00	5.20	5.42	7.86	
4-30-22 16:00	5.34	5.52	8.67	
4-30-22 17:00	5.28	5.47	9.21	
4-30-22 18:00	4.90	5.10	9.18	
4-30-22 19:00	4.53	4.71	8.98	
4-30-22 20:00	4.10	4.35	8.89	
4-30-22 21:00	3.79	3.99	8.75	
4-30-22 22:00	3.53	3.74	8.63	
4-30-22 23:00	3.29	3.52	8.58	
5-1-22 0:00	3.07	3.32	8.48	
5-1-22 1:00	2.96	3.16	8.45	
5-1-22 2:00	2.80	3.05	8.43	
5-1-22 3:00	2.73	2.96	8.29	
5-1-22 4:00	2.64	2.91	8.29	
5-1-22 5:00	2.63	2.87	8.19	
5-1-22 6:00	2.60	2.85	8.24	

Date and Time	Hourly Average Temperature (°C)			Comments
	FR_FR3	FR_SCOUTDS	FS_EFF-SC	
	E320693	E320695	E323231	
5-1-22 7:00	2.64	2.90	8.21	
5-1-22 8:00	2.76	3.00	8.27	
5-1-22 9:00	3.00	3.26	8.24	
5-1-22 10:00	3.38	3.62	8.48	
5-1-22 11:00	3.47	3.69	7.16	
5-1-22 12:00	3.77	3.90	5.89	
5-1-22 13:00	4.03	4.20	6.97	
5-1-22 14:00	4.60	4.78	7.87	
5-1-22 15:00	5.10	5.25	8.46	
5-1-22 16:00	4.88	5.05	8.87	
5-1-22 17:00	4.82	4.98	8.78	
5-1-22 18:00	4.68	4.86	8.53	
5-1-22 19:00	4.44	4.63	8.41	
5-1-22 20:00	4.18	4.35	8.16	
5-1-22 21:00	3.79	3.92	7.49	
5-1-22 22:00	3.34	3.46	4.52	
5-1-22 23:00	3.01	3.15	4.32	
5-2-22 0:00	2.71	2.89	4.21	
5-2-22 1:00	2.46	2.64	4.11	
5-2-22 2:00	2.41	2.59	4.10	
5-2-22 3:00	2.40	2.58	4.09	
5-2-22 4:00	2.41	2.57	4.09	
5-2-22 5:00	2.36	2.53	4.09	
5-2-22 6:00	2.26	2.43	3.98	
5-2-22 7:00	2.29	2.44	3.86	
5-2-22 8:00	2.58	2.75	3.95	
5-2-22 9:00	3.08	3.26	4.24	
5-2-22 10:00	3.78	3.91	4.63	
5-2-22 11:00	4.46	4.58	4.97	
5-2-22 12:00	5.15	5.28	5.50	
5-2-22 13:00	5.63	5.72	6.53	
5-2-22 14:00	6.02	6.12	7.59	
5-2-22 15:00	6.34	6.46	7.56	
5-2-22 16:00	6.35	6.43	7.54	
5-2-22 17:00	6.29	6.44	7.43	
5-2-22 18:00	6.19	6.29	7.16	
5-2-22 19:00	5.50	5.61	7.01	
5-2-22 20:00	4.94	5.06	6.81	
5-2-22 21:00	4.50	4.63	6.52	
5-2-22 22:00	4.16	4.34	6.46	
5-2-22 23:00	3.84	4.00	6.34	
5-3-22 0:00	3.51	3.65	6.19	
5-3-22 1:00	3.16	3.31	6.09	
5-3-22 2:00	2.86	3.08	5.98	
5-3-22 3:00	2.67	2.90	5.90	
5-3-22 4:00	2.51	2.75	5.84	
5-3-22 5:00	2.34	2.60	5.88	
5-3-22 6:00	2.31	2.53	5.68	
5-3-22 7:00	2.26	2.50	5.66	
5-3-22 8:00	2.48	2.74	5.82	
5-3-22 9:00	3.01	3.22	5.24	
5-3-22 10:00	3.72	3.88	4.48	
5-3-22 11:00	4.76	4.87	5.14	
5-3-22 12:00	5.51	5.60	6.18	
5-3-22 13:00	6.52	6.66	7.37	
5-3-22 14:00	6.80	6.84	7.52	
5-3-22 15:00	7.14	7.20	7.31	
5-3-22 16:00	7.49	7.55	7.20	
5-3-22 17:00	7.36	7.35	7.19	
5-3-22 18:00	7.11	7.14	6.77	
5-3-22 19:00	6.81	6.79	6.35	
5-3-22 20:00	5.99	6.01	6.04	
5-3-22 21:00	5.22	5.26	5.74	
5-3-22 22:00	4.58	4.61	5.49	
5-3-22 23:00	4.00	4.13	5.31	
5-4-22 0:00	3.64	3.79	5.28	
5-4-22 1:00	3.41	3.54	5.21	
5-4-22 2:00	3.29	3.42	5.25	
5-4-22 3:00	3.17	3.33	5.20	
5-4-22 4:00	3.13	3.29	5.17	
5-4-22 5:00	3.05	3.18	5.07	
5-4-22 6:00	2.99	3.15	5.02	
5-4-22 7:00	3.00	3.16	4.92	
5-4-22 8:00	3.13	3.29	5.19	
5-4-22 9:00	3.50	3.62	5.53	
5-4-22 10:00	4.00	4.15	6.16	
5-4-22 11:00	4.47	4.56	6.58	
5-4-22 12:00	4.44	4.49	6.36	

Date and Time	Hourly Average Temperature (°C)			Comments
	FR_FR3	FR_SCOUTDS	FS_EFF-SC	
	E320693	E320695	E323231	
5-4-22 13:00	4.36	4.46	6.17	
5-4-22 14:00	4.55	4.65	6.25	
5-4-22 15:00	4.70	4.80	6.49	
5-4-22 16:00	4.59	4.67	6.31	
5-4-22 17:00	4.48	4.58	5.94	
5-4-22 18:00	4.36	4.48	5.77	
5-4-22 19:00	4.28	4.43	5.60	
5-4-22 20:00	4.13	4.28	5.56	
5-4-22 21:00	3.92	4.13	5.45	
5-4-22 22:00	3.74	3.93	5.38	
5-4-22 23:00	3.40	3.68	5.24	
5-5-22 0:00	3.31	3.46	5.10	
5-5-22 1:00	3.04	3.25	5.00	
5-5-22 2:00	2.84	3.10	4.94	
5-5-22 3:00	2.75	2.94	4.80	
5-5-22 4:00	2.61	2.82	4.81	
5-5-22 5:00	2.49	2.71	4.69	
5-5-22 6:00	2.40	2.62	4.67	
5-5-22 7:00	2.44	2.67	4.61	
5-5-22 8:00	2.83	3.04	4.84	
5-5-22 9:00	3.57	3.74	5.70	
5-5-22 10:00	4.45	4.61	5.85	
5-5-22 11:00	5.30	5.40	6.49	
5-5-22 12:00	5.67	5.75	6.72	
5-5-22 13:00	5.63	5.69	6.41	
5-5-22 14:00	5.48	5.58	6.31	
5-5-22 15:00	5.50	5.57	6.13	
5-5-22 16:00	5.36	5.46	6.02	
5-5-22 17:00	5.13	5.23	5.82	
5-5-22 18:00	4.95	5.08	5.59	
5-5-22 19:00	4.83	4.95	5.97	
5-5-22 20:00	4.61	4.72	5.30	
5-5-22 21:00	4.22	4.42	5.08	
5-5-22 22:00	3.98	4.12	5.41	
5-5-22 23:00	3.74	3.88	5.68	
5-6-22 0:00	3.53	3.68	5.10	
5-6-22 1:00	3.31	3.52	4.67	
5-6-22 2:00	3.17	3.39	4.54	
5-6-22 3:00	3.01	3.23	4.49	
5-6-22 4:00	2.91	3.15	4.41	
5-6-22 5:00	2.85	3.04	4.29	
5-6-22 6:00	2.66	2.90	4.28	
5-6-22 7:00	2.69	2.88	4.21	
5-6-22 8:00	2.81	3.00	4.29	
5-6-22 9:00	2.97	3.21	4.51	
5-6-22 10:00	3.37	3.61	4.79	
5-6-22 11:00	3.77	4.02	5.13	
5-6-22 12:00	4.04	4.23	5.29	
5-6-22 13:00	4.31	4.55	6.27	
5-6-22 14:00	4.85	5.09	6.71	
5-6-22 15:00	5.19	5.41	6.78	
5-6-22 16:00	5.33	5.50	6.75	
5-6-22 17:00	5.41	5.51	6.74	
5-6-22 18:00	5.35	5.48	6.62	
5-6-22 19:00	4.88	5.02	6.36	
5-6-22 20:00	4.48	4.59	6.02	
5-6-22 21:00	4.10	4.21	5.90	
5-6-22 22:00	3.73	3.82	5.47	
5-6-22 23:00	3.35	3.47	5.00	
5-7-22 0:00	3.17	3.34	4.52	
5-7-22 1:00	3.06	3.28	4.55	
5-7-22 2:00	2.95	3.18	4.71	
5-7-22 3:00	2.86	3.06	5.62	
5-7-22 4:00	2.71	2.97	5.36	
5-7-22 5:00	2.64	2.88	4.40	
5-7-22 6:00	2.68	2.88	4.41	
5-7-22 7:00	2.69	2.89	4.48	
5-7-22 8:00	2.62	2.85	4.31	
5-7-22 9:00	2.82	3.10	4.38	
5-7-22 10:00	3.04	3.32	4.59	
5-7-22 11:00	3.92	4.29	5.12	
5-7-22 12:00	4.97	5.31	5.92	
5-7-22 13:00	5.93	6.20	6.37	
5-7-22 14:00	5.89	6.01	6.52	
5-7-22 15:00	5.91	6.00	6.44	
5-7-22 16:00	5.33	5.46	5.94	
5-7-22 17:00	4.74	4.85	5.25	
5-7-22 18:00	4.58	4.69	4.96	

Date and Time	Hourly Average Temperature (°C)			Comments
	FR_FR3	FR_SCOUTDS	FS_EFF-SC	
	E320693	E320695	E323231	
5-7-22 19:00	4.23	4.36	5.23	
5-7-22 20:00	3.86	4.00	6.78	
5-7-22 21:00	3.44	3.61	6.61	
5-7-22 22:00	3.00	3.23	5.99	
5-7-22 23:00	2.94	3.16	5.87	
5-8-22 0:00	2.83	3.03	5.84	
5-8-22 1:00	2.69	2.94	4.80	
5-8-22 2:00	2.60	2.87	4.52	
5-8-22 3:00	2.53	2.78	4.57	
5-8-22 4:00	2.45	2.72	4.51	
5-8-22 5:00	2.43	2.69	4.43	
5-8-22 6:00	2.43	2.68	4.29	
5-8-22 7:00	2.48	2.72	4.29	
5-8-22 8:00	2.53	2.77	4.35	
5-8-22 9:00	2.39	2.64	4.03	
5-8-22 10:00	2.51	2.79	4.03	
5-8-22 11:00	3.25	3.54	4.44	
5-8-22 12:00	4.10	4.32	4.88	
5-8-22 13:00	4.21	4.39	5.35	
5-8-22 14:00	4.71	4.96	5.55	
5-8-22 15:00	5.47	5.72	6.09	
5-8-22 16:00	5.58	5.64	6.23	
5-8-22 17:00	4.82	4.90	5.92	
5-8-22 18:00	4.33	4.47	5.56	
5-8-22 19:00	3.93	4.06	5.57	
5-8-22 20:00	3.43	3.58	6.90	
5-8-22 21:00	2.97	3.12	4.71	
5-8-22 22:00	2.62	2.79	4.52	
5-8-22 23:00	2.38	2.59	4.65	
5-9-22 0:00	2.26	2.48	4.65	
5-9-22 1:00	2.16	2.36	5.88	
5-9-22 2:00	2.13	2.37	7.15	
5-9-22 3:00	1.87	2.10	4.42	
5-9-22 4:00	1.55	1.79	4.24	
5-9-22 5:00	1.40	1.68	4.24	
5-9-22 6:00	1.51	1.75	4.51	
5-9-22 7:00	1.54	1.78	4.75	
5-9-22 8:00	1.80	2.10	4.85	
5-9-22 9:00	2.21	2.52	5.13	
5-9-22 10:00	2.81	3.18	5.32	
5-9-22 11:00	3.50	3.76	5.98	
5-9-22 12:00	3.62	3.93	5.73	
5-9-22 13:00	5.24	5.38	6.27	
5-9-22 14:00	6.32	6.38	7.26	
5-9-22 15:00	6.55	6.63	6.92	
5-9-22 16:00	6.63	6.69	6.86	
5-9-22 17:00	6.14	6.22	7.75	
5-9-22 18:00	5.82	5.93	7.53	
5-9-22 19:00	5.50	5.58	7.75	
5-9-22 20:00	4.90	5.03	7.82	
5-9-22 21:00	4.19	4.31	6.88	
5-9-22 22:00	3.67	3.82	6.78	
5-9-22 23:00	3.37	3.52	6.63	
5-10-22 0:00	3.16	3.34	6.88	
5-10-22 1:00	2.97	3.19	6.72	
5-10-22 2:00	2.76	2.94	6.63	
5-10-22 3:00	2.60	2.83	6.64	
5-10-22 4:00	2.54	2.76	7.79	
5-10-22 5:00	2.48	2.69	5.61	
5-10-22 6:00	2.40	2.59	5.58	
5-10-22 7:00	2.43	2.62	5.88	
5-10-22 8:00	2.54	2.74	6.10	
5-10-22 9:00	2.81	3.05	5.95	
5-10-22 10:00	3.23	3.46	6.16	
5-10-22 11:00	3.54	3.76	6.63	
5-10-22 12:00	4.35	4.65	6.84	
5-10-22 13:00	5.46	5.69	5.93	
5-10-22 14:00	6.26	6.40	7.72	
5-10-22 15:00	6.02	6.07	7.75	
5-10-22 16:00	5.92	5.96	6.44	
5-10-22 17:00	6.02	6.05	5.48	
5-10-22 18:00	5.83	5.81	5.48	
5-10-22 19:00	5.23	5.17	5.73	
5-10-22 20:00	4.66	4.70	6.62	
5-10-22 21:00	4.21	4.27	6.79	
5-10-22 22:00	3.80	3.89	6.68	
5-10-22 23:00	3.48	3.58	6.42	
5-11-22 0:00	3.23	3.38	6.03	

Date and Time	Hourly Average Temperature (°C)			Comments
	FR_FR3	FR_SCOUTDS	FS_EFF-SC	
	E320693	E320695	E323231	
5-11-22 1:00	3.10	3.27	7.97	
5-11-22 2:00	2.97	3.16	9.73	
5-11-22 3:00	2.85	3.01	7.48	
5-11-22 4:00	2.72	2.89	6.28	
5-11-22 5:00	2.52	2.71	6.31	
5-11-22 6:00	2.34	2.56	6.22	
5-11-22 7:00	2.32	2.51	5.91	
5-11-22 8:00	2.46	2.72	6.13	
5-11-22 9:00	3.13	3.45	5.69	
5-11-22 10:00	3.87	4.17	6.17	
5-11-22 11:00	4.64	4.95	7.08	
5-11-22 12:00	5.29	5.62	7.88	
5-11-22 13:00	6.15	6.44	8.36	
5-11-22 14:00	7.12	7.36	8.78	
5-11-22 15:00	7.43	7.57	9.05	
5-11-22 16:00	6.98	6.95	9.23	
5-11-22 17:00	6.62	6.69	7.91	
5-11-22 18:00	6.80	6.87	6.60	
5-11-22 19:00	6.23	6.24	8.27	
5-11-22 20:00	5.52	5.52	9.14	
5-11-22 21:00	4.85	4.92	8.78	
5-11-22 22:00	4.33	4.36	8.68	
5-11-22 23:00	3.89	3.97	8.76	
5-12-22 0:00	3.50	3.55	8.46	
5-12-22 1:00	3.09	3.23	8.33	
5-12-22 2:00	2.85	3.00	8.35	
5-12-22 3:00	2.66	2.77	8.05	
5-12-22 4:00	2.32	2.63	8.30	
5-12-22 5:00	2.40	2.48	8.12	
5-12-22 6:00	2.18	2.41	7.89	
5-12-22 7:00	2.14	2.38	8.14	
5-12-22 8:00	2.30	2.66	8.01	
5-12-22 9:00	2.96	3.39	8.62	
5-12-22 10:00	3.90	4.37	8.35	
5-12-22 11:00	4.99	5.52	9.04	
5-12-22 12:00	6.20	6.72	8.96	
5-12-22 13:00	6.94	7.18	9.19	
5-12-22 14:00	6.56	6.74	9.65	
5-12-22 15:00	6.59	6.85	9.00	
5-12-22 16:00	7.08	7.40	9.41	
5-12-22 17:00	7.16	7.26	9.28	
5-12-22 18:00	6.55	6.63	9.15	
5-12-22 19:00	5.91	5.93	8.82	
5-12-22 20:00	5.38	5.43	8.61	
5-12-22 21:00	4.89	4.92	8.45	
5-12-22 22:00	4.40	4.44	7.76	
5-12-22 23:00	3.90	3.95	7.26	
5-13-22 0:00	3.49	3.57	7.02	
5-13-22 1:00	3.19	3.30	6.75	
5-13-22 2:00	3.00	3.12	6.63	
5-13-22 3:00	2.80	2.93	6.54	
5-13-22 4:00	2.69	2.81	6.49	
5-13-22 5:00	2.57	2.75	6.41	
5-13-22 6:00	2.58	2.74	6.38	
5-13-22 7:00	2.65	2.85	6.34	
5-13-22 8:00	2.80	3.13	6.44	
5-13-22 9:00	3.27	3.57	6.63	
5-13-22 10:00	3.66	3.97	6.81	
5-13-22 11:00	4.03	4.29	7.14	
5-13-22 12:00	3.86	4.08	7.19	
5-13-22 13:00	3.80	4.08	8.26	
5-13-22 14:00	4.06	4.40	8.45	
5-13-22 15:00	4.62	5.00	7.87	
5-13-22 16:00	5.74	6.33	8.92	
5-13-22 17:00	5.94	6.04	9.17	
5-13-22 18:00	5.52	5.68	9.40	
5-13-22 19:00	5.13	5.32	9.10	
5-13-22 20:00	4.94	5.05	8.90	
5-13-22 21:00	4.44	4.56	8.59	
5-13-22 22:00	3.99	4.14	8.54	
5-13-22 23:00	3.59	3.66	6.20	
5-14-22 0:00	3.26	3.36	8.11	
5-14-22 1:00	2.96	3.06	7.72	
5-14-22 2:00	2.69	2.83	7.65	
5-14-22 3:00	2.47	2.64	7.58	
5-14-22 4:00	2.30	2.51	7.54	
5-14-22 5:00	2.18	2.35	7.32	
5-14-22 6:00	2.04	2.24	7.02	

Date and Time	Hourly Average Temperature (°C)			Comments
	FR_FR3	FR_SCOUTDS	FS_EFF-SC	
	E320693	E320695	E323231	
5-14-22 7:00	2.03	2.30	7.01	
5-14-22 8:00	2.35	2.68	6.81	
5-14-22 9:00	2.87	3.25	6.55	
5-14-22 10:00	3.56	4.06	7.70	
5-14-22 11:00	4.51	5.04	8.13	
5-14-22 12:00	5.66	6.20	8.43	
5-14-22 13:00	6.68	7.15	9.13	
5-14-22 14:00	7.61	8.03	9.80	
5-14-22 15:00	8.32	8.68	10.13	
5-14-22 16:00	8.52	8.79	10.35	
5-14-22 17:00	8.41	8.52	10.40	
5-14-22 18:00	7.76	7.84	10.33	
5-14-22 19:00	7.21	7.19	10.01	
5-14-22 20:00	6.32	6.33	9.83	
5-14-22 21:00	5.74	5.82	9.59	
5-14-22 22:00	5.26	5.30	9.47	
5-14-22 23:00	4.78	4.86	9.29	
5-15-22 0:00	4.34	4.39	9.11	
5-15-22 1:00	3.94	4.04	8.96	
5-15-22 2:00	3.68	3.80	8.89	
5-15-22 3:00	3.42	3.55	8.76	
5-15-22 4:00	3.21	3.36	8.64	
5-15-22 5:00	2.98	3.14	8.54	
5-15-22 6:00	2.89	3.05	8.45	
5-15-22 7:00	2.82	2.94	5.11	
5-15-22 8:00	3.10	3.44	7.23	
5-15-22 9:00	3.93	4.32	7.14	
5-15-22 10:00	4.77	5.26	8.36	
5-15-22 11:00	5.42	5.75	9.30	
5-15-22 12:00	5.76	6.14	9.53	
5-15-22 13:00	6.67	7.09	9.56	
5-15-22 14:00	7.58	7.94	7.94	
5-15-22 15:00	8.51	8.91	8.72	
5-15-22 16:00	9.05	9.24	9.86	
5-15-22 17:00	8.84	8.97	10.58	
5-15-22 18:00	8.34	8.34	10.31	
5-15-22 19:00	7.49	7.44	9.63	
5-15-22 20:00	6.76	6.79	9.42	
5-15-22 21:00	6.26	6.25	9.23	
5-15-22 22:00	5.73	5.76	9.31	
5-15-22 23:00	5.28	5.33	9.13	
5-16-22 0:00	4.88	4.94	8.62	
5-16-22 1:00	4.59	4.65	7.60	
5-16-22 2:00	4.42	4.53	8.09	
5-16-22 3:00	4.25	4.39	8.49	
5-16-22 4:00	4.10	4.28	8.06	
5-16-22 5:00	3.96	4.13	9.20	
5-16-22 6:00	3.85	4.09	9.31	
5-16-22 7:00	3.86	4.08	9.45	
5-16-22 8:00	4.04	4.32	9.54	
5-16-22 9:00	4.32	4.61	9.18	
5-16-22 10:00	4.58	4.84	8.33	
5-16-22 11:00	4.99	5.29	8.93	
5-16-22 12:00	5.53	5.88	8.51	
5-16-22 13:00	6.41	6.76	9.63	
5-16-22 14:00	7.19	7.52	10.30	
5-16-22 15:00	7.54	7.72	10.74	
5-16-22 16:00	7.33	7.49	10.48	
5-16-22 17:00	7.47	7.62	10.34	
5-16-22 18:00	7.26	7.38	10.13	
5-16-22 19:00	6.94	6.93	9.66	
5-16-22 20:00	6.41	6.40	9.32	
5-16-22 21:00	5.85	5.78	8.94	
5-16-22 22:00	5.29	5.29	8.52	
5-16-22 23:00	4.91	4.90	8.05	
5-17-22 0:00	4.62	4.60	7.98	
5-17-22 1:00	4.17	4.22	7.43	
5-17-22 2:00	3.96	4.04	7.22	
5-17-22 3:00	3.78	3.94	6.89	
5-17-22 4:00	3.72	3.88	6.62	
5-17-22 5:00	3.67	3.81	6.46	
5-17-22 6:00	3.57	3.73	6.28	
5-17-22 7:00	3.52	3.69	6.30	
5-17-22 8:00	3.68	3.95	6.74	
5-17-22 9:00	4.12	4.49	6.55	
5-17-22 10:00	4.65	4.97	7.27	
5-17-22 11:00	5.07	5.31	6.16	
5-17-22 12:00	5.45	5.66	6.15	

Date and Time	Hourly Average Temperature (°C)			Comments
	FR_FR3	FR_SCOUTDS	FS_EFF-SC	
	E320693	E320695	E323231	
5-17-22 13:00	5.34	5.38	7.16	
5-17-22 14:00	5.14	5.25	7.50	
5-17-22 15:00	5.11	5.31	7.61	
5-17-22 16:00	5.29	5.61	9.34	
5-17-22 17:00	5.52	5.71	7.32	
5-17-22 18:00	5.40	5.50	6.96	
5-17-22 19:00	4.99	5.07	7.42	
5-17-22 20:00	4.69	4.78	7.77	
5-17-22 21:00	4.37	4.41	5.60	
5-17-22 22:00	3.95	4.00	6.06	
5-17-22 23:00	3.63	3.70	6.89	
5-18-22 0:00	3.36	3.44	7.79	
5-18-22 1:00	3.10	3.20	7.74	
5-18-22 2:00	2.89	2.98	7.30	
5-18-22 3:00	2.69	2.83	7.19	
5-18-22 4:00	2.61	2.77	7.28	
5-18-22 5:00	2.61	2.79	6.88	
5-18-22 6:00	2.54	2.72	6.67	
5-18-22 7:00	2.57	2.76	6.01	
5-18-22 8:00	2.68	2.93	5.62	
5-18-22 9:00	3.23	3.55	6.95	
5-18-22 10:00	3.73	4.00	8.29	
5-18-22 11:00	3.71	3.91	8.73	
5-18-22 12:00	3.92	4.11	6.73	
5-18-22 13:00	4.11	4.40	6.31	
5-18-22 14:00	4.44	4.68	6.10	
5-18-22 15:00	4.56	4.79	5.86	
5-18-22 16:00	4.75	4.90	5.52	
5-18-22 17:00	4.13	4.08	5.34	
5-18-22 18:00	3.75	3.87	5.57	
5-18-22 19:00	3.57	3.63	6.38	
5-18-22 20:00	3.31	3.40	6.13	
5-18-22 21:00	3.17	3.26	6.36	
5-18-22 22:00	3.02	3.13	6.44	
5-18-22 23:00	2.88	3.03	6.63	
5-19-22 0:00	2.79	2.94	6.65	
5-19-22 1:00	2.69	2.82	6.56	
5-19-22 2:00	2.58	2.75	6.50	
5-19-22 3:00	2.57	2.75	6.39	
5-19-22 4:00	2.51	2.72	5.84	
5-19-22 5:00	2.51	2.66	5.51	
5-19-22 6:00	2.47	2.63	5.39	
5-19-22 7:00	2.58	2.77	5.04	
5-19-22 8:00	2.75	2.96	7.52	
5-19-22 9:00	2.96	3.23	5.51	
5-19-22 10:00	3.32	3.57	5.87	
5-19-22 11:00	3.64	3.94	7.82	
5-19-22 12:00	4.10	4.43	5.85	
5-19-22 13:00	4.74	5.02	6.43	
5-19-22 14:00	4.99	5.17	6.84	
5-19-22 15:00	5.12	5.30	6.14	
5-19-22 16:00	5.01	5.04	6.62	
5-19-22 17:00	4.58	4.66	7.15	
5-19-22 18:00	4.35	4.47	7.01	
5-19-22 19:00	4.04	4.15	6.95	
5-19-22 20:00	3.89	4.01	7.14	
5-19-22 21:00	3.66	3.71	7.04	
5-19-22 22:00	3.35	3.44	6.86	
5-19-22 23:00	3.13	3.27	6.80	
5-20-22 0:00	2.96	3.13	5.93	
5-20-22 1:00	2.85	3.01	5.81	
5-20-22 2:00	2.75	2.90	5.55	
5-20-22 3:00	2.64	2.81	5.20	
5-20-22 4:00	2.50	2.69	5.07	
5-20-22 5:00	2.42	2.59	4.82	
5-20-22 6:00	2.39	2.59	4.83	
5-20-22 7:00	2.43	2.68	4.85	
5-20-22 8:00	2.60	2.86	4.89	
5-20-22 9:00	2.96	3.26	5.16	
5-20-22 10:00	3.81	4.13	5.71	
5-20-22 11:00	4.41	4.60	6.21	
5-20-22 12:00	4.79	5.13	5.98	
5-20-22 13:00	5.68	5.98	6.52	
5-20-22 14:00	6.13	6.35	7.80	
5-20-22 15:00	6.35	6.48	8.53	
5-20-22 16:00	6.28	6.47	8.64	
5-20-22 17:00	6.46	6.51	7.34	
5-20-22 18:00	6.09	6.03	6.60	

Date and Time	Hourly Average Temperature (°C)			Comments
	FR_FR3	FR_SCOUTDS	FS_EFF-SC	
	E320693	E320695	E323231	
5-20-22 19:00	5.66	5.68	7.17	
5-20-22 20:00	5.15	5.08	7.24	
5-20-22 21:00	4.57	4.52	7.23	
5-20-22 22:00	4.09	4.07	6.92	
5-20-22 23:00	3.69	3.75	6.89	
5-21-22 0:00	3.38	3.45	6.82	
5-21-22 1:00	3.16	3.28	6.72	
5-21-22 2:00	2.96	3.02	6.93	
5-21-22 3:00	2.73	2.83	6.50	
5-21-22 4:00	2.55	2.67	6.35	
5-21-22 5:00	2.41	2.62	6.27	
5-21-22 6:00	2.39	2.53	5.57	
5-21-22 7:00	2.43	2.63	6.42	
5-21-22 8:00	2.64	2.89	6.31	
5-21-22 9:00	3.10	3.53	6.59	
5-21-22 10:00	3.90	4.21	6.97	
5-21-22 11:00	4.46	4.96	7.49	
5-21-22 12:00	5.54	5.86	8.01	
5-21-22 13:00	5.44	5.45	7.12	
5-21-22 14:00	5.19	5.33	7.01	
5-21-22 15:00	5.30	5.49	7.81	
5-21-22 16:00	5.62	5.80	8.02	
5-21-22 17:00	5.69	5.82	8.11	
5-21-22 18:00	5.44	5.56	8.04	
5-21-22 19:00	5.08	5.13	7.84	
5-21-22 20:00	4.74	4.79	7.57	
5-21-22 21:00	4.39	4.48	7.20	
5-21-22 22:00	3.98	4.02	7.07	
5-21-22 23:00	3.64	3.70	6.88	
5-22-22 0:00	3.30	3.39	6.65	
5-22-22 1:00	3.09	3.17	6.46	
5-22-22 2:00	2.87	3.06	6.65	
5-22-22 3:00	2.81	2.98	6.44	
5-22-22 4:00	2.64	2.78	6.34	
5-22-22 5:00	2.48	2.60	6.13	
5-22-22 6:00	2.34	2.47	6.01	
5-22-22 7:00	2.28	2.48	5.84	
5-22-22 8:00	2.50	2.79	5.88	
5-22-22 9:00	3.15	3.52	5.04	
5-22-22 10:00	4.12	4.53	5.17	
5-22-22 11:00	4.86	5.10	5.71	
5-22-22 12:00	4.93	5.18	5.96	
5-22-22 13:00	5.69	6.03	6.03	
5-22-22 14:00	6.15	6.44	6.46	
5-22-22 15:00	6.68	6.90	7.61	
5-22-22 16:00	6.78	7.02	8.86	
5-22-22 17:00	6.72	6.99	9.30	
5-22-22 18:00	6.83	6.99	8.99	
5-22-22 19:00	6.54	6.64	8.64	
5-22-22 20:00	6.09	6.10	8.23	
5-22-22 21:00	5.63	5.64	6.94	
5-22-22 22:00	5.12	5.10	7.79	
5-22-22 23:00	4.60	4.56	7.66	
5-23-22 0:00	4.07	4.05	7.68	
5-23-22 1:00	3.63	3.67	7.09	
5-23-22 2:00	3.32	3.40	6.81	
5-23-22 3:00	3.08	3.14	6.53	
5-23-22 4:00	2.88	2.93	6.31	
5-23-22 5:00	2.63	2.77	6.17	
5-23-22 6:00	2.50	2.62	6.07	
5-23-22 7:00	2.45	2.67	5.97	
5-23-22 8:00	2.74	3.04	6.16	
5-23-22 9:00	3.48	3.88	6.69	
5-23-22 10:00	4.44	4.95	7.30	
5-23-22 11:00	5.62	6.12	7.94	
5-23-22 12:00	6.24	6.57	8.65	
5-23-22 13:00	6.83	7.17	9.24	
5-23-22 14:00	7.22	7.56	9.12	
5-23-22 15:00	7.71	8.07	9.32	
5-23-22 16:00	8.09	8.39	9.38	
5-23-22 17:00	7.98	8.11	9.31	
5-23-22 18:00	7.75	7.88	9.21	
5-23-22 19:00	7.49	7.55	8.95	
5-23-22 20:00	7.01	6.97	8.68	
5-23-22 21:00	6.22	6.24	8.31	
5-23-22 22:00	5.69	5.61	7.92	
5-23-22 23:00	5.15	5.14	7.53	
5-24-22 0:00	4.74	4.82	7.29	

Date and Time	Hourly Average Temperature (°C)			Comments
	FR_FR3	FR_SCOUTDS	FS_EFF-SC	
	E320693	E320695	E323231	
5-24-22 1:00	4.43	4.48	7.07	
5-24-22 2:00	4.11	4.16	6.76	
5-24-22 3:00	3.81	3.82	6.65	
5-24-22 4:00	3.53	3.65	6.30	
5-24-22 5:00	3.38	3.47	6.21	
5-24-22 6:00	3.22	3.35	6.19	
5-24-22 7:00	3.18	3.32	6.13	
5-24-22 8:00	3.43	3.73	6.23	
5-24-22 9:00	3.97	4.35	6.50	
5-24-22 10:00	4.59	4.90	7.07	
5-24-22 11:00	5.32	5.83	7.75	
5-24-22 12:00	6.60	7.28	8.45	
5-24-22 13:00	7.49	7.81	9.10	
5-24-22 14:00	7.48	7.70	9.10	
5-24-22 15:00	7.53	7.70	8.74	
5-24-22 16:00	7.33	7.41	8.37	
5-24-22 17:00	7.51	7.81	8.50	
5-24-22 18:00	7.29	7.19	8.21	
5-24-22 19:00	6.77	6.81	7.81	
5-24-22 20:00	6.52	6.57	7.53	
5-24-22 21:00	6.09	6.11	7.02	
5-24-22 22:00	5.55	5.53	6.93	
5-24-22 23:00	5.07	5.09	6.63	
5-25-22 0:00	4.70	4.77	6.28	
5-25-22 1:00	4.43	4.51	6.18	
5-25-22 2:00	4.18	4.35	6.09	
5-25-22 3:00	4.13	4.27	5.97	
5-25-22 4:00	4.02	4.16	5.93	
5-25-22 5:00	3.96	4.10	5.83	
5-25-22 6:00	3.88	4.05	5.80	
5-25-22 7:00	3.86	4.06	5.68	
5-25-22 8:00	3.94	4.13	5.75	
5-25-22 9:00	4.09	4.29	5.91	
5-25-22 10:00	4.08	4.38	6.00	
5-25-22 11:00	4.90	5.25	6.48	
5-25-22 12:00	5.90	6.25	7.25	
5-25-22 13:00	6.43	6.64	7.64	
5-25-22 14:00	6.69	6.90	7.60	
5-25-22 15:00	7.35	7.55	7.68	
5-25-22 16:00	7.46	7.52	7.53	
5-25-22 17:00	6.92	6.81	6.85	
5-25-22 18:00	6.25	6.28	6.38	
5-25-22 19:00	6.12	6.21	6.26	
5-25-22 20:00	6.05	6.06	6.16	
5-25-22 21:00	5.59	5.57	5.89	
5-25-22 22:00	5.10	5.06	5.54	
5-25-22 23:00	4.68	4.77	5.34	
5-26-22 0:00	4.34	4.36	5.16	
5-26-22 1:00	4.02	4.08	5.09	
5-26-22 2:00	3.80	3.86	4.86	
5-26-22 3:00	3.61	3.72	4.94	
5-26-22 4:00	3.45	3.54	6.65	
5-26-22 5:00	3.31	3.46	4.84	
5-26-22 6:00	3.21	3.39	4.83	
5-26-22 7:00	3.21	3.43	4.86	
5-26-22 8:00	3.46	3.71	5.03	
5-26-22 9:00	4.10	4.44	5.61	
5-26-22 10:00	4.98	5.36	6.35	
5-26-22 11:00	5.86	6.24	7.37	
5-26-22 12:00	6.57	6.88	7.92	
5-26-22 13:00	7.29	7.58	8.43	
5-26-22 14:00	7.94	8.18	8.88	
5-26-22 15:00	8.47	8.62	8.82	
5-26-22 16:00	8.19	8.20	7.85	
5-26-22 17:00	7.79	7.77	7.05	
5-26-22 18:00	7.60	7.63	6.44	
5-26-22 19:00	7.34	7.30	6.39	
5-26-22 20:00	6.83	6.71	7.33	
5-26-22 21:00	6.25	6.28	8.35	
5-26-22 22:00	5.72	5.71	6.48	
5-26-22 23:00	5.22	5.29	6.08	
5-27-22 0:00	4.87	4.96	5.97	
5-27-22 1:00	4.58	4.73	6.17	
5-27-22 2:00	4.45	4.57	6.35	
5-27-22 3:00	4.31	4.48	6.91	
5-27-22 4:00	4.19	4.41	6.68	
5-27-22 5:00	4.15	4.34	6.36	
5-27-22 6:00	4.05	4.26	5.43	

Date and Time	Hourly Average Temperature (°C)			Comments
	FR_FR3	FR_SCOUTDS	FS_EFF-SC	
	E320693	E320695	E323231	
5-27-22 7:00	4.14	4.37	5.34	
5-27-22 8:00	4.30	4.56	5.30	
5-27-22 9:00	4.61	4.93	5.69	
5-27-22 10:00	5.17	5.58	5.92	
5-27-22 11:00	5.53	5.73	6.11	
5-27-22 12:00	5.86	6.24	6.35	
5-27-22 13:00	6.51	6.85	6.92	
5-27-22 14:00	6.67	6.89	6.78	
5-27-22 15:00	6.74	6.85	6.54	
5-27-22 16:00	6.88	7.06	6.31	
5-27-22 17:00	7.12	7.21	6.35	
5-27-22 18:00	6.79	6.72	5.96	
5-27-22 19:00	6.42	6.29	5.54	
5-27-22 20:00	5.97	5.90	5.17	
5-27-22 21:00	5.44	5.46	5.08	
5-27-22 22:00	4.84	4.97	4.71	
5-27-22 23:00	4.51	4.57	4.53	
5-28-22 0:00	4.20	4.33	4.48	
5-28-22 1:00	3.99	4.13	4.46	
5-28-22 2:00	3.79	4.00	4.67	
5-28-22 3:00	3.72	3.91	4.79	
5-28-22 4:00	3.64	3.86	4.89	
5-28-22 5:00	3.38	3.57	4.67	
5-28-22 6:00	3.27	3.50	4.47	
5-28-22 7:00	3.24	3.49	4.63	
5-28-22 8:00	3.60	3.81	4.99	
5-28-22 9:00	4.03	4.29	5.50	
5-28-22 10:00	4.72	4.96	6.13	
5-28-22 11:00	5.07	5.28	6.53	
5-28-22 12:00	5.68	5.84	6.78	
5-28-22 13:00	6.18	6.26	6.54	
5-28-22 14:00	6.68	6.77	6.55	
5-28-22 15:00	7.18	7.22	6.60	
5-28-22 16:00	7.14	7.19	6.39	
5-28-22 17:00	6.79	6.84	6.17	
5-28-22 18:00	6.31	6.35	5.97	
5-28-22 19:00	5.87	5.89	5.58	
5-28-22 20:00	5.36	5.42	5.20	
5-28-22 21:00	4.82	4.92	4.82	
5-28-22 22:00	4.35	4.42	4.74	
5-28-22 23:00	3.94	4.05	4.42	
5-29-22 0:00	3.62	3.76	4.49	
5-29-22 1:00	3.41	3.62	4.43	
5-29-22 2:00	3.37	3.52	4.62	
5-29-22 3:00	3.24	3.40	4.35	
5-29-22 4:00	3.18	3.33	4.26	
5-29-22 5:00	3.04	3.17	4.28	
5-29-22 6:00	2.92	3.11	4.11	
5-29-22 7:00	3.03	3.21	4.27	
5-29-22 8:00	3.24	3.46	4.60	
5-29-22 9:00	3.61	3.80	5.08	
5-29-22 10:00	4.09	4.25	5.34	
5-29-22 11:00	4.62	4.79	5.65	
5-29-22 12:00	5.08	5.23	5.85	
5-29-22 13:00	5.32	5.47	5.89	
5-29-22 14:00	5.30	5.42	5.78	
5-29-22 15:00	5.31	5.41	5.63	
5-29-22 16:00	5.14	5.24	5.55	
5-29-22 17:00	5.11	5.21	5.37	
5-29-22 18:00	4.99	5.14	5.16	
5-29-22 19:00	4.86	4.96	5.20	
5-29-22 20:00	4.64	4.77	4.92	
5-29-22 21:00	4.36	4.51	4.89	
5-29-22 22:00	4.18	4.29	4.81	
5-29-22 23:00	4.03	4.15	4.51	
5-30-22 0:00	3.88	4.05	4.59	
5-30-22 1:00	3.73	3.92	4.47	
5-30-22 2:00	3.64	3.77	4.21	
5-30-22 3:00	3.58	3.70	4.70	
5-30-22 4:00	3.53	3.70	5.67	
5-30-22 5:00	3.43	3.60	6.16	
5-30-22 6:00	3.34	3.54	5.80	
5-30-22 7:00	3.31	3.49	5.52	
5-30-22 8:00	3.56	3.75	5.63	
5-30-22 9:00	4.04	4.22	5.80	
5-30-22 10:00	4.29	4.50	5.96	
5-30-22 11:00	4.55	4.70	6.06	
5-30-22 12:00	5.00	5.15	6.27	

Date and Time	Hourly Average Temperature (°C)			Comments
	FR_FR3	FR_SCOUTDS	FS_EFF-SC	
	E320693	E320695	E323231	
5-30-22 13:00	5.41	5.58	6.59	
5-30-22 14:00	5.87	6.01	6.85	
5-30-22 15:00	6.46	6.56	6.75	
5-30-22 16:00	6.35	6.48	6.39	
5-30-22 17:00	6.14	6.26	6.05	
5-30-22 18:00	5.92	6.01	5.81	
5-30-22 19:00	5.57	5.70	5.71	
5-30-22 20:00	5.13	5.26	5.44	
5-30-22 21:00	4.71	4.85	5.16	
5-30-22 22:00	4.33	4.49	5.01	
5-30-22 23:00	4.00	4.16	4.83	
5-31-22 0:00	3.78	3.96	4.77	
5-31-22 1:00	3.51	3.71	4.65	
5-31-22 2:00	3.26	3.49	4.52	
5-31-22 3:00	3.09	3.29	4.36	
5-31-22 4:00	2.87	3.15	4.31	
5-31-22 5:00	2.73	2.98	4.22	
5-31-22 6:00	2.66	2.86	4.20	
5-31-22 7:00	2.66	2.92	4.39	
5-31-22 8:00	2.98	3.23	4.81	
5-31-22 9:00	3.60	3.87	5.48	
5-31-22 10:00	4.50	4.73	6.25	
5-31-22 11:00	5.22	5.47	6.90	
5-31-22 12:00	4.97	5.22	6.64	
5-31-22 13:00	4.88	5.04	5.68	
5-31-22 14:00	4.64	4.79	5.44	
5-31-22 15:00	4.58	4.73	6.00	
5-31-22 16:00	4.90	5.09	6.38	
5-31-22 17:00	5.06	5.21	6.54	
5-31-22 18:00	5.29	5.42	6.54	
5-31-22 19:00	5.06	5.22	6.22	
5-31-22 20:00	4.81	4.93	5.16	
5-31-22 21:00	4.45	4.59	5.77	
5-31-22 22:00	4.09	4.30	5.77	
5-31-22 23:00	3.82	3.99	5.68	
6-1-22 0:00	3.59	3.72	5.49	
6-1-22 1:00	3.36	3.59	5.41	
6-1-22 2:00	3.24	3.39	5.29	
6-1-22 3:00	3.05	3.27	5.19	
6-1-22 4:00	2.96	3.16	5.14	
6-1-22 5:00	2.94	3.12	5.08	
6-1-22 6:00	2.95	3.15	5.12	
6-1-22 7:00	3.04	3.27	5.23	
6-1-22 8:00	3.29	3.47	5.52	
6-1-22 9:00	3.54	3.72	5.73	
6-1-22 10:00	3.84	4.04	5.97	
6-1-22 11:00	4.79	4.93	6.45	
6-1-22 12:00	5.06	5.23	6.85	
6-1-22 13:00	5.51	5.68	7.20	
6-1-22 14:00	5.38	5.53	6.84	
6-1-22 15:00	6.21	6.33	6.80	
6-1-22 16:00	6.39	6.49	7.34	
6-1-22 17:00	5.84	5.99	6.95	
6-1-22 18:00	5.63	5.74	6.53	
6-1-22 19:00	5.48	5.62	6.22	
6-1-22 20:00	5.19	5.30	6.24	
6-1-22 21:00	4.79	4.92	5.92	
6-1-22 22:00	4.41	4.55	5.87	
6-1-22 23:00	4.16	4.33	5.62	
6-2-22 0:00	3.94	4.12	5.71	
6-2-22 1:00	3.83	3.97	5.66	
6-2-22 2:00	3.69	3.85	5.53	
6-2-22 3:00	3.52	3.68	5.52	
6-2-22 4:00	3.35	3.54	5.23	
6-2-22 5:00	3.23	3.40	5.09	
6-2-22 6:00	3.14	3.28	4.73	
6-2-22 7:00	3.19	3.38	4.72	
6-2-22 8:00	3.40	3.61	5.00	
6-2-22 9:00	3.84	4.06	5.46	
6-2-22 10:00	4.53	4.74	6.33	
6-2-22 11:00	5.45	5.67	7.02	
6-2-22 12:00	5.79	5.97	6.86	
6-2-22 13:00	5.95	6.10	6.78	
6-2-22 14:00	5.94	6.11	6.62	
6-2-22 15:00	5.97	6.12	6.79	
6-2-22 16:00	5.82	5.98	6.71	
6-2-22 17:00	5.58	5.75	6.38	
6-2-22 18:00	5.64	5.84	6.27	

Date and Time	Hourly Average Temperature (°C)			Comments
	FR_FR3	FR_SCOUTDS	FS_EFF-SC	
	E320693	E320695	E323231	
6-2-22 19:00	5.49	5.64	6.09	
6-2-22 20:00	5.15	5.27	5.92	
6-2-22 21:00	4.77	4.92	5.57	
6-2-22 22:00	4.38	4.49	5.39	
6-2-22 23:00	4.03	4.14	4.91	
6-3-22 0:00	3.72	3.87	5.27	
6-3-22 1:00	3.51	3.69	5.94	
6-3-22 2:00	3.32	3.47	5.49	
6-3-22 3:00	3.20	3.35	5.42	
6-3-22 4:00	3.05	3.20	5.48	
6-3-22 5:00	2.92	3.10	5.15	
6-3-22 6:00	2.89	3.08	4.99	
6-3-22 7:00	3.03	3.19	5.05	
6-3-22 8:00	3.43	3.59	5.57	
6-3-22 9:00	3.93	4.10	6.07	
6-3-22 10:00	4.66	4.82	6.68	
6-3-22 11:00	5.08	5.27	7.07	
6-3-22 12:00	5.63	5.81	7.24	
6-3-22 13:00	5.89	6.05	7.41	
6-3-22 14:00	6.32	6.45	7.40	
6-3-22 15:00	6.22	6.35	7.37	
6-3-22 16:00	6.19	6.25	6.55	
6-3-22 17:00	6.14	6.21	6.43	
6-3-22 18:00	6.08	6.17	7.24	
6-3-22 19:00	5.77	5.89	7.50	
6-3-22 20:00	5.37	5.49	6.92	
6-3-22 21:00	4.95	5.11	5.63	
6-3-22 22:00	4.60	4.74	5.33	
6-3-22 23:00	4.32	4.49	5.20	
6-4-22 0:00	4.10	4.25	5.19	
6-4-22 1:00	3.97	4.10	5.12	
6-4-22 2:00	3.85	4.01	5.23	
6-4-22 3:00	3.73	3.92	5.17	
6-4-22 4:00	3.67	3.83	5.11	
6-4-22 5:00	3.63	3.84	5.04	
6-4-22 6:00	3.62	3.77	4.80	
6-4-22 7:00	3.71	3.86	5.70	
6-4-22 8:00	3.86	4.02	7.12	
6-4-22 9:00	4.28	4.41	6.12	
6-4-22 10:00	4.72	4.87	6.00	
6-4-22 11:00	5.05	5.19	6.29	
6-4-22 12:00	5.76	5.92	7.57	
6-4-22 13:00	6.20	6.32	7.57	
6-4-22 14:00	6.37	6.47	6.88	
6-4-22 15:00	6.37	6.53	7.82	
6-4-22 16:00	6.84	6.92	7.61	
6-4-22 17:00	6.98	7.03	7.26	
6-4-22 18:00	6.67	6.73	6.95	
6-4-22 19:00	6.03	6.12	6.83	
6-4-22 20:00	5.29	5.47	6.87	
6-4-22 21:00	4.84	5.06	6.50	
6-4-22 22:00	4.65	4.72	6.17	
6-4-22 23:00	4.44	4.60	5.84	
6-5-22 0:00	4.34	4.52	5.73	
6-5-22 1:00	4.22	4.38	5.71	
6-5-22 2:00	4.10	4.25	5.64	
6-5-22 3:00	4.17	4.24	5.53	
6-5-22 4:00	3.85	4.09	5.39	
6-5-22 5:00	3.89	4.02	5.42	
6-5-22 6:00	3.80	3.99	5.41	
6-5-22 7:00	3.83	4.01	5.28	
6-5-22 8:00	3.90	4.08	5.46	
6-5-22 9:00	4.22	4.35	5.56	
6-5-22 10:00	4.57	4.70	5.96	
6-5-22 11:00	4.45	4.62	6.05	
6-5-22 12:00	4.95	5.12	6.34	
6-5-22 13:00	5.28	5.46	6.66	
6-5-22 14:00	5.39	5.54	6.55	
6-5-22 15:00	5.37	5.48	6.23	
6-5-22 16:00	5.24	5.34	6.46	
6-5-22 17:00	5.22	5.32	6.09	
6-5-22 18:00	5.17	5.27	6.05	
6-5-22 19:00	5.05	5.18	6.49	
6-5-22 20:00	4.84	4.95	6.43	
6-5-22 21:00	4.64	4.80	6.06	
6-5-22 22:00	4.40	4.57	5.94	
6-5-22 23:00	4.18	4.40	5.91	
6-6-22 0:00	4.06	4.23	5.88	

Date and Time	Hourly Average Temperature (°C)			Comments
	FR_FR3	FR_SCOUTDS	FS_EFF-SC	
	E320693	E320695	E323231	
6-6-22 1:00	3.96	4.13	5.80	
6-6-22 2:00	3.87	4.05	5.83	
6-6-22 3:00	3.77	3.95	5.77	
6-6-22 4:00	3.68	3.89	5.77	
6-6-22 5:00	3.65	3.85	5.43	
6-6-22 6:00	3.60	3.81	5.39	
6-6-22 7:00	3.62	3.81	5.37	
6-6-22 8:00	3.74	3.92	5.35	
6-6-22 9:00	3.90	4.09	5.45	
6-6-22 10:00	4.10	4.27	5.62	
6-6-22 11:00	4.36	4.53	5.78	
6-6-22 12:00	4.69	4.85	5.91	
6-6-22 13:00	5.03	5.17	6.11	
6-6-22 14:00	5.16	5.28	6.14	
6-6-22 15:00	5.51	5.59	6.02	
6-6-22 16:00	5.94	6.03		FS_EFF-SC sensor malfunction.
6-6-22 17:00	6.29	6.40		FS_EFF-SC sensor malfunction.
6-6-22 18:00	5.98	6.10		FS_EFF-SC sensor malfunction.
6-6-22 19:00	5.72	5.84		FS_EFF-SC sensor malfunction.
6-6-22 20:00	5.28	5.40		FS_EFF-SC sensor malfunction.
6-6-22 21:00	4.92	5.04		FS_EFF-SC sensor malfunction.
6-6-22 22:00	4.59	4.73		FS_EFF-SC sensor malfunction.
6-6-22 23:00	4.33	4.46		FS_EFF-SC sensor malfunction.
6-7-22 0:00	4.14	4.29		FS_EFF-SC sensor malfunction.
6-7-22 1:00	4.05	4.15		FS_EFF-SC sensor malfunction.
6-7-22 2:00	3.90	4.07		FS_EFF-SC sensor malfunction.
6-7-22 3:00	3.84	4.00		FS_EFF-SC sensor malfunction.
6-7-22 4:00	3.78	3.94		FS_EFF-SC sensor malfunction.
6-7-22 5:00	3.76	3.91		FS_EFF-SC sensor malfunction.
6-7-22 6:00	3.75	3.96		FS_EFF-SC sensor malfunction.
6-7-22 7:00	3.80	3.95		FS_EFF-SC sensor malfunction.
6-7-22 8:00	3.85	4.03		FS_EFF-SC sensor malfunction.
6-7-22 9:00	4.10	4.27		FS_EFF-SC sensor malfunction.
6-7-22 10:00	4.34	4.55		FS_EFF-SC sensor malfunction.
6-7-22 11:00	4.58	4.75		FS_EFF-SC sensor malfunction.
6-7-22 12:00	4.54	4.70		FS_EFF-SC sensor malfunction.
6-7-22 13:00	5.16	5.30		FS_EFF-SC sensor malfunction.
6-7-22 14:00	5.11	5.29		FS_EFF-SC sensor malfunction.
6-7-22 15:00	5.12	5.24		FS_EFF-SC sensor malfunction.
6-7-22 16:00	5.88	6.01		FS_EFF-SC sensor malfunction.
6-7-22 17:00	5.99	6.15	7.60	
6-7-22 18:00	5.80	5.92	7.35	
6-7-22 19:00	5.40	5.54	7.14	
6-7-22 20:00	4.99	5.14	6.90	
6-7-22 21:00	4.62	4.81	6.65	
6-7-22 22:00	4.39	4.52	6.42	
6-7-22 23:00	4.10	4.25	6.32	
6-8-22 0:00	3.84	4.02	6.08	
6-8-22 1:00	3.67	3.82	6.05	
6-8-22 2:00	3.52	3.66	5.92	
6-8-22 3:00	3.38	3.52	5.85	
6-8-22 4:00	3.27	3.48	5.81	
6-8-22 5:00	3.24	3.42	5.75	
6-8-22 6:00	3.21	3.40	5.72	
6-8-22 7:00	3.30	3.48	5.71	
6-8-22 8:00	3.47	3.61	5.86	
6-8-22 9:00	3.81	3.97	6.14	
6-8-22 10:00	4.38	4.55	6.63	
6-8-22 11:00	5.06	5.20	6.85	
6-8-22 12:00	5.96	6.12	7.38	
6-8-22 13:00	6.10	6.26	7.61	
6-8-22 14:00	6.56	6.68	7.60	
6-8-22 15:00	6.51	6.59	7.33	
6-8-22 16:00	6.75	6.83	7.63	
6-8-22 17:00	6.75	6.81	7.42	
6-8-22 18:00	6.65	6.75	7.23	
6-8-22 19:00	6.49	6.55	7.06	
6-8-22 20:00	6.02	6.14	6.79	
6-8-22 21:00	5.48	5.56	6.37	
6-8-22 22:00	5.05	5.17	6.16	
6-8-22 23:00	4.72	4.76	6.00	
6-9-22 0:00	4.33	4.48	5.87	
6-9-22 1:00	4.09	4.20	5.67	
6-9-22 2:00	3.96	4.08	5.57	
6-9-22 3:00	3.77	3.94	5.46	
6-9-22 4:00	3.64	3.77	5.33	
6-9-22 5:00	3.48	3.66	5.19	
6-9-22 6:00	3.45	3.62	5.06	

Date and Time	Hourly Average Temperature (°C)			Comments
	FR_FR3	FR_SCOUTDS	FS_EFF-SC	
	E320693	E320695	E323231	
6-9-22 7:00	3.45	3.64	5.12	
6-9-22 8:00	3.70	3.90	5.52	
6-9-22 9:00	4.18	4.39	6.08	
6-9-22 10:00	4.72	4.94	6.65	
6-9-22 11:00	5.15	5.36	6.96	
6-9-22 12:00	5.79	6.02	7.53	
6-9-22 13:00	6.45	6.62	7.97	
6-9-22 14:00	7.05	7.21	8.18	
6-9-22 15:00	7.13	7.28	8.15	
6-9-22 16:00	6.83	6.97	7.65	
6-9-22 17:00	6.46	6.57	7.10	
6-9-22 18:00	6.22	6.33	6.91	
6-9-22 19:00	5.96	6.05	6.60	
6-9-22 20:00	5.63	5.75	6.26	
6-9-22 21:00	5.20	5.32	5.99	
6-9-22 22:00	4.87	5.05	5.85	
6-9-22 23:00	4.65	4.77	5.70	
6-10-22 0:00	4.47	4.64	5.67	
6-10-22 1:00	4.40	4.56	5.62	
6-10-22 2:00	4.34	4.53	5.56	
6-10-22 3:00	4.30	4.46	5.56	
6-10-22 4:00	4.22	4.38	5.65	
6-10-22 5:00	4.23	4.37	5.51	
6-10-22 6:00	4.20	4.39	5.49	
6-10-22 7:00	4.37	4.49	5.59	
6-10-22 8:00	4.63	4.78	5.96	
6-10-22 9:00	5.13	5.30	6.51	
6-10-22 10:00	5.63	5.85	7.14	
6-10-22 11:00	6.25	6.44	7.71	
6-10-22 12:00	6.93	7.11	8.26	
6-10-22 13:00	7.64	7.82	8.68	
6-10-22 14:00	8.13	8.27	8.73	
6-10-22 15:00	8.34	8.43	8.64	
6-10-22 16:00	8.17	8.24	7.90	
6-10-22 17:00	7.54	7.58	6.95	
6-10-22 18:00	7.03	7.09	6.64	
6-10-22 19:00	6.41	6.50	6.35	
6-10-22 20:00	5.95	6.08	6.06	
6-10-22 21:00	5.49	5.63	5.92	
6-10-22 22:00	5.12	5.23	5.80	
6-10-22 23:00	4.81	4.95	5.53	
6-11-22 0:00	4.54	4.67	5.52	
6-11-22 1:00	4.37	4.49	5.48	
6-11-22 2:00	4.23	4.42	5.43	
6-11-22 3:00	4.19	4.35	5.46	
6-11-22 4:00	4.21	4.35	5.48	
6-11-22 5:00	4.13	4.31	5.36	
6-11-22 6:00	4.14	4.30	5.39	
6-11-22 7:00	4.20	4.35	5.07	
6-11-22 8:00	4.23	4.36	5.03	
6-11-22 9:00	4.43	4.55	5.70	
6-11-22 10:00	4.91	5.06	6.84	
6-11-22 11:00	5.34	5.53	7.23	
6-11-22 12:00	5.31	5.46	7.00	
6-11-22 13:00	6.17	6.31	7.50	
6-11-22 14:00	6.18	6.32	7.79	
6-11-22 15:00	6.03	6.17	7.53	
6-11-22 16:00	6.18	6.27	7.46	
6-11-22 17:00	6.10	6.23	7.69	
6-11-22 18:00	6.17	6.30	7.40	
6-11-22 19:00	5.81	5.92	6.97	
6-11-22 20:00	5.55	5.68	6.70	
6-11-22 21:00	5.18	5.30	6.43	
6-11-22 22:00	4.88	4.96	6.25	
6-11-22 23:00	4.69	4.79	6.30	
6-12-22 0:00	4.44	4.56	6.13	
6-12-22 1:00	4.31	4.46	6.02	
6-12-22 2:00	4.20	4.35	6.05	
6-12-22 3:00	4.11	4.27	5.99	
6-12-22 4:00	3.98	4.14	5.95	
6-12-22 5:00	3.94	4.09	5.82	
6-12-22 6:00	3.86	4.04	5.80	
6-12-22 7:00	3.86	4.01	5.75	
6-12-22 8:00	4.10	4.27	6.08	
6-12-22 9:00	4.29	4.46	6.24	
6-12-22 10:00	4.86	5.02	6.57	
6-12-22 11:00	5.68	5.83	8.01	
6-12-22 12:00	6.53	6.71	8.59	

Date and Time	Hourly Average Temperature (°C)			Comments
	FR_FR3	FR_SCOUTDS	FS_EFF-SC	
	E320693	E320695	E323231	
6-12-22 13:00	6.56	6.79	8.60	
6-12-22 14:00	7.35	7.51	8.81	
6-12-22 15:00	7.62	7.74	8.79	
6-12-22 16:00	7.51	7.62	8.34	
6-12-22 17:00	7.78	7.86	8.49	
6-12-22 18:00	7.37	7.46	8.07	
6-12-22 19:00	6.67	6.77	7.59	
6-12-22 20:00	6.16	6.24	7.36	
6-12-22 21:00	5.62	5.75	7.09	
6-12-22 22:00	5.18	5.30	6.90	
6-12-22 23:00	4.89	5.03	6.83	
6-13-22 0:00	4.82	4.87	6.79	
6-13-22 1:00	4.62	4.73	6.80	
6-13-22 2:00	4.48	4.68	6.84	
6-13-22 3:00	4.41	4.56	6.67	
6-13-22 4:00	4.35	4.51	6.70	
6-13-22 5:00	4.33	4.45	6.70	
6-13-22 6:00	4.29	4.42	6.61	
6-13-22 7:00	4.27	4.41	6.53	
6-13-22 8:00	4.25	4.39	6.58	
6-13-22 9:00	4.30	4.44	6.49	
6-13-22 10:00	4.33	4.49	6.58	
6-13-22 11:00	4.33	4.48	6.52	
6-13-22 12:00	4.22	4.37	6.03	
6-13-22 13:00	3.93	4.06	5.57	
6-13-22 14:00	3.44	3.57	5.37	
6-13-22 15:00	2.87	3.02	5.18	
6-13-22 16:00	2.41	2.61	4.94	
6-13-22 17:00	2.02	2.21	4.77	
6-13-22 18:00	1.81	1.99	4.78	
6-13-22 19:00	1.58	1.78	4.64	
6-13-22 20:00	1.38	1.61	4.49	
6-13-22 21:00	1.25	1.49	4.54	
6-13-22 22:00	1.20	1.38	4.01	
6-13-22 23:00	1.09	1.30	3.50	
6-14-22 0:00	1.12	1.32	2.75	
6-14-22 1:00	1.09	1.30	2.82	
6-14-22 2:00	1.05	1.25	2.82	
6-14-22 3:00	1.10	1.31	2.82	
6-14-22 4:00	1.14	1.34	2.78	
6-14-22 5:00	1.31	1.52	2.84	
6-14-22 6:00	1.52	1.72	2.93	
6-14-22 7:00	1.75	1.95	3.02	
6-14-22 8:00	2.04	2.21	3.20	
6-14-22 9:00	2.27	2.42	3.39	
6-14-22 10:00	2.47	2.62	3.43	
6-14-22 11:00	2.78	2.93	3.58	
6-14-22 12:00	3.24	3.35	3.74	
6-14-22 13:00	3.51	3.61	3.73	
6-14-22 14:00	3.68	3.80	3.94	
6-14-22 15:00	3.82	3.92	4.03	
6-14-22 16:00	3.99	4.08	4.17	
6-14-22 17:00	4.11	4.19	4.28	
6-14-22 18:00	4.11	4.21	4.25	
6-14-22 19:00	3.88	3.96	4.05	
6-14-22 20:00	3.68	3.79	3.86	
6-14-22 21:00	3.50	3.60	3.74	
6-14-22 22:00	3.35	3.45	3.62	
6-14-22 23:00	3.25	3.32	4.40	
6-15-22 0:00	3.08	3.27	4.83	
6-15-22 1:00	3.04	3.22	4.71	
6-15-22 2:00	3.01	3.16	4.67	
6-15-22 3:00	2.95	3.14	4.71	
6-15-22 4:00	2.99	3.13	4.57	
6-15-22 5:00	2.98	3.15	4.56	
6-15-22 6:00	2.98	3.13	4.65	
6-15-22 7:00	3.05	3.17	4.65	
6-15-22 8:00	3.27	3.39	4.83	
6-15-22 9:00	3.58	3.71	5.07	
6-15-22 10:00	4.11	4.22	5.49	
6-15-22 11:00	4.88	5.00	5.99	
6-15-22 12:00	5.51	5.63	6.46	
6-15-22 13:00	5.84	5.97	6.88	
6-15-22 14:00	5.75	5.86	6.01	
6-15-22 15:00	6.04	6.15	6.41	
6-15-22 16:00	6.21	6.28	6.76	
6-15-22 17:00	5.98	6.04	6.49	
6-15-22 18:00	5.88	5.94	6.25	

Date and Time	Hourly Average Temperature (°C)			Comments
	FR_FR3	FR_SCOUTDS	FS_EFF-SC	
	E320693	E320695	E323231	
6-15-22 19:00	5.57	5.66	6.10	
6-15-22 20:00	5.22	5.31	5.87	
6-15-22 21:00	4.75	4.87	5.80	
6-15-22 22:00	4.34	4.45	5.43	
6-15-22 23:00	3.98	4.17	5.53	
6-16-22 0:00	3.84	3.97	5.51	
6-16-22 1:00	3.69	3.83	5.44	
6-16-22 2:00	3.56	3.71	5.47	
6-16-22 3:00	3.45	3.63	5.41	
6-16-22 4:00	3.42	3.59	5.42	
6-16-22 5:00	3.41	3.58	5.59	
6-16-22 6:00	3.41	3.60	5.61	
6-16-22 7:00	3.53	3.71	5.67	
6-16-22 8:00	3.82	3.97	6.14	
6-16-22 9:00	4.09	4.28	6.51	
6-16-22 10:00	4.78	4.96	6.77	
6-16-22 11:00	5.32	5.47	7.31	
6-16-22 12:00	5.51	5.68	7.15	
6-16-22 13:00	5.90	6.00	7.08	
6-16-22 14:00	5.88	5.98	6.94	
6-16-22 15:00	6.01	6.11	6.94	
6-16-22 16:00	6.31	6.41	6.98	
6-16-22 17:00	6.19	6.28	6.82	
6-16-22 18:00	6.12	6.19	6.72	
6-16-22 19:00	5.91	5.99	6.44	
6-16-22 20:00	5.63	5.72	6.33	
6-16-22 21:00	5.23	5.33	6.08	
6-16-22 22:00	4.87	4.99	5.82	
6-16-22 23:00	4.55	4.64	5.71	
6-17-22 0:00	4.28	4.41	5.52	
6-17-22 1:00	4.14	4.26	5.32	
6-17-22 2:00	4.01	4.13	5.28	
6-17-22 3:00	3.91	4.08	5.24	
6-17-22 4:00	3.88	4.02	5.27	
6-17-22 5:00	3.83	3.99	5.17	
6-17-22 6:00	3.79	3.99	5.17	
6-17-22 7:00	3.86	4.01	5.09	
6-17-22 8:00	4.05	4.18	5.35	
6-17-22 9:00	4.54	4.72	5.77	
6-17-22 10:00	5.26	5.40	6.51	
6-17-22 11:00	5.72	5.90	7.33	
6-17-22 12:00	6.35	6.53	7.88	
6-17-22 13:00	6.83	7.03	8.55	
6-17-22 14:00	7.44	7.60	8.42	
6-17-22 15:00	7.60	7.69	7.95	
6-17-22 16:00	7.65	7.69	7.17	
6-17-22 17:00	7.55	7.58	7.08	
6-17-22 18:00	7.15	7.19	6.39	
6-17-22 19:00	6.46	6.57	6.56	
6-17-22 20:00	5.85	5.97	6.77	
6-17-22 21:00	5.34	5.47	6.58	
6-17-22 22:00	4.91	5.07	6.41	
6-17-22 23:00	4.62	4.75	6.25	
6-18-22 0:00	4.39	4.55	6.22	
6-18-22 1:00	4.27	4.42	6.08	
6-18-22 2:00	4.20	4.35	6.08	
6-18-22 3:00	4.08	4.25	6.04	
6-18-22 4:00	4.01	4.21	6.04	
6-18-22 5:00	4.01	4.15	5.96	
6-18-22 6:00	3.94	4.11	5.97	
6-18-22 7:00	3.95	4.14	6.01	
6-18-22 8:00	4.05	4.23	5.96	
6-18-22 9:00	4.32	4.52	6.52	
6-18-22 10:00	4.93	5.12	7.14	
6-18-22 11:00	5.42	5.61	7.76	
6-18-22 12:00	5.71	5.92	8.07	
6-18-22 13:00	6.23	6.44	7.95	
6-18-22 14:00	6.45	6.66	8.05	
6-18-22 15:00	6.86	7.05	8.10	
6-18-22 16:00	6.82	6.99	8.07	
6-18-22 17:00	6.56	6.72	7.82	
6-18-22 18:00	6.09	6.27	7.45	
6-18-22 19:00	5.65	5.84	7.03	
6-18-22 20:00	5.32	5.54	6.84	
6-18-22 21:00	4.90	5.19	6.64	
6-18-22 22:00	4.58	4.85	6.35	
6-18-22 23:00	4.30	4.55	6.23	
6-19-22 0:00	4.09	4.26	6.13	

Date and Time	Hourly Average Temperature (°C)			Comments
	FR_FR3	FR_SCOUTDS	FS_EFF-SC	
	E320693	E320695	E323231	
6-19-22 1:00	3.90	4.08	6.04	
6-19-22 2:00	3.75	3.89	5.90	
6-19-22 3:00	3.70	3.78	6.06	
6-19-22 4:00	3.63	3.72	6.14	
6-19-22 5:00	3.60	3.65	6.55	
6-19-22 6:00	3.59	3.61	6.42	
6-19-22 7:00	3.68	3.70	6.43	
6-19-22 8:00	3.88	3.87	6.72	
6-19-22 9:00	4.29	4.26	7.00	
6-19-22 10:00	4.85	4.83	7.50	
6-19-22 11:00	5.08	5.09	7.63	
6-19-22 12:00	5.43	5.42	7.83	
6-19-22 13:00	5.80	5.77	7.86	
6-19-22 14:00	6.20	6.16	7.95	
6-19-22 15:00	6.64	6.60	8.56	
6-19-22 16:00	6.94	6.91	8.54	
6-19-22 17:00	7.07	7.02	8.53	
6-19-22 18:00	7.11	7.07	7.84	
6-19-22 19:00	6.82	6.72	6.55	
6-19-22 20:00	6.15	6.02	6.42	
6-19-22 21:00	5.64	5.54	6.73	
6-19-22 22:00	5.26	5.08	5.47	
6-19-22 23:00	4.94	4.71	5.73	
6-20-22 0:00	4.66	4.53	6.26	
6-20-22 1:00	4.52	4.33	7.09	
6-20-22 2:00	4.39	4.20	7.20	
6-20-22 3:00	4.26	4.09	6.69	
6-20-22 4:00	4.16	4.03	6.63	
6-20-22 5:00	4.10	3.93	6.50	
6-20-22 6:00	4.07	3.91	6.42	
6-20-22 7:00	4.08	3.93	6.53	
6-20-22 8:00	4.21	4.09	6.85	
6-20-22 9:00	4.41	4.29	7.02	
6-20-22 10:00	4.62	4.47	6.40	
6-20-22 11:00	4.91	4.79	6.30	
6-20-22 12:00	5.29	5.17	6.70	
6-20-22 13:00	5.72	5.61	8.79	
6-20-22 14:00	6.09	6.00	9.15	
6-20-22 15:00	6.04	5.92	8.87	
6-20-22 16:00	6.21	6.14	8.61	
6-20-22 17:00	6.34	6.28	8.52	
6-20-22 18:00	6.23	6.16	8.37	
6-20-22 19:00	5.75	5.75	7.94	
6-20-22 20:00	5.47	5.44	7.64	
6-20-22 21:00	5.25	5.21	7.47	
6-20-22 22:00	5.01	4.96	7.24	
6-20-22 23:00	4.81	4.77	6.99	
6-21-22 0:00	4.65	4.59	6.86	
6-21-22 1:00	4.46	4.43	6.62	
6-21-22 2:00	4.31	4.29	6.52	
6-21-22 3:00	4.23	4.20	6.34	
6-21-22 4:00	4.15	4.13	6.36	
6-21-22 5:00	4.12	4.10	6.46	
6-21-22 6:00	4.12	4.10	6.48	
6-21-22 7:00	4.17	4.18	6.43	
6-21-22 8:00	4.37	4.36	6.64	
6-21-22 9:00	4.64	4.68	6.90	
6-21-22 10:00	5.26	5.32	7.41	
6-21-22 11:00	6.18	6.24	8.50	
6-21-22 12:00	6.88	6.96	9.59	
6-21-22 13:00	7.28	7.33	9.96	
6-21-22 14:00	7.51	7.59	10.23	
6-21-22 15:00	7.85	7.90	9.94	
6-21-22 16:00	7.26	7.32	9.75	
6-21-22 17:00	6.67	6.74	9.06	
6-21-22 18:00	6.45	6.51	8.55	
6-21-22 19:00	6.44	6.46	8.56	
6-21-22 20:00	6.25	6.29	8.45	
6-21-22 21:00	6.05	6.07	8.22	
6-21-22 22:00	5.69	5.72	8.06	
6-21-22 23:00	5.42	5.46	7.75	
6-22-22 0:00	5.25	5.29	7.66	
6-22-22 1:00	5.10	5.16	7.39	
6-22-22 2:00	4.95	5.04	7.30	
6-22-22 3:00	4.86	4.93	7.26	
6-22-22 4:00	4.79	4.87	7.14	
6-22-22 5:00	4.81	4.85	7.07	
6-22-22 6:00	4.82	4.85	7.01	

Date and Time	Hourly Average Temperature (°C)			Comments
	FR_FR3	FR_SCOUTDS	FS_EFF-SC	
	E320693	E320695	E323231	
6-22-22 7:00	4.83	4.88	6.99	
6-22-22 8:00	5.10	5.18	7.19	
6-22-22 9:00	5.12	5.19	7.44	
6-22-22 10:00	5.15	5.22	7.35	
6-22-22 11:00	5.28	5.34	7.36	
6-22-22 12:00	5.42	5.44	7.26	
6-22-22 13:00	5.57	5.59	7.58	
6-22-22 14:00	5.98	6.03	9.09	
6-22-22 15:00	6.61	6.67	9.98	
6-22-22 16:00	7.16	7.24	10.52	
6-22-22 17:00	7.08	7.13	10.08	
6-22-22 18:00	6.83	6.88	9.86	
6-22-22 19:00	6.70	6.71	9.41	
6-22-22 20:00	6.38	6.41	9.05	
6-22-22 21:00	5.99	6.03	8.66	
6-22-22 22:00	5.66	5.67	8.37	
6-22-22 23:00	5.40	5.37	8.18	
6-23-22 0:00	5.17	5.20	7.97	
6-23-22 1:00	4.99	5.04	7.54	
6-23-22 2:00	4.91	4.90	6.90	
6-23-22 3:00	4.70	4.76	6.63	
6-23-22 4:00	4.67	4.66	6.44	
6-23-22 5:00	4.55	4.56	6.52	
6-23-22 6:00	4.48	4.50	6.64	
6-23-22 7:00	4.51	4.55	6.63	
6-23-22 8:00	4.54	4.58	6.79	
6-23-22 9:00	4.73	4.80	6.94	
6-23-22 10:00	5.54	5.54	7.58	
6-23-22 11:00	6.01	6.05	8.57	
6-23-22 12:00	5.63	5.71	8.47	
6-23-22 13:00	5.71	5.75	8.08	
6-23-22 14:00	5.73	5.80	8.08	
6-23-22 15:00	6.06	6.08	8.20	
6-23-22 16:00	6.15	6.16	8.00	
6-23-22 17:00	5.97	5.97	7.57	
6-23-22 18:00	6.03	6.04	8.26	
6-23-22 19:00	5.87	5.85	7.74	
6-23-22 20:00	5.47	5.47	7.34	
6-23-22 21:00	5.08	5.11	7.03	
6-23-22 22:00	4.66	4.69	6.71	
6-23-22 23:00	4.37	4.43	6.52	
6-24-22 0:00	4.14	4.18	6.22	
6-24-22 1:00	3.97	4.02	6.09	
6-24-22 2:00	3.84	3.89	6.05	
6-24-22 3:00	3.76	3.84	5.90	
6-24-22 4:00	3.75	3.83	6.05	
6-24-22 5:00	3.59	3.64	5.85	
6-24-22 6:00	3.17	3.20	5.31	
6-24-22 7:00	2.83	2.89	5.08	
6-24-22 8:00	2.77	2.81	5.00	
6-24-22 9:00	2.83	2.87	4.94	
6-24-22 10:00	3.21	3.21	5.45	
6-24-22 11:00	3.65	3.71	6.76	
6-24-22 12:00	4.24	4.26	7.00	
6-24-22 13:00	4.69	4.71	7.40	
6-24-22 14:00	5.30	5.31	7.71	
6-24-22 15:00	5.74	5.72	7.89	
6-24-22 16:00	5.92	5.93	8.00	
6-24-22 17:00	6.18	6.20	7.99	
6-24-22 18:00	6.40	6.38	7.88	
6-24-22 19:00	6.08	6.08	7.72	
6-24-22 20:00	5.67	5.69	7.61	
6-24-22 21:00	5.34	5.35	7.33	
6-24-22 22:00	5.03	5.04	7.30	
6-24-22 23:00	4.79	4.80	6.98	
6-25-22 0:00	4.56	4.60	6.92	
6-25-22 1:00	4.42	4.48	6.74	
6-25-22 2:00	4.26	4.31	6.80	
6-25-22 3:00	4.14	4.21	6.82	
6-25-22 4:00	4.07	4.13	6.89	
6-25-22 5:00	3.98	4.05	6.94	
6-25-22 6:00	3.94	4.00	6.82	
6-25-22 7:00	4.00	4.05	6.96	
6-25-22 8:00	4.14	4.19	7.14	
6-25-22 9:00	4.61	4.67	7.41	
6-25-22 10:00	5.55	5.61	8.08	
6-25-22 11:00	6.22	6.29	8.76	
6-25-22 12:00	6.37	6.50	9.21	

Date and Time	Hourly Average Temperature (°C)			Comments
	FR_FR3	FR_SCOUTDS	FS_EFF-SC	
	E320693	E320695	E323231	
6-25-22 13:00	7.15	7.22	9.45	
6-25-22 14:00	7.97	8.01	10.08	
6-25-22 15:00	8.26	8.35	10.58	
6-25-22 16:00	7.75	7.89	10.63	
6-25-22 17:00	7.95	8.04	10.36	
6-25-22 18:00	7.81	7.88	10.00	
6-25-22 19:00	7.47	7.56	9.35	
6-25-22 20:00	7.02	7.04	7.94	
6-25-22 21:00	6.44	6.48	7.86	
6-25-22 22:00	5.90	5.95	8.81	
6-25-22 23:00	5.44	5.48	8.75	
6-26-22 0:00	5.13	5.15	8.32	
6-26-22 1:00	4.84	4.87	8.37	
6-26-22 2:00	4.60	4.66	8.45	
6-26-22 3:00	4.42	4.47	8.67	
6-26-22 4:00	4.22	4.28	8.55	
6-26-22 5:00	4.10	4.16	8.29	
6-26-22 6:00	4.02	4.08	8.02	
6-26-22 7:00	4.03	4.13	7.82	
6-26-22 8:00	4.28	4.38	7.83	
6-26-22 9:00	4.87	4.95	7.49	
6-26-22 10:00	5.65	5.76	8.74	
6-26-22 11:00	6.54	6.62	9.92	
6-26-22 12:00	7.43	7.51	10.55	
6-26-22 13:00	8.24	8.32	11.27	
6-26-22 14:00	8.93	9.01	11.79	
6-26-22 15:00	9.43	9.47	12.15	
6-26-22 16:00	9.69	9.76	12.26	
6-26-22 17:00	9.62	9.64	12.18	
6-26-22 18:00	9.25	9.31	11.77	
6-26-22 19:00	8.69	8.73	11.08	
6-26-22 20:00	7.89	7.96	10.38	
6-26-22 21:00	7.17	7.19	10.03	
6-26-22 22:00	6.56	6.61	10.04	
6-26-22 23:00	6.01	5.97	9.55	
6-27-22 0:00	5.60	5.63	9.23	
6-27-22 1:00	5.23	5.27	8.80	
6-27-22 2:00	5.01	5.02	8.80	
6-27-22 3:00	4.78	4.85	8.61	
6-27-22 4:00	4.61	4.70	8.72	
6-27-22 5:00	4.49	4.47	8.49	
6-27-22 6:00	4.40	4.41	8.42	
6-27-22 7:00	4.42	4.47	8.57	
6-27-22 8:00	4.66	4.74	8.66	
6-27-22 9:00	5.20	5.30	9.04	
6-27-22 10:00	5.95	6.04	9.67	
6-27-22 11:00	6.79	6.87	10.49	
6-27-22 12:00	7.64	7.74	11.26	
6-27-22 13:00	8.48	8.56	12.02	
6-27-22 14:00	9.24	9.31	12.62	
6-27-22 15:00	9.77	9.85	13.02	
6-27-22 16:00	9.97	10.04	13.01	
6-27-22 17:00	9.82	9.90	12.71	
6-27-22 18:00	9.26	9.33	12.06	
6-27-22 19:00	8.72	8.81	11.35	
6-27-22 20:00	8.02	8.08	10.67	
6-27-22 21:00	7.38	7.43	10.07	
6-27-22 22:00	6.75	6.81	9.61	
6-27-22 23:00	6.21	6.26	9.00	
6-28-22 0:00	5.89	5.97	8.94	
6-28-22 1:00	5.71	5.70	9.02	
6-28-22 2:00	5.59	5.60	9.84	
6-28-22 3:00	5.44	5.48	9.30	
6-28-22 4:00	5.32	5.27	9.40	
6-28-22 5:00	5.22	5.25	9.49	
6-28-22 6:00	5.12	5.17	9.21	
6-28-22 7:00	5.12	5.19	8.44	
6-28-22 8:00	5.34	5.41	8.57	
6-28-22 9:00	5.71	5.81	9.16	
6-28-22 10:00	6.14	6.24	9.40	
6-28-22 11:00	6.92	6.96	9.95	
6-28-22 12:00	7.82	7.88	10.91	
6-28-22 13:00	8.47	8.57	11.67	
6-28-22 14:00	8.98	9.08	12.37	
6-28-22 15:00	9.39	9.47	12.69	
6-28-22 16:00	9.42	9.53	12.79	
6-28-22 17:00	9.05	9.12	12.25	
6-28-22 18:00	8.55	8.64	11.52	

Date and Time	Hourly Average Temperature (°C)			Comments
	FR_FR3	FR_SCOUTDS	FS_EFF-SC	
	E320693	E320695	E323231	
6-28-22 19:00	8.20	8.32	11.10	
6-28-22 20:00	7.77	7.86	10.60	
6-28-22 21:00	7.16	7.21	10.06	
6-28-22 22:00	6.64	6.70	9.81	
6-28-22 23:00	6.18	6.26	9.57	
6-29-22 0:00	5.87	5.91	9.30	
6-29-22 1:00	5.60	5.61	9.33	
6-29-22 2:00	5.38	5.44	9.18	
6-29-22 3:00	5.19	5.26	8.85	
6-29-22 4:00	5.09	5.13	9.12	
6-29-22 5:00	5.02	5.05	9.35	
6-29-22 6:00	4.94	4.99	9.25	
6-29-22 7:00	4.99	5.05	8.96	
6-29-22 8:00	5.14	5.18	8.63	
6-29-22 9:00	5.21	5.28	8.66	
6-29-22 10:00	5.37	5.47	8.81	
6-29-22 11:00	5.57	5.64	8.94	
6-29-22 12:00	6.15	6.23	8.96	
6-29-22 13:00	6.29	6.34	9.57	
6-29-22 14:00	6.40	6.48	9.90	
6-29-22 15:00	7.07	7.14	9.95	
6-29-22 16:00	7.28	7.39	10.50	
6-29-22 17:00	7.44	7.53	10.86	
6-29-22 18:00	7.19	7.28	10.63	
6-29-22 19:00	7.02	7.13	10.25	
6-29-22 20:00	6.75	6.82	9.82	
6-29-22 21:00	6.34	6.45	9.54	
6-29-22 22:00	6.07	6.11	9.15	
6-29-22 23:00	5.75	5.79	8.54	
6-30-22 0:00	5.53	5.59	8.70	
6-30-22 1:00	5.37	5.41	8.54	
6-30-22 2:00	5.24	5.34	8.55	
6-30-22 3:00	5.17	5.24	8.45	
6-30-22 4:00	4.95	5.09	8.27	
6-30-22 5:00	4.89	4.93	8.23	
6-30-22 6:00	4.86	4.97	8.08	
6-30-22 7:00	4.88	4.97	8.30	
6-30-22 8:00	5.00	5.04	8.35	
6-30-22 9:00	5.56	5.63	8.70	
6-30-22 10:00	6.14	6.24	9.46	
6-30-22 11:00	6.58	6.67	10.21	
6-30-22 12:00	7.19	7.27	10.51	
6-30-22 13:00	8.44	8.54	11.22	
6-30-22 14:00	8.92	9.01	11.88	
6-30-22 15:00	8.78	8.88	11.81	
6-30-22 16:00	8.29	8.43	11.75	
6-30-22 17:00	8.92	9.02	11.73	
6-30-22 18:00	9.07	9.18	11.80	
6-30-22 19:00	8.59	8.69	11.43	
6-30-22 20:00	7.86	7.94	10.98	
6-30-22 21:00	7.10	7.25	10.59	
6-30-22 22:00	6.57	6.68	10.10	
6-30-22 23:00	6.18	6.32	9.81	
7-1-22 0:00	5.85	5.98	9.52	
7-1-22 1:00	5.68	5.79	9.46	
7-1-22 2:00	5.51	5.62	9.36	
7-1-22 3:00	5.39	5.50	9.37	
7-1-22 4:00	5.24	5.32	9.27	
7-1-22 5:00	5.10	5.19	9.09	
7-1-22 6:00	5.00	5.11	8.99	
7-1-22 7:00	5.00	5.10	8.95	
7-1-22 8:00	5.10	5.26	9.12	
7-1-22 9:00	5.70	5.80	9.32	
7-1-22 10:00	6.42	6.48	10.08	
7-1-22 11:00	6.57	6.61	10.13	
7-1-22 12:00	6.95	7.00	9.86	
7-1-22 13:00	9.13	9.17	9.76	
7-1-22 14:00	9.51	9.57	10.67	
7-1-22 15:00	8.71	8.80	11.45	
7-1-22 16:00	8.61	8.74	12.49	
7-1-22 17:00	8.55	8.65	11.98	
7-1-22 18:00	8.73	8.80	11.77	
7-1-22 19:00	8.34	8.44	11.56	
7-1-22 20:00	7.88	7.97	11.21	
7-1-22 21:00	7.51	7.60	10.81	
7-1-22 22:00	6.97	7.07	10.34	
7-1-22 23:00	6.58	6.66	8.44	
7-2-22 0:00	6.34	6.40	7.98	

Date and Time	Hourly Average Temperature (°C)			Comments
	FR_FR3	FR_SCOUTDS	FS_EFF-SC	
	E320693	E320695	E323231	
7-2-22 1:00	6.10	6.14	7.95	
7-2-22 2:00	5.94	5.99	7.83	
7-2-22 3:00	5.81	5.90	7.62	
7-2-22 4:00	5.74	5.76	7.55	
7-2-22 5:00	5.67	5.71	7.48	
7-2-22 6:00	5.57	5.64	7.40	
7-2-22 7:00	5.61	5.62	7.40	
7-2-22 8:00	5.74	5.80	7.57	
7-2-22 9:00	6.12	6.18	7.95	
7-2-22 10:00	6.68	6.73	8.46	
7-2-22 11:00	7.57	7.65	9.23	
7-2-22 12:00	8.36	8.43	9.97	
7-2-22 13:00	8.67	8.73	10.83	
7-2-22 14:00	9.46	9.57	11.95	
7-2-22 15:00	9.92	9.99	12.07	
7-2-22 16:00	10.09	10.14	11.85	
7-2-22 17:00	9.67	9.75	11.89	
7-2-22 18:00	9.09	9.19	11.46	
7-2-22 19:00	8.54	8.62	10.74	
7-2-22 20:00	8.30	8.35	10.15	
7-2-22 21:00	7.94	7.98	9.40	
7-2-22 22:00	7.47	7.55	10.28	
7-2-22 23:00	7.13	7.20	10.73	
7-3-22 0:00	6.82	6.89	10.42	
7-3-22 1:00	6.60	6.71	10.36	
7-3-22 2:00	6.47	6.56	10.16	
7-3-22 3:00	6.32	6.41	10.04	
7-3-22 4:00	6.21	6.31	10.00	
7-3-22 5:00	6.12	6.24	9.83	
7-3-22 6:00	6.08	6.19	9.66	
7-3-22 7:00	6.03	6.13	9.54	
7-3-22 8:00	6.01	6.10	9.57	
7-3-22 9:00	6.06	6.18	9.60	
7-3-22 10:00	6.15	6.25	9.71	
7-3-22 11:00	6.19	6.33	9.77	
7-3-22 12:00	6.22	6.30	9.91	
7-3-22 13:00	6.25	6.35	9.70	
7-3-22 14:00	6.38	6.48	9.67	
7-3-22 15:00	6.40	6.51	10.00	
7-3-22 16:00	6.34	6.46	10.36	
7-3-22 17:00	6.34	6.46	10.30	
7-3-22 18:00	6.27	6.36	10.36	
7-3-22 19:00	6.23	6.30	10.13	
7-3-22 20:00	6.12	6.21	10.14	
7-3-22 21:00	5.99	6.11	9.95	
7-3-22 22:00	5.88	6.02	9.93	
7-3-22 23:00	5.84	5.83	10.12	
7-4-22 0:00	5.78	5.86	9.95	
7-4-22 1:00	5.76	5.81	9.74	
7-4-22 2:00	5.54	5.74	9.69	
7-4-22 3:00	5.50	5.82	9.51	
7-4-22 4:00	5.53	5.61	9.58	
7-4-22 5:00	5.45	5.57	9.41	
7-4-22 6:00	5.46	5.57	9.45	
7-4-22 7:00	5.54	5.61	9.43	
7-4-22 8:00	5.64	5.77	9.56	
7-4-22 9:00	5.85	5.95	9.85	
7-4-22 10:00	6.13	6.25	9.97	
7-4-22 11:00	6.55	6.67	10.45	
7-4-22 12:00	6.61	6.73	10.50	
7-4-22 13:00	6.84	6.94	10.84	
7-4-22 14:00	7.45	7.56	11.14	
7-4-22 15:00	7.56	7.64	11.57	
7-4-22 16:00	7.60	7.72	11.68	
7-4-22 17:00	7.52	7.62	11.28	
7-4-22 18:00	7.08	7.17	11.13	
7-4-22 19:00	6.88	7.02	10.06	
7-4-22 20:00	6.67	6.79	9.32	
7-4-22 21:00	6.41	6.53	9.56	
7-4-22 22:00	6.11	6.24	9.20	
7-4-22 23:00	5.89	6.00	9.21	
7-5-22 0:00	5.71	5.79	9.16	
7-5-22 1:00	5.49	5.49	8.76	
7-5-22 2:00	5.31	5.29	8.98	
7-5-22 3:00	5.19	5.20	9.78	
7-5-22 4:00	5.14	5.22	9.62	
7-5-22 5:00	5.11	5.16	9.52	
7-5-22 6:00	5.11	5.19	9.73	

Date and Time	Hourly Average Temperature (°C)			Comments
	FR_FR3	FR_SCOUTDS	FS_EFF-SC	
	E320693	E320695	E323231	
7-5-22 7:00	5.15	5.23	9.39	
7-5-22 8:00	5.26	5.33	9.49	
7-5-22 9:00	5.81	5.89	9.84	
7-5-22 10:00	6.41	6.49	10.19	
7-5-22 11:00	6.65	6.73	10.35	
7-5-22 12:00	6.95	7.03	10.67	
7-5-22 13:00	7.09	7.18	11.20	
7-5-22 14:00	7.34	7.40	11.44	
7-5-22 15:00	7.72	7.82	11.59	
7-5-22 16:00	8.34	8.45	11.94	
7-5-22 17:00	7.93	8.01	11.91	
7-5-22 18:00	7.81	7.90	11.46	
7-5-22 19:00	7.43	7.53	10.92	
7-5-22 20:00	7.12	7.23	10.73	
7-5-22 21:00	6.70	6.78	10.63	
7-5-22 22:00	6.28	6.39	10.21	
7-5-22 23:00	5.94	6.01	9.68	
7-6-22 0:00	5.65	5.70	9.53	
7-6-22 1:00	5.37	5.49	9.46	
7-6-22 2:00	5.18	5.30	9.27	
7-6-22 3:00	5.02	5.12	9.02	
7-6-22 4:00	4.86	4.99	8.94	
7-6-22 5:00	4.76	4.85	8.98	
7-6-22 6:00	4.71	4.77	8.77	
7-6-22 7:00	4.74	4.82	8.69	
7-6-22 8:00	5.08	5.19	8.82	
7-6-22 9:00	5.44	5.58	9.29	
7-6-22 10:00	5.80	5.92	9.63	
7-6-22 11:00	6.36	6.48	10.08	
7-6-22 12:00	6.39	6.52	10.36	
7-6-22 13:00	6.44	6.54	10.31	
7-6-22 14:00	6.46	6.57	10.21	
7-6-22 15:00	6.69	6.79	10.15	
7-6-22 16:00	7.34	7.42	10.41	
7-6-22 17:00	7.68	7.77	10.70	
7-6-22 18:00	7.92	8.01	10.94	
7-6-22 19:00	7.87	7.96	10.84	
7-6-22 20:00	7.49	7.61	10.57	
7-6-22 21:00	7.07	7.18	10.33	
7-6-22 22:00	6.75	6.82	9.21	
7-6-22 23:00	6.46	6.54	9.60	
7-7-22 0:00	6.24	6.36	10.36	
7-7-22 1:00	6.02	6.14	10.04	
7-7-22 2:00	5.87	6.01	9.71	
7-7-22 3:00	5.78	5.86	9.81	
7-7-22 4:00	5.71	5.88	9.55	
7-7-22 5:00	5.64	5.78	9.65	
7-7-22 6:00	5.60	5.70	9.54	
7-7-22 7:00	5.62	5.74	9.37	
7-7-22 8:00	5.89	6.03	9.58	
7-7-22 9:00	6.58	6.71	10.03	
7-7-22 10:00	7.49	7.55	10.77	
7-7-22 11:00	8.10	8.19	11.44	
7-7-22 12:00	9.30	9.35	12.08	
7-7-22 13:00	10.16	10.24	12.71	
7-7-22 14:00	10.35	10.41	13.10	
7-7-22 15:00	10.09	10.16	12.23	
7-7-22 16:00	10.15	10.19	11.37	
7-7-22 17:00	10.28	10.35	12.10	
7-7-22 18:00	9.85	9.92	12.44	
7-7-22 19:00	9.05	9.14	12.22	
7-7-22 20:00	8.61	8.65	11.60	
7-7-22 21:00	8.10	8.19	11.00	
7-7-22 22:00	7.66	7.76	10.73	
7-7-22 23:00	7.22	7.29	10.57	
7-8-22 0:00	6.81	6.88	10.35	
7-8-22 1:00	6.47	6.62	10.11	
7-8-22 2:00	6.25	6.32	10.57	
7-8-22 3:00	6.10	6.17	10.70	
7-8-22 4:00	5.93	6.04	10.59	
7-8-22 5:00	5.82	5.95	10.51	
7-8-22 6:00	5.69	5.81	10.16	
7-8-22 7:00	5.68	5.78	10.02	
7-8-22 8:00	5.90	5.99	10.17	
7-8-22 9:00	6.41	6.50	9.01	
7-8-22 10:00	7.17	7.29	10.85	
7-8-22 11:00	8.06	8.18	11.97	
7-8-22 12:00	8.61	8.72	11.98	

Date and Time	Hourly Average Temperature (°C)			Comments
	FR_FR3	FR_SCOUTDS	FS_EFF-SC	
	E320693	E320695	E323231	
7-8-22 13:00	9.01	9.09	12.66	
7-8-22 14:00	9.91	10.01	13.04	
7-8-22 15:00	10.66	10.74	13.45	
7-8-22 16:00	10.53	10.60	13.60	
7-8-22 17:00	10.28	10.35	13.64	
7-8-22 18:00	9.81	9.89	13.39	
7-8-22 19:00	9.19	9.32	13.09	
7-8-22 20:00	8.61	8.72	12.70	
7-8-22 21:00	8.02	8.11	12.43	
7-8-22 22:00	7.49	7.58	11.92	
7-8-22 23:00	7.07	7.14	11.61	
7-9-22 0:00	6.70	6.82	11.19	
7-9-22 1:00	6.41	6.50	11.07	
7-9-22 2:00	6.23	6.29	10.90	
7-9-22 3:00	6.02	6.12	10.68	
7-9-22 4:00	5.86	5.98	10.69	
7-9-22 5:00	5.72	5.84	10.38	
7-9-22 6:00	5.66	5.75	10.53	
7-9-22 7:00	5.65	5.75	10.49	
7-9-22 8:00	5.94	6.07	10.75	
7-9-22 9:00	6.53	6.64	10.63	
7-9-22 10:00	7.33	7.41	10.04	
7-9-22 11:00	8.24	8.37	10.14	
7-9-22 12:00	9.20	9.32	11.06	
7-9-22 13:00	9.88	9.96	12.39	
7-9-22 14:00	9.83	9.94	12.64	
7-9-22 15:00	9.10	9.24	12.55	
7-9-22 16:00	9.05	9.17	11.84	
7-9-22 17:00	9.32	9.43	11.94	
7-9-22 18:00	9.23	9.35	11.81	
7-9-22 19:00	8.61	8.75	11.56	
7-9-22 20:00	8.26	8.37	11.09	
7-9-22 21:00	7.80	7.89	10.59	
7-9-22 22:00	7.36	7.45	10.00	
7-9-22 23:00	7.05	7.22	9.64	
7-10-22 0:00	6.86	6.96	10.56	
7-10-22 1:00	6.50	6.63	10.21	
7-10-22 2:00	6.25	6.39	10.01	
7-10-22 3:00	6.01	6.13	9.77	
7-10-22 4:00	5.83	5.98	9.49	
7-10-22 5:00	5.71	5.83	9.64	
7-10-22 6:00	5.62	5.79	9.67	
7-10-22 7:00	5.70	5.82	9.66	
7-10-22 8:00	5.85	5.97	9.73	
7-10-22 9:00	6.11	6.23	10.11	
7-10-22 10:00	6.56	6.71	10.84	
7-10-22 11:00	7.33	7.45	10.33	
7-10-22 12:00	7.96	8.09	10.87	
7-10-22 13:00	8.76	8.85	11.62	
7-10-22 14:00	9.14	9.22	12.16	
7-10-22 15:00	9.58	9.65	12.42	
7-10-22 16:00	9.53	9.61	12.81	
7-10-22 17:00	9.81	9.89	13.06	
7-10-22 18:00	9.49	9.59	12.66	
7-10-22 19:00	9.38	9.47	12.67	
7-10-22 20:00	8.85	8.98	12.36	
7-10-22 21:00	8.27	8.41	12.14	
7-10-22 22:00	7.80	7.96	12.79	
7-10-22 23:00	7.38	7.51	11.60	
7-11-22 0:00	7.00	7.19	12.21	
7-11-22 1:00	6.66	6.83	12.02	
7-11-22 2:00	6.41	6.56	11.18	
7-11-22 3:00	6.24	6.40	12.20	
7-11-22 4:00	6.04	6.17	10.77	
7-11-22 5:00	5.87	6.07	11.70	
7-11-22 6:00	5.80	5.97	11.18	
7-11-22 7:00	5.77	5.93	10.99	
7-11-22 8:00	6.00	6.22	11.37	
7-11-22 9:00	6.60	6.81	10.85	
7-11-22 10:00	7.45	7.75	11.90	
7-11-22 11:00	8.42	8.76	12.34	
7-11-22 12:00	9.43	9.77	12.74	
7-11-22 13:00	10.33	10.72	13.25	
7-11-22 14:00	11.14	11.55	13.77	
7-11-22 15:00	11.65	12.10	14.27	
7-11-22 16:00	11.92	12.37	14.54	
7-11-22 17:00	11.88	12.33	14.61	
7-11-22 18:00	11.54	11.97	14.62	

Date and Time	Hourly Average Temperature (°C)			Comments
	FR_FR3	FR_SCOUTDS	FS_EFF-SC	
	E320693	E320695	E323231	
7-11-22 19:00	10.91	11.17	14.48	
7-11-22 20:00	10.00	10.23	14.08	
7-11-22 21:00	9.17	9.36	13.84	
7-11-22 22:00	8.51	8.71	13.53	
7-11-22 23:00	7.92	8.12	13.13	
7-12-22 0:00	7.49	7.69	12.89	
7-12-22 1:00	7.09	7.28	12.86	
7-12-22 2:00	6.79	6.98	12.80	
7-12-22 3:00	6.61	6.77	12.64	
7-12-22 4:00	6.47	6.65	12.37	
7-12-22 5:00	6.33	6.52	12.29	
7-12-22 6:00	6.18	6.40	12.13	
7-12-22 7:00	6.22	6.43	11.88	
7-12-22 8:00	6.51	6.69	11.75	
7-12-22 9:00	7.04	7.24	12.01	
7-12-22 10:00	7.90	8.14	12.52	
7-12-22 11:00	8.85	9.06	11.83	
7-12-22 12:00	9.78	10.04	11.56	
7-12-22 13:00	10.71	11.04	13.50	
7-12-22 14:00	11.46	11.81	14.19	
7-12-22 15:00	11.98	12.38	14.64	
7-12-22 16:00	12.24	12.58	15.03	
7-12-22 17:00	12.19	12.54	15.22	
7-12-22 18:00	11.87	12.23	15.19	
7-12-22 19:00	11.25	11.49	15.03	
7-12-22 20:00	10.38	10.54	14.76	
7-12-22 21:00	9.56	9.73	14.39	
7-12-22 22:00	8.93	9.11	13.74	
7-12-22 23:00	8.33	8.55	13.87	
7-13-22 0:00	7.86	8.05	13.52	
7-13-22 1:00	7.49	7.68	13.30	
7-13-22 2:00	7.21	7.38	12.96	
7-13-22 3:00	7.01	7.17	12.84	
7-13-22 4:00	6.85	7.05	12.93	
7-13-22 5:00	6.73	6.96	12.52	
7-13-22 6:00	6.67	6.83	12.45	
7-13-22 7:00	6.66	6.85	12.24	
7-13-22 8:00	6.92	7.12	12.59	
7-13-22 9:00	7.59	7.82		FS_EFF-SC sensor disconnected for service.
7-13-22 10:00	8.64	8.85	15.87	
7-13-22 11:00	9.65	9.89	15.99	
7-13-22 12:00	10.57	10.86	16.34	
7-13-22 13:00	11.32	11.65	16.92	
7-13-22 14:00	11.80	12.04	16.86	
7-13-22 15:00	12.02	12.25	16.34	
7-13-22 16:00	11.71	11.95	17.54	
7-13-22 17:00	11.32	11.51	17.52	
7-13-22 18:00	10.76	10.96	17.54	
7-13-22 19:00	10.30	10.48	17.48	
7-13-22 20:00	9.60	9.76	17.31	
7-13-22 21:00	8.96	9.13	17.27	
7-13-22 22:00	8.39	8.55	17.02	
7-13-22 23:00	7.93	8.07	16.97	
7-14-22 0:00	7.50	7.71	16.59	
7-14-22 1:00	7.26	7.38	16.52	
7-14-22 2:00	7.01	7.12	16.05	
7-14-22 3:00	6.79	6.99	16.15	
7-14-22 4:00	6.63	6.78	15.84	
7-14-22 5:00	6.49	6.65	15.88	
7-14-22 6:00	6.35	6.53	15.60	
7-14-22 7:00	6.34	6.53	15.58	
7-14-22 8:00	6.60	6.81	14.94	
7-14-22 9:00	7.18	7.41	15.35	
7-14-22 10:00	8.06	8.41	15.31	
7-14-22 11:00	9.01	9.32	15.68	
7-14-22 12:00	9.96	10.22	16.09	
7-14-22 13:00	10.85	11.11	16.50	
7-14-22 14:00	11.57	11.82	16.48	
7-14-22 15:00	12.10	12.32	16.40	
7-14-22 16:00	12.36	12.55	16.62	
7-14-22 17:00	12.32	12.54	16.71	
7-14-22 18:00	11.99	12.22	16.58	
7-14-22 19:00	11.41	11.56	16.29	
7-14-22 20:00	10.62	10.70	16.22	
7-14-22 21:00	9.77	9.86	15.79	
7-14-22 22:00	9.01	9.12	15.30	
7-14-22 23:00	8.53	8.63	14.94	
7-15-22 0:00	8.10	8.19	14.21	

Date and Time	Hourly Average Temperature (°C)			Comments
	FR_FR3	FR_SCOUTDS	FS_EFF-SC	
	E320693	E320695	E323231	
7-15-22 1:00	7.73	7.80	13.68	
7-15-22 2:00	7.44	7.49	13.38	
7-15-22 3:00	7.15	7.25	13.12	
7-15-22 4:00	7.01	7.11	12.93	
7-15-22 5:00	6.83	6.94	12.73	
7-15-22 6:00	6.71	6.80	12.56	
7-15-22 7:00	6.71	6.77	12.46	
7-15-22 8:00	6.92	7.03	12.51	
7-15-22 9:00	7.51	7.67	12.71	
7-15-22 10:00	8.44	8.62	13.13	
7-15-22 11:00	9.49	9.67	13.70	
7-15-22 12:00	10.42	10.63	14.36	
7-15-22 13:00	11.38	11.59	15.23	
7-15-22 14:00	12.18	12.38	16.37	
7-15-22 15:00	12.67	12.89	16.93	
7-15-22 16:00	12.84	13.08	17.33	
7-15-22 17:00	12.79	12.99	17.32	
7-15-22 18:00	12.37	12.57	17.05	
7-15-22 19:00	11.73	11.87	16.66	
7-15-22 20:00	10.89	11.01	16.18	
7-15-22 21:00	10.09	10.19	15.64	
7-15-22 22:00	9.39	9.45	16.20	
7-15-22 23:00	8.85	8.97	15.10	
7-16-22 0:00	8.43	8.52	14.76	
7-16-22 1:00	8.08	8.17	14.39	
7-16-22 2:00	7.82	7.87	14.11	
7-16-22 3:00	7.66	7.72	13.91	
7-16-22 4:00	7.52	7.57	13.50	
7-16-22 5:00	7.35	7.39	13.16	
7-16-22 6:00	7.18	7.24	12.85	
7-16-22 7:00	7.10	7.19	12.67	
7-16-22 8:00	7.40	7.46	12.75	
7-16-22 9:00	8.05	8.21	13.05	
7-16-22 10:00	8.94	9.15	13.30	
7-16-22 11:00	9.92	10.14	14.00	
7-16-22 12:00	10.96	11.18	14.73	
7-16-22 13:00	11.90	12.14	15.36	
7-16-22 14:00	11.85	11.98	15.72	
7-16-22 15:00	11.69	11.84	15.95	
7-16-22 16:00	11.62	11.80	15.89	
7-16-22 17:00	11.87	12.06	15.84	
7-16-22 18:00	11.41	11.61	15.74	
7-16-22 19:00	10.72	10.86	15.90	
7-16-22 20:00	9.99	10.07	15.69	
7-16-22 21:00	9.40	9.47	15.23	
7-16-22 22:00	8.93	9.00	14.71	
7-16-22 23:00	8.53	8.64	14.41	
7-17-22 0:00	8.21	8.29	14.06	
7-17-22 1:00	7.89	7.99	13.54	
7-17-22 2:00	7.61	7.72	13.08	
7-17-22 3:00	7.45	7.49	12.75	
7-17-22 4:00	7.24	7.32	12.50	
7-17-22 5:00	7.13	7.15	12.33	
7-17-22 6:00	7.00	7.10	12.16	
7-17-22 7:00	6.99	7.06	12.01	
7-17-22 8:00	7.29	7.36	12.12	
7-17-22 9:00	7.92	7.97	12.29	
7-17-22 10:00	8.88	9.06	13.03	
7-17-22 11:00	9.94	10.12	13.61	
7-17-22 12:00	10.98	11.15	14.52	
7-17-22 13:00	11.94	12.06	15.31	
7-17-22 14:00	12.12	12.24	15.73	
7-17-22 15:00	12.30	12.42	15.97	
7-17-22 16:00	12.51	12.62	16.14	
7-17-22 17:00	12.49	12.60	16.19	
7-17-22 18:00	12.29	12.44	16.22	
7-17-22 19:00	11.71	11.78	16.07	
7-17-22 20:00	10.80	10.86	15.70	
7-17-22 21:00	9.87	9.94	15.04	
7-17-22 22:00	9.23	9.27	14.45	
7-17-22 23:00	8.71	8.77	14.04	
7-18-22 0:00	8.33	8.37	13.61	
7-18-22 1:00	8.05	8.11	13.32	
7-18-22 2:00	7.88	7.91	13.07	
7-18-22 3:00	7.74	7.80	12.84	
7-18-22 4:00	7.65	7.71	12.90	
7-18-22 5:00	7.62	7.70	13.07	
7-18-22 6:00	7.59	7.66	12.64	

Date and Time	Hourly Average Temperature (°C)			Comments
	FR_FR3	FR_SCOUTDS	FS_EFF-SC	
	E320693	E320695	E323231	
7-18-22 7:00	7.62	7.71	12.83	
7-18-22 8:00	7.71	7.79	12.61	
7-18-22 9:00	7.80	7.86	12.41	
7-18-22 10:00	7.79	7.88	12.30	
7-18-22 11:00	7.98	8.03	12.57	
7-18-22 12:00	8.06	8.15	12.45	
7-18-22 13:00	8.29	8.34	12.56	
7-18-22 14:00	8.86	8.95	12.76	
7-18-22 15:00	9.24	9.33	12.96	
7-18-22 16:00	9.54	9.60	13.16	
7-18-22 17:00	9.78	9.83	13.30	
7-18-22 18:00	9.42	9.45	13.25	
7-18-22 19:00	9.01	9.06	13.23	
7-18-22 20:00	8.75	8.81	13.12	
7-18-22 21:00	8.39	8.46	12.97	
7-18-22 22:00	8.06	8.10	12.74	
7-18-22 23:00	7.78	7.91	12.49	
7-19-22 0:00	7.57	7.60	12.13	
7-19-22 1:00	7.33	7.39	11.79	
7-19-22 2:00	7.17	7.24	11.54	
7-19-22 3:00	7.11	7.16	11.37	
7-19-22 4:00	6.98	7.04	11.17	
7-19-22 5:00	6.78	6.87	10.99	
7-19-22 6:00	6.63	6.68	10.87	
7-19-22 7:00	6.61	6.67	10.76	
7-19-22 8:00	6.94	7.00	10.76	
7-19-22 9:00	7.64	7.69	11.14	
7-19-22 10:00	8.66	8.79	11.65	
7-19-22 11:00	9.78	9.90	12.25	
7-19-22 12:00	10.96	11.08	12.83	
7-19-22 13:00	12.11	12.16	13.38	
7-19-22 14:00	13.05	13.11	13.77	
7-19-22 15:00	13.45	13.52	14.24	
7-19-22 16:00	13.56	13.61	14.17	
7-19-22 17:00	13.34	13.38	13.17	
7-19-22 18:00	12.82	12.90	13.03	
7-19-22 19:00	12.16	12.13	12.90	
7-19-22 20:00	11.22	11.19	13.42	
7-19-22 21:00	10.27	10.32	13.20	
7-19-22 22:00	9.57	9.62	12.76	
7-19-22 23:00	9.04	9.10	12.94	
7-20-22 0:00	8.67	8.69	13.06	
7-20-22 1:00	8.23	8.29	12.77	
7-20-22 2:00	7.92	8.00	12.62	
7-20-22 3:00	7.69	7.78	12.42	
7-20-22 4:00	7.50	7.57	12.18	
7-20-22 5:00	7.38	7.44	11.99	
7-20-22 6:00	7.23	7.33	11.83	
7-20-22 7:00	7.21	7.29	11.68	
7-20-22 8:00	7.50	7.57	11.75	
7-20-22 9:00	8.17	8.29	11.87	
7-20-22 10:00	9.11	9.34	12.49	
7-20-22 11:00	10.25	10.43	12.77	
7-20-22 12:00	11.37	11.58	13.32	
7-20-22 13:00	12.35	12.53	12.81	
7-20-22 14:00	13.13	13.30	13.14	
7-20-22 15:00	13.65	13.78	13.18	
7-20-22 16:00	13.85	13.95	13.43	
7-20-22 17:00	13.66	13.70	14.16	
7-20-22 18:00	13.08	13.21	14.94	
7-20-22 19:00	12.40	12.39	14.63	
7-20-22 20:00	11.53	11.57	14.25	
7-20-22 21:00	10.67	10.70	14.04	
7-20-22 22:00	9.97	10.04	14.07	
7-20-22 23:00	9.44	9.52	13.81	
7-21-22 0:00	9.00	9.08	13.54	
7-21-22 1:00	8.58	8.65	13.51	
7-21-22 2:00	8.32	8.34	13.27	
7-21-22 3:00	8.18	8.25	13.09	
7-21-22 4:00	7.92	8.03	12.86	
7-21-22 5:00	7.71	7.80	12.63	
7-21-22 6:00	7.56	7.62	12.45	
7-21-22 7:00	7.52	7.55	12.30	
7-21-22 8:00	7.68	7.73	12.29	
7-21-22 9:00	8.33	8.40	12.42	
7-21-22 10:00	9.24	9.46	12.60	
7-21-22 11:00	10.36	10.58	12.98	
7-21-22 12:00	11.46	11.72	13.37	

Date and Time	Hourly Average Temperature (°C)			Comments
	FR_FR3	FR_SCOUTDS	FS_EFF-SC	
	E320693	E320695	E323231	
7-21-22 13:00	12.46	12.73	14.14	
7-21-22 14:00	13.35	13.60	14.63	
7-21-22 15:00	13.92	14.18	14.83	
7-21-22 16:00	14.12	14.25	14.46	
7-21-22 17:00	13.97	14.12	15.40	
7-21-22 18:00	13.52	13.59	14.64	
7-21-22 19:00	12.69	12.74	14.81	
7-21-22 20:00	11.88	11.88	15.30	
7-21-22 21:00	10.89	10.96	14.96	
7-21-22 22:00	10.12	10.19	14.55	
7-21-22 23:00	9.55	9.62	14.18	
7-22-22 0:00	9.13	9.18	13.77	
7-22-22 1:00	8.79	8.83	13.57	
7-22-22 2:00	8.52	8.59	13.41	
7-22-22 3:00	8.31	8.38	13.20	
7-22-22 4:00	8.17	8.23	13.06	
7-22-22 5:00	8.04	8.08	12.90	
7-22-22 6:00	7.89	7.96	12.75	
7-22-22 7:00	7.86	7.92	12.60	
7-22-22 8:00	8.08	8.15	12.65	
7-22-22 9:00	8.59	8.69	12.75	
7-22-22 10:00	9.56	9.74	13.21	
7-22-22 11:00	10.15	10.25	13.57	
7-22-22 12:00	9.86	9.96	13.64	
7-22-22 13:00	10.08	10.20	14.23	
7-22-22 14:00	10.51	10.57	14.22	
7-22-22 15:00	10.17	10.06	13.10	
7-22-22 16:00	9.76	9.84	13.39	
7-22-22 17:00	9.76	9.86	13.39	
7-22-22 18:00	10.06	10.19	13.73	
7-22-22 19:00	9.78	9.86	13.55	
7-22-22 20:00	9.58	9.66	13.21	
7-22-22 21:00	9.24	9.29	12.91	
7-22-22 22:00	8.90	8.93	12.83	
7-22-22 23:00	8.55	8.56	12.93	
7-23-22 0:00	8.27	8.34	12.62	
7-23-22 1:00	8.00	8.06	12.39	
7-23-22 2:00	7.75	7.88	12.19	
7-23-22 3:00	7.64	7.67	12.01	
7-23-22 4:00	7.45	7.52	11.76	
7-23-22 5:00	7.29	7.36	11.62	
7-23-22 6:00	7.14	7.22	11.46	
7-23-22 7:00	7.11	7.19	11.34	
7-23-22 8:00	7.39	7.45	11.33	
7-23-22 9:00	8.06	8.09	11.46	
7-23-22 10:00	8.99	9.11	11.67	
7-23-22 11:00	10.17	10.34	12.26	
7-23-22 12:00	11.34	11.50	12.59	
7-23-22 13:00	12.51	12.66	13.18	
7-23-22 14:00	13.31	13.47	13.43	
7-23-22 15:00	13.86	14.00	13.68	
7-23-22 16:00	13.94	13.99	14.26	
7-23-22 17:00	13.16	13.20	14.02	
7-23-22 18:00	12.89	12.99	14.86	
7-23-22 19:00	12.24	12.28	15.01	
7-23-22 20:00	11.37	11.38	14.25	
7-23-22 21:00	10.88	10.84	13.23	
7-23-22 22:00	10.28	10.27	13.16	
7-23-22 23:00	9.69	9.70	13.16	
7-24-22 0:00	9.21	9.23	12.88	
7-24-22 1:00	8.82	8.86	12.67	
7-24-22 2:00	8.50	8.53	12.50	
7-24-22 3:00	8.34	8.32	12.37	
7-24-22 4:00	8.12	8.08	12.24	
7-24-22 5:00	7.83	7.86	12.05	
7-24-22 6:00	7.65	7.67	11.93	
7-24-22 7:00	7.63	7.66	11.74	
7-24-22 8:00	7.85	7.89	11.79	
7-24-22 9:00	8.53	8.57	11.89	
7-24-22 10:00	9.45	9.57	12.03	
7-24-22 11:00	10.54	10.65	12.20	
7-24-22 12:00	11.68	11.83	12.64	
7-24-22 13:00	12.87	13.00	13.21	
7-24-22 14:00	13.76	13.88	13.45	
7-24-22 15:00	14.29	14.41	13.52	
7-24-22 16:00	14.31	14.34	13.55	
7-24-22 17:00	14.12	14.15	13.82	
7-24-22 18:00	13.56	13.59	13.92	

Date and Time	Hourly Average Temperature (°C)			Comments
	FR_FR3	FR_SCOUTDS	FS_EFF-SC	
	E320693	E320695	E323231	
7-24-22 19:00	12.83	12.85	14.46	
7-24-22 20:00	12.08	12.09	14.39	
7-24-22 21:00	11.22	11.24	14.30	
7-24-22 22:00	10.49	10.54	14.20	
7-24-22 23:00	9.95	9.99	14.00	
7-25-22 0:00	9.53	9.60	13.69	
7-25-22 1:00	9.25	9.31	13.51	
7-25-22 2:00	9.04	9.09	13.34	
7-25-22 3:00	8.93	8.97	13.23	
7-25-22 4:00	8.82	8.89	12.96	
7-25-22 5:00	8.75	8.80	12.86	
7-25-22 6:00	8.68	8.74	12.75	
7-25-22 7:00	8.68	8.76	12.67	
7-25-22 8:00	8.92	8.99	12.66	
7-25-22 9:00	9.57	9.59	13.02	
7-25-22 10:00	10.33	10.43	13.19	
7-25-22 11:00	11.23	11.29	13.04	
7-25-22 12:00	11.97	12.03	12.99	
7-25-22 13:00	12.83	12.91	13.24	
7-25-22 14:00	13.26	13.27	13.63	
7-25-22 15:00	12.62	12.63	13.66	
7-25-22 16:00	12.62	12.64	14.11	
7-25-22 17:00	13.09	13.13	14.73	
7-25-22 18:00	12.42	12.44	14.74	
7-25-22 19:00	11.84	11.90	14.70	
7-25-22 20:00	11.37	11.39	13.94	
7-25-22 21:00	10.87	10.86	13.31	
7-25-22 22:00	10.45	10.45	13.29	
7-25-22 23:00	10.15	10.17	13.50	
7-26-22 0:00	9.91	9.94	13.46	
7-26-22 1:00	9.65	9.70	13.41	
7-26-22 2:00	9.46	9.51	13.27	
7-26-22 3:00	9.22	9.28	13.16	
7-26-22 4:00	9.00	9.02	13.05	
7-26-22 5:00	8.71	8.75	12.88	
7-26-22 6:00	8.57	8.60	12.69	
7-26-22 7:00	8.48	8.52	12.61	
7-26-22 8:00	8.63	8.71	12.62	
7-26-22 9:00	9.23	9.28	12.70	
7-26-22 10:00	10.17	10.29	12.71	
7-26-22 11:00	11.39	11.48	13.08	
7-26-22 12:00	12.37	12.49	13.58	
7-26-22 13:00	12.87	13.02	14.23	
7-26-22 14:00	13.65	13.79	14.07	
7-26-22 15:00	14.11	14.22	14.35	
7-26-22 16:00	13.87	13.98	14.45	
7-26-22 17:00	14.28	14.35	14.58	
7-26-22 18:00	13.99	14.15	14.78	
7-26-22 19:00	13.09	13.11	14.70	
7-26-22 20:00	12.13	12.14	14.64	
7-26-22 21:00	11.40	11.41	14.35	
7-26-22 22:00	10.81	10.86	14.30	
7-26-22 23:00	10.38	10.39	14.19	
7-27-22 0:00	9.98	10.01	13.96	
7-27-22 1:00	9.63	9.69	13.80	
7-27-22 2:00	9.39	9.41	13.57	
7-27-22 3:00	9.18	9.24	13.47	
7-27-22 4:00	9.00	9.04	13.35	
7-27-22 5:00	8.82	8.90	13.19	
7-27-22 6:00	8.69	8.70	13.10	
7-27-22 7:00	8.59	8.65	12.98	
7-27-22 8:00	8.76	8.85	12.99	
7-27-22 9:00	9.50	9.54	13.07	
7-27-22 10:00	10.46	10.61	13.13	
7-27-22 11:00	11.63	11.83	13.34	
7-27-22 12:00	12.96	13.12	13.57	
7-27-22 13:00	13.99	14.19	13.77	
7-27-22 14:00	14.08	14.06	13.93	
7-27-22 15:00	14.23	14.21	14.05	
7-27-22 16:00	14.00	14.04	14.05	
7-27-22 17:00	14.08	14.11	15.06	
7-27-22 18:00	13.47	13.59	15.37	
7-27-22 19:00	12.97	12.94	15.18	
7-27-22 20:00	12.32	12.31	14.72	
7-27-22 21:00	11.61	11.63	14.10	
7-27-22 22:00	11.05	11.07	13.94	
7-27-22 23:00	10.64	10.65	13.85	
7-28-22 0:00	10.24	10.25	13.83	

Date and Time	Hourly Average Temperature (°C)			Comments
	FR_FR3	FR_SCOUTDS	FS_EFF-SC	
	E320693	E320695	E323231	
7-28-22 1:00	9.83	9.86	13.56	
7-28-22 2:00	9.56	9.64	13.34	
7-28-22 3:00	9.40	9.45	13.25	
7-28-22 4:00	9.18	9.26	13.11	
7-28-22 5:00	9.01	9.07	12.99	
7-28-22 6:00	8.88	8.92	12.92	
7-28-22 7:00	8.81	8.84	12.86	
7-28-22 8:00	8.98	9.06	12.87	
7-28-22 9:00	9.65	9.68	12.94	
7-28-22 10:00	10.66	10.82	13.01	
7-28-22 11:00	11.93	12.07	13.28	
7-28-22 12:00	13.10	13.26	13.47	
7-28-22 13:00	14.11	14.28	13.56	
7-28-22 14:00	15.17	15.35	14.05	
7-28-22 15:00	15.71	15.83	14.17	
7-28-22 16:00	15.86	15.87	14.34	
7-28-22 17:00	15.61	15.62	14.80	
7-28-22 18:00	15.15	15.15	15.07	
7-28-22 19:00	14.41	14.29	15.14	
7-28-22 20:00	13.45	13.35	15.14	
7-28-22 21:00	12.51	12.41	14.97	
7-28-22 22:00	11.62	11.54	14.70	
7-28-22 23:00	10.89	10.89	14.43	
7-29-22 0:00	10.40	10.41	14.24	
7-29-22 1:00	10.08	10.08	14.06	
7-29-22 2:00	9.82	9.83	13.84	
7-29-22 3:00	9.57	9.61	13.69	
7-29-22 4:00	9.36	9.38	13.50	
7-29-22 5:00	9.19	9.19	13.31	
7-29-22 6:00	9.04	9.08	13.18	
7-29-22 7:00	8.97	9.03	13.10	
7-29-22 8:00	9.19	9.24	13.15	
7-29-22 9:00	9.83	9.86	13.17	
7-29-22 10:00	10.84	10.90	13.31	
7-29-22 11:00	12.07	12.25	13.90	
7-29-22 12:00	13.31	13.45	13.50	
7-29-22 13:00	14.42	14.56	13.76	
7-29-22 14:00	15.24	15.33	14.23	
7-29-22 15:00	15.30	15.22	14.37	
7-29-22 16:00	14.60	14.54	15.31	
7-29-22 17:00	14.22	14.26	16.05	
7-29-22 18:00	14.06	13.99	15.08	
7-29-22 19:00	13.36	13.34	15.90	
7-29-22 20:00	12.70	12.67	15.77	
7-29-22 21:00	12.13	12.14	14.84	
7-29-22 22:00	11.51	11.50	14.25	
7-29-22 23:00	11.00	10.96	13.93	
7-30-22 0:00	10.50	10.54	13.70	
7-30-22 1:00	10.13	10.13	13.51	
7-30-22 2:00	9.78	9.78	13.30	
7-30-22 3:00	9.49	9.53	13.25	
7-30-22 4:00	9.30	9.29	13.10	
7-30-22 5:00	9.07	9.10	13.06	
7-30-22 6:00	8.88	8.90	12.93	
7-30-22 7:00	8.77	8.81	12.79	
7-30-22 8:00	9.02	9.05	12.78	
7-30-22 9:00	9.70	9.69	12.95	
7-30-22 10:00	10.68	10.73	13.00	
7-30-22 11:00	11.92	12.01	13.51	
7-30-22 12:00	13.16	13.23	13.61	
7-30-22 13:00	14.32	14.42	13.71	
7-30-22 14:00	15.24	15.26	13.87	
7-30-22 15:00	15.83	15.85	14.12	
7-30-22 16:00	15.94	15.91	14.27	
7-30-22 17:00	15.48	15.42	15.15	
7-30-22 18:00	14.82	14.81	15.59	
7-30-22 19:00	13.99	13.94	14.80	
7-30-22 20:00	13.14	13.05	14.41	
7-30-22 21:00	12.42	12.34	14.46	
7-30-22 22:00	11.80	11.75	14.33	
7-30-22 23:00	11.31	11.23	14.25	
7-31-22 0:00	10.89	10.84	14.10	
7-31-22 1:00	10.50	10.51	13.90	
7-31-22 2:00	10.11	10.10	13.60	
7-31-22 3:00	9.86	9.86	13.45	
7-31-22 4:00	9.61	9.61	13.41	
7-31-22 5:00	9.40	9.44	13.27	
7-31-22 6:00	9.28	9.30	13.17	

Date and Time	Hourly Average Temperature (°C)			Comments
	FR_FR3	FR_SCOUTDS	FS_EFF-SC	
	E320693	E320695	E323231	
7-31-22 7:00	9.21	9.24	13.12	
7-31-22 8:00	9.37	9.39	13.08	
7-31-22 9:00	9.91	9.94	13.15	
7-31-22 10:00	10.90	10.94	13.18	
7-31-22 11:00	12.24	12.35	13.78	
7-31-22 12:00	13.58	13.67	13.91	
7-31-22 13:00	14.59	14.69	13.76	
7-31-22 14:00	15.30	15.39	13.72	
7-31-22 15:00	15.82	15.89	14.18	
7-31-22 16:00	16.10	16.11	14.91	
7-31-22 17:00	15.96	15.98	15.12	
7-31-22 18:00	15.47	15.49	14.64	
7-31-22 19:00	14.64	14.52	14.96	
7-31-22 20:00	13.60	13.51	14.82	
7-31-22 21:00	12.63	12.60	14.79	
7-31-22 22:00	11.82	11.81	14.47	
7-31-22 23:00	11.16	11.15	14.17	
8-1-22 0:00	10.69	10.67	13.98	
8-1-22 1:00	10.33	10.31	13.83	
8-1-22 2:00	10.02	10.04	13.64	
8-1-22 3:00	9.83	9.85	13.48	
8-1-22 4:00	9.69	9.64	13.37	
8-1-22 5:00	9.50	9.55	13.25	
8-1-22 6:00	9.31	9.32	13.17	
8-1-22 7:00	9.15	9.18	13.11	
8-1-22 8:00	9.31	9.31	13.11	
8-1-22 9:00	9.87	9.82	13.15	
8-1-22 10:00	10.84	10.89	13.20	
8-1-22 11:00	12.08	12.17	13.76	
8-1-22 12:00	13.26	13.42	14.70	
8-1-22 13:00	14.30	14.43	15.25	
8-1-22 14:00	15.13	15.28	15.64	
8-1-22 15:00	15.65	15.79	15.59	
8-1-22 16:00	15.85	15.92	16.28	
8-1-22 17:00	15.61	15.67	16.31	
8-1-22 18:00	15.14	15.21	16.70	
8-1-22 19:00	14.27	14.26	16.39	
8-1-22 20:00	13.30	13.35	16.67	
8-1-22 21:00	12.40	12.47	16.68	
8-1-22 22:00	11.78	11.83	16.34	
8-1-22 23:00	11.26	11.32	15.84	
8-2-22 0:00	10.92	10.97	15.36	
8-2-22 1:00	10.14	10.20	13.74	
8-2-22 2:00	10.13	10.16	13.65	
8-2-22 3:00	10.11	10.09	13.32	
8-2-22 4:00	9.91	9.87	13.03	
8-2-22 5:00	9.75	9.73	13.02	
8-2-22 6:00	9.56	9.53	12.63	
8-2-22 7:00	9.38	9.40	12.64	
8-2-22 8:00	9.57	9.56	12.69	
8-2-22 9:00	10.18	10.19	12.68	
8-2-22 10:00	11.14	11.18	12.44	
8-2-22 11:00	12.28	12.35	12.51	
8-2-22 12:00	12.98	13.07	12.84	
8-2-22 13:00	13.43	13.44	12.84	
8-2-22 14:00	14.19	14.18	13.31	
8-2-22 15:00	14.81	14.89	13.33	
8-2-22 16:00	14.88	14.85	13.87	
8-2-22 17:00	14.73	14.66	13.88	
8-2-22 18:00	13.93	13.85	14.51	
8-2-22 19:00	13.32	13.22	14.42	
8-2-22 20:00	12.56	12.47	14.01	
8-2-22 21:00	11.78	11.75	13.95	
8-2-22 22:00	11.20	11.21	14.18	
8-2-22 23:00	10.67	10.69	14.11	
8-3-22 0:00	10.20	10.23	13.59	
8-3-22 1:00	9.84	9.89	13.51	
8-3-22 2:00	9.61	9.65	13.38	
8-3-22 3:00	9.41	9.40	13.23	
8-3-22 4:00	9.23	9.25	13.17	
8-3-22 5:00	8.97	9.06	13.06	
8-3-22 6:00	8.86	8.91	12.90	
8-3-22 7:00	8.76	8.79	12.80	
8-3-22 8:00	8.81	8.83	12.78	
8-3-22 9:00	9.50	9.56	13.00	
8-3-22 10:00	10.60	10.71	13.45	
8-3-22 11:00	11.80	12.02	13.55	
8-3-22 12:00	12.96	13.07	13.76	

Date and Time	Hourly Average Temperature (°C)			Comments
	FR_FR3	FR_SCOUTDS	FS_EFF-SC	
	E320693	E320695	E323231	
8-3-22 13:00	13.93	14.01	14.20	
8-3-22 14:00	14.82	14.77	14.00	
8-3-22 15:00	14.84	14.77	14.67	
8-3-22 16:00	14.54	14.52	14.92	
8-3-22 17:00	14.62	14.62	15.47	
8-3-22 18:00	14.25	14.33	15.67	
8-3-22 19:00	13.63	13.59	15.55	
8-3-22 20:00	12.69	12.65	15.32	
8-3-22 21:00	11.73	11.78	15.04	
8-3-22 22:00	11.00	11.07	14.81	
8-3-22 23:00	10.46	10.51	14.51	
8-4-22 0:00	10.02	10.10	14.27	
8-4-22 1:00	9.69	9.77	14.12	
8-4-22 2:00	9.42	9.48	13.81	
8-4-22 3:00	9.17	9.29	13.67	
8-4-22 4:00	9.02	9.11	13.42	
8-4-22 5:00	8.93	8.98	13.25	
8-4-22 6:00	8.80	8.88	13.07	
8-4-22 7:00	8.74	8.78	12.88	
8-4-22 8:00	8.93	8.97	12.78	
8-4-22 9:00	9.32	9.38	12.76	
8-4-22 10:00	9.46	9.51	12.63	
8-4-22 11:00	9.56	9.56	12.19	
8-4-22 12:00	9.61	9.63	12.32	
8-4-22 13:00	10.06	10.10	12.28	
8-4-22 14:00	11.24	11.41	12.46	
8-4-22 15:00	12.03	11.99	12.61	
8-4-22 16:00	11.95	11.91	12.74	
8-4-22 17:00	11.80	11.74	12.53	
8-4-22 18:00	11.17	11.11	11.34	
8-4-22 19:00	10.57	10.53	11.28	
8-4-22 20:00	10.16	10.12	11.50	
8-4-22 21:00	9.76	9.73	11.72	
8-4-22 22:00	9.21	9.20	11.57	
8-4-22 23:00	8.75	8.79	11.40	
8-5-22 0:00	8.43	8.43	11.50	
8-5-22 1:00	8.17	8.17	11.33	
8-5-22 2:00	7.90	7.92	11.17	
8-5-22 3:00	7.67	7.70	11.05	
8-5-22 4:00	7.54	7.54	10.95	
8-5-22 5:00	7.33	7.34	10.85	
8-5-22 6:00	7.22	7.18	10.84	
8-5-22 7:00	7.13	7.15	10.72	
8-5-22 8:00	7.37	7.34	10.67	
8-5-22 9:00	8.11	8.11	11.02	
8-5-22 10:00	9.30	9.39	10.96	
8-5-22 11:00	10.60	10.76	11.17	
8-5-22 12:00	11.97	12.09	11.32	
8-5-22 13:00	12.87	12.90	12.10	
8-5-22 14:00	13.37	13.38	11.85	
8-5-22 15:00	14.29	14.10	12.14	
8-5-22 16:00	14.25	14.01	12.05	
8-5-22 17:00	13.48	13.37	12.03	
8-5-22 18:00	12.42	12.33	12.00	
8-5-22 19:00	11.56	11.52	12.17	
8-5-22 20:00	10.99	10.91	12.14	
8-5-22 21:00	10.40	10.38	11.98	
8-5-22 22:00	9.99	9.93	11.64	
8-5-22 23:00	9.68	9.64	11.24	
8-6-22 0:00	9.45	9.38	11.23	
8-6-22 1:00	9.19	9.20	11.29	
8-6-22 2:00	8.99	8.97	11.07	
8-6-22 3:00	8.70	8.72	10.81	
8-6-22 4:00	8.35	8.35	10.78	
8-6-22 5:00	8.11	8.09	10.79	
8-6-22 6:00	7.90	7.89	10.68	
8-6-22 7:00	7.72	7.70	10.56	
8-6-22 8:00	7.82	7.81	10.56	
8-6-22 9:00	8.44	8.47	10.68	
8-6-22 10:00	9.59	9.64	10.82	
8-6-22 11:00	10.91	10.99	11.11	
8-6-22 12:00	12.27	12.39	11.44	
8-6-22 13:00	13.55	13.57	11.84	
8-6-22 14:00	14.39	14.45	11.66	
8-6-22 15:00	14.90	14.93	11.51	
8-6-22 16:00	15.15	15.03	11.54	
8-6-22 17:00	14.98	14.92	12.00	
8-6-22 18:00	14.49	14.43	12.79	

Date and Time	Hourly Average Temperature (°C)			Comments
	FR_FR3	FR_SCOUTDS	FS_EFF-SC	
	E320693	E320695	E323231	
8-6-22 19:00	13.71	13.52	12.77	
8-6-22 20:00	12.69	12.55	12.68	
8-6-22 21:00	11.71	11.61	12.62	
8-6-22 22:00	10.98	10.91	12.52	
8-6-22 23:00	10.35	10.32	12.26	
8-7-22 0:00	9.82	9.81	11.89	
8-7-22 1:00	9.36	9.42	11.58	
8-7-22 2:00	9.02	9.06	11.47	
8-7-22 3:00	8.79	8.76	11.28	
8-7-22 4:00	8.52	8.56	11.17	
8-7-22 5:00	8.34	8.35	11.00	
8-7-22 6:00	8.19	8.21	10.72	
8-7-22 7:00	8.09	8.10	10.66	
8-7-22 8:00	8.27	8.28	10.68	
8-7-22 9:00	9.03	8.99	10.81	
8-7-22 10:00	10.21	10.33	10.95	
8-7-22 11:00	11.58	11.78	10.75	
8-7-22 12:00	12.99	13.18	11.00	
8-7-22 13:00	14.29	14.38	11.61	
8-7-22 14:00	15.20	15.28	12.52	
8-7-22 15:00	15.78	15.78	12.38	
8-7-22 16:00	16.01	15.84	11.54	
8-7-22 17:00	15.88	15.77	12.58	
8-7-22 18:00	15.39	15.30	13.04	
8-7-22 19:00	14.52	14.32	12.99	
8-7-22 20:00	13.56	13.38	13.19	
8-7-22 21:00	12.57	12.46	13.48	
8-7-22 22:00	11.83	11.75	13.46	
8-7-22 23:00	11.18	11.14	13.01	
8-8-22 0:00	10.65	10.63	12.82	
8-8-22 1:00	10.30	10.25	12.56	
8-8-22 2:00	9.95	9.93	12.39	
8-8-22 3:00	9.66	9.64	12.14	
8-8-22 4:00	9.38	9.37	12.00	
8-8-22 5:00	9.20	9.15	11.92	
8-8-22 6:00	8.97	8.98	11.86	
8-8-22 7:00	8.85	8.86	11.73	
8-8-22 8:00	9.01	9.02	11.67	
8-8-22 9:00	9.68	9.67	11.74	
8-8-22 10:00	10.86	10.99	12.02	
8-8-22 11:00	12.24	12.48	12.53	
8-8-22 12:00	13.64	13.83	12.54	
8-8-22 13:00	14.89	14.98	12.36	
8-8-22 14:00	15.75	15.77	12.05	
8-8-22 15:00	16.23	16.25	12.35	
8-8-22 16:00	16.41	16.30	12.95	
8-8-22 17:00	16.27	16.22	13.05	
8-8-22 18:00	15.79	15.67	13.05	
8-8-22 19:00	15.00	14.80	13.69	
8-8-22 20:00	13.97	13.83	13.65	
8-8-22 21:00	12.89	12.81	13.84	
8-8-22 22:00	12.17	12.12	13.53	
8-8-22 23:00	11.69	11.65	13.15	
8-9-22 0:00	11.18	11.19	12.80	
8-9-22 1:00	10.70	10.70	12.78	
8-9-22 2:00	10.32	10.34	12.63	
8-9-22 3:00	10.02	10.06	12.47	
8-9-22 4:00	9.83	9.87	12.33	
8-9-22 5:00	9.61	9.63	12.22	
8-9-22 6:00	9.39	9.46	12.13	
8-9-22 7:00	9.26	9.31	12.06	
8-9-22 8:00	9.40	9.45	12.01	
8-9-22 9:00	10.03	10.09	12.07	
8-9-22 10:00	11.21	11.36	12.58	
8-9-22 11:00	12.55	12.83	13.13	
8-9-22 12:00	13.91	14.18	13.30	
8-9-22 13:00	15.17	15.34	13.35	
8-9-22 14:00	15.97	16.09	13.19	
8-9-22 15:00	15.96	16.00	12.72	
8-9-22 16:00	16.26	16.24	12.09	
8-9-22 17:00	16.43	16.27	11.65	
8-9-22 18:00	15.70	15.59	11.75	
8-9-22 19:00	14.66	14.53	11.74	
8-9-22 20:00	13.80	13.68	11.72	
8-9-22 21:00	13.08	12.98	11.63	
8-9-22 22:00	12.50	12.37	11.40	
8-9-22 23:00	11.95	11.87	11.25	
8-10-22 0:00	11.49	11.40	11.15	

Date and Time	Hourly Average Temperature (°C)			Comments
	FR_FR3	FR_SCOUTDS	FS_EFF-SC	
	E320693	E320695	E323231	
8-10-22 1:00	11.13	11.04	11.02	
8-10-22 2:00	10.76	10.68	11.39	
8-10-22 3:00	10.44	10.38	11.25	
8-10-22 4:00	10.19	10.17	11.17	
8-10-22 5:00	10.18	10.10	11.21	
8-10-22 6:00	10.13	10.08	11.19	
8-10-22 7:00	10.12	10.10	11.38	
8-10-22 8:00	10.17	10.18	12.10	
8-10-22 9:00	10.32	10.33	12.71	
8-10-22 10:00	10.64	10.68	11.61	
8-10-22 11:00	11.64	11.66	11.31	
8-10-22 12:00	12.12	12.04	11.58	
8-10-22 13:00	12.07	12.06	12.51	
8-10-22 14:00	12.45	12.45	11.85	
8-10-22 15:00	13.22	13.17	11.49	
8-10-22 16:00	13.72	13.62	11.65	
8-10-22 17:00	13.63	13.54	11.69	
8-10-22 18:00	13.39	13.25	11.83	
8-10-22 19:00	12.96	12.83	11.88	
8-10-22 20:00	12.45	12.38	11.87	
8-10-22 21:00	12.08	11.99	11.81	
8-10-22 22:00	11.80	11.72	11.97	
8-10-22 23:00	11.49	11.42	12.06	
8-11-22 0:00	11.03	10.98	11.82	
8-11-22 1:00	10.67	10.58	11.33	
8-11-22 2:00	10.35	10.26	11.00	
8-11-22 3:00	10.08	10.00	10.63	
8-11-22 4:00	9.83	9.79	10.44	
8-11-22 5:00	9.68	9.62	10.37	
8-11-22 6:00	9.48	9.46	10.37	
8-11-22 7:00	9.50	9.46	10.24	
8-11-22 8:00	9.69	9.60	10.32	
8-11-22 9:00	10.24	10.26	10.81	
8-11-22 10:00	11.50	11.61	10.90	
8-11-22 11:00	12.81	12.97	10.68	
8-11-22 12:00	14.18	14.34	11.10	
8-11-22 13:00	15.43	15.42	11.95	
8-11-22 14:00	16.25	16.34	12.04	
8-11-22 15:00	16.80	16.98	13.33	
8-11-22 16:00	17.03	16.96	12.20	
8-11-22 17:00	16.89	16.82	12.32	
8-11-22 18:00	16.35	16.27	12.64	
8-11-22 19:00	15.47	15.22	12.62	
8-11-22 20:00	14.43	14.24	12.77	
8-11-22 21:00	13.47	13.36	13.58	
8-11-22 22:00	12.74	12.68	13.18	
8-11-22 23:00	12.22	12.11	12.40	
8-12-22 0:00	11.83	11.74	12.24	
8-12-22 1:00	11.54	11.46	12.02	
8-12-22 2:00	11.27	11.22	11.85	
8-12-22 3:00	10.94	10.87	11.78	
8-12-22 4:00	10.62	10.56	11.65	
8-12-22 5:00	10.41	10.33	11.57	
8-12-22 6:00	10.20	10.14	11.53	
8-12-22 7:00	9.99	9.92	11.42	
8-12-22 8:00	9.98	9.93	11.24	
8-12-22 9:00	10.55	10.52	11.20	
8-12-22 10:00	11.62	11.71	11.26	
8-12-22 11:00	12.94	13.16	11.29	
8-12-22 12:00	14.38	14.58	11.70	
8-12-22 13:00	15.41	15.59	12.01	
8-12-22 14:00	16.21	16.36	12.16	
8-12-22 15:00	15.77	15.66	12.15	
8-12-22 16:00	14.82	14.75	12.45	
8-12-22 17:00	14.53	14.52	12.27	
8-12-22 18:00	14.50	14.45	12.89	
8-12-22 19:00	14.00	13.94	13.52	
8-12-22 20:00	13.20	13.14	13.56	
8-12-22 21:00	12.71	12.63	13.54	
8-12-22 22:00	12.18	12.15	13.29	
8-12-22 23:00	11.68	11.61	12.68	
8-13-22 0:00	11.22	11.19	12.37	
8-13-22 1:00	10.92	10.89	11.93	
8-13-22 2:00	10.67	10.65	12.06	
8-13-22 3:00	10.49	10.43	12.11	
8-13-22 4:00	10.20	10.19	11.85	
8-13-22 5:00	9.92	9.87	11.88	
8-13-22 6:00	9.66	9.62	11.71	

Date and Time	Hourly Average Temperature (°C)			Comments
	FR_FR3	FR_SCOUTDS	FS_EFF-SC	
	E320693	E320695	E323231	
8-13-22 7:00	9.44	9.40	11.56	
8-13-22 8:00	9.48	9.46	11.64	
8-13-22 9:00	10.10	10.10	11.48	
8-13-22 10:00	11.29	11.44	11.29	
8-13-22 11:00	12.73	12.98	11.53	
8-13-22 12:00	14.21	14.36	11.87	
8-13-22 13:00	15.08	15.13	12.22	
8-13-22 14:00	14.93	14.91	12.27	
8-13-22 15:00	15.07	15.17	12.10	
8-13-22 16:00	15.82	15.80	12.47	
8-13-22 17:00	15.61	15.70	12.99	
8-13-22 18:00	14.91	14.92	13.16	
8-13-22 19:00	14.13	14.01	13.23	
8-13-22 20:00	13.16	13.07	13.24	
8-13-22 21:00	12.11	12.08	13.04	
8-13-22 22:00	11.46	11.36	12.88	
8-13-22 23:00	10.97	10.90	13.00	
8-14-22 0:00	10.49	10.43	12.41	
8-14-22 1:00	10.11	10.07	11.80	
8-14-22 2:00	9.79	9.76	11.77	
8-14-22 3:00	9.43	9.48	11.94	
8-14-22 4:00	9.21	9.17	11.94	
8-14-22 5:00	9.03	8.97	11.80	
8-14-22 6:00	8.79	8.78	11.68	
8-14-22 7:00	8.71	8.67	11.53	
8-14-22 8:00	8.82	8.76	11.19	
8-14-22 9:00	9.47	9.47	11.14	
8-14-22 10:00	10.71	10.86	10.97	
8-14-22 11:00	12.14	12.38	11.32	
8-14-22 12:00	13.61	13.73	11.68	
8-14-22 13:00	14.80	14.96	11.87	
8-14-22 14:00	15.68	15.89	12.14	
8-14-22 15:00	16.31	16.50	12.51	
8-14-22 16:00	16.66	16.67	12.84	
8-14-22 17:00	16.45	16.38	12.99	
8-14-22 18:00	16.07	16.02	12.89	
8-14-22 19:00	15.23	15.01	12.61	
8-14-22 20:00	14.10	13.92	12.54	
8-14-22 21:00	13.06	12.89	12.64	
8-14-22 22:00	12.19	12.08	12.83	
8-14-22 23:00	11.51	11.41	12.41	
8-15-22 0:00	10.91	10.83	11.86	
8-15-22 1:00	10.43	10.31	11.96	
8-15-22 2:00	10.01	9.98	11.80	
8-15-22 3:00	9.75	9.64	11.67	
8-15-22 4:00	9.45	9.37	11.69	
8-15-22 5:00	9.17	9.16	11.67	
8-15-22 6:00	8.95	8.94	11.65	
8-15-22 7:00	8.87	8.83	11.52	
8-15-22 8:00	8.95	8.91	11.46	
8-15-22 9:00	9.54	9.55	11.34	
8-15-22 10:00	10.73	10.85	11.09	
8-15-22 11:00	12.14	12.41	11.73	
8-15-22 12:00	13.60	13.80	12.11	
8-15-22 13:00	14.73	14.79	12.36	
8-15-22 14:00	15.25	15.36	13.21	
8-15-22 15:00	15.63	15.76	12.18	
8-15-22 16:00	16.03	16.05	12.53	
8-15-22 17:00	16.25	16.22	12.44	
8-15-22 18:00	15.78	15.65	11.98	
8-15-22 19:00	14.50	14.34	11.86	
8-15-22 20:00	13.68	13.53	12.03	
8-15-22 21:00	12.85	12.74	12.27	
8-15-22 22:00	12.13	12.02	12.57	
8-15-22 23:00	11.53	11.45	12.50	
8-16-22 0:00	11.05	10.97	12.59	
8-16-22 1:00	10.67	10.63	12.57	
8-16-22 2:00	10.32	10.25	12.54	
8-16-22 3:00	10.07	10.03	13.94	
8-16-22 4:00	9.75	9.75	12.37	
8-16-22 5:00	9.52	9.46	10.94	
8-16-22 6:00	9.36	9.25	11.07	
8-16-22 7:00	9.21	9.18	11.64	
8-16-22 8:00	9.29	9.24	11.75	
8-16-22 9:00	9.89	9.89	11.44	
8-16-22 10:00	11.10	11.22	11.40	
8-16-22 11:00	12.46	12.73	11.47	
8-16-22 12:00	13.91	14.04	11.83	

Date and Time	Hourly Average Temperature (°C)			Comments
	FR_FR3	FR_SCOUTDS	FS_EFF-SC	
	E320693	E320695	E323231	
8-16-22 13:00	14.91	14.96	12.09	
8-16-22 14:00	14.91	14.86	12.43	
8-16-22 15:00	15.33	15.52	12.38	
8-16-22 16:00	16.10	16.12	12.31	
8-16-22 17:00	16.17	16.16	11.85	
8-16-22 18:00	15.77	15.70	11.80	
8-16-22 19:00	15.12	14.90	11.91	
8-16-22 20:00	14.16	13.97	11.66	
8-16-22 21:00	13.15	13.00	11.62	
8-16-22 22:00	12.40	12.24	12.05	
8-16-22 23:00	11.72	11.64	12.33	
8-17-22 0:00	11.23	11.12	12.32	
8-17-22 1:00	10.98	10.88	12.30	
8-17-22 2:00	10.90	10.83	12.32	
8-17-22 3:00	10.63	10.55	12.25	
8-17-22 4:00	10.32	10.27	12.02	
8-17-22 5:00	10.06	10.02	11.86	
8-17-22 6:00	9.87	9.81	11.72	
8-17-22 7:00	9.76	9.69	11.60	
8-17-22 8:00	9.81	9.79	11.55	
8-17-22 9:00	10.46	10.44	11.34	
8-17-22 10:00	11.64	11.75	11.40	
8-17-22 11:00	13.12	13.29	9.47	
8-17-22 12:00	14.60	14.80	9.35	
8-17-22 13:00	15.82	15.92	9.81	
8-17-22 14:00	16.85	17.11	10.65	
8-17-22 15:00	17.41	17.65	11.24	
8-17-22 16:00	18.05	18.03	11.36	
8-17-22 17:00	18.10	18.05	10.71	
8-17-22 18:00	17.49	17.34	10.50	
8-17-22 19:00	16.12	15.84	10.36	
8-17-22 20:00	14.64	14.43	10.13	
8-17-22 21:00	13.38	13.23	10.22	
8-17-22 22:00	12.58	12.40	10.02	
8-17-22 23:00	12.00	11.82	10.46	
8-18-22 0:00	11.51	11.32	10.81	
8-18-22 1:00	11.07	10.94	10.58	
8-18-22 2:00	10.75	10.61	10.20	
8-18-22 3:00	10.49	10.31	9.90	
8-18-22 4:00	10.22	10.10	9.86	
8-18-22 5:00	10.01	9.89	9.97	
8-18-22 6:00	9.79	9.68	9.88	
8-18-22 7:00	9.64	9.53	9.78	
8-18-22 8:00	9.70	9.57	9.78	
8-18-22 9:00	10.32	10.22	9.93	
8-18-22 10:00	11.39	11.42	9.84	
8-18-22 11:00	12.81	13.03	9.80	
8-18-22 12:00	14.37	14.55	9.78	
8-18-22 13:00	15.64	15.85	10.44	
8-18-22 14:00	16.55	16.74	10.40	
8-18-22 15:00	17.16	17.27	10.26	
8-18-22 16:00	17.47	17.36	10.56	
8-18-22 17:00	17.48	17.35	9.72	
8-18-22 18:00	17.13	16.92	9.82	
8-18-22 19:00	16.26	15.95	9.84	
8-18-22 20:00	15.18	14.89	9.93	
8-18-22 21:00	14.13	13.90	9.95	
8-18-22 22:00	13.33	13.05	10.18	
8-18-22 23:00	12.62	12.39	10.03	
8-19-22 0:00	11.99	11.78	10.08	
8-19-22 1:00	11.48	11.27	10.08	
8-19-22 2:00	11.11	10.94	9.82	
8-19-22 3:00	10.78	10.63	9.67	
8-19-22 4:00	10.49	10.32	9.68	
8-19-22 5:00	10.29	10.15	9.47	
8-19-22 6:00	10.12	9.94	9.41	
8-19-22 7:00	10.01	9.88	9.44	
8-19-22 8:00	10.13	9.98	9.44	
8-19-22 9:00	10.58	10.54	9.58	
8-19-22 10:00	11.46	11.44	8.96	
8-19-22 11:00	12.68	12.87	8.83	
8-19-22 12:00	14.08	14.19	9.21	
8-19-22 13:00	15.36	15.49	9.66	
8-19-22 14:00	16.32	16.50	10.02	
8-19-22 15:00	16.91	16.99	10.00	
8-19-22 16:00	17.16	17.03	9.70	
8-19-22 17:00	17.03	16.78	9.32	
8-19-22 18:00	16.37	16.16	9.56	

Date and Time	Hourly Average Temperature (°C)			Comments
	FR_FR3	FR_SCOUTDS	FS_EFF-SC	
	E320693	E320695	E323231	
8-19-22 19:00	15.48	15.27	9.58	
8-19-22 20:00	14.56	14.31	9.45	
8-19-22 21:00	13.62	13.37	9.13	
8-19-22 22:00	12.83	12.59	9.01	
8-19-22 23:00	12.22	11.99	9.23	
8-20-22 0:00	11.72	11.51	9.17	
8-20-22 1:00	11.29	11.07	9.08	
8-20-22 2:00	10.93	10.73	9.36	
8-20-22 3:00	10.60	10.42	9.55	
8-20-22 4:00	10.41	10.19	9.45	
8-20-22 5:00	10.22	10.06	9.36	
8-20-22 6:00	10.20	10.03	9.26	
8-20-22 7:00	10.19	10.06	9.28	
8-20-22 8:00	10.30	10.14	9.31	
8-20-22 9:00	10.64	10.58	9.48	
8-20-22 10:00	11.26	11.15	9.28	
8-20-22 11:00	11.61	11.47	8.91	
8-20-22 12:00	11.72	11.65	8.83	
8-20-22 13:00	11.83	11.71	8.72	
8-20-22 14:00	11.86	11.83	8.56	
8-20-22 15:00	12.89	13.18	9.04	
8-20-22 16:00	14.33	14.38	9.47	
8-20-22 17:00	14.54	14.36	9.22	
8-20-22 18:00	13.78	13.66	9.11	
8-20-22 19:00	13.42	13.24	8.94	
8-20-22 20:00	13.04	12.85	8.80	
8-20-22 21:00	12.55	12.37	8.87	
8-20-22 22:00	12.10	11.88	8.85	
8-20-22 23:00	11.73	11.54	8.76	
8-21-22 0:00	11.47	11.31	8.71	
8-21-22 1:00	11.23	11.01	8.59	
8-21-22 2:00	10.96	10.76	8.88	
8-21-22 3:00	10.63	10.44	8.88	
8-21-22 4:00	10.33	10.14	8.80	
8-21-22 5:00	10.10	9.94	8.60	
8-21-22 6:00	9.93	9.74	8.57	
8-21-22 7:00	9.80	9.64	8.58	
8-21-22 8:00	9.89	9.74	8.57	
8-21-22 9:00	10.46	10.37	8.62	
8-21-22 10:00	11.39	11.36	8.42	
8-21-22 11:00	12.40	12.44	8.64	
8-21-22 12:00	13.51	13.64	9.07	
8-21-22 13:00	14.79	14.79	9.31	
8-21-22 14:00	14.64	14.47	9.92	
8-21-22 15:00	14.88	14.77	8.68	
8-21-22 16:00	14.58	14.33	9.90	
8-21-22 17:00	14.05	13.95	9.33	
8-21-22 18:00	14.36	14.25	11.00	
8-21-22 19:00	14.17	13.90	10.49	
8-21-22 20:00	13.28	13.04	10.16	
8-21-22 21:00	12.55	12.32	9.66	
8-21-22 22:00	12.01	11.78	9.24	
8-21-22 23:00	11.53	11.32	9.28	
8-22-22 0:00	11.11	10.95	9.17	
8-22-22 1:00	10.82	10.67	9.08	
8-22-22 2:00	10.55	10.39	8.83	
8-22-22 3:00	10.23	10.08	8.79	
8-22-22 4:00	9.98	9.81	8.46	
8-22-22 5:00	9.78	9.58	7.92	
8-22-22 6:00	9.57	9.41	7.94	
8-22-22 7:00	9.49	9.26	7.88	
8-22-22 8:00	9.49	9.33	8.87	
8-22-22 9:00	10.12	9.97	7.85	
8-22-22 10:00	11.26	11.23	7.98	
8-22-22 11:00	12.73	12.90	8.18	
8-22-22 12:00	14.40	14.60	8.70	
8-22-22 13:00	15.70	15.86	9.31	
8-22-22 14:00	16.46	16.48	9.54	
8-22-22 15:00	16.69	16.76	9.62	
8-22-22 16:00	17.05	16.90	9.46	
8-22-22 17:00	17.12	16.75	8.41	
8-22-22 18:00	16.54	16.10	8.78	
8-22-22 19:00	15.54	15.28	8.70	
8-22-22 20:00	14.64	14.30	8.82	
8-22-22 21:00	13.65	13.34	9.20	
8-22-22 22:00	13.01	12.78	10.29	
8-22-22 23:00	12.53	12.29	9.76	
8-23-22 0:00	12.18	11.93	9.73	

Date and Time	Hourly Average Temperature (°C)			Comments
	FR_FR3	FR_SCOUTDS	FS_EFF-SC	
	E320693	E320695	E323231	
8-23-22 1:00	11.87	11.63	9.60	
8-23-22 2:00	11.62	11.41	9.33	
8-23-22 3:00	11.41	11.22	8.97	
8-23-22 4:00	11.24	11.03	8.95	
8-23-22 5:00	11.05	10.86	8.88	
8-23-22 6:00	10.84	10.62	8.85	
8-23-22 7:00	10.63	10.37	8.93	
8-23-22 8:00	10.47	10.39	11.07	
8-23-22 9:00	10.78	10.77	11.43	
8-23-22 10:00	11.47	11.52	11.35	
8-23-22 11:00	12.72	12.89	11.35	
8-23-22 12:00	14.35	14.50	11.91	
8-23-22 13:00	15.05	15.13	12.04	
8-23-22 14:00	15.09	15.02	12.07	
8-23-22 15:00	15.87	15.64	11.97	
8-23-22 16:00	15.67	15.32	11.93	
8-23-22 17:00	14.30	14.12	12.62	
8-23-22 18:00	13.12	13.02	11.88	
8-23-22 19:00	12.50	12.31	11.11	
8-23-22 20:00	12.08	11.97	11.55	
8-23-22 21:00	11.82	11.73	12.28	
8-23-22 22:00	11.51	11.43	11.94	
8-23-22 23:00	11.16	11.07	12.22	
8-24-22 0:00	10.77	10.73	11.55	
8-24-22 1:00	10.56	10.48	11.24	
8-24-22 2:00	10.40	10.34	11.00	
8-24-22 3:00	10.24	10.14	9.07	
8-24-22 4:00	10.08	9.89	7.82	
8-24-22 5:00	9.88	9.75	8.36	
8-24-22 6:00	9.74	9.65	10.58	
8-24-22 7:00	9.58	9.51	10.16	
8-24-22 8:00	9.53	9.40	7.73	
8-24-22 9:00	9.79	9.67	7.37	
8-24-22 10:00	10.64	10.52	7.27	
8-24-22 11:00	11.66	11.52	7.43	
8-24-22 12:00	11.84	11.65	7.31	
8-24-22 13:00	11.94	11.79	7.33	
8-24-22 14:00	12.17	12.04	7.65	
8-24-22 15:00	12.56	12.36	7.59	
8-24-22 16:00	12.97	12.92	8.12	
8-24-22 17:00	13.37	13.20	8.32	
8-24-22 18:00	13.29	13.10	8.50	
8-24-22 19:00	13.04	12.78	8.54	
8-24-22 20:00	12.33	12.10	8.08	
8-24-22 21:00	11.72	11.54	8.36	
8-24-22 22:00	11.26	11.11	8.39	
8-24-22 23:00	10.98	10.83	8.53	
8-25-22 0:00	10.80	10.66	8.39	
8-25-22 1:00	10.67	10.53	8.63	
8-25-22 2:00	10.55	10.39	8.96	
8-25-22 3:00	10.42	10.31	8.96	
8-25-22 4:00	10.29	10.16	8.68	
8-25-22 5:00	10.19	10.06	8.53	
8-25-22 6:00	10.06	9.94	8.42	
8-25-22 7:00	9.99	9.82	8.30	
8-25-22 8:00	10.00	9.92	8.59	
8-25-22 9:00	10.18	10.07	8.54	
8-25-22 10:00	10.81	10.77	8.37	
8-25-22 11:00	11.58	11.50	8.59	
8-25-22 12:00	12.29	12.20	8.79	
8-25-22 13:00	13.17	13.13	9.03	
8-25-22 14:00	13.28	13.08	8.79	
8-25-22 15:00	13.35	13.18	8.81	
8-25-22 16:00	13.57	13.35	8.96	
8-25-22 17:00	13.50	13.35	9.07	
8-25-22 18:00	13.66	13.51	9.50	
8-25-22 19:00	13.38	13.18	9.49	
8-25-22 20:00	12.75	12.55	9.25	
8-25-22 21:00	12.04	11.84	9.12	
8-25-22 22:00	11.42	11.23	8.96	
8-25-22 23:00	10.99	10.84	8.69	
8-26-22 0:00	10.65	10.45	8.40	
8-26-22 1:00	10.27	10.14	8.33	
8-26-22 2:00	10.04	9.90	8.12	
8-26-22 3:00	9.83	9.63	7.88	
8-26-22 4:00	9.69	9.58	7.78	
8-26-22 5:00	9.58	9.43	7.69	
8-26-22 6:00	9.54	9.36	7.70	

Date and Time	Hourly Average Temperature (°C)			Comments
	FR_FR3	FR_SCOUTDS	FS_EFF-SC	
	E320693	E320695	E323231	
8-26-22 7:00	9.61	9.43	7.34	
8-26-22 8:00	9.76	9.61	7.18	
8-26-22 9:00	10.37	10.26	7.33	
8-26-22 10:00	11.34	11.18	7.51	
8-26-22 11:00	12.17	12.14	7.79	
8-26-22 12:00	12.76	12.62	7.97	
8-26-22 13:00	12.83	12.71	8.15	
8-26-22 14:00	13.52	13.52	8.28	
8-26-22 15:00	14.67	14.59	8.32	
8-26-22 16:00	15.15	14.90	8.51	
8-26-22 17:00	14.78	14.59	8.73	
8-26-22 18:00	14.09	13.83	8.48	
8-26-22 19:00	13.14	12.90	9.37	
8-26-22 20:00	12.48	12.25	8.96	
8-26-22 21:00	11.93	11.69	8.93	
8-26-22 22:00	11.32	11.14	8.57	
8-26-22 23:00	10.86	10.68	8.46	
8-27-22 0:00	10.49	10.39	8.31	
8-27-22 1:00	10.28	10.14	8.29	
8-27-22 2:00	10.17	10.03	8.27	
8-27-22 3:00	10.07	9.94	8.15	
8-27-22 4:00	10.00	9.83	8.11	
8-27-22 5:00	9.86	9.73	8.28	
8-27-22 6:00	9.71	9.59	8.29	
8-27-22 7:00	9.61	9.48	8.65	
8-27-22 8:00	9.61	9.48	8.58	
8-27-22 9:00	9.72	9.64	8.39	
8-27-22 10:00	10.22	10.08	8.30	
8-27-22 11:00	10.44	10.33	8.60	
8-27-22 12:00	10.94	10.80	8.79	
8-27-22 13:00	11.03	10.83	8.78	
8-27-22 14:00	10.91	10.84	8.88	
8-27-22 15:00	12.13	12.00	8.72	
8-27-22 16:00	12.88	12.67	8.76	
8-27-22 17:00	11.97	11.80	8.88	
8-27-22 18:00	11.17	11.01	8.65	
8-27-22 19:00	10.72	10.61	9.60	
8-27-22 20:00	10.28	10.22	11.22	
8-27-22 21:00	9.70	9.70	10.09	
8-27-22 22:00	9.25	9.22	9.98	
8-27-22 23:00	8.89	8.93	10.03	
8-28-22 0:00	8.73	8.64	9.80	
8-28-22 1:00	8.49	8.49	9.84	
8-28-22 2:00	8.27	8.26	9.72	
8-28-22 3:00	8.08	8.05	9.56	
8-28-22 4:00	7.87	7.89	9.52	
8-28-22 5:00	7.73	7.68	9.05	
8-28-22 6:00	7.59	7.57	8.84	
8-28-22 7:00	7.43	7.44	8.80	
8-28-22 8:00	7.41	7.41	8.73	
8-28-22 9:00	7.82	7.83	8.72	
8-28-22 10:00	8.66	8.63	8.93	
8-28-22 11:00	9.64	9.62	9.19	
8-28-22 12:00	10.61	10.58	9.73	
8-28-22 13:00	11.67	11.57	9.82	
8-28-22 14:00	12.54	12.38	9.74	
8-28-22 15:00	12.15	12.09	9.63	
8-28-22 16:00	12.04	11.94	9.86	
8-28-22 17:00	12.05	11.95	10.14	
8-28-22 18:00	11.69	11.63	10.03	
8-28-22 19:00	11.33	11.26	10.12	
8-28-22 20:00	10.75	10.67	9.94	
8-28-22 21:00	10.14	10.10	9.79	
8-28-22 22:00	9.72	9.70	9.96	
8-28-22 23:00	9.30	9.29	9.95	
8-29-22 0:00	9.03	8.92	9.84	
8-29-22 1:00	8.66	8.63	9.57	
8-29-22 2:00	8.41	8.40	9.38	
8-29-22 3:00	8.19	8.21	9.29	
8-29-22 4:00	8.05	8.00	9.19	
8-29-22 5:00	7.87	7.85	9.03	
8-29-22 6:00	7.72	7.75	8.92	
8-29-22 7:00	7.63	7.63	8.83	
8-29-22 8:00	7.79	7.80	8.76	
8-29-22 9:00	8.53	8.50	8.88	
8-29-22 10:00	9.44	9.39	9.22	
8-29-22 11:00	10.53	10.51	9.73	
8-29-22 12:00	11.75	11.76	10.23	

Date and Time	Hourly Average Temperature (°C)			Comments
	FR_FR3	FR_SCOUTDS	FS_EFF-SC	
	E320693	E320695	E323231	
8-29-22 13:00	12.86	12.76	10.60	
8-29-22 14:00	13.73	13.66	10.65	
8-29-22 15:00	14.12	13.92	10.42	
8-29-22 16:00	14.12	13.93	10.15	
8-29-22 17:00	14.21	14.00	10.98	
8-29-22 18:00	13.56	13.55	14.55	
8-29-22 19:00	12.95	12.81	9.97	
8-29-22 20:00	12.24	12.11	9.33	
8-29-22 21:00	11.51	11.38	9.27	
8-29-22 22:00	10.91	10.80	9.22	
8-29-22 23:00	10.40	10.28	9.00	
8-30-22 0:00	9.97	9.88	8.69	
8-30-22 1:00	9.70	9.59	8.69	
8-30-22 2:00	9.39	9.30	8.69	
8-30-22 3:00	9.21	9.10	8.76	
8-30-22 4:00	9.05	8.86	8.47	
8-30-22 5:00	8.81	8.74	8.45	
8-30-22 6:00	8.65	8.58	8.46	
8-30-22 7:00	8.55	8.47	8.47	
8-30-22 8:00	8.54	8.47	8.56	
8-30-22 9:00	9.01	8.94	8.32	
8-30-22 10:00	10.02	9.90	8.42	
8-30-22 11:00	11.18	11.16	8.38	
8-30-22 12:00	12.51	12.54	8.59	
8-30-22 13:00	13.64	13.64	8.69	
8-30-22 14:00	14.53	14.56	8.93	
8-30-22 15:00	15.24	15.18	9.28	
8-30-22 16:00	15.61	15.39	9.27	
8-30-22 17:00	15.48	15.34	10.14	
8-30-22 18:00	14.90	14.75	10.37	
8-30-22 19:00	14.03	13.83	9.84	
8-30-22 20:00	13.06	12.89	9.75	
8-30-22 21:00	12.24	12.13	10.19	
8-30-22 22:00	11.58	11.48	10.51	
8-30-22 23:00	11.04	10.94	10.29	
8-31-22 0:00	10.59	10.50	10.34	
8-31-22 1:00	10.23	10.10	10.34	
8-31-22 2:00	9.89	9.77	10.10	
8-31-22 3:00	9.61	9.57	10.20	
8-31-22 4:00	9.44	9.39	10.18	
8-31-22 5:00	9.24	9.22	10.14	
8-31-22 6:00	9.08	9.05	10.16	
8-31-22 7:00	8.99	8.93	10.39	
8-31-22 8:00	8.94	8.88	10.29	
8-31-22 9:00	9.40	9.33	9.41	
8-31-22 10:00	10.33	10.27	9.07	
8-31-22 11:00	11.60	11.64	9.04	
8-31-22 12:00	12.97	13.08	9.31	
8-31-22 13:00	14.06	14.18	9.48	
8-31-22 14:00	14.90	15.03	9.38	
8-31-22 15:00	15.50	15.55	9.12	
8-31-22 16:00	15.76	15.66	9.31	
8-31-22 17:00	15.65	15.55	9.38	
8-31-22 18:00	15.09	14.88	9.36	
8-31-22 19:00	14.13	13.94	9.28	
8-31-22 20:00	13.19	13.03	9.28	
8-31-22 21:00	12.37	12.26	9.56	
8-31-22 22:00	11.74	11.61	9.81	
8-31-22 23:00	11.24	11.16	9.99	
9-1-22 0:00	10.89	10.79	9.95	
9-1-22 1:00	10.55	10.45	9.93	
9-1-22 2:00	10.23	10.12	9.84	
9-1-22 3:00	9.93	9.76	9.57	
9-1-22 4:00	9.72	9.66	9.51	
9-1-22 5:00	9.56	9.46	9.51	
9-1-22 6:00	9.35	9.27	9.57	
9-1-22 7:00	9.23	9.15	9.37	
9-1-22 8:00	9.21	9.18	9.38	
9-1-22 9:00	9.62	9.55	9.40	
9-1-22 10:00	10.44	10.45	9.56	
9-1-22 11:00	11.72	11.75	9.62	
9-1-22 12:00	13.10	13.23	9.67	
9-1-22 13:00	14.27	14.40	9.81	
9-1-22 14:00	15.07	15.12	9.93	
9-1-22 15:00	15.53	15.57	10.20	
9-1-22 16:00	15.67	15.52	10.25	
9-1-22 17:00	15.25	15.14	10.11	
9-1-22 18:00	14.75	14.64	10.09	

Date and Time	Hourly Average Temperature (°C)			Comments
	FR_FR3	FR_SCOUTDS	FS_EFF-SC	
	E320693	E320695	E323231	
9-1-22 19:00	14.00	13.83	10.13	
9-1-22 20:00	13.12	12.93	10.10	
9-1-22 21:00	12.30	12.14	10.23	
9-1-22 22:00	11.62	11.51	10.17	
9-1-22 23:00	11.09	11.00	10.05	
9-2-22 0:00	10.64	10.54	9.98	
9-2-22 1:00	10.25	10.24	9.89	
9-2-22 2:00	9.90	9.86	9.79	
9-2-22 3:00	9.61	9.52	9.72	
9-2-22 4:00	9.34	9.25	9.65	
9-2-22 5:00	9.13	9.05	9.54	
9-2-22 6:00	8.93	8.86	9.50	
9-2-22 7:00	8.79	8.69	9.39	
9-2-22 8:00	8.73	8.63	9.34	
9-2-22 9:00	9.15	9.06	10.05	
9-2-22 10:00	10.17	10.11	9.57	
9-2-22 11:00	11.50	11.55	10.07	
9-2-22 12:00	12.98	13.14	11.25	
9-2-22 13:00	14.22	14.33	11.21	
9-2-22 14:00	15.11	15.22	11.79	
9-2-22 15:00	15.63	15.72	12.09	
9-2-22 16:00	15.90	15.84	12.56	
9-2-22 17:00	15.79	15.76	12.69	
9-2-22 18:00	15.28	15.19	12.76	
9-2-22 19:00	14.39	14.18	11.91	
9-2-22 20:00	13.36	13.22	11.82	
9-2-22 21:00	12.54	12.39	10.86	
9-2-22 22:00	11.87	11.71	10.46	
9-2-22 23:00	11.31	11.14	10.45	
9-3-22 0:00	10.81	10.70	10.34	
9-3-22 1:00	10.40	10.27	10.39	
9-3-22 2:00	10.14	9.96	10.47	
9-3-22 3:00	9.64	9.64	10.36	
9-3-22 4:00	9.49	9.45	10.29	
9-3-22 5:00	9.29	9.22	10.18	
9-3-22 6:00	9.11	9.08	10.11	
9-3-22 7:00	9.03	9.00	10.05	
9-3-22 8:00	9.09	9.03	9.97	
9-3-22 9:00	9.40	9.35	9.95	
9-3-22 10:00	10.17	10.12	9.98	
9-3-22 11:00	11.33	11.37	9.97	
9-3-22 12:00	12.71	12.79	10.06	
9-3-22 13:00	13.94	14.05	10.63	
9-3-22 14:00	14.93	15.03	11.22	
9-3-22 15:00	15.36	15.42	11.83	
9-3-22 16:00	15.46	15.33	12.02	
9-3-22 17:00	15.27	15.18	12.28	
9-3-22 18:00	14.78	14.64	12.64	
9-3-22 19:00	14.02	13.94	13.25	
9-3-22 20:00	13.29	13.22	13.03	
9-3-22 21:00	12.64	12.56	12.80	
9-3-22 22:00	12.10	12.06	12.35	
9-3-22 23:00	11.60	11.50	11.50	
9-4-22 0:00	11.17	11.05	10.76	
9-4-22 1:00	10.78	10.65	10.40	
9-4-22 2:00	10.44	10.33	10.15	
9-4-22 3:00	10.13	10.01	10.12	
9-4-22 4:00	9.86	9.72	10.04	
9-4-22 5:00	9.61	9.53	9.92	
9-4-22 6:00	9.40	9.32	9.87	
9-4-22 7:00	9.25	9.18	9.70	
9-4-22 8:00	9.30	9.22	9.65	
9-4-22 9:00	9.60	9.53	9.66	
9-4-22 10:00	10.34	10.30	9.74	
9-4-22 11:00	11.56	11.68	10.25	
9-4-22 12:00	12.93	13.09	10.49	
9-4-22 13:00	14.14	14.29	10.97	
9-4-22 14:00	15.02	15.17	11.30	
9-4-22 15:00	15.53	15.57	11.47	
9-4-22 16:00	15.67	15.54	12.31	
9-4-22 17:00	15.43	15.35	12.59	
9-4-22 18:00	14.81	14.67	12.43	
9-4-22 19:00	13.94	13.78	12.38	
9-4-22 20:00	13.01	12.90	12.37	
9-4-22 21:00	12.21	12.12	12.16	
9-4-22 22:00	11.64	11.60	11.97	
9-4-22 23:00	11.20	11.13	11.73	
9-5-22 0:00	10.78	10.73	11.05	

Date and Time	Hourly Average Temperature (°C)			Comments
	FR_FR3	FR_SCOUTDS	FS_EFF-SC	
	E320693	E320695	E323231	
9-5-22 1:00	10.46	10.39	10.80	
9-5-22 2:00	10.15	10.08	10.87	
9-5-22 3:00	9.86	9.83	10.79	
9-5-22 4:00	9.64	9.58	10.46	
9-5-22 5:00	9.44	9.33	9.99	
9-5-22 6:00	9.22	9.16	9.88	
9-5-22 7:00	9.09	9.02	10.00	
9-5-22 8:00	9.06	9.00	9.84	
9-5-22 9:00	9.48	9.43	9.97	
9-5-22 10:00	10.55	10.49	10.10	
9-5-22 11:00	11.53	11.55	10.29	
9-5-22 12:00	12.50	12.64	10.43	
9-5-22 13:00	13.58	13.62	10.53	
9-5-22 14:00	13.92	14.00	10.73	
9-5-22 15:00	14.09	14.10	11.01	
9-5-22 16:00	14.16	13.96	11.04	
9-5-22 17:00	14.08	13.98	11.08	
9-5-22 18:00	13.71	13.48	10.97	
9-5-22 19:00	12.91	12.75	10.92	
9-5-22 20:00	12.03	11.89	10.72	
9-5-22 21:00	11.23	11.12	10.55	
9-5-22 22:00	10.67	10.56	10.34	
9-5-22 23:00	10.20	10.11	10.07	
9-6-22 0:00	9.82	9.66	9.97	
9-6-22 1:00	9.40	9.34	9.99	
9-6-22 2:00	9.15	9.05	10.10	
9-6-22 3:00	8.86	8.77	10.19	
9-6-22 4:00	8.60	8.52	10.10	
9-6-22 5:00	8.38	8.28	9.98	
9-6-22 6:00	8.18	8.10	9.87	
9-6-22 7:00	8.00	7.96	9.70	
9-6-22 8:00	7.96	7.88	9.67	
9-6-22 9:00	8.28	8.24	9.54	
9-6-22 10:00	9.28	9.26	9.37	
9-6-22 11:00	10.58	10.72	9.93	
9-6-22 12:00	12.01	12.19	10.45	
9-6-22 13:00	13.15	13.33	10.84	
9-6-22 14:00	13.95	14.07	11.02	
9-6-22 15:00	14.39	14.46	11.16	
9-6-22 16:00	14.55	14.45	11.21	
9-6-22 17:00	14.36	14.26	11.25	
9-6-22 18:00	13.96	13.86	11.17	
9-6-22 19:00	13.91	13.81	11.17	
9-6-22 20:00	12.38	12.25	10.80	
9-6-22 21:00	11.32	11.20	10.60	
9-6-22 22:00	10.79	10.66	10.42	
9-6-22 23:00	10.35	10.22	10.09	
9-7-22 0:00	9.96	9.82	9.96	
9-7-22 1:00	9.61	9.48	9.77	
9-7-22 2:00	9.27	9.21	9.69	
9-7-22 3:00	9.01	8.93	9.54	
9-7-22 4:00	8.79	8.69	9.42	
9-7-22 5:00	8.59	8.50	9.28	
9-7-22 6:00	8.42	8.31	9.19	
9-7-22 7:00	8.26	8.18	9.15	
9-7-22 8:00	8.24	8.16	9.22	
9-7-22 9:00	8.60	8.54	9.56	
9-7-22 10:00	9.55	9.55	9.20	
9-7-22 11:00	10.93	11.05	9.47	
9-7-22 12:00	12.23	12.35	10.13	
9-7-22 13:00	12.99	13.06	10.14	
9-7-22 14:00	13.66	13.79	10.61	
9-7-22 15:00	13.98	13.98	10.83	
9-7-22 16:00	13.67	13.53	11.16	
9-7-22 17:00	13.20	13.09	10.58	
9-7-22 18:00	12.73	12.53	10.39	
9-7-22 19:00	12.06	11.88	10.08	
9-7-22 20:00	11.41	11.24	9.76	
9-7-22 21:00	10.85	10.71	9.57	
9-7-22 22:00	10.44	10.32	9.56	
9-7-22 23:00	10.01	9.86	9.54	
9-8-22 0:00	9.54	9.40	9.51	
9-8-22 1:00	9.17	9.04	9.60	
9-8-22 2:00	8.97	8.95	9.42	
9-8-22 3:00	8.98	8.91	9.53	
9-8-22 4:00	8.92	8.87	9.78	
9-8-22 5:00	8.93	8.86	9.61	
9-8-22 6:00	8.85	8.83	9.53	

Date and Time	Hourly Average Temperature (°C)			Comments
	FR_FR3	FR_SCOUTDS	FS_EFF-SC	
	E320693	E320695	E323231	
9-8-22 7:00	8.79	8.72	9.72	
9-8-22 8:00	8.69	8.68	10.22	
9-8-22 9:00	9.04	9.04	10.20	
9-8-22 10:00	9.37	9.31	9.28	
9-8-22 11:00	9.83	9.86	9.86	
9-8-22 12:00	10.77	10.82	9.66	
9-8-22 13:00	11.61	11.57	9.75	
9-8-22 14:00	11.67	11.53	9.65	
9-8-22 15:00	11.54	11.40	9.33	
9-8-22 16:00	11.31	11.24	11.13	
9-8-22 17:00	11.05	10.96	10.37	
9-8-22 18:00	10.79	10.72	10.46	
9-8-22 19:00	10.38	10.30	10.38	
9-8-22 20:00	9.91	9.84	10.30	
9-8-22 21:00	9.54	9.47	10.33	
9-8-22 22:00	9.30	9.26	10.40	
9-8-22 23:00	9.12	9.08	10.39	
9-9-22 0:00	8.94	8.84	9.73	
9-9-22 1:00	8.75	8.65	9.28	
9-9-22 2:00	8.59	8.63	11.25	
9-9-22 3:00	8.50	8.47	10.02	
9-9-22 4:00	8.23	8.19	9.15	
9-9-22 5:00	8.01	7.99	9.82	
9-9-22 6:00	7.96	7.90	9.81	
9-9-22 7:00	7.85	7.87	9.76	
9-9-22 8:00	7.82	7.77	9.80	
9-9-22 9:00	7.85	7.82	9.24	
9-9-22 10:00	8.65	8.64	9.76	
9-9-22 11:00	10.22	10.39	10.09	
9-9-22 12:00	11.44	11.60	10.27	
9-9-22 13:00	10.89	11.12	10.39	
9-9-22 14:00	11.71	11.68	10.31	
9-9-22 15:00	12.23	12.36	10.73	
9-9-22 16:00	12.38	12.28	10.47	
9-9-22 17:00	11.81	11.88	10.45	
9-9-22 18:00	11.28	11.19	10.47	
9-9-22 19:00	10.69	10.58	10.74	
9-9-22 20:00	9.90	9.81	10.54	
9-9-22 21:00	9.20	9.16	10.33	
9-9-22 22:00	8.71	8.59	10.14	
9-9-22 23:00	8.28	8.19	9.97	
9-10-22 0:00	7.90	7.82	9.95	
9-10-22 1:00	7.58	7.51	10.03	
9-10-22 2:00	7.33	7.26	9.80	
9-10-22 3:00	7.11	7.01	9.77	
9-10-22 4:00	6.89	6.81	9.58	
9-10-22 5:00	6.69	6.66	9.50	
9-10-22 6:00	6.54	6.49	9.43	
9-10-22 7:00	6.41	6.38	9.38	
9-10-22 8:00	6.40	6.36	9.34	
9-10-22 9:00	6.75	6.71	9.29	
9-10-22 10:00	7.81	7.82	9.44	
9-10-22 11:00	9.19	9.35	9.44	
9-10-22 12:00	10.64	10.86	9.78	
9-10-22 13:00	11.88	12.11	9.93	
9-10-22 14:00	12.86	13.06	10.26	
9-10-22 15:00	13.55	13.68	10.41	
9-10-22 16:00	13.82	13.62	9.48	
9-10-22 17:00	13.64	13.48	9.72	
9-10-22 18:00	13.14	13.01	10.73	
9-10-22 19:00	12.30	12.17	10.33	
9-10-22 20:00	11.33	11.25	10.30	
9-10-22 21:00	10.53	10.40	10.03	
9-10-22 22:00	9.91	9.80	9.95	
9-10-22 23:00	9.35	9.25	9.62	
9-11-22 0:00	8.87	8.81	9.49	
9-11-22 1:00	8.54	8.43	9.35	
9-11-22 2:00	8.24	8.17	9.26	
9-11-22 3:00	7.96	7.91	9.21	
9-11-22 4:00	7.75	7.65	9.14	
9-11-22 5:00	7.52	7.48	9.12	
9-11-22 6:00	7.34	7.28	9.05	
9-11-22 7:00	7.19	7.15	9.07	
9-11-22 8:00	7.14	7.10	9.03	
9-11-22 9:00	7.46	7.44	9.03	
9-11-22 10:00	8.45	8.44	8.78	
9-11-22 11:00	9.73	9.89	8.93	
9-11-22 12:00	10.97	11.17	9.19	

Date and Time	Hourly Average Temperature (°C)			Comments
	FR_FR3	FR_SCOUTDS	FS_EFF-SC	
	E320693	E320695	E323231	
9-11-22 13:00	11.88	12.08	9.51	
9-11-22 14:00	12.55	12.71	9.69	
9-11-22 15:00	12.95	13.03	10.00	
9-11-22 16:00	13.04	12.96	9.99	
9-11-22 17:00	12.88	12.82	9.92	
9-11-22 18:00	12.50	12.36	9.71	
9-11-22 19:00	11.84	11.64	9.05	
9-11-22 20:00	11.02	10.79	8.65	
9-11-22 21:00	10.32	10.21	9.57	
9-11-22 22:00	9.79	9.71	9.74	
9-11-22 23:00	9.35	9.27	9.29	
9-12-22 0:00	8.95	8.88	9.17	
9-12-22 1:00	8.67	8.57	9.13	
9-12-22 2:00	8.35	8.31	8.99	
9-12-22 3:00	8.18	8.09	8.96	
9-12-22 4:00	7.99	7.93	8.89	
9-12-22 5:00	7.89	7.81	8.83	
9-12-22 6:00	7.78	7.72	8.80	
9-12-22 7:00	7.68	7.64	8.75	
9-12-22 8:00	7.75	7.74	8.74	
9-12-22 9:00	8.10	8.12	8.80	
9-12-22 10:00	8.54	8.54	8.82	
9-12-22 11:00	8.93	8.94	8.92	
9-12-22 12:00	9.43	9.45	9.01	
9-12-22 13:00	9.80	9.76	9.14	
9-12-22 14:00	9.95	9.90	9.17	
9-12-22 15:00	10.03	10.02	9.08	
9-12-22 16:00	10.21	10.20	9.09	
9-12-22 17:00	10.49	10.47	9.04	
9-12-22 18:00	10.54	10.47	9.12	
9-12-22 19:00	10.32	10.22	8.99	
9-12-22 20:00	10.02	9.97	8.92	
9-12-22 21:00	9.79	9.73	8.99	
9-12-22 22:00	9.67	9.60	8.94	
9-12-22 23:00	9.55	9.51	8.94	
9-13-22 0:00	9.45	9.42	8.91	
9-13-22 1:00	9.28	9.26	8.92	
9-13-22 2:00	9.21	9.14	8.92	
9-13-22 3:00	9.11	9.09	8.90	
9-13-22 4:00	9.10	9.04	8.91	
9-13-22 5:00	9.05	8.99	8.89	
9-13-22 6:00	8.96	8.93	8.86	
9-13-22 7:00	8.87	8.80	8.87	
9-13-22 8:00	8.77	8.77	8.75	
9-13-22 9:00	9.04	9.00	8.80	
9-13-22 10:00	9.61	9.64	8.91	
9-13-22 11:00	10.39	10.50	9.02	
9-13-22 12:00	11.22	11.38	9.25	
9-13-22 13:00	12.35	12.49	9.23	
9-13-22 14:00	12.52	12.72	9.46	
9-13-22 15:00	12.82	12.93	9.54	
9-13-22 16:00	12.65	12.59	9.58	
9-13-22 17:00	12.21	12.11	9.47	
9-13-22 18:00	11.81	11.72	9.27	
9-13-22 19:00	11.42	11.40	9.38	
9-13-22 20:00	11.01	10.96	9.40	
9-13-22 21:00	10.72	10.55	8.65	
9-13-22 22:00	10.35	10.23	9.48	
9-13-22 23:00	10.05	9.94	9.00	
9-14-22 0:00	9.84	9.73	9.07	
9-14-22 1:00	9.55	9.48	8.95	
9-14-22 2:00	9.24	9.13	8.78	
9-14-22 3:00	8.87	8.77	8.76	
9-14-22 4:00	8.56	8.49	8.73	
9-14-22 5:00	8.31	8.24	8.76	
9-14-22 6:00	8.08	7.99	8.68	
9-14-22 7:00	7.83	7.81	8.67	
9-14-22 8:00	7.69	7.74	8.85	
9-14-22 9:00	8.04	8.05	7.54	
9-14-22 10:00	8.89	8.89	8.00	
9-14-22 11:00	9.68	9.72	9.19	
9-14-22 12:00	10.75	10.87	9.14	
9-14-22 13:00	11.79	11.88	8.90	
9-14-22 14:00	12.40	12.40	8.98	
9-14-22 15:00	12.50	12.36	9.11	
9-14-22 16:00	12.01	11.90	9.13	
9-14-22 17:00	11.39	11.29	9.07	
9-14-22 18:00	10.75	10.68	9.05	

Date and Time	Hourly Average Temperature (°C)			Comments
	FR_FR3	FR_SCOUTDS	FS_EFF-SC	
	E320693	E320695	E323231	
9-14-22 19:00	10.25	10.17	9.04	
9-14-22 20:00	9.86	9.78	9.17	
9-14-22 21:00	9.49	9.45	9.23	
9-14-22 22:00	9.23	9.14	9.16	
9-14-22 23:00	8.91	8.89	9.17	
9-15-22 0:00	8.69	8.64	9.10	
9-15-22 1:00	8.51	8.48	8.84	
9-15-22 2:00	8.45	8.41	8.50	
9-15-22 3:00	8.40	8.34	8.51	
9-15-22 4:00	8.28	8.18	8.46	
9-15-22 5:00	8.16	8.14	8.42	
9-15-22 6:00	8.11	8.06	8.37	
9-15-22 7:00	8.08	8.05	8.35	
9-15-22 8:00	8.22	8.22	8.37	
9-15-22 9:00	8.46	8.48	8.63	
9-15-22 10:00	9.05	9.08	8.90	
9-15-22 11:00	9.74	9.90	9.05	
9-15-22 12:00	11.19	11.40	9.30	
9-15-22 13:00	11.54	11.70	9.43	
9-15-22 14:00	12.67	12.71	9.51	
9-15-22 15:00	13.48	13.40	9.72	
9-15-22 16:00	13.36	13.35	9.83	
9-15-22 17:00	12.74	12.79	9.92	
9-15-22 18:00	12.40	12.25	9.89	
9-15-22 19:00	11.85	11.71	9.69	
9-15-22 20:00	11.02	10.95	9.42	
9-15-22 21:00	10.39	10.23	9.27	
9-15-22 22:00	9.82	9.74	9.19	
9-15-22 23:00	9.34	9.32	9.08	
9-16-22 0:00	9.01	8.92	9.04	
9-16-22 1:00	8.62	8.58	8.95	
9-16-22 2:00	8.32	8.25	8.91	
9-16-22 3:00	8.07	8.00	8.73	
9-16-22 4:00	7.81	7.76	8.77	
9-16-22 5:00	7.64	7.60	8.65	
9-16-22 6:00	7.45	7.42	8.64	
9-16-22 7:00	7.36	7.32	8.59	
9-16-22 8:00	7.43	7.44	8.65	
9-16-22 9:00	7.76	7.79	8.72	
9-16-22 10:00	8.27	8.32	8.79	
9-16-22 11:00	9.09	9.26	8.91	
9-16-22 12:00	10.17	10.28	8.78	
9-16-22 13:00	11.07	11.28	8.21	
9-16-22 14:00	11.96	11.91	8.05	
9-16-22 15:00	11.81	11.79	10.86	
9-16-22 16:00	11.45	11.41	9.67	
9-16-22 17:00	11.39	11.31	9.03	
9-16-22 18:00	11.02	10.95	9.18	
9-16-22 19:00	10.53	10.42	8.94	
9-16-22 20:00	9.95	9.78	8.78	
9-16-22 21:00	9.39	9.30	8.86	
9-16-22 22:00	8.91	8.84	8.81	
9-16-22 23:00	8.65	8.65	8.87	
9-17-22 0:00	8.57	8.57	8.89	
9-17-22 1:00	8.56	8.57	8.78	
9-17-22 2:00	8.44	8.49	8.79	
9-17-22 3:00	8.43	8.40	8.75	
9-17-22 4:00	8.37	8.34	8.69	
9-17-22 5:00	8.26	8.22	8.71	
9-17-22 6:00	8.14	8.14	8.61	
9-17-22 7:00	8.15	8.11	8.64	
9-17-22 8:00	8.08	8.07	8.61	
9-17-22 9:00	8.23	8.27	8.68	
9-17-22 10:00	8.61	8.61	8.66	
9-17-22 11:00	9.54	9.68	8.92	
9-17-22 12:00	10.61	10.55	9.13	
9-17-22 13:00	11.25	11.41	9.26	
9-17-22 14:00	11.76	11.86	9.21	
9-17-22 15:00	12.33	12.29	9.27	
9-17-22 16:00	12.53	12.45	9.25	
9-17-22 17:00	12.15	12.11	9.28	
9-17-22 18:00	11.45	11.33	9.16	
9-17-22 19:00	10.75	10.60	9.12	
9-17-22 20:00	9.98	9.82	8.92	
9-17-22 21:00	9.36	9.21	8.80	
9-17-22 22:00	8.78	8.67	8.72	
9-17-22 23:00	8.28	8.19	8.74	
9-18-22 0:00	7.87	7.81	8.64	

Date and Time	Hourly Average Temperature (°C)			Comments
	FR_FR3	FR_SCOUTDS	FS_EFF-SC	
	E320693	E320695	E323231	
9-18-22 1:00	7.56	7.46	8.59	
9-18-22 2:00	7.32	7.29	8.56	
9-18-22 3:00	7.12	7.05	8.47	
9-18-22 4:00	6.86	6.81	8.47	
9-18-22 5:00	6.67	6.58	8.36	
9-18-22 6:00	6.46	6.40	8.34	
9-18-22 7:00	6.32	6.23	8.32	
9-18-22 8:00	6.21	6.16	8.25	
9-18-22 9:00	6.46	6.45	8.32	
9-18-22 10:00	7.27	7.37	8.36	
9-18-22 11:00	8.44	8.63	8.59	
9-18-22 12:00	9.54	9.79	8.87	
9-18-22 13:00	10.62	10.87	8.99	
9-18-22 14:00	11.40	11.51	9.30	
9-18-22 15:00	11.65	11.73	9.45	
9-18-22 16:00	11.73	11.81	9.66	
9-18-22 17:00	11.80	11.78	9.49	
9-18-22 18:00	11.48	11.41	9.32	
9-18-22 19:00	10.92	10.84	9.19	
9-18-22 20:00	10.26	10.16	9.04	
9-18-22 21:00	9.66	9.58	8.98	
9-18-22 22:00	9.20	9.08	9.02	
9-18-22 23:00	8.74	8.67	9.04	
9-19-22 0:00	8.34	8.30	9.04	
9-19-22 1:00	8.01	7.98	8.92	
9-19-22 2:00	7.84	7.79	8.88	
9-19-22 3:00	7.63	7.60	8.78	
9-19-22 4:00	7.38	7.37	8.73	
9-19-22 5:00	7.17	7.14	8.60	
9-19-22 6:00	7.02	6.97	8.51	
9-19-22 7:00	6.88	6.86	8.32	
9-19-22 8:00	6.89	6.90	7.93	
9-19-22 9:00	7.25	7.26	8.75	
9-19-22 10:00	7.94	8.04	8.45	
9-19-22 11:00	8.99	9.14	8.49	
9-19-22 12:00	9.19	9.23	8.65	
9-19-22 13:00	9.24	9.25	8.67	
9-19-22 14:00	9.30	9.35	8.65	
9-19-22 15:00	9.60	9.57	8.48	
9-19-22 16:00	9.98	9.88	8.23	
9-19-22 17:00	9.88	9.79	8.25	
9-19-22 18:00	9.34	9.23	8.22	
9-19-22 19:00	8.89	8.82	8.17	
9-19-22 20:00	8.54	8.35	6.89	
9-19-22 21:00	8.19	8.02	6.80	
9-19-22 22:00	7.86	7.76	7.68	
9-19-22 23:00	7.59	7.51	7.17	
9-20-22 0:00	7.44	7.34	6.90	
9-20-22 1:00	7.32	7.21	6.83	
9-20-22 2:00	7.19	7.10	7.04	
9-20-22 3:00	7.06	7.00	7.25	
9-20-22 4:00	6.92	6.84	7.21	
9-20-22 5:00	6.76	6.68	7.45	
9-20-22 6:00	6.56	6.46	7.67	
9-20-22 7:00	6.28	6.21	7.03	
9-20-22 8:00	6.13	6.11	7.61	
9-20-22 9:00	6.22	6.19	7.56	
9-20-22 10:00	7.04	7.05	7.40	
9-20-22 11:00	8.28	8.49	7.69	
9-20-22 12:00	9.58	9.95	7.96	
9-20-22 13:00	10.77	11.13	8.39	
9-20-22 14:00	11.63	11.90	8.59	
9-20-22 15:00	11.94	12.02	8.86	
9-20-22 16:00	11.87	11.75	8.96	
9-20-22 17:00	11.44	11.39	9.19	
9-20-22 18:00	10.80	10.66	9.15	
9-20-22 19:00	9.99	9.88	8.97	
9-20-22 20:00	9.15	8.99	7.95	
9-20-22 21:00	8.43	8.38	9.60	
9-20-22 22:00	7.92	7.84	8.54	
9-20-22 23:00	7.47	7.36	8.44	
9-21-22 0:00	7.03	6.96	8.43	
9-21-22 1:00	6.69	6.60	8.20	
9-21-22 2:00	6.40	6.32	8.20	
9-21-22 3:00	6.20	6.10	8.15	
9-21-22 4:00	6.00	5.90	8.11	
9-21-22 5:00	5.80	5.72	8.09	
9-21-22 6:00	5.60	5.53	8.02	

Date and Time	Hourly Average Temperature (°C)			Comments
	FR_FR3	FR_SCOUTDS	FS_EFF-SC	
	E320693	E320695	E323231	
9-21-22 7:00	5.41	5.37	7.94	
9-21-22 8:00	5.31	5.27	7.95	
9-21-22 9:00	5.49			FR_SCOUTDS disconnected and location moved slightly due to decreasing flows in river. FS_EFF-SC disconnected and repositioned in outfall trough.
9-21-22 10:00	6.40		8.11	FR_SCOUTDS disconnected and location moved slightly due to decreasing flows in river.
9-21-22 11:00	7.78	8.03	8.34	
9-21-22 12:00	9.29	9.44	8.62	
9-21-22 13:00		10.75	8.86	FR_FR3 disconnected and location moved slightly due to decreasing flows in river.
9-21-22 14:00	11.78	11.71	9.02	
9-21-22 15:00	12.40	12.27	9.24	
9-21-22 16:00	12.43	12.17	8.02	
9-21-22 17:00	12.11	11.84	7.97	
9-21-22 18:00	11.52	11.23	7.92	
9-21-22 19:00	10.67	10.59	9.75	
9-21-22 20:00	9.84	9.72	8.29	
9-21-22 21:00	9.18	9.05	8.27	
9-21-22 22:00	8.69	8.61	8.49	
9-21-22 23:00	8.24	8.21	8.30	
9-22-22 0:00	7.91	7.84	7.75	
9-22-22 1:00	7.65	7.60	7.72	
9-22-22 2:00	7.42	7.37	7.52	
9-22-22 3:00	7.27	7.23	7.48	
9-22-22 4:00	7.16	7.12	7.49	
9-22-22 5:00	7.03	7.02	7.41	
9-22-22 6:00	6.97	6.95	7.34	
9-22-22 7:00	6.98	6.97	7.52	
9-22-22 8:00	7.04	7.04	7.56	
9-22-22 9:00	7.29	7.29	7.53	
9-22-22 10:00	7.77	7.71	7.60	
9-22-22 11:00	8.17	8.10	7.75	
9-22-22 12:00	8.62	8.54	8.19	
9-22-22 13:00	8.96	8.91	8.46	
9-22-22 14:00	9.38	9.32	8.57	
9-22-22 15:00	9.79	9.66	8.63	
9-22-22 16:00	10.16	10.06	8.66	
9-22-22 17:00	10.25	10.15	8.71	
9-22-22 18:00	9.88	9.83	8.67	
9-22-22 19:00	9.33	9.31	8.54	
9-22-22 20:00	8.98	8.84	8.49	
9-22-22 21:00	8.75	8.70	8.41	
9-22-22 22:00	8.49	8.45	8.36	
9-22-22 23:00	8.22	8.18	8.31	
9-23-22 0:00	8.09	8.04	8.32	
9-23-22 1:00	8.01	7.94	8.30	
9-23-22 2:00	7.90	7.89	8.28	
9-23-22 3:00	7.82	7.76	8.23	
9-23-22 4:00	7.62	7.60	8.18	
9-23-22 5:00	7.44	7.41	8.13	
9-23-22 6:00	7.29	7.29	8.09	
9-23-22 7:00	7.21	7.18	8.09	
9-23-22 8:00	7.29	7.26	8.06	
9-23-22 9:00	7.46	7.43	8.11	
9-23-22 10:00	7.62	7.63	8.17	
9-23-22 11:00	8.01	7.97	8.21	
9-23-22 12:00	8.33	8.29	8.31	
9-23-22 13:00	8.60	8.54	8.37	
9-23-22 14:00	8.94	8.88	8.54	
9-23-22 15:00	9.85	9.78	8.64	
9-23-22 16:00	10.51	10.41	8.89	
9-23-22 17:00	10.31	10.22	9.01	
9-23-22 18:00	9.88	9.75	8.92	
9-23-22 19:00	9.46	9.38	8.84	
9-23-22 20:00	9.19	9.10	8.76	
9-23-22 21:00	8.94	8.99	8.67	
9-23-22 22:00	8.68	8.63	8.70	
9-23-22 23:00	8.47	8.33	8.65	
9-24-22 0:00	8.24	8.17	8.63	
9-24-22 1:00	8.10	8.05	8.59	
9-24-22 2:00	7.92	7.95	8.57	
9-24-22 3:00	7.92	7.90	8.55	
9-24-22 4:00	7.80	7.85	8.60	
9-24-22 5:00	7.75	7.72	8.75	
9-24-22 6:00	7.64	7.65	8.51	

Date and Time	Hourly Average Temperature (°C)			Comments
	FR_FR3	FR_SCOUTDS	FS_EFF-SC	
	E320693	E320695	E323231	
9-24-22 7:00	7.61	7.59	8.36	
9-24-22 8:00	7.58	7.58	8.36	
9-24-22 9:00	7.77	7.75	8.27	
9-24-22 10:00	8.55	8.52	8.42	
9-24-22 11:00	9.81	9.78	8.66	
9-24-22 12:00	11.11	11.04	8.86	
9-24-22 13:00	12.12	12.08	9.07	
9-24-22 14:00	12.64	12.54	9.07	
9-24-22 15:00	12.83	12.68	9.11	
9-24-22 16:00	12.91	12.76	9.27	
9-24-22 17:00	12.49	12.31	9.26	
9-24-22 18:00	11.82	11.62	9.20	
9-24-22 19:00	10.83	10.69	9.05	
9-24-22 20:00	9.98	9.88	8.88	
9-24-22 21:00	9.31	9.34	8.87	
9-24-22 22:00	8.83	8.77	8.78	
9-24-22 23:00	8.32	8.33	8.74	
9-25-22 0:00	7.92	7.94	8.68	
9-25-22 1:00	7.59	7.60	8.65	
9-25-22 2:00	7.28	7.28	8.58	
9-25-22 3:00	7.00	7.05	8.61	
9-25-22 4:00	6.84	6.88	8.56	
9-25-22 5:00	6.61	6.65	8.49	
9-25-22 6:00	6.45	6.48	8.40	
9-25-22 7:00	6.32	6.37	8.38	
9-25-22 8:00	6.22	6.27	8.36	
9-25-22 9:00	6.40	6.46	8.32	
9-25-22 10:00	7.26	7.28	8.40	
9-25-22 11:00	8.57	8.53	8.68	
9-25-22 12:00	9.92	9.89	8.97	
9-25-22 13:00	11.11	11.14	9.28	
9-25-22 14:00	11.95	11.96	9.47	
9-25-22 15:00	12.42	12.37	9.66	
9-25-22 16:00	12.62	12.51	9.71	
9-25-22 17:00	12.52	12.42	9.66	
9-25-22 18:00	12.09	11.95	9.61	
9-25-22 19:00	11.36	11.24	9.48	
9-25-22 20:00	10.60	10.50	9.38	
9-25-22 21:00	9.94	9.89	9.19	
9-25-22 22:00	9.41	9.33	9.06	
9-25-22 23:00	9.02	8.95	9.17	
9-26-22 0:00	8.58	8.58	8.98	
9-26-22 1:00	8.26	8.23	8.87	
9-26-22 2:00	8.00	7.97	8.79	
9-26-22 3:00	7.75	7.72	8.74	
9-26-22 4:00	7.55	7.57	8.69	
9-26-22 5:00	7.36	7.38	8.62	
9-26-22 6:00	7.23	7.22	7.93	
9-26-22 7:00	7.10	7.17	8.70	
9-26-22 8:00	6.99	7.18	11.44	
9-26-22 9:00	7.14	7.26	9.48	
9-26-22 10:00	7.99	7.97	8.78	
9-26-22 11:00	9.30	9.27	9.23	
9-26-22 12:00	10.71	10.65	9.48	
9-26-22 13:00	11.94	11.95	9.66	
9-26-22 14:00	12.89	12.88	9.91	
9-26-22 15:00	13.33	13.24	9.90	
9-26-22 16:00	13.36	13.26	10.03	
9-26-22 17:00	13.10	12.96	9.99	
9-26-22 18:00	12.46	12.29	9.96	
9-26-22 19:00	11.59	11.42	9.72	
9-26-22 20:00	10.83	10.71	9.60	
9-26-22 21:00	10.23	10.17	9.39	
9-26-22 22:00	9.68	9.59	9.28	
9-26-22 23:00	9.26	9.18	9.15	
9-27-22 0:00	8.84	8.81	9.10	
9-27-22 1:00	8.50	8.47	8.99	
9-27-22 2:00	8.20	8.20	8.95	
9-27-22 3:00	7.95	7.96	8.86	
9-27-22 4:00	7.74	7.75	8.85	
9-27-22 5:00	7.54	7.55	8.74	
9-27-22 6:00	7.36	7.40	8.75	
9-27-22 7:00	7.23	7.25	8.66	
9-27-22 8:00	7.11	7.13	8.62	
9-27-22 9:00	7.27	7.31	8.58	
9-27-22 10:00	8.02	8.02	8.62	
9-27-22 11:00	9.39	9.34	8.83	
9-27-22 12:00	10.72	10.63	8.64	

Date and Time	Hourly Average Temperature (°C)			Comments
	FR_FR3	FR_SCOUTDS	FS_EFF-SC	
	E320693	E320695	E323231	
9-27-22 13:00	11.77	11.77	9.85	
9-27-22 14:00	12.63	12.58	9.58	
9-27-22 15:00	13.13	13.03	10.32	
9-27-22 16:00	13.24	13.12	10.02	
9-27-22 17:00	12.95	12.79	9.89	
9-27-22 18:00	12.28	12.14	9.77	
9-27-22 19:00	11.37	11.24	9.64	
9-27-22 20:00	10.59	10.47	9.62	
9-27-22 21:00	9.96	9.85	9.41	
9-27-22 22:00	9.42	9.37	9.36	
9-27-22 23:00	8.97	8.95	9.24	
9-28-22 0:00	8.57	8.57	9.21	
9-28-22 1:00	8.21	8.21	9.11	
9-28-22 2:00	7.97	7.94	9.05	
9-28-22 3:00	7.72	7.74	8.56	
9-28-22 4:00	7.54	7.59	9.27	
9-28-22 5:00	7.37	7.42	8.65	
9-28-22 6:00	7.27	7.33	8.80	
9-28-22 7:00	7.16	7.18	8.23	
9-28-22 8:00	7.05	7.10	8.14	
9-28-22 9:00	7.17	7.24	8.08	
9-28-22 10:00	7.90	7.85	7.38	
9-28-22 11:00	9.26	9.17	7.48	
9-28-22 12:00	10.61	10.47	7.66	
9-28-22 13:00	11.83	11.79	9.22	
9-28-22 14:00	12.74	12.70	9.42	
9-28-22 15:00	13.17	13.05	9.94	
9-28-22 16:00	13.20	13.10	10.67	
9-28-22 17:00	12.90	12.78	11.00	
9-28-22 18:00	12.43	12.31	11.08	
9-28-22 19:00	11.68	11.62	11.01	
9-28-22 20:00	11.11	11.06	10.73	
9-28-22 21:00	10.65	10.56	10.64	
9-28-22 22:00	10.27	10.21	10.47	
9-28-22 23:00	9.89	9.87	10.33	
9-29-22 0:00	9.56	9.50	9.36	
9-29-22 1:00	9.30	9.35	10.31	
9-29-22 2:00	9.16	9.16	9.98	
9-29-22 3:00	9.08	9.06	10.02	
9-29-22 4:00	9.05	9.04	9.94	
9-29-22 5:00	9.05	9.06	9.97	
9-29-22 6:00	9.05	9.02	9.96	
9-29-22 7:00	8.99	8.95	9.75	
9-29-22 8:00	8.91	8.89	9.10	
9-29-22 9:00	8.94	8.84	8.42	
9-29-22 10:00	9.03	9.04	9.88	
9-29-22 11:00	9.27	9.28	9.73	
9-29-22 12:00	10.14	10.11	9.48	
9-29-22 13:00	10.88	10.79	9.33	
9-29-22 14:00	11.15	11.06	9.99	
9-29-22 15:00	11.31	11.20	9.54	
9-29-22 16:00	11.56	11.44	9.53	
9-29-22 17:00	11.34	11.23	9.57	
9-29-22 18:00	11.06	10.92	9.58	
9-29-22 19:00	10.70	10.58	9.50	
9-29-22 20:00	10.34	10.23	9.56	
9-29-22 21:00	10.03	9.99	9.65	
9-29-22 22:00	9.80	9.72	9.58	
9-29-22 23:00	9.55	9.45	9.16	
9-30-22 0:00	9.30	9.20	9.77	
9-30-22 1:00	9.19	9.19	9.78	
9-30-22 2:00	8.96	8.96	9.62	
9-30-22 3:00	8.99	8.86	9.63	
9-30-22 4:00	8.82	8.67	9.56	
9-30-22 5:00	8.80	8.78	9.59	
9-30-22 6:00	8.79	8.66	9.51	
9-30-22 7:00	8.73	8.57	9.42	
9-30-22 8:00	8.67	8.66	9.45	
9-30-22 9:00	8.74	8.71	8.93	
9-30-22 10:00	8.99	8.95	9.76	
9-30-22 11:00	9.49	9.44	9.20	
9-30-22 12:00	10.03	9.91	7.40	
9-30-22 13:00	10.71	10.51	6.08	
9-30-22 14:00	11.19	10.94	6.50	
9-30-22 15:00	11.30	11.12	8.82	
9-30-22 16:00	11.09	10.90	7.33	
9-30-22 17:00	10.81	10.58	6.50	
9-30-22 18:00	10.53	10.33	6.39	

Date and Time	Hourly Average Temperature (°C)			Comments
	FR_FR3	FR_SCOUTDS	FS_EFF-SC	
	E320693	E320695	E323231	
9-30-22 19:00	10.21	9.98	6.43	
9-30-22 20:00	9.66	9.59	6.37	
9-30-22 21:00	9.28	9.07	6.37	
9-30-22 22:00	8.88	8.71	6.38	
9-30-22 23:00	8.56	8.46	6.34	
10-1-22 0:00	8.30	8.14	6.29	
10-1-22 1:00	8.03	7.92	6.30	
10-1-22 2:00	7.76	7.67	6.22	
10-1-22 3:00	7.59	7.45	6.27	
10-1-22 4:00	7.40	7.30	6.04	
10-1-22 5:00	7.19	7.12	6.02	
10-1-22 6:00	7.04	6.95	6.13	
10-1-22 7:00	6.88	6.81	6.09	
10-1-22 8:00	6.75	6.70	6.12	
10-1-22 9:00	6.87	6.83	6.05	
10-1-22 10:00	7.56	7.49	6.08	
10-1-22 11:00	8.78	8.68	6.94	
10-1-22 12:00	10.10	9.95	6.16	
10-1-22 13:00	11.27	11.20	6.35	
10-1-22 14:00	12.48	12.30	6.32	
10-1-22 15:00	13.24	12.94	6.66	
10-1-22 16:00	13.03	12.75	6.89	
10-1-22 17:00	12.23	11.97	6.79	
10-1-22 18:00	11.42	11.16	6.68	
10-1-22 19:00	10.57	10.36	6.49	
10-1-22 20:00	10.04	9.74	6.53	
10-1-22 21:00	9.54	9.34	6.47	
10-1-22 22:00	9.06	8.89	6.44	
10-1-22 23:00	8.59	8.48	6.42	
10-2-22 0:00	8.23	8.11	6.34	
10-2-22 1:00	7.89	7.81	6.37	
10-2-22 2:00	7.60	7.55	6.35	
10-2-22 3:00	7.37	7.25	6.21	
10-2-22 4:00	7.11	7.07	6.10	
10-2-22 5:00	6.91	6.84	6.14	
10-2-22 6:00	6.70	6.63	6.17	
10-2-22 7:00	6.54	6.52	6.18	
10-2-22 8:00	6.39	6.33	6.06	
10-2-22 9:00	6.45	6.45	6.06	
10-2-22 10:00	7.12	7.03	5.98	
10-2-22 11:00	8.25	8.19	6.05	
10-2-22 12:00	9.50	9.41	6.06	
10-2-22 13:00	10.66	10.61	6.22	
10-2-22 14:00	11.53	11.44	6.19	
10-2-22 15:00	12.03	11.81	6.27	
10-2-22 16:00	12.09	11.83	6.41	
10-2-22 17:00	11.60	11.37	6.35	
10-2-22 18:00	10.88	10.64	6.44	
10-2-22 19:00	10.20	9.98	6.42	
10-2-22 20:00	9.65	9.48	6.29	
10-2-22 21:00	9.27	9.08	6.22	
10-2-22 22:00	8.92	8.76	6.07	
10-2-22 23:00	8.56	8.42	6.09	
10-3-22 0:00	8.17	8.06	6.22	
10-3-22 1:00	7.90	7.74	6.22	
10-3-22 2:00	7.64	7.53	6.17	
10-3-22 3:00	7.42	7.34	6.15	
10-3-22 4:00	7.25	7.18	6.14	
10-3-22 5:00	7.06	6.98	6.19	
10-3-22 6:00	6.86	6.80	6.07	
10-3-22 7:00	6.72	6.64	6.03	
10-3-22 8:00	6.60	6.53	6.08	
10-3-22 9:00	6.71	6.64	6.06	
10-3-22 10:00	7.33	7.28	6.05	
10-3-22 11:00	8.56	8.49	6.08	
10-3-22 12:00	9.87	9.73	6.12	
10-3-22 13:00	10.97	10.91	6.25	
10-3-22 14:00	11.95	11.82	6.50	
10-3-22 15:00	12.49	12.22	6.58	
10-3-22 16:00	12.58	12.31	6.77	
10-3-22 17:00	12.32	12.03	6.78	
10-3-22 18:00	11.71	11.41	6.63	
10-3-22 19:00	10.83	10.55	6.62	
10-3-22 20:00	10.13	9.88	6.46	
10-3-22 21:00	9.53	9.33	6.38	
10-3-22 22:00	9.04	8.85	6.37	
10-3-22 23:00	8.61	8.44	6.26	
10-4-22 0:00	8.22	8.07	6.37	

Date and Time	Hourly Average Temperature (°C)			Comments
	FR_FR3	FR_SCOUTDS	FS_EFF-SC	
	E320693	E320695	E323231	
10-4-22 1:00	7.89	7.76	6.27	
10-4-22 2:00	7.60	7.51	6.27	
10-4-22 3:00	7.36	7.27	6.28	
10-4-22 4:00	7.16	7.06	6.20	
10-4-22 5:00	6.96	6.93	6.19	
10-4-22 6:00	6.84	6.77	6.16	
10-4-22 7:00	6.71	6.59	6.11	
10-4-22 8:00	6.58	6.51	6.15	
10-4-22 9:00	6.70	6.63	6.05	
10-4-22 10:00	7.30	7.25	6.08	
10-4-22 11:00	8.56	8.49	7.10	
10-4-22 12:00	9.87	9.73	7.39	
10-4-22 13:00	10.98	10.87	8.06	
10-4-22 14:00	11.94	11.81	7.94	
10-4-22 15:00	12.48	12.27	8.35	
10-4-22 16:00	12.53	12.31	7.46	
10-4-22 17:00	12.21	12.01	9.37	
10-4-22 18:00	11.68	11.36	6.64	
10-4-22 19:00	10.88	10.67	7.21	
10-4-22 20:00	10.22	9.96	7.39	
10-4-22 21:00	9.62	9.54	8.60	
10-4-22 22:00	9.12	8.99	6.89	
10-4-22 23:00	8.75	8.57	5.89	
10-5-22 0:00	8.49	8.31	5.80	
10-5-22 1:00	8.25	8.08	5.74	
10-5-22 2:00	8.04	7.94	6.60	
10-5-22 3:00	7.88	7.87	8.84	
10-5-22 4:00	7.69	7.64	7.82	
10-5-22 5:00	7.46	7.34	6.20	
10-5-22 6:00	7.27	7.19	6.25	
10-5-22 7:00	7.07	6.99	6.19	
10-5-22 8:00	6.97	6.91	7.11	
10-5-22 9:00	7.08	7.00	6.15	
10-5-22 10:00	7.68	7.58	6.34	
10-5-22 11:00	8.82	8.74	6.71	
10-5-22 12:00	10.05	9.99	8.50	
10-5-22 13:00	11.12	11.01	6.58	
10-5-22 14:00	12.03	11.75	6.73	
10-5-22 15:00	12.14	11.82	6.73	
10-5-22 16:00	11.88	11.57	6.71	
10-5-22 17:00	11.55	11.28	6.81	
10-5-22 18:00	11.04	10.75	6.73	
10-5-22 19:00	10.29	10.02	7.01	
10-5-22 20:00	9.72	9.50	6.95	
10-5-22 21:00	9.29	9.10	6.94	
10-5-22 22:00	8.90	8.70	7.37	
10-5-22 23:00	8.54	8.39	6.87	
10-6-22 0:00	8.24	8.14	6.69	
10-6-22 1:00	7.92	7.75	6.49	
10-6-22 2:00	7.63	7.53	6.57	
10-6-22 3:00	7.35	7.24	6.47	
10-6-22 4:00	7.08	6.99	6.42	
10-6-22 5:00	6.83	6.78	6.37	
10-6-22 6:00	6.63	6.56	6.29	
10-6-22 7:00	6.42	6.38	6.23	
10-6-22 8:00	6.28	6.23	6.08	
10-6-22 9:00	6.36	6.33	6.17	
10-6-22 10:00	6.91	6.83	6.17	
10-6-22 11:00	8.03	7.86	5.28	
10-6-22 12:00	9.35	9.13	5.29	
10-6-22 13:00	10.45	10.28	5.50	
10-6-22 14:00	11.50	11.19	5.54	
10-6-22 15:00	12.24	11.79	5.45	
10-6-22 16:00	12.49	12.06	5.62	
10-6-22 17:00	12.23	11.74	5.58	
10-6-22 18:00	11.45	11.02	5.67	
10-6-22 19:00	10.42	10.02	5.37	
10-6-22 20:00	9.66	9.33	5.69	
10-6-22 21:00	9.12	8.79	5.57	
10-6-22 22:00	8.70	8.41	5.55	
10-6-22 23:00	8.30	8.06	5.48	
10-7-22 0:00	7.94	7.70	5.40	
10-7-22 1:00	7.63	7.45	5.36	
10-7-22 2:00	7.30	7.15	5.24	
10-7-22 3:00	7.03	6.87	5.24	
10-7-22 4:00	6.75	6.62	5.18	
10-7-22 5:00	6.51	6.38	5.14	
10-7-22 6:00	6.32	6.21	5.04	

Date and Time	Hourly Average Temperature (°C)			Comments
	FR_FR3	FR_SCOUTDS	FS_EFF-SC	
	E320693	E320695	E323231	
10-7-22 7:00	6.13	6.04	5.03	
10-7-22 8:00	5.96	5.87	5.02	
10-7-22 9:00	6.03	5.95	4.96	
10-7-22 10:00	6.59	6.50	5.02	
10-7-22 11:00	7.79	7.62	5.06	
10-7-22 12:00	9.18	8.93	5.19	
10-7-22 13:00	10.39	10.15	5.28	
10-7-22 14:00	11.35	11.06	5.24	
10-7-22 15:00	11.86	11.43	5.28	
10-7-22 16:00	11.88	11.45	5.47	
10-7-22 17:00	11.62	11.13	5.54	
10-7-22 18:00	11.07	10.65	5.58	
10-7-22 19:00	10.26	9.88	5.70	
10-7-22 20:00	9.48	9.15	5.71	
10-7-22 21:00	8.80	8.53	5.57	
10-7-22 22:00	8.32	8.12	6.46	
10-7-22 23:00	7.96	7.97	8.57	
10-8-22 0:00	7.66	7.64	8.06	
10-8-22 1:00	7.30	7.12	5.22	
10-8-22 2:00	6.95	6.79	5.13	
10-8-22 3:00	6.67	6.49	5.08	
10-8-22 4:00	6.39	6.30	5.05	
10-8-22 5:00	6.16	6.04	5.02	
10-8-22 6:00	5.96	5.87	4.98	
10-8-22 7:00	5.77	5.66	4.97	
10-8-22 8:00	5.65	5.59	5.02	
10-8-22 9:00	5.75	5.68	5.01	
10-8-22 10:00	6.31	6.21	5.05	
10-8-22 11:00	7.52	7.34	5.08	
10-8-22 12:00	8.89	8.68	5.18	
10-8-22 13:00	10.03	9.84	5.26	
10-8-22 14:00	10.98	10.65	5.23	
10-8-22 15:00	11.64	11.16	5.36	
10-8-22 16:00	11.77	11.28	5.38	
10-8-22 17:00	11.50	11.09	6.48	
10-8-22 18:00	10.93	10.51	5.45	
10-8-22 19:00	10.09	9.69	5.47	
10-8-22 20:00	9.25	8.91	5.26	
10-8-22 21:00	8.63	8.35	5.22	
10-8-22 22:00	8.14	7.88	5.15	
10-8-22 23:00	7.74	7.51	5.06	
10-9-22 0:00	7.39	7.17	5.03	
10-9-22 1:00	7.01	6.82	4.96	
10-9-22 2:00	6.67	6.53	5.01	
10-9-22 3:00	6.44	6.30	4.99	
10-9-22 4:00	6.19	6.04	5.01	
10-9-22 5:00	5.98	5.91	5.04	
10-9-22 6:00	5.88	5.81	4.97	
10-9-22 7:00	5.75	5.67	4.97	
10-9-22 8:00	5.63	5.57	4.97	
10-9-22 9:00	5.70	5.63	4.89	
10-9-22 10:00	6.25	6.18	4.92	
10-9-22 11:00	7.45	7.28	5.00	
10-9-22 12:00	8.75	8.57	5.14	
10-9-22 13:00	9.84	9.70	5.24	
10-9-22 14:00	10.75	10.53	5.25	
10-9-22 15:00	11.33	10.97	5.24	
10-9-22 16:00	11.43	11.07	5.14	
10-9-22 17:00	11.13	10.77	5.23	
10-9-22 18:00	10.53	10.16	5.23	
10-9-22 19:00	9.63	9.34	5.34	
10-9-22 20:00	8.96	8.69	5.09	
10-9-22 21:00	8.38	8.15	5.17	
10-9-22 22:00	7.90	7.73	5.08	
10-9-22 23:00	7.53	7.35	5.08	
10-10-22 0:00	7.15	7.01	4.96	
10-10-22 1:00	6.83	6.71	5.03	
10-10-22 2:00	6.59	6.45	4.97	
10-10-22 3:00	6.35	6.20	5.00	
10-10-22 4:00	6.15	6.11	4.95	
10-10-22 5:00	5.99	5.89	4.93	
10-10-22 6:00	5.81	5.74	4.92	
10-10-22 7:00	5.66	5.62	4.86	
10-10-22 8:00	5.57	5.51	4.86	
10-10-22 9:00	5.69	5.61	4.90	
10-10-22 10:00	6.19	6.12	4.99	
10-10-22 11:00	7.05	6.96	5.01	
10-10-22 12:00	8.18	8.04	5.09	

Date and Time	Hourly Average Temperature (°C)			Comments
	FR_FR3	FR_SCOUTDS	FS_EFF-SC	
	E320693	E320695	E323231	
10-10-22 13:00	9.31	9.19	5.49	
10-10-22 14:00	10.22	9.98	5.29	
10-10-22 15:00	10.61	10.24	5.23	
10-10-22 16:00	10.40	10.05	5.17	
10-10-22 17:00	9.89	9.53	5.20	
10-10-22 18:00	9.39	9.07	5.30	
10-10-22 19:00	8.92	8.67	5.13	
10-10-22 20:00	8.51	8.26	5.12	
10-10-22 21:00	8.05	7.83	5.05	
10-10-22 22:00	7.63	7.44	5.02	
10-10-22 23:00	7.38	7.20	5.00	
10-11-22 0:00	7.14	6.98	5.07	
10-11-22 1:00	6.82	6.70	5.00	
10-11-22 2:00	6.50	6.37	4.98	
10-11-22 3:00	6.20	6.07	5.01	
10-11-22 4:00	5.94	5.88	4.95	
10-11-22 5:00	5.81	5.69	4.90	
10-11-22 6:00	5.59	5.53	4.97	
10-11-22 7:00	5.46	5.41	4.91	
10-11-22 8:00	5.46	5.38	4.88	
10-11-22 9:00	5.56	5.51	4.91	
10-11-22 10:00	5.93	5.87	4.95	
10-11-22 11:00	6.89	6.75	4.94	
10-11-22 12:00	8.07	7.94	5.03	
10-11-22 13:00	8.95	8.90	5.13	
10-11-22 14:00	9.78	9.65	5.17	
10-11-22 15:00	10.28	10.03	5.27	
10-11-22 16:00	10.21	9.94	5.49	
10-11-22 17:00	9.63	9.34	5.30	
10-11-22 18:00	9.19	8.94	5.21	
10-11-22 19:00	8.45	8.23	5.10	
10-11-22 20:00	7.84	7.65	5.04	
10-11-22 21:00	7.40	7.21	5.08	
10-11-22 22:00	7.07	6.94	5.03	
10-11-22 23:00	6.81	6.73	5.08	
10-12-22 0:00	6.62	6.47	5.04	
10-12-22 1:00	6.39	6.29	5.01	
10-12-22 2:00	6.17	6.06	5.00	
10-12-22 3:00	6.00	5.89	4.96	
10-12-22 4:00	5.81	5.72	4.94	
10-12-22 5:00	5.58	5.53	4.94	
10-12-22 6:00	5.36	5.35	4.97	
10-12-22 7:00	5.21	5.15	4.96	
10-12-22 8:00	5.07	5.03	4.90	
10-12-22 9:00	5.10	5.06	4.71	
10-12-22 10:00	5.58	5.54	4.77	
10-12-22 11:00	6.71	6.61	4.92	
10-12-22 12:00	7.92	7.80	5.05	
10-12-22 13:00	8.91	8.88	5.16	
10-12-22 14:00	9.78	9.69	5.21	
10-12-22 15:00	10.30	10.06	5.40	
10-12-22 16:00	10.17	9.95	5.23	
10-12-22 17:00	9.77	9.50	5.14	
10-12-22 18:00	9.12	8.87	5.12	
10-12-22 19:00	8.31	8.10	5.08	
10-12-22 20:00	7.80	7.60	5.03	
10-12-22 21:00	7.36	7.17	4.96	
10-12-22 22:00	6.92	6.79	4.99	
10-12-22 23:00	6.53	6.41	4.91	
10-13-22 0:00	6.21	6.08	4.91	
10-13-22 1:00	5.94	5.89	4.82	
10-13-22 2:00	5.72	5.63	4.81	
10-13-22 3:00	5.50	5.43	4.86	
10-13-22 4:00	5.30	5.22	4.81	
10-13-22 5:00	5.11	5.04	4.82	
10-13-22 6:00	4.94	4.87	4.84	
10-13-22 7:00	4.83	4.73	4.77	
10-13-22 8:00	4.69	4.67	4.82	
10-13-22 9:00	4.73	4.76	5.45	
10-13-22 10:00	5.23	5.26	5.36	
10-13-22 11:00	6.36	6.29	4.84	
10-13-22 12:00	7.61	7.50	5.01	
10-13-22 13:00	8.70	8.61	5.06	
10-13-22 14:00	9.63	9.51	5.24	
10-13-22 15:00	10.21	9.96	5.20	
10-13-22 16:00	10.30	10.00	5.22	
10-13-22 17:00	9.99	9.69	5.12	
10-13-22 18:00	9.47	9.14	5.22	

Date and Time	Hourly Average Temperature (°C)			Comments
	FR_FR3	FR_SCOUTDS	FS_EFF-SC	
	E320693	E320695	E323231	
10-13-22 19:00	8.66	8.40	5.34	
10-13-22 20:00	8.05	7.80	4.85	
10-13-22 21:00	7.47	7.30	4.92	
10-13-22 22:00	6.96	6.83	4.91	
10-13-22 23:00	6.60	6.45	4.93	
10-14-22 0:00	6.21	6.13	4.95	
10-14-22 1:00	5.91	5.82	4.84	
10-14-22 2:00	5.67	5.58	4.83	
10-14-22 3:00	5.49	5.42	4.88	
10-14-22 4:00	5.33	5.29	4.82	
10-14-22 5:00	5.17	5.11	4.90	
10-14-22 6:00	5.04	4.99	4.75	
10-14-22 7:00	4.92	4.86	4.78	
10-14-22 8:00	4.91	4.85	4.75	
10-14-22 9:00	5.01	4.96	4.83	
10-14-22 10:00	5.46	5.41	4.92	
10-14-22 11:00	6.34	6.25	5.03	
10-14-22 12:00	7.41	7.31	5.00	
10-14-22 13:00	8.56	8.42	5.08	
10-14-22 14:00	9.34	9.10	5.21	
10-14-22 15:00	9.83	9.55	5.11	
10-14-22 16:00	9.97	9.67	5.23	
10-14-22 17:00	9.71	9.39	5.11	
10-14-22 18:00	9.11	8.85	5.08	
10-14-22 19:00	8.50	8.26	5.02	
10-14-22 20:00	8.09	7.90	5.09	
10-14-22 21:00	7.87	7.64	4.98	
10-14-22 22:00	7.56	7.38	4.93	
10-14-22 23:00	7.16	7.01	5.00	
10-15-22 0:00	6.76	6.63	4.89	
10-15-22 1:00	6.42	6.27	4.89	
10-15-22 2:00	6.11	6.03	4.93	
10-15-22 3:00	5.86	5.73	4.89	
10-15-22 4:00	5.60	5.56	4.85	
10-15-22 5:00	5.40	5.34	5.02	
10-15-22 6:00	5.18	5.15	4.79	
10-15-22 7:00	4.99	4.95	4.77	
10-15-22 8:00	4.83	4.80	4.76	
10-15-22 9:00	4.86	4.82	4.72	
10-15-22 10:00	5.31	5.29	4.90	
10-15-22 11:00	6.35	6.25	4.84	
10-15-22 12:00	7.53	7.44	5.10	
10-15-22 13:00	8.57	8.52	5.23	
10-15-22 14:00	9.38	9.26	5.35	
10-15-22 15:00	9.89	9.65	5.36	
10-15-22 16:00	9.88	9.65	5.30	
10-15-22 17:00	9.64	9.33	5.27	
10-15-22 18:00	9.06	8.77	5.18	
10-15-22 19:00	8.31	8.07	5.02	
10-15-22 20:00	7.75	7.54	4.98	
10-15-22 21:00	7.25	7.07	5.01	
10-15-22 22:00	6.85	6.69	4.93	
10-15-22 23:00	6.50	6.39	4.90	
10-16-22 0:00	6.18	6.12	4.95	
10-16-22 1:00	5.90	5.85	4.87	
10-16-22 2:00	5.68	5.61	4.90	
10-16-22 3:00	5.45	5.39	4.89	
10-16-22 4:00	5.25	5.23	4.86	
10-16-22 5:00	5.10	5.10	4.90	
10-16-22 6:00	5.00	4.93	4.86	
10-16-22 7:00	4.85	4.82	4.82	
10-16-22 8:00	4.75	4.72	4.90	
10-16-22 9:00	4.78	4.76	4.82	
10-16-22 10:00	5.22	5.20	4.89	
10-16-22 11:00	6.29	6.21	4.96	
10-16-22 12:00	7.55	7.47	5.01	
10-16-22 13:00	8.64	8.60	5.15	
10-16-22 14:00	9.53	9.43	5.21	
10-16-22 15:00	10.07	9.79	5.26	
10-16-22 16:00	10.13	9.81	5.24	
10-16-22 17:00	9.88	9.51	5.19	
10-16-22 18:00	9.28	8.97	5.22	
10-16-22 19:00	8.43	8.18	5.15	
10-16-22 20:00	7.83	7.64	5.05	
10-16-22 21:00	7.28	7.10	4.97	
10-16-22 22:00	6.81	6.67	5.00	
10-16-22 23:00	6.44	6.32	4.99	
10-17-22 0:00	6.11	6.00	4.94	

Date and Time	Hourly Average Temperature (°C)			Comments
	FR_FR3	FR_SCOUTDS	FS_EFF-SC	
	E320693	E320695	E323231	
10-17-22 1:00	5.78	5.70	4.98	
10-17-22 2:00	5.48	5.45	4.88	
10-17-22 3:00	5.27	5.22	4.89	
10-17-22 4:00	5.08	5.04	4.92	
10-17-22 5:00	4.90	4.93	4.85	
10-17-22 6:00	4.75	4.73	4.83	
10-17-22 7:00	4.62	4.61	4.89	
10-17-22 8:00	4.50	4.48	4.82	
10-17-22 9:00	4.50	4.51	4.85	
10-17-22 10:00	4.93	4.91	4.90	
10-17-22 11:00	5.97	5.95	4.96	
10-17-22 12:00	7.24	7.17	5.13	
10-17-22 13:00	8.36	8.29	4.94	
10-17-22 14:00	9.21	9.14	5.21	
10-17-22 15:00	9.76	9.53	5.23	
10-17-22 16:00	9.80	9.55	5.30	
10-17-22 17:00	9.51	9.24	5.23	
10-17-22 18:00	8.88	8.66	5.18	
10-17-22 19:00	8.06	7.87	5.00	
10-17-22 20:00	7.47	7.32	5.03	
10-17-22 21:00	6.92	6.79	4.96	
10-17-22 22:00	6.47	6.31	4.97	
10-17-22 23:00	6.07	5.98	4.96	
10-18-22 0:00	5.72	5.67	4.90	
10-18-22 1:00	5.43	5.38	4.95	
10-18-22 2:00	5.15	5.12	4.86	
10-18-22 3:00	4.91	4.90	4.88	
10-18-22 4:00	4.70	4.78	4.81	
10-18-22 5:00	4.54	4.52	4.89	
10-18-22 6:00	4.39	4.39	4.81	
10-18-22 7:00	4.22	4.25	4.84	
10-18-22 8:00	4.13	4.12	4.86	
10-18-22 9:00	4.14	4.16	4.81	
10-18-22 10:00	4.49	4.49	4.89	
10-18-22 11:00	5.44	5.39	4.91	
10-18-22 12:00	6.56	6.52	5.00	
10-18-22 13:00	7.61	7.60	5.04	
10-18-22 14:00	8.62	8.58	5.17	
10-18-22 15:00	9.31	9.05	5.23	
10-18-22 16:00	9.39	9.11	5.24	
10-18-22 17:00	9.19	8.94	5.16	
10-18-22 18:00	8.60	8.36	5.32	
10-18-22 19:00	7.87	7.67	5.27	
10-18-22 20:00	7.31	7.16	5.13	
10-18-22 21:00	6.80	6.69	5.10	
10-18-22 22:00	6.39	6.28	5.01	
10-18-22 23:00	6.00	5.89	4.97	
10-19-22 0:00	5.66	5.58	4.97	
10-19-22 1:00	5.35	5.28	4.90	
10-19-22 2:00	5.05	5.03	4.88	
10-19-22 3:00	4.81	4.82	4.83	
10-19-22 4:00	4.65	4.69	4.88	
10-19-22 5:00	4.48	4.45	4.83	
10-19-22 6:00	4.29	4.28	4.88	
10-19-22 7:00	4.15	4.17	4.89	
10-19-22 8:00	4.03	4.04	4.84	
10-19-22 9:00	4.02	4.10	5.30	
10-19-22 10:00	4.45	4.45	4.82	
10-19-22 11:00	5.45	5.43	4.93	
10-19-22 12:00	6.67	6.63	5.06	
10-19-22 13:00	7.67	7.62	5.15	
10-19-22 14:00	8.51	8.44	5.20	
10-19-22 15:00	9.16	8.96	5.18	
10-19-22 16:00	9.32	9.07	5.27	
10-19-22 17:00	9.10	8.84	5.19	
10-19-22 18:00	8.44	8.24	5.33	
10-19-22 19:00	7.74	7.50	5.38	
10-19-22 20:00	7.19	7.05	5.78	
10-19-22 21:00	6.75	6.71	6.75	
10-19-22 22:00	6.41	6.26	5.23	
10-19-22 23:00	6.06	6.00	6.00	
10-20-22 0:00	5.78	5.71	5.35	
10-20-22 1:00	5.54	5.47	5.02	
10-20-22 2:00	5.37	5.31	5.16	
10-20-22 3:00	5.20	5.10	4.59	
10-20-22 4:00	5.05	4.99	4.72	
10-20-22 5:00	4.93	4.89	4.68	
10-20-22 6:00	4.91	4.87	4.77	

Date and Time	Hourly Average Temperature (°C)			Comments
	FR_FR3	FR_SCOUTDS	FS_EFF-SC	
	E320693	E320695	E323231	
10-20-22 7:00	4.88	4.84	4.85	
10-20-22 8:00	4.78	4.76	4.80	
10-20-22 9:00	4.72	4.71	4.81	
10-20-22 10:00	4.93	4.90	4.86	
10-20-22 11:00	5.38	5.30	4.91	
10-20-22 12:00	5.79	5.70	5.01	
10-20-22 13:00	6.14	6.06	5.05	
10-20-22 14:00	6.43	6.32	5.01	
10-20-22 15:00	6.64	6.50	5.09	
10-20-22 16:00	6.85	6.69	5.05	
10-20-22 17:00	6.91	6.77	5.11	
10-20-22 18:00	6.78	6.64	5.04	
10-20-22 19:00	6.51	6.37	4.97	
10-20-22 20:00	6.22	6.12	4.88	
10-20-22 21:00	5.95	5.87	4.96	
10-20-22 22:00	5.79	5.69	4.90	
10-20-22 23:00	5.66	5.57	4.91	
10-21-22 0:00	5.60	5.51	4.97	
10-21-22 1:00	5.54	5.48	4.90	
10-21-22 2:00	5.54	5.44	4.88	
10-21-22 3:00	5.55	5.48	4.88	
10-21-22 4:00	5.65	5.51	4.88	
10-21-22 5:00	5.64	5.57	4.93	
10-21-22 6:00	5.66	5.55	4.90	
10-21-22 7:00	5.67	5.61	4.93	
10-21-22 8:00	5.73	5.64	4.97	
10-21-22 9:00	5.79	5.66	4.88	
10-21-22 10:00	5.79	5.72	4.95	
10-21-22 11:00	5.76	5.74	5.45	
10-21-22 12:00	5.98	5.90	4.88	
10-21-22 13:00	6.24	6.16	5.13	
10-21-22 14:00	6.38	6.27	5.11	
10-21-22 15:00	6.51	6.39	5.10	
10-21-22 16:00	6.60	6.48	5.05	
10-21-22 17:00	6.48	6.38	5.03	
10-21-22 18:00	6.22	6.10	4.97	
10-21-22 19:00	5.91	5.81	4.93	
10-21-22 20:00	5.64	5.54	4.86	
10-21-22 21:00	5.43	5.32	4.86	
10-21-22 22:00	5.21	5.12	4.92	
10-21-22 23:00	5.05	5.03	4.83	
10-22-22 0:00	4.96	4.95	4.86	
10-22-22 1:00	4.71	4.70	4.94	
10-22-22 2:00	4.22	4.23	4.81	
10-22-22 3:00	4.04	4.02	4.83	
10-22-22 4:00	4.08	4.16	4.78	
10-22-22 5:00	4.12	4.13	4.92	
10-22-22 6:00	4.14	4.15	4.90	
10-22-22 7:00	4.14	4.17	4.83	
10-22-22 8:00	4.07	4.09	4.84	
10-22-22 9:00	4.05	4.07	4.81	
10-22-22 10:00	4.14	4.17	4.86	
10-22-22 11:00	4.42	4.42	4.87	
10-22-22 12:00	4.89	4.87	4.89	
10-22-22 13:00	5.34	5.31	4.98	
10-22-22 14:00	5.62	5.56	4.88	
10-22-22 15:00	5.70	5.65	4.92	
10-22-22 16:00	5.60	5.53	4.90	
10-22-22 17:00	5.36	5.28	4.84	
10-22-22 18:00	5.07	5.02	4.92	
10-22-22 19:00	4.76	4.76	4.80	
10-22-22 20:00	4.51	4.49	4.84	
10-22-22 21:00	4.28	4.28	4.83	
10-22-22 22:00	4.04	4.05	4.78	
10-22-22 23:00	3.84	3.86	4.81	
10-23-22 0:00	3.68	3.71	4.73	
10-23-22 1:00	3.57	3.60	4.77	
10-23-22 2:00	3.49	3.51	4.74	
10-23-22 3:00	3.47	3.48	4.70	
10-23-22 4:00	3.46	3.50	4.74	
10-23-22 5:00	3.47	3.51	4.65	
10-23-22 6:00	3.41	3.44	4.68	
10-23-22 7:00	3.27	3.32	4.70	
10-23-22 8:00	3.18	3.22	4.62	
10-23-22 9:00	3.15	3.24	4.72	
10-23-22 10:00	3.31	3.36	4.64	
10-23-22 11:00	3.74	3.77	4.72	
10-23-22 12:00	4.44	4.46	4.73	

Date and Time	Hourly Average Temperature (°C)			Comments
	FR_FR3	FR_SCOUTDS	FS_EFF-SC	
	E320693	E320695	E323231	
10-23-22 13:00	4.80	4.77	4.76	
10-23-22 14:00	4.92	4.91	4.79	
10-23-22 15:00	5.20	5.14	4.75	
10-23-22 16:00	5.31	5.23	4.81	
10-23-22 17:00	5.14	5.08	4.71	
10-23-22 18:00	4.86	4.84	4.73	
10-23-22 19:00	4.51	4.51	4.73	
10-23-22 20:00	4.14	4.16	4.67	
10-23-22 21:00	3.85	3.86	4.66	
10-23-22 22:00	3.61	3.66	4.61	
10-23-22 23:00	3.47	3.52	4.67	
10-24-22 0:00	3.36	3.42	4.60	
10-24-22 1:00	3.28	3.31	4.60	
10-24-22 2:00	3.21	3.22	4.61	
10-24-22 3:00	3.06	3.10	4.54	
10-24-22 4:00	2.91	3.01	4.64	
10-24-22 5:00	3.01	3.04	4.62	
10-24-22 6:00	3.13	3.23	4.66	
10-24-22 7:00	3.26	3.29	4.58	
10-24-22 8:00	3.31	3.38	4.57	
10-24-22 9:00	3.39	3.41	4.65	
10-24-22 10:00	3.51	3.52	4.64	
10-24-22 11:00	3.64	3.67	4.72	
10-24-22 12:00	3.87	3.89	4.70	
10-24-22 13:00	4.18	4.19	4.70	
10-24-22 14:00	4.34	4.35	5.20	
10-24-22 15:00	4.45	4.44	4.61	
10-24-22 16:00	4.49	4.48	4.82	
10-24-22 17:00	4.37	4.36	4.72	
10-24-22 18:00	4.12	4.11	4.70	
10-24-22 19:00	3.88	3.85	4.73	
10-24-22 20:00	3.75	3.78	4.67	
10-24-22 21:00	3.61	3.65	4.74	
10-24-22 22:00	3.45	3.53	4.67	
10-24-22 23:00	3.35	3.40	4.68	
10-25-22 0:00	3.25	3.32	4.69	
10-25-22 1:00	3.26	3.27	4.64	
10-25-22 2:00	3.29	3.36	4.70	
10-25-22 3:00	3.28	3.29	4.65	
10-25-22 4:00	3.26	3.30	4.65	
10-25-22 5:00	3.24	3.30	4.68	
10-25-22 6:00	3.12	3.18	4.64	
10-25-22 7:00	3.17	3.19	4.66	
10-25-22 8:00	3.26	3.29	4.69	
10-25-22 9:00	3.33	3.19	2.28	
10-25-22 10:00	3.39	3.29	2.45	
10-25-22 11:00	3.66	3.55	2.48	
10-25-22 12:00	3.94	3.80	2.57	
10-25-22 13:00	4.34	4.21	2.68	
10-25-22 14:00	4.93	4.97	5.42	
10-25-22 15:00	5.38	5.45	6.46	
10-25-22 16:00	5.57	5.63	7.22	
10-25-22 17:00	5.37	5.46	7.24	
10-25-22 18:00	5.00	5.11	7.28	
10-25-22 19:00	4.62	4.75	7.21	
10-25-22 20:00	4.24	4.25	5.07	
10-25-22 21:00	3.89	4.04	6.81	
10-25-22 22:00	3.61	3.77	6.51	
10-25-22 23:00	3.48	3.63	6.36	
10-26-22 0:00	3.38	3.50	6.44	
10-26-22 1:00	3.30	3.43	6.53	
10-26-22 2:00	3.19	3.42	6.71	
10-26-22 3:00	3.18	3.37	6.84	
10-26-22 4:00	3.15	3.34	6.80	
10-26-22 5:00	3.21	3.36	6.81	
10-26-22 6:00	3.08	3.23	6.79	
10-26-22 7:00	3.01	3.19	6.76	
10-26-22 8:00	3.06	3.24	6.84	
10-26-22 9:00	3.16	3.33	6.86	
10-26-22 10:00	3.38	3.57	6.87	
10-26-22 11:00	3.66	3.85	7.05	
10-26-22 12:00	4.16	4.32	7.08	
10-26-22 13:00	4.59	4.77	7.08	
10-26-22 14:00	5.13	5.23	7.24	
10-26-22 15:00	5.44	5.55	7.25	
10-26-22 16:00	5.37	5.43	7.22	
10-26-22 17:00	5.15	5.24	7.26	
10-26-22 18:00	4.85	4.96	7.18	

Date and Time	Hourly Average Temperature (°C)			Comments
	FR_FR3	FR_SCOUTDS	FS_EFF-SC	
	E320693	E320695	E323231	
10-26-22 19:00	4.55	4.63	7.17	
10-26-22 20:00	4.34	4.46	7.08	
10-26-22 21:00	4.19	4.30	6.94	
10-26-22 22:00	3.96	4.09	6.92	
10-26-22 23:00	3.68	3.85	6.91	
10-27-22 0:00	3.41	3.56	6.87	
10-27-22 1:00	3.15	3.34	6.91	
10-27-22 2:00	3.03	3.24	6.87	
10-27-22 3:00	3.02	3.27	6.85	
10-27-22 4:00	3.00	3.19	6.83	
10-27-22 5:00	2.94	3.13	6.86	
10-27-22 6:00	2.91	3.10	6.92	
10-27-22 7:00	2.87	3.08	6.89	
10-27-22 8:00	2.78	2.97	6.83	
10-27-22 9:00	2.68	2.90	6.83	
10-27-22 10:00	2.83	3.05	6.96	
10-27-22 11:00	3.26	3.46	6.98	
10-27-22 12:00	3.87	4.03	7.07	
10-27-22 13:00	4.68	4.85	7.14	
10-27-22 14:00	5.38	5.53	7.27	
10-27-22 15:00	5.95	6.03	7.33	
10-27-22 16:00	6.09	6.15	7.40	
10-27-22 17:00	5.62	5.68	7.30	
10-27-22 18:00	4.81	4.88	7.22	
10-27-22 19:00	4.22	4.34	7.37	
10-27-22 20:00	3.83	3.99	7.12	
10-27-22 21:00	3.60	3.72	6.77	
10-27-22 22:00	3.45	3.62	6.76	
10-27-22 23:00	3.38	3.53	6.72	
10-28-22 0:00	3.23	3.41	6.70	
10-28-22 1:00	3.14	3.29	6.67	
10-28-22 2:00	3.11	3.28	6.62	
10-28-22 3:00	3.11	3.26	6.68	
10-28-22 4:00	3.02	3.21	6.66	
10-28-22 5:00	2.91	3.06	6.63	
10-28-22 6:00	2.83	2.97	6.53	
10-28-22 7:00	2.91	3.06	6.50	
10-28-22 8:00	2.95	3.16	6.59	
10-28-22 9:00	3.09	3.25	6.55	
10-28-22 10:00	3.18	3.35	6.60	
10-28-22 11:00	3.21	3.38	6.61	
10-28-22 12:00	3.21	3.36	6.51	
10-28-22 13:00	3.24	3.41	6.54	
10-28-22 14:00	3.59	3.73	6.59	
10-28-22 15:00	4.02	4.14	6.72	
10-28-22 16:00	4.24	4.36	6.80	
10-28-22 17:00	4.12	4.26	6.86	
10-28-22 18:00	3.88	4.01	6.77	
10-28-22 19:00	3.61	3.74	6.78	
10-28-22 20:00	3.31	3.49	6.68	
10-28-22 21:00	3.15	3.31	6.67	
10-28-22 22:00	3.04	3.23	6.71	
10-28-22 23:00	2.95	3.13	6.63	
10-29-22 0:00	2.78	2.97	6.59	
10-29-22 1:00	2.67	2.88	6.67	
10-29-22 2:00	2.58	2.77	6.59	
10-29-22 3:00	2.57	2.73	6.56	
10-29-22 4:00	2.51	2.60	4.58	
10-29-22 5:00	2.48	2.66	6.51	
10-29-22 6:00	2.47	2.51	4.73	
10-29-22 7:00	2.52	2.49	2.81	
10-29-22 8:00	2.52	2.68	5.22	
10-29-22 9:00	2.63	2.79	6.21	
10-29-22 10:00	2.90	3.06	5.79	
10-29-22 11:00	3.64	3.78	6.36	
10-29-22 12:00	4.58	4.72	7.00	
10-29-22 13:00	5.11	5.25	7.15	
10-29-22 14:00	5.69	5.78	7.12	
10-29-22 15:00	6.26	6.29	7.13	
10-29-22 16:00	6.15	6.20	7.13	
10-29-22 17:00	5.74	5.79	7.17	
10-29-22 18:00	5.34	5.42	7.04	
10-29-22 19:00	5.02	5.09	7.04	
10-29-22 20:00	4.70	4.78	7.04	
10-29-22 21:00	4.36	4.46	6.97	
10-29-22 22:00	4.05	4.18	6.97	
10-29-22 23:00	3.80	3.97	6.95	
10-30-22 0:00	3.58	3.75	6.89	

Date and Time	Hourly Average Temperature (°C)			Comments
	FR_FR3	FR_SCOUTDS	FS_EFF-SC	
	E320693	E320695	E323231	
10-30-22 1:00	3.48	3.67	6.94	
10-30-22 2:00	3.41	3.56	6.95	
10-30-22 3:00	3.39	3.62	6.92	
10-30-22 4:00	3.45	3.62	6.99	
10-30-22 5:00	3.48	3.67	6.94	
10-30-22 6:00	3.46	3.63	6.94	
10-30-22 7:00	3.42	3.60	6.97	
10-30-22 8:00	3.41	3.56	6.93	
10-30-22 9:00	3.43	3.62	6.96	
10-30-22 10:00	3.68	3.85	7.02	
10-30-22 11:00	4.33	4.45	7.06	
10-30-22 12:00	4.72	4.87	7.24	
10-30-22 13:00	4.76	4.87	7.27	
10-30-22 14:00	4.88	5.00	7.24	
10-30-22 15:00	5.24	5.32	7.29	
10-30-22 16:00	5.33	5.40	7.38	
10-30-22 17:00	5.13	5.23	7.28	
10-30-22 18:00	4.83	4.96	7.27	
10-30-22 19:00	4.56	4.69	7.19	
10-30-22 20:00	4.35	4.51	7.13	
10-30-22 21:00	4.29	4.40	7.18	
10-30-22 22:00	4.21	4.30	7.09	
10-30-22 23:00	4.18	4.27	6.87	
10-31-22 0:00	4.17	4.27	6.93	
10-31-22 1:00	4.16	4.29	6.88	
10-31-22 2:00	4.18	4.31	6.96	
10-31-22 3:00	4.20	4.27	6.12	
10-31-22 4:00	4.20	4.06	3.15	
10-31-22 5:00	4.19	4.24	6.19	
10-31-22 6:00	4.13	4.16	6.03	
10-31-22 7:00	3.96	4.04	6.03	
10-31-22 8:00	3.73	3.70	3.53	
10-31-22 9:00	3.66	3.79	5.95	
10-31-22 10:00	3.82	3.93	6.16	
10-31-22 11:00	4.16	4.11	4.27	
10-31-22 12:00	4.43	4.52	5.69	
10-31-22 13:00	4.65	4.72	6.52	
10-31-22 14:00	4.91	4.95	6.82	
10-31-22 15:00	5.08	5.07	6.12	
10-31-22 16:00	5.07	4.89	3.17	
10-31-22 17:00	4.98	4.78	3.13	
10-31-22 18:00	4.74	4.58	3.08	
10-31-22 19:00	4.49	4.35	3.02	
10-31-22 20:00	3.98	3.87	2.95	
10-31-22 21:00	3.13	3.11	2.81	
10-31-22 22:00	2.67	2.64	2.80	
10-31-22 23:00	2.88	2.81	2.61	
11-1-22 0:00	2.20	2.35	4.60	
11-1-22 1:00	1.75	2.02	5.98	
11-1-22 2:00	1.81	1.92	3.68	
11-1-22 3:00	2.11	2.14	3.62	
11-1-22 4:00	2.41	2.46	3.62	
11-1-22 5:00	2.67	2.67	3.75	
11-1-22 6:00	2.92	2.94	3.73	
11-1-22 7:00	3.09	3.10	3.70	
11-1-22 8:00	3.17	3.17	3.60	
11-1-22 9:00	3.26	3.25	3.55	
11-1-22 10:00	3.43	3.41	3.72	
11-1-22 11:00	3.61	3.63	3.73	
11-1-22 12:00	3.78	3.74	3.48	
11-1-22 13:00	3.93	3.89	3.71	
11-1-22 14:00	3.84	3.76	2.87	
11-1-22 15:00	3.64	3.57	2.84	
11-1-22 16:00	3.50	3.45	2.81	
11-1-22 17:00	3.31	3.25	2.80	
11-1-22 18:00	3.01	2.96	2.69	
11-1-22 19:00	2.59	2.56	2.73	
11-1-22 20:00	2.37	2.36	2.73	
11-1-22 21:00	2.22	2.20	2.76	
11-1-22 22:00	2.03	2.10	2.71	
11-1-22 23:00	1.97	2.04	2.66	
11-2-22 0:00	2.18	2.05	2.60	
11-2-22 1:00	2.12	2.05	2.52	
11-2-22 2:00	1.91	1.94	2.55	
11-2-22 3:00	1.89	1.86	2.47	
11-2-22 4:00	1.84	1.82	2.43	
11-2-22 5:00	1.76	1.73	2.38	
11-2-22 6:00	1.54	1.57	2.35	

Date and Time	Hourly Average Temperature (°C)			Comments
	FR_FR3	FR_SCOUTDS	FS_EFF-SC	
	E320693	E320695	E323231	
11-2-22 7:00	1.08	1.14	2.31	
11-2-22 8:00	0.67	0.76	2.23	
11-2-22 9:00	0.49	0.58	2.16	
11-2-22 10:00	0.58	0.65	2.07	
11-2-22 11:00	0.97	1.01	2.05	
11-2-22 12:00	1.46	1.49	1.98	
11-2-22 13:00	2.13	2.11	2.02	
11-2-22 14:00	2.70	2.61	2.01	
11-2-22 15:00	2.99	2.91	2.04	
11-2-22 16:00	3.17	3.06	2.00	
11-2-22 17:00	3.09	2.94	2.00	
11-2-22 18:00	2.76	2.65	1.93	
11-2-22 19:00	2.47	2.40	2.35	
11-2-22 20:00	2.25	2.71	11.51	
11-2-22 21:00	2.12	2.35	7.11	
11-2-22 22:00	2.06	2.20	5.51	
11-2-22 23:00	1.97	2.13	5.18	
11-3-22 0:00	1.88	2.02	5.05	
11-3-22 1:00	1.71	1.86	4.99	
11-3-22 2:00	1.51	1.70	4.89	
11-3-22 3:00	1.26	1.44	4.96	
11-3-22 4:00	0.94	1.17	4.97	
11-3-22 5:00	0.62	0.88	5.26	
11-3-22 6:00	0.47	0.74	5.43	
11-3-22 7:00	0.32	0.58	5.58	
11-3-22 8:00	0.26	0.54	5.58	
11-3-22 9:00	0.39	0.63	5.55	
11-3-22 10:00	0.85	1.15	5.65	
11-3-22 11:00	1.73	1.91	4.87	
11-3-22 12:00	2.60	2.75	4.20	
11-3-22 13:00	3.16	3.25	4.42	
11-3-22 14:00	3.65	3.70	4.49	
11-3-22 15:00	4.08	4.10	4.61	
11-3-22 16:00	3.98	4.04	5.63	
11-3-22 17:00	3.58	3.58	4.37	
11-3-22 18:00	3.19	3.21	4.34	
11-3-22 19:00	2.85	2.87	4.33	
11-3-22 20:00	2.61	2.63	4.36	
11-3-22 21:00	2.43	2.49	4.49	
11-3-22 22:00	2.22	2.32	4.86	
11-3-22 23:00	2.04	2.12	4.79	
11-4-22 0:00	1.89	1.99	4.72	
11-4-22 1:00	1.79	1.88	4.63	
11-4-22 2:00	1.75	1.83	4.26	
11-4-22 3:00	1.64	1.73	4.02	
11-4-22 4:00	1.69	1.75	4.13	
11-4-22 5:00	1.64	1.73	4.32	
11-4-22 6:00	1.49	1.61	4.38	
11-4-22 7:00	1.58	1.68	4.44	
11-4-22 8:00	1.66	1.76	4.42	
11-4-22 9:00	1.75	1.81	4.44	
11-4-22 10:00	1.98	2.04	4.44	
11-4-22 11:00	2.32	2.42	4.44	
11-4-22 12:00	2.69	2.76	4.23	
11-4-22 13:00	2.98	3.02	4.18	
11-4-22 14:00	3.31	3.36	4.51	
11-4-22 15:00	3.58	3.60	4.69	
11-4-22 16:00	3.65	3.66	4.34	
11-4-22 17:00	3.43	3.44	4.41	
11-4-22 18:00	3.08	3.12	4.53	
11-4-22 19:00	2.73	2.79	4.48	
11-4-22 20:00	2.52	2.58	4.48	
11-4-22 21:00	2.34	2.42	4.48	
11-4-22 22:00	2.14	2.24	4.49	
11-4-22 23:00	1.97	2.10	4.35	
11-5-22 0:00	1.80	1.95	4.31	
11-5-22 1:00	1.62	1.75	4.36	
11-5-22 2:00	1.46	1.59	4.44	
11-5-22 3:00	0.80	1.01	3.37	
11-5-22 4:00	0.42	0.69	4.32	
11-5-22 5:00	0.77	1.04	6.10	
11-5-22 6:00	1.23	1.40	4.05	
11-5-22 7:00	1.60	1.84	6.39	
11-5-22 8:00	1.80	2.04	6.02	
11-5-22 9:00	1.90	2.13	6.37	
11-5-22 10:00	2.04	2.28	6.41	
11-5-22 11:00	2.07	2.31	6.38	
11-5-22 12:00	1.56	1.86	6.49	

Date and Time	Hourly Average Temperature (°C)			Comments
	FR_FR3	FR_SCOUTDS	FS_EFF-SC	
	E320693	E320695	E323231	
11-5-22 13:00	0.85	1.18	6.37	
11-5-22 14:00	0.71	1.01	6.38	
11-5-22 15:00	1.19	1.48	6.49	
11-5-22 16:00	1.80	2.07	6.57	
11-5-22 17:00	2.08	2.33	6.71	
11-5-22 18:00	1.91	2.15	6.69	
11-5-22 19:00	1.53	1.75	5.01	
11-5-22 20:00	1.19	1.36	4.76	
11-5-22 21:00	0.91	1.13	4.63	
11-5-22 22:00	0.69	0.89	4.56	
11-5-22 23:00	0.44	0.64	4.45	
11-6-22 0:00	0.33	0.53	4.44	
11-6-22 1:00	0.39	0.60	4.34	
11-6-22 1:00	0.51	0.71	4.49	
11-6-22 2:00	0.68	0.83	4.57	
11-6-22 3:00	0.70	0.92	4.39	
11-6-22 4:00	0.76	0.95	4.40	
11-6-22 5:00	0.75	0.95	4.42	
11-6-22 6:00	0.64	0.81	4.38	
11-6-22 7:00	0.56	0.76	4.28	
11-6-22 8:00	0.46	0.68	4.36	
11-6-22 9:00	0.51	0.72	4.32	
11-6-22 10:00	0.66	0.88	4.41	
11-6-22 11:00	0.88	1.07	4.14	
11-6-22 12:00	1.03	1.19	4.16	
11-6-22 13:00	1.13	1.34	4.40	
11-6-22 14:00	1.08	1.27	4.43	
11-6-22 15:00	0.90	1.08	4.31	
11-6-22 16:00	0.45	0.63	4.13	
11-6-22 17:00	-0.03	0.18	4.19	
11-6-22 18:00	-0.18	-0.03	4.07	
11-6-22 19:00	-0.16	-0.02	4.18	
11-6-22 20:00	-0.17	-0.07	4.09	
11-6-22 21:00	-0.17	-0.10	4.16	
11-6-22 22:00	-0.16	-0.07	4.03	
11-6-22 23:00	-0.15	-0.13	4.08	
11-7-22 0:00	-0.16	-0.12	3.97	
11-7-22 1:00	-0.16	-0.11	3.87	
11-7-22 2:00	-0.16	-0.12	3.77	
11-7-22 3:00	-0.18	-0.12	3.74	
11-7-22 4:00	-0.17	-0.13	3.46	
11-7-22 5:00	-0.17	-0.11	3.47	
11-7-22 6:00	-0.17	-0.08	3.51	
11-7-22 7:00	-0.16	0.02	3.47	
11-7-22 8:00	-0.16	0.05	3.52	
11-7-22 9:00	-0.17	0.07	3.60	
11-7-22 10:00	-0.13	0.12	3.53	
11-7-22 11:00	-0.15	0.16	3.55	
11-7-22 12:00	-0.17	0.23	3.54	
11-7-22 13:00	-0.15	0.30	3.68	
11-7-22 14:00	-0.16	0.27	3.63	
11-7-22 15:00	-0.14	0.39	3.68	
11-7-22 16:00	-0.15	0.37	3.63	
11-7-22 17:00	-0.17	0.47	3.73	
11-7-22 18:00	-0.15	0.51	3.71	
11-7-22 19:00	-0.18	0.56	3.79	
11-7-22 20:00	-0.15	0.59	3.75	
11-7-22 21:00	-0.17	0.66	3.86	
11-7-22 22:00	-0.14	0.66	3.73	
11-7-22 23:00	-0.15	0.73	3.86	
11-8-22 0:00	-0.17	0.71	3.77	
11-8-22 1:00	-0.17	0.79	3.85	
11-8-22 2:00	-0.17	0.79	3.76	
11-8-22 3:00	-0.16	0.89	3.84	
11-8-22 4:00	-0.16	0.92	3.76	
11-8-22 5:00	-0.14	0.97	3.86	
11-8-22 6:00	-0.16	0.96	3.79	
11-8-22 7:00	-0.16	1.00	3.84	
11-8-22 8:00	-0.19	1.05	3.78	
11-8-22 9:00	-0.16	1.22	3.80	
11-8-22 10:00		1.30	3.75	FR_FR3 disconnected for service.
11-8-22 11:00		1.25	3.74	FR_FR3 disconnected for service.
11-8-22 12:00		1.23	3.76	FR_FR3 disconnected for service.
11-8-22 13:00	-0.15	1.10	3.84	
11-8-22 14:00	-0.15	0.79	3.90	
11-8-22 15:00	-0.16	0.66	4.01	
11-8-22 16:00	-0.18	0.58	3.99	
11-8-22 17:00	-0.16	0.46	3.97	

Date and Time	Hourly Average Temperature (°C)			Comments
	FR_FR3	FR_SCOUTDS	FS_EFF-SC	
	E320693	E320695	E323231	
11-8-22 18:00	-0.16	0.45	3.92	
11-8-22 19:00	-0.15	0.42	3.90	
11-8-22 20:00	-0.15	0.42	3.87	
11-8-22 21:00	-0.16	0.45	3.88	
11-8-22 22:00	-0.15	0.47	3.92	
11-8-22 23:00	-0.15	0.47	4.02	
11-9-22 0:00	-0.17	0.50	4.00	
11-9-22 1:00	-0.17	0.50	4.06	
11-9-22 2:00	-0.18	0.49	4.03	
11-9-22 3:00	-0.17	0.54	4.12	
11-9-22 4:00	-0.17	0.57	3.97	
11-9-22 5:00	-0.15	0.51	3.82	
11-9-22 6:00	-0.16	0.55	3.84	
11-9-22 7:00	-0.17	0.55	3.78	
11-9-22 8:00	-0.16	0.45	3.24	
11-9-22 9:00	-0.16	0.22	1.77	
11-9-22 10:00	-0.15	0.33	1.83	
11-9-22 11:00	-0.14	0.40	1.81	
11-9-22 12:00	-0.14	0.30	1.81	
11-9-22 13:00	-0.14	0.18	1.88	
11-9-22 14:00	-0.11	0.26	2.41	
11-9-22 15:00	-0.14	0.48	5.00	
11-9-22 16:00	-0.15	0.31	4.05	
11-9-22 17:00	-0.16	0.26	4.25	
11-9-22 18:00	-0.16	0.33	5.32	
11-9-22 19:00	-0.15	0.32	5.35	
11-9-22 20:00	-0.15	0.30	5.45	
11-9-22 21:00	-0.18	0.26	5.47	
11-9-22 22:00	-0.17	0.25	5.51	
11-9-22 23:00	-0.17	0.25	5.58	
11-10-22 0:00	-0.17	0.26	5.47	
11-10-22 1:00	-0.17	0.28	5.54	
11-10-22 2:00	-0.15	0.24	5.55	
11-10-22 3:00	-0.19	0.31	5.84	
11-10-22 4:00	-0.17	0.34	5.94	
11-10-22 5:00	-0.16	0.29	5.88	
11-10-22 6:00	-0.18	0.33	5.82	
11-10-22 7:00	-0.15	0.33	5.75	
11-10-22 8:00	-0.18	0.36	5.72	
11-10-22 9:00	-0.18	0.40	5.77	
11-10-22 10:00	-0.17	0.41	5.85	
11-10-22 11:00	-0.16	0.43	5.82	
11-10-22 12:00	-0.15	0.51	5.95	
11-10-22 13:00	-0.15	0.36	5.97	
11-10-22 14:00	-0.16	0.49	6.16	
11-10-22 15:00	-0.16	0.43	6.31	
11-10-22 16:00	-0.16	0.34	6.18	
11-10-22 17:00	-0.14	0.32	6.23	
11-10-22 18:00	-0.16	0.32	6.13	
11-10-22 19:00	-0.17	0.31	6.08	
11-10-22 20:00	-0.18	0.32	6.08	
11-10-22 21:00	-0.16	0.30	6.02	
11-10-22 22:00	-0.13	0.29	6.04	
11-10-22 23:00	-0.17	0.31	5.99	
11-11-22 0:00	-0.16	0.27	5.93	
11-11-22 1:00	-0.17	0.29	6.04	
11-11-22 2:00	-0.15	0.29	5.98	
11-11-22 3:00	-0.16	0.29	5.96	
11-11-22 4:00	-0.17	0.30	5.99	
11-11-22 5:00	-0.19	0.28	5.83	
11-11-22 6:00	-0.16	0.27	5.91	
11-11-22 7:00	-0.16	0.28	5.88	
11-11-22 8:00	-0.15	0.29	5.84	
11-11-22 9:00	-0.16	0.32	5.88	
11-11-22 10:00	-0.14	0.34	5.82	
11-11-22 11:00	-0.15	0.38	5.84	
11-11-22 12:00	-0.13	0.39	6.03	
11-11-22 13:00	-0.13	0.35	6.07	
11-11-22 14:00	-0.12	0.32	5.97	
11-11-22 15:00	-0.15	0.24	5.56	
11-11-22 16:00	-0.14	0.26	5.89	
11-11-22 17:00	-0.15	0.28	6.28	
11-11-22 18:00	-0.14	0.28	6.16	
11-11-22 19:00	-0.16	0.27	6.20	
11-11-22 20:00	-0.16	0.26	6.17	
11-11-22 21:00	-0.16	0.30	6.27	
11-11-22 22:00	-0.16	0.29	6.18	
11-11-22 23:00	-0.14	0.28	6.08	

Date and Time	Hourly Average Temperature (°C)			Comments
	FR_FR3	FR_SCOUTDS	FS_EFF-SC	
	E320693	E320695	E323231	
11-12-22 0:00	-0.17	0.24	5.70	
11-12-22 1:00	-0.15	0.21	5.75	
11-12-22 2:00	-0.15	0.20	5.69	
11-12-22 3:00	-0.15	0.19	5.71	
11-12-22 4:00	-0.14	0.19	5.69	
11-12-22 5:00	-0.14	0.19	5.70	
11-12-22 6:00	-0.16	0.20	5.68	
11-12-22 7:00	-0.17	0.19	5.68	
11-12-22 8:00	-0.15	0.21	5.79	
11-12-22 9:00	-0.16	0.30	5.72	
11-12-22 10:00	-0.16	0.35	5.90	
11-12-22 11:00	-0.17	0.29	5.92	
11-12-22 12:00	-0.15	0.30	6.09	
11-12-22 13:00	-0.13	0.30	6.10	
11-12-22 14:00	-0.15	0.27	6.26	
11-12-22 15:00	-0.16	0.27	6.16	
11-12-22 16:00	-0.16	0.25	6.37	
11-12-22 17:00	-0.16	0.22	6.11	
11-12-22 18:00	-0.16	0.24	6.17	
11-12-22 19:00	-0.16	0.18	6.04	
11-12-22 20:00	-0.17	0.18	6.10	
11-12-22 21:00	-0.18	0.20	5.94	
11-12-22 22:00	-0.16	0.21	6.06	
11-12-22 23:00	-0.16	0.19	5.93	
11-13-22 0:00	-0.17	0.20	6.02	
11-13-22 1:00	-0.17	0.17	5.92	
11-13-22 2:00	-0.16	0.19	5.98	
11-13-22 3:00	-0.15	0.20	5.95	
11-13-22 4:00	-0.18	0.17	6.04	
11-13-22 5:00	-0.15	0.19	5.91	
11-13-22 6:00	-0.20	0.19	5.98	
11-13-22 7:00	-0.14	0.21	5.95	
11-13-22 8:00	-0.16	0.25	6.07	
11-13-22 9:00	-0.18	0.26	5.92	
11-13-22 10:00	-0.16	0.29	6.13	
11-13-22 11:00	-0.15	0.33	6.08	
11-13-22 12:00	-0.14	0.37	6.30	
11-13-22 13:00	-0.11	0.27	6.25	
11-13-22 14:00	-0.14	0.26	6.39	
11-13-22 15:00	-0.14	0.22	6.35	
11-13-22 16:00	-0.15	0.20	6.34	
11-13-22 17:00	-0.16	0.20	6.23	
11-13-22 18:00	-0.17	0.18	6.18	
11-13-22 19:00	-0.14	0.19	6.19	
11-13-22 20:00	-0.16	0.20	6.15	
11-13-22 21:00	-0.15	0.17	6.16	
11-13-22 22:00	-0.15	0.19	6.13	
11-13-22 23:00	-0.16	0.19	6.19	
11-14-22 0:00	-0.16	0.18	6.41	
11-14-22 1:00	-0.15	0.19	6.47	
11-14-22 2:00	-0.14	0.19	6.43	
11-14-22 3:00	-0.17	0.19	6.46	
11-14-22 4:00	-0.15	0.18	6.41	
11-14-22 5:00	-0.17	0.16	6.31	
11-14-22 6:00	-0.14	0.18	6.13	
11-14-22 7:00	-0.17	0.17	6.06	
11-14-22 8:00	-0.14	0.14	5.78	
11-14-22 9:00	-0.16	0.19	5.72	
11-14-22 10:00	-0.16	0.23	5.75	
11-14-22 11:00	-0.13	0.25	5.62	
11-14-22 12:00	-0.13	0.26	6.08	
11-14-22 13:00	-0.11	0.24	6.22	
11-14-22 14:00	0.02	0.30	6.28	
11-14-22 15:00	0.08	0.36	6.27	
11-14-22 16:00	0.10	0.39	6.19	
11-14-22 17:00	0.08	0.31	5.93	
11-14-22 18:00	0.03	0.21	4.09	
11-14-22 19:00	0.03	0.19	4.00	
11-14-22 20:00	0.02	0.17	3.95	
11-14-22 21:00	-0.01	0.13	4.01	
11-14-22 22:00	-0.07	0.09	3.89	
11-14-22 23:00	-0.14	0.06	4.00	
11-15-22 0:00	-0.17	0.01	3.92	
11-15-22 1:00	-0.15	0.02	4.04	
11-15-22 2:00	-0.16	0.00	3.90	
11-15-22 3:00	-0.17	0.02	4.01	
11-15-22 4:00	-0.21	0.01	3.86	
11-15-22 5:00	-0.17	0.03	3.93	

Date and Time	Hourly Average Temperature (°C)			Comments
	FR_FR3	FR_SCOUTDS	FS_EFF-SC	
	E320693	E320695	E323231	
11-15-22 6:00	-0.16	0.01	3.85	
11-15-22 7:00	-0.17	0.02	3.92	
11-15-22 8:00	-0.18	-0.10	1.73	
11-15-22 9:00	-0.17	-0.06	1.83	
11-15-22 10:00	-0.15	-0.06	1.82	
11-15-22 11:00	-0.17	0.02	1.83	
11-15-22 12:00	-0.16	-0.02	1.85	
11-15-22 13:00	-0.06	0.05	1.88	
11-15-22 14:00	0.20	0.28	1.87	
11-15-22 15:00	0.32	0.38	1.85	
11-15-22 16:00	0.38	0.43	1.90	
11-15-22 17:00	0.34	0.65	7.55	
11-15-22 18:00	0.28	0.33	2.91	
11-15-22 19:00	0.23	0.23	1.79	
11-15-22 20:00	0.17	0.22	1.81	
11-15-22 21:00	0.10	0.19	1.80	
11-15-22 22:00	0.04	0.13	1.82	
11-15-22 23:00	-0.07	0.02	1.78	
11-16-22 0:00	-0.14	-0.07	1.81	
11-16-22 1:00	-0.17	-0.12	1.80	
11-16-22 2:00	-0.17	-0.11	1.82	
11-16-22 3:00	-0.18	-0.09	1.83	
11-16-22 4:00	-0.18	-0.07	1.85	
11-16-22 5:00	-0.15	-0.09	1.83	
11-16-22 6:00	-0.17	-0.09	1.81	
11-16-22 7:00	-0.17	-0.09	1.83	
11-16-22 8:00	-0.17	-0.07	1.87	
11-16-22 9:00	-0.17	0.20	6.09	
11-16-22 10:00	-0.15	0.36	9.24	
11-16-22 11:00	-0.14	0.33	9.49	
11-16-22 12:00	-0.07	0.39	9.30	
11-16-22 13:00	0.17	0.67	9.21	
11-16-22 14:00	0.38	0.94	8.67	
11-16-22 15:00	0.48	0.98	8.95	
11-16-22 16:00	0.56	1.03	8.86	
11-16-22 17:00	0.55	1.02	8.59	
11-16-22 18:00	0.59	1.04	8.62	
11-16-22 19:00	0.63	1.06	8.51	
11-16-22 20:00	0.57	1.01	8.65	
11-16-22 21:00	0.30	0.78	8.53	
11-16-22 22:00	0.14	0.57	8.51	
11-16-22 23:00	-0.12	0.34	8.39	
11-17-22 0:00	-0.16	0.24	8.26	
11-17-22 1:00	-0.17	0.31	8.10	
11-17-22 2:00	-0.18	0.13	4.08	
11-17-22 3:00	-0.15	0.02	2.99	
11-17-22 4:00	-0.17	0.13	4.39	
11-17-22 5:00	-0.17	0.45	7.75	
11-17-22 6:00	-0.18	0.43	7.40	
11-17-22 7:00	-0.16	0.43	7.12	
11-17-22 8:00	-0.16	0.48	7.13	
11-17-22 9:00	-0.19	0.48	6.86	
11-17-22 10:00	-0.16	0.42	6.66	
11-17-22 11:00	-0.15	0.35	6.53	
11-17-22 12:00	-0.14	0.23	6.42	
11-17-22 13:00	-0.13	0.20	6.36	
11-17-22 14:00	-0.15	0.31	6.40	
11-17-22 15:00	-0.16	0.30	6.28	
11-17-22 16:00	-0.15	0.27	6.32	
11-17-22 17:00	-0.16	0.24	6.16	
11-17-22 18:00	-0.16	0.24	6.16	
11-17-22 19:00	-0.15	0.24	6.05	
11-17-22 20:00	-0.16	0.27	5.96	
11-17-22 21:00	-0.18	0.23	5.93	
11-17-22 22:00	-0.20	0.21	5.60	
11-17-22 23:00	-0.18	0.20	5.53	
11-18-22 0:00	-0.18	0.20	5.43	
11-18-22 1:00	-0.18	0.24	5.34	
11-18-22 2:00	-0.18	0.27	5.28	
11-18-22 3:00	-0.16	0.27	5.15	
11-18-22 4:00	-0.17	0.27	5.12	
11-18-22 5:00	-0.17	0.26	4.98	
11-18-22 6:00	-0.18	0.24	4.95	
11-18-22 7:00	-0.16	0.28	4.85	
11-18-22 8:00	-0.17	0.26	4.75	
11-18-22 9:00	-0.15	0.28	4.67	
11-18-22 10:00	-0.15	0.26	4.64	
11-18-22 11:00	-0.14	0.32	4.60	

Date and Time	Hourly Average Temperature (°C)			Comments
	FR_FR3	FR_SCOUTDS	FS_EFF-SC	
	E320693	E320695	E323231	
11-18-22 12:00	-0.15	0.23	4.67	
11-18-22 13:00	-0.14	0.16	4.72	
11-18-22 14:00	-0.15	0.11	4.81	
11-18-22 15:00	-0.16	0.09	4.74	
11-18-22 16:00	-0.16	0.10	4.79	
11-18-22 17:00	-0.16	0.09	4.69	
11-18-22 18:00	-0.16	0.10	4.67	
11-18-22 19:00	-0.16	0.10	4.59	
11-18-22 20:00	-0.17	0.13	4.63	
11-18-22 21:00	-0.14	0.13	4.45	
11-18-22 22:00	-0.16	0.11	4.26	
11-18-22 23:00	-0.18	0.09	4.25	
11-19-22 0:00	-0.16	0.08	4.21	
11-19-22 1:00	-0.17	0.09	4.18	
11-19-22 2:00	-0.18	0.11	4.14	
11-19-22 3:00	-0.16	0.10	4.10	
11-19-22 4:00	-0.16	0.11	4.13	
11-19-22 5:00	-0.14	0.11	4.08	
11-19-22 6:00	-0.17	0.09	4.06	
11-19-22 7:00	-0.16	0.12	4.04	
11-19-22 8:00	-0.17	0.11	4.03	
11-19-22 9:00	-0.16	0.17	3.96	
11-19-22 10:00	-0.16	0.19	4.03	
11-19-22 11:00	-0.18	0.28	4.02	
11-19-22 12:00	-0.16	0.26	4.07	
11-19-22 13:00	-0.17	0.19	4.25	
11-19-22 14:00	-0.13	0.19	3.93	
11-19-22 15:00	-0.14	0.17	4.40	
11-19-22 16:00	-0.14	0.15	4.40	
11-19-22 17:00	-0.16	0.15	4.42	
11-19-22 18:00	-0.17	0.17	4.35	
11-19-22 19:00	-0.17	0.18	4.38	
11-19-22 20:00	-0.15	0.19	4.32	
11-19-22 21:00	-0.16	0.19	4.34	
11-19-22 22:00	-0.20	0.21	4.27	
11-19-22 23:00	-0.19	0.21	4.27	
11-20-22 0:00	-0.17	0.24	4.19	
11-20-22 1:00	-0.17	0.21	3.92	
11-20-22 2:00	-0.14	0.22	4.15	
11-20-22 3:00	-0.17	0.27	4.15	
11-20-22 4:00	-0.18	0.30	4.19	
11-20-22 5:00	-0.16	0.32	4.19	
11-20-22 6:00	-0.16	0.35	4.15	
11-20-22 7:00	-0.17	0.33	4.14	
11-20-22 8:00	-0.18	0.40	4.11	
11-20-22 9:00	-0.18	0.42	4.21	
11-20-22 10:00	-0.16	0.40	4.39	
11-20-22 11:00	-0.15	0.42	4.36	
11-20-22 12:00	-0.16	0.48	4.47	
11-20-22 13:00	-0.15	0.44	3.38	
11-20-22 14:00	-0.15	0.65	4.81	
11-20-22 15:00	-0.14	0.74	5.11	
11-20-22 16:00	-0.15	0.63	5.00	
11-20-22 17:00	-0.15	0.55	5.06	
11-20-22 18:00	-0.17	0.61	5.24	
11-20-22 19:00	-0.13	0.53	4.97	
11-20-22 20:00	-0.15	0.52	5.24	
11-20-22 21:00	-0.18	0.46	5.27	
11-20-22 22:00	-0.17	0.48	5.22	
11-20-22 23:00	-0.12	0.52	5.20	
11-21-22 0:00	-0.20	0.48	4.96	
11-21-22 1:00	-0.16	0.48	4.95	
11-21-22 2:00	-0.14	0.51	4.91	
11-21-22 3:00	-0.13	0.54	4.90	
11-21-22 4:00	-0.21	0.49	4.81	
11-21-22 5:00	-0.14	0.54	4.91	
11-21-22 6:00	-0.17	0.53	5.00	
11-21-22 7:00	-0.18	0.54	5.00	
11-21-22 8:00	-0.15	0.46	4.26	
11-21-22 9:00	-0.15	0.59	4.99	
11-21-22 10:00	-0.16	0.61	5.06	
11-21-22 11:00	-0.16	0.72	5.09	
11-21-22 12:00	-0.13	0.69	5.16	
11-21-22 13:00	-0.14	0.66	5.29	
11-21-22 14:00	-0.15	0.62	5.33	
11-21-22 15:00	-0.14	0.52	5.41	
11-21-22 16:00	-0.17	0.31	3.62	
11-21-22 17:00	-0.17	0.49	5.41	

Date and Time	Hourly Average Temperature (°C)			Comments
	FR_FR3	FR_SCOUTDS	FS_EFF-SC	
	E320693	E320695	E323231	
11-21-22 18:00	-0.17	0.47	5.49	
11-21-22 19:00	-0.15	0.46	5.46	
11-21-22 20:00	-0.16	0.45	5.47	
11-21-22 21:00	-0.17	0.52	5.44	
11-21-22 22:00	-0.16	0.45	5.48	
11-21-22 23:00	-0.18	0.38	5.25	
11-22-22 0:00	-0.13	0.38	5.51	
11-22-22 1:00	-0.19	0.37	5.50	
11-22-22 2:00	-0.13	0.39	5.56	
11-22-22 3:00	-0.14	0.38	5.55	
11-22-22 4:00	-0.15	0.36	5.56	
11-22-22 5:00	-0.16	0.36	5.56	
11-22-22 6:00	-0.16	0.37	5.55	
11-22-22 7:00	-0.17	0.36	5.55	
11-22-22 8:00	-0.17	0.39	5.52	
11-22-22 9:00	-0.15	0.36	5.63	
11-22-22 10:00	-0.13	0.39	5.66	
11-22-22 11:00	-0.14	0.42	5.72	
11-22-22 12:00	-0.15	0.32	5.72	
11-22-22 13:00	-0.14	0.36	5.77	
11-22-22 14:00	-0.15	0.32	5.84	
11-22-22 15:00	-0.16	0.27	6.00	
11-22-22 16:00	-0.15	0.28	6.10	
11-22-22 17:00	-0.15	0.26	6.15	
11-22-22 18:00	-0.15	0.26	6.11	
11-22-22 19:00	-0.14	0.31	6.12	
11-22-22 20:00	-0.14	0.27	6.11	
11-22-22 21:00	-0.17	0.24	6.17	
11-22-22 22:00	-0.17	0.23	6.16	
11-22-22 23:00	-0.14	0.23	6.12	
11-23-22 0:00	-0.14	0.23	6.28	
11-23-22 1:00	-0.12	0.26	6.31	
11-23-22 2:00	-0.13	0.22	6.31	
11-23-22 3:00	-0.12	0.21	6.36	
11-23-22 4:00	-0.12	0.27	6.33	
11-23-22 5:00	-0.16	0.19	6.21	
11-23-22 6:00	-0.07	0.24	6.14	
11-23-22 7:00	-0.22	0.21	6.18	
11-23-22 8:00	-0.16	0.22	6.16	
11-23-22 9:00	-0.13	0.25	6.07	
11-23-22 10:00	-0.11	0.30	6.16	
11-23-22 11:00	-0.08	0.30	6.09	
11-23-22 12:00	0.00	0.23	3.60	
11-23-22 13:00	0.16	0.24	2.80	
11-23-22 14:00	0.28	0.47	4.45	
11-23-22 15:00	0.44	0.57	3.55	
11-23-22 16:00	0.63	0.84	6.02	
11-23-22 17:00	0.58	0.74	6.18	
11-23-22 18:00	0.49	0.75	6.24	
11-23-22 19:00	0.56	0.90	6.32	
11-23-22 20:00	0.67	1.03	6.30	
11-23-22 21:00	0.66	0.99	6.21	
11-23-22 22:00	0.63	0.99	6.25	
11-23-22 23:00	0.68	1.04	6.24	
11-24-22 0:00	0.70	1.03	6.22	
11-24-22 1:00	0.72	1.02	6.19	
11-24-22 2:00	0.64	1.02	6.18	
11-24-22 3:00	0.66	1.00	6.16	
11-24-22 4:00	0.72	0.99	6.10	
11-24-22 5:00	0.69	1.03	6.10	
11-24-22 6:00	0.60	1.01	6.12	
11-24-22 7:00	0.62	0.97	6.08	
11-24-22 8:00	0.61	0.98	6.08	
11-24-22 9:00	0.61	0.95	6.10	
11-24-22 10:00	0.68	1.05	6.12	
11-24-22 11:00	0.90	1.33	6.15	
11-24-22 12:00	1.34	1.71	6.14	
11-24-22 13:00	1.76	2.11	6.19	
11-24-22 14:00	2.02	2.30	6.36	
11-24-22 15:00	2.11	2.40	6.43	
11-24-22 16:00	1.89	2.21	6.42	
11-24-22 17:00	1.60	1.91	6.31	
11-24-22 18:00	1.41	1.66	6.28	
11-24-22 19:00	1.22	1.54	6.25	
11-24-22 20:00	1.09	1.42	6.31	
11-24-22 21:00	1.04	1.35	6.21	
11-24-22 22:00	0.88	1.26	6.23	
11-24-22 23:00	0.90	1.16	6.16	

Date and Time	Hourly Average Temperature (°C)			Comments
	FR_FR3	FR_SCOUTDS	FS_EFF-SC	
	E320693	E320695	E323231	
11-25-22 0:00	0.74	1.08	6.10	
11-25-22 1:00	0.60	0.94	6.12	
11-25-22 2:00	0.56	0.85	6.02	
11-25-22 3:00	0.49	0.81	6.03	
11-25-22 4:00	0.47	0.78	5.90	
11-25-22 5:00	0.45	0.81	5.92	
11-25-22 6:00	0.48	0.78	5.88	
11-25-22 7:00	0.59	0.88	5.77	
11-25-22 8:00	0.65	1.00	5.88	
11-25-22 9:00	0.79	1.12	5.86	
11-25-22 10:00	1.02	1.37	5.85	
11-25-22 11:00	1.28	1.61	5.87	
11-25-22 12:00	1.55	1.84	5.90	
11-25-22 13:00	1.69	2.03	5.82	
11-25-22 14:00	1.80	2.09	6.09	
11-25-22 15:00	1.78	2.02	6.02	
11-25-22 16:00	1.58	1.89	6.05	
11-25-22 17:00	1.36	1.67	5.88	
11-25-22 18:00	1.22	1.53	5.88	
11-25-22 19:00	1.19	1.53	5.85	
11-25-22 20:00	1.20	1.52	5.87	
11-25-22 21:00	1.20	1.48	5.95	
11-25-22 22:00	1.20	1.49	5.95	
11-25-22 23:00	1.30	1.56	5.99	
11-26-22 0:00	1.28	1.59	5.95	
11-26-22 1:00	1.20	1.53	6.00	
11-26-22 2:00	1.05	1.33	6.17	
11-26-22 3:00	0.86	1.22	6.24	
11-26-22 4:00	0.72	1.02	6.21	
11-26-22 5:00	0.48	0.80	6.19	
11-26-22 6:00	0.30	0.66	6.13	
11-26-22 7:00	0.17	0.49	6.03	
11-26-22 8:00	0.04	0.39	5.99	
11-26-22 9:00	-0.05	0.32	5.92	
11-26-22 10:00	0.02	0.40	5.87	
11-26-22 11:00	0.30	0.71	5.91	
11-26-22 12:00	0.84	1.25	5.96	
11-26-22 13:00	1.21	1.51	6.13	
11-26-22 14:00	1.37	1.73	6.29	
11-26-22 15:00	1.48	1.80	6.31	
11-26-22 16:00	1.43	1.79	6.31	
11-26-22 17:00	1.27	1.58	6.27	
11-26-22 18:00	1.17	1.38	6.26	
11-26-22 19:00	0.97	1.04	2.74	
11-26-22 20:00	0.85	1.01	3.70	
11-26-22 21:00	0.83	1.16	6.30	
11-26-22 22:00	0.73	1.10	6.26	
11-26-22 23:00	0.52	0.87	6.24	
11-27-22 0:00	0.21	0.60	6.18	
11-27-22 1:00	-0.03	0.59	6.16	
11-27-22 2:00	0.01	0.49	6.10	
11-27-22 3:00	0.13	0.41	6.03	
11-27-22 4:00	-0.07	0.29	5.98	
11-27-22 5:00	-0.15	0.19	5.90	
11-27-22 6:00	-0.13	0.21	5.84	
11-27-22 7:00	-0.20	0.21	5.78	
11-27-22 8:00	-0.15	0.23	5.75	
11-27-22 9:00	-0.16	0.23	5.82	
11-27-22 10:00	-0.15	0.20	5.83	
11-27-22 11:00	0.02	0.40	5.76	
11-27-22 12:00	0.57	0.93	5.93	
11-27-22 13:00	0.59	0.93	5.98	
11-27-22 14:00	0.60	0.92	5.96	
11-27-22 15:00	0.60	0.93	5.98	
11-27-22 16:00	0.64	0.96	6.04	
11-27-22 17:00	0.56	0.93	6.21	
11-27-22 18:00	0.38	0.72	6.22	
11-27-22 19:00	0.24	0.56	6.14	
11-27-22 20:00	0.09	0.43	6.16	
11-27-22 21:00	-0.06	0.32	6.08	
11-27-22 22:00	-0.16	0.22	6.04	
11-27-22 23:00	-0.17	0.19	6.03	
11-28-22 0:00	-0.16	0.19	5.98	
11-28-22 1:00	-0.19	0.31	5.86	
11-28-22 2:00	-0.17	0.30	5.77	
11-28-22 3:00	-0.18	0.15	4.19	
11-28-22 4:00	-0.16	0.28	5.66	
11-28-22 5:00	-0.16	0.28	5.60	

Date and Time	Hourly Average Temperature (°C)			Comments
	FR_FR3	FR_SCOUTDS	FS_EFF-SC	
	E320693	E320695	E323231	
11-28-22 6:00	-0.17	0.28	5.52	
11-28-22 7:00	-0.17	0.28	5.47	
11-28-22 8:00	-0.15	0.29	5.43	
11-28-22 9:00	-0.15	0.30	5.33	
11-28-22 10:00	-0.16	0.33	5.31	
11-28-22 11:00	-0.13	0.33	5.27	
11-28-22 12:00	-0.17	0.33	5.24	
11-28-22 13:00	-0.17	0.24	5.30	
11-28-22 14:00	-0.17	0.28	5.28	
11-28-22 15:00	-0.15	0.26	5.32	
11-28-22 16:00	-0.17	0.27	5.30	
11-28-22 17:00	-0.17	0.28	5.24	
11-28-22 18:00	-0.15	0.26	5.15	
11-28-22 19:00	-0.15	0.25	5.08	
11-28-22 20:00	-0.17	0.26	5.04	
11-28-22 21:00	-0.18	0.27	4.96	
11-28-22 22:00	-0.15	0.28	4.89	
11-28-22 23:00	-0.16	0.29	4.82	
11-29-22 0:00	-0.19	0.28	4.68	
11-29-22 1:00	-0.18	0.26	4.64	
11-29-22 2:00	-0.16	0.31	4.58	
11-29-22 3:00	-0.16	0.35	4.47	
11-29-22 4:00	-0.15	0.35	4.45	
11-29-22 5:00	-0.18	0.37	4.32	
11-29-22 6:00	-0.20	0.39	4.29	
11-29-22 7:00	-0.17	0.39	4.21	
11-29-22 8:00	-0.18	0.45	4.15	
11-29-22 9:00	-0.17	0.51	4.13	
11-29-22 10:00	-0.17	0.55	4.07	
11-29-22 11:00	-0.18	0.63	4.07	
11-29-22 12:00	-0.13	0.55	4.10	
11-29-22 13:00	-0.17	0.28	3.26	
11-29-22 14:00	-0.16	0.02	2.31	
11-29-22 15:00	-0.16	0.19	3.73	
11-29-22 16:00	-0.18	0.24	4.19	
11-29-22 17:00	-0.17	0.27	4.15	
11-29-22 18:00	-0.17	0.30	4.14	
11-29-22 19:00	-0.15	0.31	4.03	
11-29-22 20:00	-0.17	0.32	4.01	
11-29-22 21:00	-0.16	0.35	4.20	
11-29-22 22:00	-0.18	0.38	4.37	
11-29-22 23:00	-0.17	0.48	4.64	
11-30-22 0:00	-0.15	0.44	4.57	
11-30-22 1:00	-0.17	0.43	4.63	
11-30-22 2:00	-0.17	0.49	4.62	
11-30-22 3:00	-0.16	0.45	4.60	
11-30-22 4:00	-0.16	0.46	4.69	
11-30-22 5:00	-0.18	0.47	4.72	
11-30-22 6:00	-0.18	0.46	4.42	
11-30-22 7:00	-0.18	0.17	2.46	
11-30-22 8:00	-0.16	0.45	4.58	
11-30-22 9:00	-0.16	0.45	4.61	
11-30-22 10:00	-0.17	0.44	4.60	
11-30-22 11:00	-0.16	0.43	4.64	
11-30-22 12:00	-0.16	0.60	4.65	
11-30-22 13:00	-0.16	0.45	4.69	
11-30-22 14:00	-0.15	0.46	4.75	
11-30-22 15:00	-0.16	0.44	4.78	
11-30-22 16:00	-0.16	0.44	4.86	
11-30-22 17:00	-0.17	0.43	4.87	
11-30-22 18:00	-0.14	0.43	4.88	
11-30-22 19:00	-0.17	0.44	4.94	
11-30-22 20:00	-0.13	0.43	4.95	
11-30-22 21:00	-0.19	0.43	4.99	
11-30-22 22:00	-0.16	0.42	4.98	
11-30-22 23:00	-0.16	0.44	5.01	
12-1-22 0:00	-0.16	0.46	5.06	
12-1-22 1:00	-0.18	0.47	5.05	
12-1-22 2:00	-0.16	0.46	5.04	
12-1-22 3:00	-0.17	0.47	5.02	
12-1-22 4:00	-0.19	0.47	4.98	
12-1-22 5:00	-0.16	0.51	4.93	
12-1-22 6:00	-0.16	0.51	4.93	
12-1-22 7:00	-0.16	0.42	4.02	
12-1-22 8:00	-0.17	0.54	4.90	
12-1-22 9:00	-0.16	0.56	4.91	
12-1-22 10:00	-0.16	0.56	4.87	
12-1-22 11:00	-0.17	0.60	4.83	

Date and Time	Hourly Average Temperature (°C)			Comments
	FR_FR3	FR_SCOUTDS	FS_EFF-SC	
	E320693	E320695	E323231	
12-1-22 12:00	-0.15	0.63	4.81	
12-1-22 13:00	-0.17	0.67	4.79	
12-1-22 14:00	-0.13	0.66	4.83	
12-1-22 15:00	-0.15	0.64	4.85	
12-1-22 16:00	-0.17	0.59	4.78	
12-1-22 17:00	-0.15	0.56	4.72	
12-1-22 18:00	-0.18	0.54	4.64	
12-1-22 19:00	-0.19	0.58	4.56	
12-1-22 20:00	-0.18	0.55	4.46	
12-1-22 21:00	-0.16	0.58	4.36	
12-1-22 22:00	-0.17	0.56	4.34	
12-1-22 23:00	-0.16	0.54	4.25	
12-2-22 0:00	-0.17	0.52	4.09	
12-2-22 1:00	-0.17	0.53	3.99	
12-2-22 2:00	-0.18	0.52	3.94	
12-2-22 3:00	-0.15	0.53	3.92	
12-2-22 4:00	-0.17	0.50	3.83	
12-2-22 5:00	-0.18	0.50	3.78	
12-2-22 6:00	-0.15	0.51	3.72	
12-2-22 7:00	-0.18	0.54	3.66	
12-2-22 8:00	-0.18	0.56	3.57	
12-2-22 9:00	-0.19	0.57	3.51	
12-2-22 10:00	-0.18	0.73	3.50	
12-2-22 11:00	-0.16	0.86	3.53	
12-2-22 12:00	-0.14	0.73	3.53	
12-2-22 13:00	-0.18	0.71	3.69	
12-2-22 14:00	-0.19	0.72	4.12	
12-2-22 15:00	-0.16	0.70	4.33	
12-2-22 16:00	-0.18	0.62	4.43	
12-2-22 17:00	-0.18	0.73	4.56	
12-2-22 18:00	-0.16	0.79	4.66	
12-2-22 19:00	-0.17	0.81	4.68	
12-2-22 20:00	-0.18	0.82	4.58	
12-2-22 21:00	-0.16	0.83	4.58	
12-2-22 22:00	-0.17	0.87	4.57	
12-2-22 23:00	-0.15	0.75	4.50	
12-3-22 0:00	-0.16	0.86	4.41	
12-3-22 1:00	-0.16	0.92	4.40	
12-3-22 2:00	-0.15	0.90	4.42	
12-3-22 3:00	-0.17	0.89	4.38	
12-3-22 4:00	-0.17	0.91	4.31	
12-3-22 5:00	-0.16	0.90	4.31	
12-3-22 6:00	-0.17	0.88	4.24	
12-3-22 7:00	-0.15	0.87	4.16	
12-3-22 8:00	-0.17	0.80	4.00	
12-3-22 9:00	-0.14	0.86	4.14	
12-3-22 10:00	-0.16	0.90	4.16	
12-3-22 11:00	-0.15	1.05	4.16	
12-3-22 12:00	-0.15	0.99	4.18	
12-3-22 13:00	-0.17	0.88	4.18	
12-3-22 14:00	-0.15	0.83	4.16	
12-3-22 15:00	-0.16	0.81	4.18	
12-3-22 16:00	-0.16	0.79	4.21	
12-3-22 17:00	-0.14	0.75	4.20	
12-3-22 18:00	-0.16	0.78	4.18	
12-3-22 19:00	-0.17	0.72	3.98	
12-3-22 20:00	-0.18	0.71	3.94	
12-3-22 21:00	-0.17	0.78	4.24	
12-3-22 22:00	-0.18	0.78	4.19	
12-3-22 23:00	-0.19	0.80	4.20	
12-4-22 0:00	-0.19	0.84	4.21	
12-4-22 1:00	-0.16	0.86	4.21	
12-4-22 2:00	-0.17	0.87	4.20	
12-4-22 3:00	-0.18	0.85	4.19	
12-4-22 4:00	-0.13	0.88	4.19	
12-4-22 5:00	-0.16	0.86	4.17	
12-4-22 6:00	-0.16	0.85	4.17	
12-4-22 7:00	-0.16	0.82	4.13	
12-4-22 8:00	-0.16	0.85	4.14	
12-4-22 9:00	-0.16	0.82	4.12	
12-4-22 10:00	-0.17	0.85	4.05	
12-4-22 11:00	-0.14	0.98	4.03	
12-4-22 12:00	-0.16	0.97	4.09	
12-4-22 13:00	-0.15	0.94	4.15	
12-4-22 14:00	-0.16	0.83	4.16	
12-4-22 15:00	-0.15	0.79	4.13	
12-4-22 16:00	-0.16	0.74	4.16	
12-4-22 17:00	-0.18	0.74	4.21	

Date and Time	Hourly Average Temperature (°C)			Comments
	FR_FR3	FR_SCOUTDS	FS_EFF-SC	
	E320693	E320695	E323231	
12-4-22 18:00	-0.17	0.75	4.20	
12-4-22 19:00	-0.17	0.76	4.14	
12-4-22 20:00	-0.16	0.74	4.16	
12-4-22 21:00	-0.19	0.79	4.20	
12-4-22 22:00	-0.14	0.81	4.20	
12-4-22 23:00	-0.13	0.84	4.22	
12-5-22 0:00	-0.16	0.85	4.19	
12-5-22 1:00	-0.17	0.84	4.17	
12-5-22 2:00	-0.16	0.84	4.24	
12-5-22 3:00	-0.15	0.87	4.23	
12-5-22 4:00	-0.14	0.83	4.18	
12-5-22 5:00	-0.17	0.81	4.26	
12-5-22 6:00	-0.16	0.78	4.27	
12-5-22 7:00	-0.18	0.84	4.26	
12-5-22 8:00	-0.16	0.80	4.23	
12-5-22 9:00	-0.17	0.83	4.24	
12-5-22 10:00	-0.15	0.85	4.30	
12-5-22 11:00	-0.17	0.86	4.33	
12-5-22 12:00	-0.15	0.84	4.31	
12-5-22 13:00	-0.15	0.84	4.28	
12-5-22 14:00	-0.14	0.79	4.38	
12-5-22 15:00	-0.15	0.74	4.40	
12-5-22 16:00	-0.14	0.70	4.43	
12-5-22 17:00	-0.15	0.67	4.37	
12-5-22 18:00	-0.16	0.68	4.39	
12-5-22 19:00	-0.13	0.69	4.49	
12-5-22 20:00	-0.16	0.69	4.50	
12-5-22 21:00	-0.15	0.68	4.47	
12-5-22 22:00	-0.17	0.64	4.47	
12-5-22 23:00	-0.15	0.66	4.54	
12-6-22 0:00	-0.17	0.67	4.55	
12-6-22 1:00	-0.17	0.66	4.52	
12-6-22 2:00	-0.17	0.66	4.43	
12-6-22 3:00	-0.15	0.68	4.44	
12-6-22 4:00	-0.17	0.61	4.35	
12-6-22 5:00	-0.18	0.58	4.23	
12-6-22 6:00	-0.15	0.55	4.07	
12-6-22 7:00	-0.16	0.54	4.11	
12-6-22 8:00	-0.14	0.55	4.13	
12-6-22 9:00	-0.16	0.55	4.02	
12-6-22 10:00	-0.14	0.54	3.99	
12-6-22 11:00	-0.17	0.58	3.91	
12-6-22 12:00	-0.17	0.52	3.89	
12-6-22 13:00	-0.14	0.50	3.98	
12-6-22 14:00	-0.14	0.47	3.97	
12-6-22 15:00	-0.15	0.35	3.59	
12-6-22 16:00	-0.15	0.37	3.33	
12-6-22 17:00	-0.16	0.26	3.20	
12-6-22 18:00	-0.16	0.24	3.07	
12-6-22 19:00	-0.16	0.22	3.03	
12-6-22 20:00	-0.15	0.22	2.94	
12-6-22 21:00	-0.14	0.19	2.93	
12-6-22 22:00	-0.11	0.19	2.90	
12-6-22 23:00	-0.14	0.19	2.83	
12-7-22 0:00	-0.15	0.18	2.79	
12-7-22 1:00	-0.16	0.15	2.78	
12-7-22 2:00	-0.18	0.14	2.80	
12-7-22 3:00	-0.14	0.16	2.80	
12-7-22 4:00	-0.18	0.14	2.81	
12-7-22 5:00	-0.14	0.14	2.78	
12-7-22 6:00	-0.15	0.13	2.78	
12-7-22 7:00	-0.15	0.12	2.79	
12-7-22 8:00	-0.15	0.10	2.77	
12-7-22 9:00	-0.14	0.12	2.74	
12-7-22 10:00	-0.15	0.13	2.78	
12-7-22 11:00	-0.15	0.14	2.77	
12-7-22 12:00	-0.15	0.13	2.79	
12-7-22 13:00	-0.16	0.14	2.88	
12-7-22 14:00	-0.15	0.11	3.10	
12-7-22 15:00	-0.15	0.08	3.12	
12-7-22 16:00	-0.16	0.06	3.15	
12-7-22 17:00	-0.13	0.13	3.22	
12-7-22 18:00	-0.14	0.09	3.42	
12-7-22 19:00	-0.15	0.16	3.64	
12-7-22 20:00	-0.15	0.12	3.78	
12-7-22 21:00	-0.15	0.12	3.96	
12-7-22 22:00	-0.13	0.12	4.01	
12-7-22 23:00	-0.11	0.16	4.09	

Date and Time	Hourly Average Temperature (°C)			Comments
	FR_FR3	FR_SCOUTDS	FS_EFF-SC	
	E320693	E320695	E323231	
12-8-22 0:00	-0.20	0.11	4.06	
12-8-22 1:00	-0.13	0.11	4.06	
12-8-22 2:00	-0.16	0.13	4.13	
12-8-22 3:00	-0.16	0.13	3.91	
12-8-22 4:00	-0.14	0.15	4.07	
12-8-22 5:00	-0.17	0.13	4.15	
12-8-22 6:00	-0.17	0.12	4.13	
12-8-22 7:00	-0.15	0.12	4.09	
12-8-22 8:00	-0.15	0.14	4.08	
12-8-22 9:00	-0.14	0.17	4.13	
12-8-22 10:00	-0.14	0.13	4.15	
12-8-22 11:00	-0.15	0.16	4.20	
12-8-22 12:00	-0.13	0.14	3.89	
12-8-22 13:00	-0.16	0.06	3.32	
12-8-22 14:00	-0.15	0.06	3.34	
12-8-22 15:00	-0.15	0.06	3.38	
12-8-22 16:00	-0.17	0.03	3.39	
12-8-22 17:00	-0.15	0.07	3.47	
12-8-22 18:00	-0.17	0.05	3.49	
12-8-22 19:00	-0.14	0.08	3.57	
12-8-22 20:00	-0.13	0.05	3.66	
12-8-22 21:00	-0.19	0.06	3.51	
12-8-22 22:00	-0.17	0.04	3.25	
12-8-22 23:00	-0.14	0.03	3.34	
12-9-22 0:00	-0.04	0.04	3.39	
12-9-22 1:00	-0.07	0.05	3.41	
12-9-22 2:00	-0.08	0.05	3.42	
12-9-22 3:00	-0.16	0.06	3.36	
12-9-22 4:00	-0.13	0.04	3.39	
12-9-22 5:00	-0.14	0.05	3.45	
12-9-22 6:00	-0.14	0.05	3.68	
12-9-22 7:00	-0.15	0.08	3.74	
12-9-22 8:00	-0.16	0.05	3.74	
12-9-22 9:00	-0.14	0.06	3.61	
12-9-22 10:00	-0.16	0.09	3.85	
12-9-22 11:00	-0.16	0.07	3.85	
12-9-22 12:00	-0.15	0.13	3.89	
12-9-22 13:00	-0.14	0.13	3.85	
12-9-22 14:00	-0.13	0.10	3.94	
12-9-22 15:00	-0.15	0.08	3.96	
12-9-22 16:00	-0.15	0.08	4.07	
12-9-22 17:00	-0.16	0.12	4.24	
12-9-22 18:00	-0.15	0.11	4.23	
12-9-22 19:00	-0.16	0.07	4.15	
12-9-22 20:00	-0.14	0.08	4.16	
12-9-22 21:00	-0.16	0.09	4.13	
12-9-22 22:00	-0.17	0.12	4.19	
12-9-22 23:00	-0.13	0.09	4.26	
12-10-22 0:00	-0.16	0.10	4.25	
12-10-22 1:00	-0.15	0.09	4.20	
12-10-22 2:00	-0.15	0.09	4.26	
12-10-22 3:00	-0.17	0.08	4.24	
12-10-22 4:00	-0.14	0.09	4.36	
12-10-22 5:00	-0.16	0.08	4.30	
12-10-22 6:00	-0.15	0.10	4.33	
12-10-22 7:00	-0.17	0.11	4.32	
12-10-22 8:00	-0.15	0.10	4.38	
12-10-22 9:00	-0.17	0.19	4.41	
12-10-22 10:00	-0.15	0.16	4.40	
12-10-22 11:00	-0.15	0.13	4.52	
12-10-22 12:00	-0.13	0.13	4.49	
12-10-22 13:00	-0.14	0.16	4.57	
12-10-22 14:00	-0.14	0.13	4.59	
12-10-22 15:00	-0.13	0.12	4.67	
12-10-22 16:00	-0.11	0.12	4.75	
12-10-22 17:00	-0.09	0.12	4.74	
12-10-22 18:00	-0.06	0.13	4.71	
12-10-22 19:00	-0.06	0.14	4.78	
12-10-22 20:00	-0.07	0.15	4.83	
12-10-22 21:00	-0.07	0.13	4.78	
12-10-22 22:00	-0.03	0.14	4.93	
12-10-22 23:00	-0.04	0.17	4.83	
12-11-22 0:00	-0.06	0.15	4.95	
12-11-22 1:00	-0.05	0.16	4.94	
12-11-22 2:00	-0.04	0.18	4.91	
12-11-22 3:00	-0.02	0.22	4.99	
12-11-22 4:00	-0.05	0.20	4.95	
12-11-22 5:00	-0.02	0.20	5.00	

Date and Time	Hourly Average Temperature (°C)			Comments
	FR_FR3	FR_SCOUTDS	FS_EFF-SC	
	E320693	E320695	E323231	
12-11-22 6:00	-0.03	0.20	4.90	
12-11-22 7:00	0.01	0.23	5.07	
12-11-22 8:00	0.10	0.29	5.00	
12-11-22 9:00	0.07	0.30	5.03	
12-11-22 10:00	0.13	0.35	4.97	
12-11-22 11:00	0.18	0.42	4.90	
12-11-22 12:00	0.28	0.48	4.97	
12-11-22 13:00	0.30	0.53	5.20	
12-11-22 14:00	0.39	0.62	5.32	
12-11-22 15:00	0.48	0.75	5.34	
12-11-22 16:00	0.55	0.92	5.45	
12-11-22 17:00	0.53	0.83	5.39	
12-11-22 18:00	0.47	0.74	5.27	
12-11-22 19:00	0.35	0.65	5.22	
12-11-22 20:00	0.33	0.63	5.24	
12-11-22 21:00	0.37	0.65	5.19	
12-11-22 22:00	0.41	0.74	5.34	
12-11-22 23:00	0.47	0.72	5.33	
12-12-22 0:00	0.43	0.70	5.34	
12-12-22 1:00	0.40	0.68	5.30	
12-12-22 2:00	0.32	0.63	5.35	
12-12-22 3:00	0.34	0.62	5.31	
12-12-22 4:00	0.27	0.56	5.36	
12-12-22 5:00	0.21	0.52	5.30	
12-12-22 6:00	0.21	0.50	5.32	
12-12-22 7:00	0.23	0.47	5.33	
12-12-22 8:00	0.23	0.54	5.41	
12-12-22 9:00	0.32	0.60	5.37	
12-12-22 10:00	0.39	0.68	5.22	
12-12-22 11:00	0.54	0.75	3.69	
12-12-22 12:00	0.73	0.81	1.83	
12-12-22 13:00	0.98	1.06	1.83	
12-12-22 14:00	1.18	1.30	3.37	
12-12-22 15:00	1.15	1.28	4.09	
12-12-22 16:00	0.98	1.24	5.65	
12-12-22 17:00	0.69	0.95	5.66	
12-12-22 18:00	0.39	0.67	5.61	
12-12-22 19:00	0.14	0.41	5.43	
12-12-22 20:00	-0.10	0.18	5.33	
12-12-22 21:00	-0.16	0.10	5.37	
12-12-22 22:00	-0.16	0.12	5.34	
12-12-22 23:00	-0.16	0.14	5.35	
12-13-22 0:00	-0.17	0.30	5.18	
12-13-22 1:00	-0.16	0.34	5.22	
12-13-22 2:00	-0.18	0.24	5.16	
12-13-22 3:00	-0.15	0.22	5.11	
12-13-22 4:00	-0.18	0.26	5.08	
12-13-22 5:00	-0.15	0.32	5.14	
12-13-22 6:00	-0.16	0.47	5.03	
12-13-22 7:00	-0.19	0.58	5.03	
12-13-22 8:00	-0.15	0.50	4.93	
12-13-22 9:00	-0.18	0.44	4.89	
12-13-22 10:00	-0.17	0.45	5.03	
12-13-22 11:00	-0.18	0.32	5.10	
12-13-22 12:00	-0.17	0.19	5.16	
12-13-22 13:00	-0.16	0.20	5.27	
12-13-22 14:00	-0.15	0.17	4.48	
12-13-22 15:00	-0.15	0.22	5.18	
12-13-22 16:00	-0.15	0.29	5.35	
12-13-22 17:00	-0.14	0.44	5.32	
12-13-22 18:00	-0.14	0.25	5.35	
12-13-22 19:00	-0.15	0.25	5.31	
12-13-22 20:00	-0.18	0.26	5.34	
12-13-22 21:00	-0.15	0.23	5.38	
12-13-22 22:00	-0.16	0.23	5.43	
12-13-22 23:00	-0.16	0.24	5.45	
12-14-22 0:00	-0.17	0.32	5.44	
12-14-22 1:00	-0.16	0.27	5.51	
12-14-22 2:00	-0.15	0.24	5.62	
12-14-22 3:00	-0.16	0.26	5.52	
12-14-22 4:00	-0.17	0.28	5.52	
12-14-22 5:00	-0.18	0.25	5.52	
12-14-22 6:00	-0.16	0.20	5.56	
12-14-22 7:00	-0.16	0.23	5.59	
12-14-22 8:00	-0.16	0.21	5.52	
12-14-22 9:00	-0.16	0.22	5.64	
12-14-22 10:00	-0.16	0.22	5.62	
12-14-22 11:00	-0.13	0.23	5.67	

Date and Time	Hourly Average Temperature (°C)			Comments
	FR_FR3	FR_SCOUTDS	FS_EFF-SC	
	E320693	E320695	E323231	
12-14-22 12:00	-0.17	0.24	5.72	
12-14-22 13:00	-0.16	0.22	5.75	
12-14-22 14:00	-0.14	0.19	5.32	
12-14-22 15:00	-0.15	0.17	5.36	
12-14-22 16:00	-0.15	0.16	5.96	
12-14-22 17:00	-0.16	0.14	5.89	
12-14-22 18:00	-0.18	0.14	5.81	
12-14-22 19:00	-0.15	0.14	5.80	
12-14-22 20:00	-0.16	0.16	5.94	
12-14-22 21:00	-0.18	0.17	5.91	
12-14-22 22:00	-0.15	0.18	5.97	
12-14-22 23:00	-0.15	0.20	5.93	
12-15-22 0:00	-0.19	0.15	5.93	
12-15-22 1:00	-0.14	0.17	5.94	
12-15-22 2:00	-0.17	0.21	5.92	
12-15-22 3:00	-0.16	0.18	5.98	
12-15-22 4:00	-0.17	0.17	5.78	
12-15-22 5:00	-0.15	0.17	5.74	
12-15-22 6:00	-0.16	0.16	5.64	
12-15-22 7:00	-0.15	0.15	5.70	
12-15-22 8:00	-0.15	0.17	5.61	
12-15-22 9:00	-0.15	0.17	5.57	
12-15-22 10:00	-0.16	0.17	5.59	
12-15-22 11:00	-0.17	0.22	5.63	
12-15-22 12:00	-0.16	0.22	5.72	
12-15-22 13:00	-0.15	0.19	5.65	
12-15-22 14:00	-0.15	0.16	5.71	
12-15-22 15:00	-0.16	0.14	5.79	
12-15-22 16:00	-0.15	0.16	5.75	
12-15-22 17:00	-0.15	0.13	5.65	
12-15-22 18:00	-0.15	0.12	5.53	
12-15-22 19:00	-0.18	0.14	5.50	
12-15-22 20:00	-0.15	0.15	5.54	
12-15-22 21:00	-0.17	0.13	5.10	
12-15-22 22:00	-0.15	0.12	5.60	
12-15-22 23:00	-0.18	0.14	5.57	
12-16-22 0:00	-0.17	0.15	5.54	
12-16-22 1:00	-0.17	0.17	5.43	
12-16-22 2:00	-0.17	0.13	5.39	
12-16-22 3:00	-0.17	0.15	5.41	
12-16-22 4:00	-0.17	0.18	5.36	
12-16-22 5:00	-0.16	0.15	5.28	
12-16-22 6:00	-0.17	0.17	5.29	
12-16-22 7:00	-0.17	0.15	5.16	
12-16-22 8:00	-0.15	0.16	5.18	
12-16-22 9:00	-0.17	0.14	4.91	
12-16-22 10:00	-0.15	0.15	5.03	
12-16-22 11:00	-0.17	0.16	5.09	
12-16-22 12:00	-0.17	0.18	5.16	
12-16-22 13:00	-0.17	0.16	5.22	
12-16-22 14:00	-0.17	0.17	5.21	
12-16-22 15:00	-0.17	0.16	5.30	
12-16-22 16:00	-0.16	0.17	5.32	
12-16-22 17:00	-0.17	0.19	5.27	
12-16-22 18:00	-0.16	0.21	5.34	
12-16-22 19:00	-0.17	0.16	5.41	
12-16-22 20:00	-0.17	0.16	5.34	
12-16-22 21:00	-0.16	0.17	5.41	
12-16-22 22:00	-0.18	0.16	5.34	
12-16-22 23:00	-0.18	0.17	5.42	
12-17-22 0:00	-0.15	0.18	5.40	
12-17-22 1:00	-0.17	0.19	5.35	
12-17-22 2:00	-0.16	0.17	5.44	
12-17-22 3:00	-0.16	0.19	5.30	
12-17-22 4:00	-0.16	0.19	5.35	
12-17-22 5:00	-0.14	0.20	5.34	
12-17-22 6:00	-0.15	0.22	5.26	
12-17-22 7:00	-0.15	0.19	5.33	
12-17-22 8:00	-0.16	0.21	5.35	
12-17-22 9:00	-0.16	0.23	5.28	
12-17-22 10:00	-0.17	0.19	5.35	
12-17-22 11:00	-0.16	0.24	5.45	
12-17-22 12:00	-0.15	0.23	5.50	
12-17-22 13:00	-0.15	0.20	5.45	
12-17-22 14:00	-0.17	0.20	5.40	
12-17-22 15:00	-0.15	0.19	5.27	
12-17-22 16:00	-0.16	0.18	5.44	
12-17-22 17:00	-0.18	0.16	5.35	

Date and Time	Hourly Average Temperature (°C)			Comments
	FR_FR3	FR_SCOUTDS	FS_EFF-SC	
	E320693	E320695	E323231	
12-17-22 18:00	-0.19	0.18	5.26	
12-17-22 19:00	-0.18	0.16	5.18	
12-17-22 20:00	-0.17	0.17	5.06	
12-17-22 21:00	-0.15	0.15	4.97	
12-17-22 22:00	-0.17	0.17	4.80	
12-17-22 23:00	-0.17	0.13	4.72	
12-18-22 0:00	-0.17	0.14	4.61	
12-18-22 1:00	-0.20	0.18	4.54	
12-18-22 2:00	-0.16	0.29	4.47	
12-18-22 3:00	-0.17	0.39	4.41	
12-18-22 4:00	-0.15	0.31	4.34	
12-18-22 5:00	-0.18	0.22	4.28	
12-18-22 6:00	-0.18	0.27	4.20	
12-18-22 7:00	-0.17	0.23	4.15	
12-18-22 8:00	-0.16	0.26	4.11	
12-18-22 9:00	-0.17	0.24	4.10	
12-18-22 10:00	-0.15	0.27	4.07	
12-18-22 11:00	-0.17	0.24	4.03	
12-18-22 12:00	-0.17	0.24	4.00	
12-18-22 13:00	-0.18	0.27	3.97	
12-18-22 14:00	-0.18	0.24	4.05	
12-18-22 15:00	-0.13	0.20	3.98	
12-18-22 16:00	-0.18	0.22	4.00	
12-18-22 17:00	-0.16	0.23	3.96	
12-18-22 18:00	-0.15	0.21	3.95	
12-18-22 19:00	-0.16	0.19	3.96	
12-18-22 20:00	-0.17	0.23	3.88	
12-18-22 21:00	-0.18	0.25	3.90	
12-18-22 22:00	-0.18	0.19	3.79	
12-18-22 23:00	-0.18	0.13	3.80	
12-19-22 0:00	-0.18	0.20	3.99	
12-19-22 1:00	-0.17	0.28	3.96	
12-19-22 2:00	-0.19	0.31	3.92	
12-19-22 3:00	-0.19	0.23	3.86	
12-19-22 4:00	-0.15	0.23	3.84	
12-19-22 5:00	-0.19	0.24	3.69	
12-19-22 6:00	-0.17	0.23	3.68	
12-19-22 7:00	-0.20	0.19	3.62	
12-19-22 8:00	-0.19	0.24	3.60	
12-19-22 9:00	-0.20	0.29	3.69	
12-19-22 10:00	-0.18	0.37	3.69	
12-19-22 11:00	-0.16	0.36	3.75	
12-19-22 12:00	-0.16	0.34	3.79	
12-19-22 13:00	-0.16	0.32	3.98	
12-19-22 14:00	-0.19	0.30	4.04	
12-19-22 15:00	-0.19	0.28	3.92	
12-19-22 16:00	-0.16	0.21	3.58	
12-19-22 17:00	-0.18	0.14	3.11	
12-19-22 18:00	-0.17	0.13	3.74	
12-19-22 19:00	-0.18	0.15	3.75	
12-19-22 20:00	-0.17	0.18	3.74	
12-19-22 21:00	-0.18	0.23	3.82	
12-19-22 22:00	-0.17	0.22	3.90	
12-19-22 23:00	-0.17	0.21	3.79	
12-20-22 0:00	-0.18	0.22	3.77	
12-20-22 1:00	-0.18	0.24	3.75	
12-20-22 2:00	-0.16	0.23	3.76	
12-20-22 3:00	-0.16	0.22	3.70	
12-20-22 4:00	-0.21	0.26	3.80	
12-20-22 5:00	-0.23	0.19	3.76	
12-20-22 6:00	-0.16	0.33	3.94	
12-20-22 7:00	-0.19	0.25	3.86	
12-20-22 8:00	-0.18	0.33	3.89	
12-20-22 9:00	-0.17	0.26	3.95	
12-20-22 10:00	-0.17	0.31	3.91	
12-20-22 11:00	-0.16	0.33	3.94	
12-20-22 12:00	-0.17	0.32	3.91	
12-20-22 13:00	-0.15	0.31	3.97	
12-20-22 14:00	-0.16	0.24	3.95	
12-20-22 15:00	-0.17	0.24	3.84	
12-20-22 16:00	-0.16	0.29	4.01	
12-20-22 17:00	-0.18	0.29	4.07	
12-20-22 18:00	-0.17	0.25	4.00	
12-20-22 19:00	-0.18	0.23	3.98	
12-20-22 20:00	-0.17	0.20	4.02	
12-20-22 21:00	-0.16	0.20	3.98	
12-20-22 22:00	-0.15	0.20	3.99	
12-20-22 23:00	-0.16	0.18	3.91	

Date and Time	Hourly Average Temperature (°C)			Comments
	FR_FR3	FR_SCOUTDS	FS_EFF-SC	
	E320693	E320695	E323231	
12-21-22 0:00	-0.16	0.21	3.91	
12-21-22 1:00	-0.16	0.25	3.81	
12-21-22 2:00	-0.17	0.21	3.80	
12-21-22 3:00	-0.15	0.22	3.79	
12-21-22 4:00	-0.13	0.20	3.76	
12-21-22 5:00	-0.20	0.19	3.71	
12-21-22 6:00	-0.19	0.20	3.68	
12-21-22 7:00	-0.19	0.15	3.47	
12-21-22 8:00	-0.20	0.09	3.38	
12-21-22 9:00	-0.18	0.16	3.50	
12-21-22 10:00	-0.19	0.17	3.38	
12-21-22 11:00	-0.19	0.25	3.49	
12-21-22 12:00	-0.16	0.24	3.48	
12-21-22 13:00	-0.18	0.22	3.46	
12-21-22 14:00	-0.16	0.19	3.45	
12-21-22 15:00	-0.17	0.16	3.45	
12-21-22 16:00	-0.17	0.15	3.41	
12-21-22 17:00	-0.17	0.15	3.51	
12-21-22 18:00	-0.16	0.14	3.57	
12-21-22 19:00	-0.19	0.13	3.68	
12-21-22 20:00	-0.18	0.14	3.63	
12-21-22 21:00	-0.19	0.15	3.46	
12-21-22 22:00	-0.19	0.07	2.96	
12-21-22 23:00	-0.19	0.08	2.96	
12-22-22 0:00	-0.20	0.09	3.22	
12-22-22 1:00	-0.20	0.14	3.41	
12-22-22 2:00	-0.17	0.13	3.43	
12-22-22 3:00	-0.19	0.13	3.42	
12-22-22 4:00	-0.18	0.12	3.41	
12-22-22 5:00	-0.20	0.16	3.39	
12-22-22 6:00	-0.17	0.10	3.25	
12-22-22 7:00	-0.17	0.13	3.27	
12-22-22 8:00	-0.17	0.06	2.81	
12-22-22 9:00	-0.19	-0.18	1.00	
12-22-22 10:00	-0.18	-0.14	1.04	
12-22-22 11:00	-0.18	-0.09	1.08	
12-22-22 12:00	-0.18	-0.04	1.09	
12-22-22 13:00	-0.17	-0.03	1.16	
12-22-22 14:00	-0.15	-0.08	1.15	
12-22-22 15:00	-0.17	-0.08	1.14	
12-22-22 16:00	-0.17	-0.12	1.14	
12-22-22 17:00	-0.18	-0.14	1.14	
12-22-22 18:00	-0.18	-0.14	1.14	
12-22-22 19:00	-0.19	-0.12	1.12	
12-22-22 20:00	-0.18	-0.12	1.13	
12-22-22 21:00	-0.18	-0.13	1.14	
12-22-22 22:00	-0.20	-0.13	1.13	
12-22-22 23:00	-0.19	-0.16	1.12	
12-23-22 0:00	-0.21	-0.12	1.12	
12-23-22 1:00	-0.21	-0.13	1.28	
12-23-22 2:00	-0.19	-0.11	1.24	
12-23-22 3:00	-0.18	-0.10	1.16	
12-23-22 4:00	-0.14	-0.14	1.17	
12-23-22 5:00	-0.17	-0.15	1.16	
12-23-22 6:00	-0.17	-0.17	1.16	
12-23-22 7:00	-0.17	-0.19	1.16	
12-23-22 8:00	-0.16	-0.18	1.18	
12-23-22 9:00	-0.17	-0.15	1.15	
12-23-22 10:00	-0.19	-0.09	1.23	
12-23-22 11:00	-0.18	0.05	3.58	
12-23-22 12:00	-0.17	0.11	2.78	
12-23-22 13:00	-0.17	0.07	2.76	
12-23-22 14:00	-0.17	0.08	2.76	
12-23-22 15:00	-0.14	0.10	2.71	
12-23-22 16:00	-0.17	0.05	2.71	
12-23-22 17:00	-0.15	0.07	2.74	
12-23-22 18:00	-0.17	0.08	2.76	
12-23-22 19:00	-0.17	0.09	2.72	
12-23-22 20:00	-0.16	0.11	3.01	
12-23-22 21:00	-0.18	0.11	2.98	
12-23-22 22:00	-0.18	0.11	2.98	
12-23-22 23:00	-0.15	0.10	3.01	
12-24-22 0:00	-0.21	0.11	3.06	
12-24-22 1:00	-0.17	0.10	3.07	
12-24-22 2:00	-0.15	0.11	3.13	
12-24-22 3:00	-0.15	0.12	3.10	
12-24-22 4:00	-0.16	0.13	3.09	
12-24-22 5:00	-0.15	0.10	3.10	

Date and Time	Hourly Average Temperature (°C)			Comments
	FR_FR3	FR_SCOUTDS	FS_EFF-SC	
	E320693	E320695	E323231	
12-24-22 6:00	-0.16	0.07	3.07	
12-24-22 7:00	-0.19	0.10	3.49	
12-24-22 8:00	-0.16	0.17	3.48	
12-24-22 9:00	-0.18	0.18	2.93	
12-24-22 10:00	-0.15	0.12	2.41	
12-24-22 11:00	-0.16	0.04	1.84	
12-24-22 12:00	-0.16	0.25	3.80	
12-24-22 13:00	-0.16	0.22	3.75	
12-24-22 14:00	-0.15	0.24	3.82	
12-24-22 15:00	-0.17	0.25	4.04	
12-24-22 16:00	-0.16	0.28	4.44	
12-24-22 17:00	-0.16	-0.01	1.54	
12-24-22 18:00	-0.13	0.06	2.02	
12-24-22 19:00	-0.11	0.11	2.64	
12-24-22 20:00	-0.14	0.09	1.69	
12-24-22 21:00	-0.13	-0.05	1.35	
12-24-22 22:00	-0.16	0.01	2.70	
12-24-22 23:00	-0.17	0.27	3.98	
12-25-22 0:00	-0.14	0.26	3.92	
12-25-22 1:00	-0.14	0.18	3.06	
12-25-22 2:00	-0.14	0.14	2.80	
12-25-22 3:00	-0.08	0.12	2.59	
12-25-22 4:00	-0.14	0.13	3.00	
12-25-22 5:00	-0.16	0.18	3.75	
12-25-22 6:00	-0.18	0.14	3.80	
12-25-22 7:00	-0.15	0.16	3.96	
12-25-22 8:00	-0.17	0.17	4.06	
12-25-22 9:00	-0.17	0.24	4.16	
12-25-22 10:00	-0.16	0.25	4.25	
12-25-22 11:00	-0.16	0.30	4.48	
12-25-22 12:00	-0.15	0.30	4.52	
12-25-22 13:00	-0.16	0.29	4.69	
12-25-22 14:00	-0.15	0.25	4.78	
12-25-22 15:00	-0.14	0.25	4.81	
12-25-22 16:00	-0.16	0.23	4.82	
12-25-22 17:00	-0.17	0.22	4.88	
12-25-22 18:00	-0.17	0.26	5.02	
12-25-22 19:00	-0.19	0.24	4.95	
12-25-22 20:00	-0.16	0.25	5.14	
12-25-22 21:00	-0.15	0.23	5.03	
12-25-22 22:00	-0.16	0.25	5.12	
12-25-22 23:00	-0.13	0.23	5.05	
12-26-22 0:00	-0.08	0.25	5.12	
12-26-22 1:00	-0.04	0.36	5.14	
12-26-22 2:00	0.04	0.55	5.17	
12-26-22 3:00	-0.14	0.34	5.18	
12-26-22 4:00	-0.21	0.24	5.19	
12-26-22 5:00	-0.15	0.22	5.10	
12-26-22 6:00	-0.17	0.17	4.32	
12-26-22 7:00	-0.16	0.17	4.28	
12-26-22 8:00	-0.15	0.19	4.36	
12-26-22 9:00	-0.17	0.27	4.54	
12-26-22 10:00	-0.14	0.24	4.62	
12-26-22 11:00	-0.14	0.23	4.48	
12-26-22 12:00	-0.13	0.20	4.23	
12-26-22 13:00	-0.16	0.20	4.31	
12-26-22 14:00	-0.13	0.21	4.64	
12-26-22 15:00	-0.14	0.20	4.56	
12-26-22 16:00	-0.16	0.14	3.21	
12-26-22 17:00	-0.14	0.23	5.11	
12-26-22 18:00	-0.14	0.26	5.03	
12-26-22 19:00	-0.15	0.25	5.04	
12-26-22 20:00	-0.14	0.28	5.29	
12-26-22 21:00	-0.12	0.27	5.43	
12-26-22 22:00	-0.13	0.25	5.41	
12-26-22 23:00	-0.17	0.27	5.38	
12-27-22 0:00	-0.15	0.25	5.48	
12-27-22 1:00	-0.16	0.24	5.58	
12-27-22 2:00	-0.15	0.26	5.68	
12-27-22 3:00	-0.16	0.25	5.77	
12-27-22 4:00	-0.11	0.24	5.80	
12-27-22 5:00	-0.14	0.26	5.82	
12-27-22 6:00	-0.13	0.27	5.83	
12-27-22 7:00	-0.13	0.31	5.81	
12-27-22 8:00	-0.15	0.34	6.02	
12-27-22 9:00	-0.13	0.35	6.10	
12-27-22 10:00	-0.16	0.33	6.04	
12-27-22 11:00	-0.14	0.37	6.11	

Date and Time	Hourly Average Temperature (°C)			Comments
	FR_FR3	FR_SCOUTDS	FS_EFF-SC	
	E320693	E320695	E323231	
12-27-22 12:00	-0.16	0.35	6.08	
12-27-22 13:00	-0.12	0.35	6.20	
12-27-22 14:00	-0.13	0.35	6.24	
12-27-22 15:00	-0.12	0.34	6.30	
12-27-22 16:00	-0.13	0.30	6.32	
12-27-22 17:00	-0.15	0.31	6.40	
12-27-22 18:00	-0.14	0.29	6.54	
12-27-22 19:00	-0.15	0.30	6.54	
12-27-22 20:00	-0.15	0.33	6.59	
12-27-22 21:00	-0.15	0.31	6.62	
12-27-22 22:00	-0.14	0.31	6.69	
12-27-22 23:00	-0.13	0.29	6.43	
12-28-22 0:00	-0.17	0.30	6.59	
12-28-22 1:00	-0.13	0.30	6.68	
12-28-22 2:00	-0.13	0.29	6.67	
12-28-22 3:00	-0.14	0.32	6.74	
12-28-22 4:00	-0.13	0.29	6.72	
12-28-22 5:00	-0.16	0.30	6.78	
12-28-22 6:00	-0.14	0.30	6.68	
12-28-22 7:00	-0.15	0.33	6.64	
12-28-22 8:00	-0.15	0.29	6.75	
12-28-22 9:00	-0.15	0.35	6.80	
12-28-22 10:00	-0.14	0.25	5.18	
12-28-22 11:00	-0.14	0.33	6.52	
12-28-22 12:00	-0.14	0.35	6.91	
12-28-22 13:00	-0.12	0.33	6.91	
12-28-22 14:00	-0.14	0.33	6.95	
12-28-22 15:00	-0.16	0.34	7.02	
12-28-22 16:00	-0.15	0.33	7.08	
12-28-22 17:00	-0.14	0.32	7.08	
12-28-22 18:00	-0.13	0.36	7.09	
12-28-22 19:00	-0.14	0.33	7.02	
12-28-22 20:00	-0.13	0.33	6.97	
12-28-22 21:00	-0.17	0.33	6.89	
12-28-22 22:00	-0.14	0.31	6.90	
12-28-22 23:00	-0.12	0.29	6.81	
12-29-22 0:00	-0.13	0.32	6.84	
12-29-22 1:00	-0.15	0.32	6.80	
12-29-22 2:00	-0.15	0.33	6.94	
12-29-22 3:00	-0.16	0.35	6.92	
12-29-22 4:00	-0.15	0.33	6.93	
12-29-22 5:00	-0.15	0.32	6.88	
12-29-22 6:00	-0.15	0.32	6.81	
12-29-22 7:00	-0.15	0.34	6.82	
12-29-22 8:00	-0.13	0.32	6.69	
12-29-22 9:00	-0.11	0.29	6.75	
12-29-22 10:00	-0.14	0.35	6.71	
12-29-22 11:00	-0.11	0.36	6.75	
12-29-22 12:00	-0.09	0.38	6.72	
12-29-22 13:00	-0.10	0.40	6.75	
12-29-22 14:00	-0.06	0.42	6.83	
12-29-22 15:00	-0.01	0.43	6.88	
12-29-22 16:00	-0.01	0.44	6.80	
12-29-22 17:00	0.05	0.39	6.84	
12-29-22 18:00	-0.01	0.41	6.86	
12-29-22 19:00	-0.03	0.36	6.83	
12-29-22 20:00	-0.04	0.34	6.88	
12-29-22 21:00	-0.05	0.35	6.83	
12-29-22 22:00	-0.07	0.34	6.84	
12-29-22 23:00	-0.11	0.33	6.75	
12-30-22 0:00	-0.11	0.32	6.75	
12-30-22 1:00	-0.11	0.35	6.73	
12-30-22 2:00	-0.08	0.35	6.84	
12-30-22 3:00	-0.09	0.35	6.81	
12-30-22 4:00	-0.09	0.36	6.77	
12-30-22 5:00	-0.08	0.35	6.70	
12-30-22 6:00	-0.07	0.34	6.65	
12-30-22 7:00	-0.06	0.35	6.62	
12-30-22 8:00	-0.02	0.39	6.56	
12-30-22 9:00	-0.03	0.39	6.59	
12-30-22 10:00	0.00	0.42	6.62	
12-30-22 11:00	0.05	0.46	6.64	
12-30-22 12:00	0.11	0.56	6.63	
12-30-22 13:00	0.21	0.61	6.72	
12-30-22 14:00	0.20	0.62	6.77	
12-30-22 15:00	0.15	0.59	6.77	
12-30-22 16:00	0.20	0.65	6.78	
12-30-22 17:00	0.18	0.59	6.82	

Date and Time	Hourly Average Temperature (°C)			Comments
	FR_FR3	FR_SCOUTDS	FS_EFF-SC	
	E320693	E320695	E323231	
12-30-22 18:00	0.18	0.56	6.75	
12-30-22 19:00	0.14	0.55	6.72	
12-30-22 20:00	0.11	0.51	6.71	
12-30-22 21:00	0.12	0.51	6.77	
12-30-22 22:00	0.09	0.50	6.76	
12-30-22 23:00	0.11	0.52	6.76	
12-31-22 0:00	0.16	0.53	6.74	
12-31-22 1:00	0.16	0.53	6.70	
12-31-22 2:00	0.11	0.48	6.64	
12-31-22 3:00	0.06	0.44	6.58	
12-31-22 4:00	0.00	0.39	6.55	
12-31-22 5:00	-0.08	0.35	6.53	
12-31-22 6:00	-0.11	0.33	6.50	
12-31-22 7:00	-0.12	0.31	6.46	
12-31-22 8:00	-0.10	0.35	6.45	
12-31-22 9:00	-0.09	0.35	6.44	
12-31-22 10:00	-0.04	0.40	6.51	
12-31-22 11:00	0.04	0.49	6.63	
12-31-22 12:00	0.18	0.66	6.69	
12-31-22 13:00	0.28	0.70	6.75	
12-31-22 14:00	0.42	0.82	6.76	
12-31-22 15:00	0.48	0.90	6.72	
12-31-22 16:00	0.48	0.89	6.81	
12-31-22 17:00	0.50	0.88	6.80	
12-31-22 18:00	0.58	0.97	6.86	
12-31-22 19:00	0.54	0.93	6.81	
12-31-22 20:00	0.56	0.97	6.83	
12-31-22 21:00	0.54	0.94	6.75	
12-31-22 22:00	0.51	0.92	6.69	
12-31-22 23:00	0.47	0.88	6.71	

Appendix D – Acute Toxicity Test Results

This appendix contains the 2022 acute toxicity test results conducted on Rainbow Trout (*Oncorhynchus mykiss*) and water flea (*Daphnia magna*) for:

- WLC AWTF, as required by Table 4B3 of Permit 107517
- EVO SRF P2, as required by Table 4C4 of Permit 107517
- FROS AWTF, as required by Table 4D3 of Permit 107517

Table D-1. Acute toxicity test results from WLC AWTF Effluent – 2022

EMS ID	Location Code	Date	48-Hour *Daphnia magna*	96-Hour Rainbow Trout
			% Mortality	% Mortality
E291569	WL_BFWB_OUT_SP21	10-Jan-2022	0	0
E291569	WL_BFWB_OUT_SP21	24-Jan-2022	0	0
E291569	WL_BFWB_OUT_SP21	7-Feb-2022	0	0
E291569	WL_BFWB_OUT_SP21	21-Feb-2022	3	0
E291569	WL_BFWB_OUT_SP21	7-Mar-2022	3	0
E291569	WL_BFWB_OUT_SP21	21-Mar-2022	0	0
E291569	WL_BFWB_OUT_SP21	4-Apr-2022	0	0
E291569	WL_BFWB_OUT_SP21	18-Apr-2022	0	0
E291569	WL_BFWB_OUT_SP21	2-May-2022	3	0
E291569	WL_BFWB_OUT_SP21	16-May-2022	0	0
E291569	WL_BFWB_OUT_SP21	30-May-2022	0	0
E291569	WL_BFWB_OUT_SP21	13-Jun-2022	0	0
E291569	WL_BFWB_OUT_SP21	27-Jun-2022	0	10
E291569	WL_BFWB_OUT_SP21	11-Jul-2022	0	0
E291569	WL_BFWB_OUT_SP21	25-Jul-2022	0	0
E291569	WL_BFWB_OUT_SP21	8-Aug-2022	0	0
E291569	WL_BFWB_OUT_SP21	22-Aug-2022	0	0
E291569	WL_BFWB_OUT_SP21	5-Sept-2022	0	10
E291569	WL_BFWB_OUT_SP21	19-Sept-2022	0	0
E291569	WL_BFWB_OUT_SP21	3-Oct-2022	0	0
E291569	WL_BFWB_OUT_SP21	17-Oct-2022	0	0
E291569	WL_BFWB_OUT_SP21	31-Oct-2022	0	0
E291569	WL_BFWB_OUT_SP21	14-Nov-2022	0	0
E291569	WL_BFWB_OUT_SP21	28-Nov-2022	0	0
E291569	WL_BFWB_OUT_SP21	12-Dec-2022	0	0
E291569	WL_BFWB_OUT_SP21	27-Dec-2022	0	0

Table D-2. Acute toxicity test results for EVO SRF receiving environment – 2022

EMS ID	Location Code	Date	48-Hour Daphnia magna	96-Hour Rainbow Trout
			% Mortality	% Mortality
E102685	EV_BC1	1/3/2022	0	0
E102685	EV_BC1	1/18/2022	0	
E102685	EV_BC1	2/1/2022	0	0
E102685	EV_BC1	2/15/2022	0	0
E102685	EV_BC1	3/1/2022	0	0
E102685	EV_BC1	3/15/2022	0	0
E102685	EV_BC1	3/29/2022	0	0

EMS ID	Location Code	Date	48-Hour Daphnia magna	96-Hour Rainbow Trout
			% Mortality	% Mortality
E102685	EV_BC1	4/12/2022	0	0
E102685	EV_BC1	4/26/2022	0	0
E102685	EV_BC1	5/10/2022	0	0
E102685	EV_BC1	5/24/2022	0	0
E102685	EV_BC1	6/7/2022	0	0
E102685	EV_BC1	6/21/2022	0	0
E102685	EV_BC1	7/5/2022	0	0
E102685	EV_BC1	7/19/2022	0	0
E102685	EV_BC1	8/2/2022	0	0
E102685	EV_BC1	8/16/2022	0	0
E102685	EV_BC1	8/30/2022	0	0
E102685	EV_BC1	9/13/2022	0	0
E102685	EV_BC1	9/27/2022	0	0
E102685	EV_BC1	10/4/2022	0	0
E102685	EV_BC1	10/18/2022	0	0
E102685	EV_BC1	11/1/2022	0	0
E102685	EV_BC1	11/15/2022	0	0
E102685	EV_BC1	11/29/2022	0	0
E102685	EV_BC1	12/13/2022	0	0
E102685	EV_BC1	12/28/2022	0	0
200097	EV_EC1	1/17/2022	0	0
200097	EV_EC1	1/31/2022	0	0
200097	EV_EC1	2/14/2022	0	0
200097	EV_EC1	2/28/2022	0	0
200097	EV_EC1	3/14/2022	0	0
200097	EV_EC1	3/28/2022	0	0
200097	EV_EC1	3/28/2022	0	0
200097	EV_EC1	4/11/2022	0	0
200097	EV_EC1	4/25/2022	0	0
200097	EV_EC1	5/9/2022	0	0
200097	EV_EC1	5/23/2022	3	0
200097	EV_EC1	6/2/2022	0	10
200097	EV_EC1	6/6/2022	53	0
200097	EV_EC1	6/16/2022	0	0
200097	EV_EC1	6/20/2022	0	0
200097	EV_EC1	7/4/2022	3	0
200097	EV_EC1	7/18/2022	3	0
200097	EV_EC1	8/1/2022	13	0

EMS ID	Location Code	Date	48-Hour Daphnia magna	96-Hour Rainbow Trout
			% Mortality	% Mortality
200097	EV_EC1	8/15/2022	0	0
200097	EV_EC1	8/29/2022	0	0
200097	EV_EC1	9/12/2022	0	0
200097	EV_EC1	9/26/2022	0	0
200097	EV_EC1	10/3/2022	0	0
200097	EV_EC1	10/17/2022	0	0
200097	EV_EC1	10/31/2022	0	0
200097	EV_EC1	11/14/2022	0	0
200097	EV_EC1	11/28/2022	0	0
200097	EV_EC1	12/12/2022	0	0
200097	EV_EC1	12/27/2022	0	0
E321814	EV_ECOUT	1/17/2022	0	0
E321814	EV_ECOUT	1/31/2022	0	0
E321814	EV_ECOUT	2/14/2022	0	0
E321814	EV_ECOUT	2/28/2022	0	0
E321814	EV_ECOUT	3/14/2022	0	0
E321814	EV_ECOUT	4/11/2022	7	0
E321814	EV_ECOUT	4/25/2022	0	0
E321814	EV_ECOUT	5/9/2022	3	0
E321814	EV_ECOUT	5/23/2022	7	0
E321814	EV_ECOUT	6/2/2022	0	0
E321814	EV_ECOUT	6/6/2022	0	0
E321814	EV_ECOUT	6/16/2022	0	0
E321814	EV_ECOUT	6/20/2022	0	0
E321814	EV_ECOUT	7/4/2022	0	0
E321814	EV_ECOUT	7/18/2022	7	0
E321814	EV_ECOUT	8/1/2022	3	0
E321814	EV_ECOUT	8/15/2022	0	0
E321814	EV_ECOUT	8/29/2022	0	0
E321814	EV_ECOUT	9/12/2022	0	10
E321814	EV_ECOUT	9/26/2022	0	10
E321814	EV_ECOUT	10/3/2022	0	20
E321814	EV_ECOUT	10/9/2022	0	0
E321814	EV_ECOUT	10/17/2022	0	0
E321814	EV_ECOUT	10/31/2022		10
E321814	EV_ECOUT	11/14/2022	0	0
E321814	EV_ECOUT	11/28/2022	0	0
E321814	EV_ECOUT	12/12/2022	0	0

EMS ID	Location Code	Date	48-Hour Daphnia magna	96-Hour Rainbow Trout
			% Mortality	% Mortality
E321814	EV_ECOUT	12/27/2022	0	0
E206231	EV_GT1	1/3/2022	0	0
E206231	EV_GT1	1/18/2022	0	0
E206231	EV_GT1	2/1/2022	0	0
E206231	EV_GT1	2/15/2022	0	0
E206231	EV_GT1	3/1/2022	0	0
E206231	EV_GT1	3/15/2022	0	0
E206231	EV_GT1	3/29/2022	0	0
E206231	EV_GT1	4/12/2022	0	0
E206231	EV_GT1	4/26/2022	0	0
E206231	EV_GT1	5/10/2022	0	0
E206231	EV_GT1	5/24/2022	0	0
E206231	EV_GT1	6/7/2022	0	0
E206231	EV_GT1	6/21/2022	0	0
E206231	EV_GT1	7/5/2022	0	0
E206231	EV_GT1	7/19/2022	0	0
E206231	EV_GT1	8/2/2022	0	0
E206231	EV_GT1	8/16/2022	0	0
E206231	EV_GT1	8/30/2022	0	0
E206231	EV_GT1	9/13/2022	0	0
E206231	EV_GT1	9/27/2022	0	0
E206231	EV_GT1	10/4/2022	0	0
E206231	EV_GT1	10/18/2022	0	0
E206231	EV_GT1	11/1/2022	0	0
E206231	EV_GT1	11/15/2022	0	0
E206231	EV_GT1	11/29/2022	0	0
E206231	EV_GT1	12/13/2022	0	0
E206231	EV_GT1	12/28/2022	0	0
E321812	F2_BPO	1/4/2022	0	0
E321812	F2_BPO	1/10/2022	0	0
E321812	F2_BPO	1/17/2022	3	0
E321812	F2_BPO	1/24/2022	0	0
E321812	F2_BPO	1/31/2022	0	0
E321812	F2_BPO	2/7/2022	0	0
E321812	F2_BPO	2/14/2022	3	0
E321812	F2_BPO	2/21/2022	0	0
E321812	F2_BPO	2/28/2022	0	0
E321812	F2_BPO	3/7/2022	0	0

EMS ID	Location Code	Date	48-Hour Daphnia magna	96-Hour Rainbow Trout
			% Mortality	% Mortality
E321812	F2_BPO	3/14/2022	0	0
E321812	F2_BPO	3/21/2022	0	0
E321812	F2_BPO	3/28/2022	0	0
E321812	F2_BPO	4/4/2022	0	0
E321812	F2_BPO	4/11/2022	0	0
E321812	F2_BPO	4/18/2022	0	0
E321812	F2_BPO	4/25/2022	0	0
E321812	F2_BPO	5/2/2022	0	0
E321812	F2_BPO	5/9/2022	0	0
E321812	F2_BPO	5/16/2022	13	0
E321812	F2_BPO	5/23/2022	0	0
E321812	F2_BPO	6/6/2022	0	0
E321812	F2_BPO	6/13/2022	0	0
E321812	F2_BPO	6/20/2022	0	0
E321812	F2_BPO	6/27/2022	0	0
E321812	F2_BPO	7/4/2022	0	0
E321812	F2_BPO	7/11/2022	0	0
E321812	F2_BPO	7/18/2022	0	0
E321812	F2_BPO	7/25/2022	0	0
E321812	F2_BPO	8/1/2022	13	0
E321812	F2_BPO	8/8/2022	0	0
E321812	F2_BPO	8/15/2022	0	0
E321812	F2_BPO	8/22/2022	0	20
E321812	F2_BPO	8/28/2022	0	0
E321812	F2_BPO	8/29/2022	0	0
E321812	F2_BPO	9/5/2022	0	0
E321812	F2_BPO	9/12/2022	0	0
E321812	F2_BPO	9/19/2022	0	0
E321812	F2_BPO	9/26/2022	0	10
E321812	F2_BPO	10/3/2022	0	0
E321812	F2_BPO	10/10/2022	0	0
E321812	F2_BPO	10/17/2022	0	0
E321812	F2_BPO	10/24/2022	0	0
E321812	F2_BPO	10/31/2022	0	10
E321812	F2_BPO	11/7/2022	0	0
E321812	F2_BPO	11/14/2022	0	0
E321812	F2_BPO	11/21/2022	0	0
E321812	F2_BPO	11/28/2022	0	0

EMS ID	Location Code	Date	48-Hour Daphnia magna	96-Hour Rainbow Trout
			% Mortality	% Mortality
E321812	F2_BPO	12/5/2022	0	0
E321812	F2_BPO	12/12/2022	0	0
E321812	F2_BPO	12/19/2022	0	0
E321812	F2_BPO	12/27/2022	0	0

Table D-3. Acute toxicity test results from FRO-S AWTF Effluent – 2022

EMS ID	Location Code	Date	48-Hour *Daphnia magna*	96-Hour Rainbow Trout
			% Mortality	% Mortality
E321351	FS_BPO	1/3/2022	0	0
E321351	FS_BPO	1/10/2022	0	0
E321351	FS_BPO	1/17/2022	0	0
E321351	FS_BPO	1/24/2022	0	0
E321351	FS_BPO	1/31/2022	0	0
E321351	FS_BPO	2/7/2022	0	0
E321351	FS_BPO	2/14/2022	0	0
E321351	FS_BPO	2/21/2022	0	0
E321351	FS_BPO	2/28/2022	0	0
E321351	FS_BPO	3/7/2022	0	0
E321351	FS_BPO	3/14/2022	0	0
E321351	FS_BPO	3/21/2022	0	0
E321351	FS_BPO	3/28/2022	0	0
E321351	FS_BPO	4/4/2022	0	0
E321351	FS_BPO	4/11/2022	0	0
E321351	FS_BPO	4/18/2022	0	0
E321351	FS_BPO	4/25/2022	0	0
E321351	FS_BPO	5/2/2022	0	0
E321351	FS_BPO	5/9/2022	0	0
E321351	FS_BPO	5/16/2022	0	0
E321351	FS_BPO	5/23/2022	0	0
E321351	FS_BPO	5/30/2022	0	0
E321351	FS_BPO	6/6/2022	0	0
E321351	FS_BPO	6/13/2022	0	0
E321351	FS_BPO	6/20/2022	0	0
E321351	FS_BPO	6/27/2022	0	0
E321351	FS_BPO	6/29/2022	0	0
E321351	FS_BPO	7/4/2022	0	0
E321351	FS_BPO	7/11/2022	0	0
E321351	FS_BPO	7/18/2022	0	0
E321351	FS_BPO	7/25/2022	0	0

EMS ID	Location Code	Date	48-Hour *Daphnia magna*	96-Hour Rainbow Trout
			% Mortality	% Mortality
E321351	FS_BPO	8/1/2022	0	0
E321351	FS_BPO	8/8/2022	0	0
E321351	FS_BPO	8/15/2022	0	0
E321351	FS_BPO	8/22/2022	0	0
E321351	FS_BPO	8/29/2022	0	0
E321351	FS_BPO	9/5/2022	0	0
E321351	FS_BPO	9/12/2022	0	0
E321351	FS_BPO	9/19/2022	0	0
E321351	FS_BPO	9/26/2022	0	0
E321351	FS_BPO	10/3/2022	0	0
E321351	FS_BPO	10/10/2022	0	0
E321351	FS_BPO	10/17/2022	0	0
E321351	FS_BPO	10/24/2022	0	10
E321351	FS_BPO	10/31/2022	0	0
E321351	FS_BPO	11/7/2022	0	0
E321351	FS_BPO	11/14/2022	0	0
E321351	FS_BPO	11/21/2022	0	0
E321351	FS_BPO	11/28/2022	3	0
E321351	FS_BPO	12/5/2022	0	0
E321351	FS_BPO	12/12/2022	0	0
E321351	FS_BPO	12/19/2022	0	0
E321351	FS_BPO	12/21/2022	0	0
E321351	FS_BPO	12/26/2022	0	0

Acute Toxicity Test Results

Sample collected January 10, 2022

Final Report

January 27, 2022

Submitted to: **Teck Coal Ltd.**
Sparwood, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates			
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 20˚C test initiation
WL_BFWB_OUT_SP21_2022-01-10_N_0900 / 2122-1071	10-Jan-22 at 0900h	11-Jan-22 at 0900h	11-Jan-22 at 1520h	12-Jan-22 at 1405h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
WL_BFWB_OUT_SP21_2022-01-10_N_0900	8.0°C	1003	233

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample	
	Rainbow trout	*Daphnia magna* 20˚C
WL_BFWB_OUT_SP21_2022-01-10_N_0900	100	100

Sample ID	Percent Immobility in 100 (% v/v)
	Daphnia magna 20˚C
WL_BFWB_OUT_SP21_2022-01-10_N_0900	0

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
WL_BFWB_OUT_SP21_2022-01-10_N_0900	Rainbow trout	None	None
	Daphnia magna	None	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	3.3 (2.8-3.9) g/L KCl[1]	6.3 (5.9-6.7) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.4 (2.6 -4.5) g/L KCl	6.4 (5.5-7.4) g/L NaCl
Reference toxicant CV	9.1%	5.1%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, December 30, 2021; [2] Test Date January 4, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation



Report By:
Mia Fearey, BSc
Biologist



Reviewed By:
Leila Oosterbroek, P Biol
Environmental Scientist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS ENVIRONMENTAL

Trout Bench Sheet

Method TRS Client TEC164 Reference 2122-1071 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022/01/11	1310 *	CC/EP/CH	1	DJ
1	2022/01/12	0930	MA/CH	-	DP
2	2022/01/13	1000	EP/CH	-	TP
3	2022/01/14	1010	DJ	-	TP
4	2022/01/15	0910	MA/CC	1	DJ

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 7.6
Initial EC (µS/cm): ~~355~~ 1563
Salinity (ppt): 3

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L (yes/no)

	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
Preaeration time					
DO(mg/L) of 100%	13.8	~~9.4~~	9.3	8.8	
Temp (°C) of 100%	15	at 10.3			

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

	Conc.	CTL	100						
pH (units) (range: **5.5-8.5**)									
	Day 0	7.8	7.6						
	Day 4	8.3	8.4						
EC (uS/cm)									
	Day 0	416	1430						
	Day 4	481	1729						
DO (mg/L) (**70-100% saturation at test temp.**)									
	Day 0	8.9	8.8						
	Day 4	8.8	8.6						
Temperature (°C) (range: **14-16°C**)									
	Day 0	14	15						
	Day 4	15	15						
Number Alive (In brackets number stressed)									
	Day 0	10	10						
	Day 1	10	10						
	Day 2	10	10						
	Day 3	10	10						
	Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.5	0.4
2	3.8	0.7
3	4.0	0.7
4	2.8	0.2
5	3.8	0.4
6	3.0	0.3
7	3.2	0.3
8	3.8	0.6
9	3.0	0.3
10	3.7	0.5

Loading Density (g/L): 8.2 (must be ≤0.5 g/L)
Mean Length (cm): 3.4
Length Range (cm): 2.8-4.0
Mean Weight (g): 0.4 (Must be ≥0.3g)
Weight Range: (g): 0.2-0.7

Test Organism Information

Batch 20211214TR
Source Smoky Trout Farm
Tank # 3
Days Held at 15± 2°C 29 (must be ≥14 days)
Percent stock mortality 0.64 (7 days prior to test, must be ≤2%)
Test Volume (L) 18

Comments : 96 HRS: NaCl ppt.

Reviewed By: TP Date Reviewed: 2022/01/20

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS20 Client TEC164 Reference 2122-1071

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/01/11 12	1405	QWINT	3	MAF
1	2022/01/12 13	0800	EC	-	TP
2	2022/01/13 14	0855	JCC	2	MF

Sample Information

Initial pH:	7.6
Initial EC (µS/cm):	15603
Salinity (ppt):	3

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	8.0	8.0	8.0	7.9	7.8	7.8				
2	8.1	8.1	8.1	8.2	8.2	8.2				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	484	487	486	1592	1705	1710				
2	469	467	469	1621	1663	1672				

DO (mg/L) (**40-100% saturation at test temp.**)

0	8.1	8.1	8.1	8.1	8.1	8.1				
2	8.1	8.1	8.1	8.1	8.1	8.1				

Temperature (°C) (range: **18-22 °C**)

0	19	19	19	19	19	19				
2	19	19	19	19	19	19				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar D3 Jar(s) mortality 7 days prior to test (must be ≤25%) 0

QA (previous month)

Days to first brood (≤12 days) 8

Average number of young produced (≥15 young) 26

Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - 0%

(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 10.4 Temperature (°C) of sample prior to aeration: 20

DO % of sample prior to aeration: 130 Is aeration required (<40% or >100%)? (Yes) or No

Duration of aeration (37.5 +/- 12.5 mL/min/L): 20min Filtered with 110um screen prior to testing **Yes or (No)**

Hardness (mg $CaCO_3$/L) of 100% : 1003 Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or (No)**

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —

Alkalinity of 100% sample (mg $CaCO_3$/L): 233

Dilution Water

Pail label / preparation date 1:01/08/09

Hardness of dilution water (mg/L) 223

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Comments/Observations: 0hrs: No ppt

48hrs: No ppt

Reviewed By: JP Date Reviewed: 2022/01/20

APPENDIX C – Chain-of-custody form

Teck

COC ID: 2022-01-10_SP21 **TURNAROUND TIME:** Regular (default) **RUSH:** NO

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name	WLC AWTF			Lab Name	Nautilus Environmental			Report Format / Distribution		Excel	PDF	EDD
Project Manager	Brett Mason			Lab Contact	Tamara Pomeroy			Email 1:	DL-WLC-Lab@teck.com	X	X	X
Email	brett.mason@teck.com			Email	tamara@nautilusenvironmental.ca			Email 2:	H20.lab.results@teck.com	X	X	X
Address	15 Km North HWY 43			Address	10823 27th Street SE			Email 3:	TeckCoal@equisonline.com			X
								Email 4:	Tricia.Hill@teck.com	X	X	X
City	Sparwood	Province	BC	City	Calgary	Province	AB	Email 5:	Marty.Hafke@teck.com	X	X	X
Postal Code	V0B 2G0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada	Email 6:				
Phone Number	250 425 4837			Phone Number	403 253 7121			PO number	VPO00807029			

SAMPLE DETAILS

2022/01/11
09:00
Manitoulin
JC
3x20L carboys, 3x1L bottles
NaS/NaI
Good Condition

ANALYSIS REQUESTED

Please indicate below Filtered, Perserved or both (F, P, F/P)

Sample ID 2122 ~~1072~~ JC 1071	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	ANALYSIS: NAUT_96Hr_RT_Single_Concentration_Toxicity Test	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 20C	°C
WL_BFWB_OUT_SP21_2022-01-10_N_0900	WL_BFWB_OUT_SP21	WS		2022/01/10	9:00	G	6	X	X	8.0

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	Date	Time	ACCEPTED BY/AFFILIATION	Date	Time
Shipment includes 2 extra 20 L bladders and 2 extra 1.2 L plastic bottles.	Vanessa Turner	2022/01/10				

SERVICE REQUEST (rush - subject to availability)					
Regular (default)	X	Sampler's Name	Gilroy James	Mobile #	
Priority (2-3 business days) - 50% surcharge					
Emergency (1 Business Day) - 100% surcharge		Sampler's Signature		Date/Time	10-Jan-22
For Emergency <1 Day, ASAP or Weekend - Contact ALS					

END OF REPORT

Acute Toxicity Test Results

Sample collected January 10, 2022

Final Report

February 2, 2022

Submitted to: **Teck Coal Ltd.**
Sparwood, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates					
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation	*Daphnia magna* antiscalant test initiation
LC_WTF_IN_2022-01-10_NP_0800 / 2122-1070	10-Jan-22 at 0800h	11-Jan-22 at 0900h	11-Jan-22 at 1450h	12-Jan-22 at 1410h	12-Jan-22 at 1410h	12-Jan-22 at 1410h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
LC_WTF_IN_2022-01-10_NP_0800	7.6°C	950	268

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)
- *Daphnia magna* 48-h single concentration screening test (conducted with 2 mg/L antiscalant)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample			
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
LC_WTF_IN_2022-01-10_NP_0800	100	100	97	100

Sample ID	Percent Immobility in 100 (% v/v)		
	Daphnia magna 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
LC_WTF_IN_2022-01-10_NP_0800	0	3	0

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
LC_WTF_IN_2022-01-10_NP_0800	Rainbow trout	None	None
	Daphnia magna	None	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	3.3 (2.8-3.9) g/L KCl[1]	6.3 (5.9-6.7) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.4 (2.6 -4.5) g/L KCl	6.4 (5.5-7.4) g/L NaCl
Reference toxicant CV	9.1%	5.1%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, December 30, 2021; [2] Test Date January 4, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation



Report By:
Mia Fearey, BSc
Biologist



Reviewed By:
Sara Thiessen, BSc
Senior Biologist

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APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Control/dilution water for antiscalant test	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L), Na_2SeO_4 (2 µg Se/L) and 2 mg/L antiscalant
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS ENVIRONMENTAL

Trout Bench Sheet

Method TRS Client TEC164 Reference 2122-1070 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022/01/11	1450 *	CC/EP/CH	1	DW
1	2022/01/12	0920	CH/MAF	-	TP
2	2022/01/13	1000	EP/CH	-	TP
3	2022/01/14	1010	CH	-	TP
4	2022/01/15	0910	mm/cc	1	DW

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 8.1
Initial EC (µS/cm): ~~1250~~ 1484 ST
Salinity (ppt): 2

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L: **yes/no**

	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
Preaeration time					
DO(mg/L) of 100%	10.06	9.6	8.8		
Temp (°C) of 100%	15				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	7.8	8.0						
Day 4	8.2	8.3						
EC (uS/cm)								
Day 0	414	1339						
Day 4	480	1590						
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	8.9	8.8						
Day 4	8.8	8.9						
Temperature (°C) (range: 14-16°C)								
Day 0	14	15						
Day 4	15	15						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.5	0.5
2	3.3	0.2
3	3.2	0.4
4	3.0	0.2
5	2.8	0.2
6	3.1	0.3
7	3.4	0.4
8	3.9	0.7
9	3.2	0.4 MAF
10	2.6	0.2

Loading Density (g/L): 0.2 (must be ≤0.5 g/L)
Mean Length (cm): 3.2
Length Range (cm): 2.6-3.9
Mean Weight (g): 0.3 (Must be ≥0.3g)
Weight Range: (g): 0.2-0.7

Test Organism Information

Batch 20211214TR
Source Smoky Trout Farm
Tank # 3
Days Held at 15± 2°C 29 (must be ≥14 days)
Percent stock mortality 0.64 (7 days prior to test, must be ≤2%)
Test Volume (L) 18

Comments: 96 HRS: NCOPE.

Reviewed By: ST Date Reviewed: 2022/02/02

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS20 Client TEC164 Reference 2122-1072 MAF

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/01/11 12	1410	AJ/MF	3	MAF
1	2022/01/12 13	0800	CC	-	TP
2	2022/01/13 14	0900	JCC	2	MF

Sample Information

Initial pH: 8.1
Initial EC (µS/cm): 1484
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	8.1	8.1	8.1	8.0	8.0	8.0				
2	8.1	8.1	8.1	8.2	8.3	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	481	480	484	1589	1588	1597				
2	464	469	471	1510	1553	1564				

DO (mg/L) (**40-100% saturation at test temp.**)

0	8.1	8.1	8.1	8.3	8.2	8.3				
2	8.1	8.1	8.1	8.2	8.2	8.3				

Temperature (°C) (range: **18-22 °C**)

0	19	19	19	19	19	19				
2	19	19	19	19	19	19				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	9	10	9	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar D3 Jar(s) mortality 7 days prior to test (must be ≤25%) 0

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 26
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 3% ~~3.3%~~ JCC
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 9.3
DO % of sample prior to aeration: 116
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20 min
Hardness (mg $CaCO_3$/L) of 100% : 950
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 208

Temperature (°C) of sample prior to aeration: 20
Is aeration required (<40% or >100%)? **Yes or No**
Filtered with 110um screen prior to testing **Yes or No**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Dilution Water
Pail label / preparation date 1:0/DR 09
Hardness of dilution water (mg/L) 223 SW

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Comments/Observations:
0hrs: No ppt
48hrs: No ppt

Reviewed By: MG Date Reviewed: 2022/01/18

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC164 Reference 2122-1072 MAF 70

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/01/11 12	1410	DW/MF	3	MAF
1	2022/01/12 13	0810	CC	-	TP
2	2022/01/13 14	0905	JCC	2	MAF

Sample Information

Initial pH: 8.1
Initial EC (µS/cm): 1484
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	8.0	8.0	8.0	8.0	8.0	8.0				
2	8.2	8.2	8.1	8.3	8.3	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	477	474	479	1601	1600	1605				
2	474	471	467	1573	1569	1570				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.5	9.5	9.5				
2	9.4	9.4	9.4	9.6	9.5	9.6				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar D3 Jar(s) mortality 7 days prior to test (must be ≤25%) 0

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 26
Were test treatments randomized on test tray? Yes / No

Control Validity Criteria
Mean % mortality at 48 hours - 0.1
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: DW 10.193 Temperature (°C) of sample prior to aeration: DW 12 DW
DO % of sample prior to aeration: 159 DW Is aeration required (<40% or >100%)? **Yes or No**
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20min Filtered with 110um screen prior to testing **Yes or No**
Hardness (mg $CaCO_3$/L) of 100% : 950 Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 208

Dilution Water
Pail label / preparation date 2:01/18 DW 09
Hardness of dilution water (mg/L) 223

DO Levels (40-100% saturation) - corrected for altitude -
4.1 to 10.3 mg/L at 8°C
4.0 to 10.0 mg/L at 9°C
3.9 to 9.8 mg/L at 10°C
3.8 to 9.6 mg/L at 11°C
3.7 to 9.4 mg/L at 12°C

Comments/Observations: 0hrs: No ppt
48hrs: NO ppt

Reviewed By: ML Date Reviewed: 2022/01/18

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS Client TEC164 Reference 2122-1072 70 MAF

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/01/11 12	1410	AW/MF	3	MAF
1	2022/01/12 13	0755	CC	-	TP
2	2022/01/13 14	0850	JCC	2	MF

Sample Information

Initial pH: 8.1
Initial EC (µS/cm): 1484
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

day

pH (units) (range: 6.0-8.5)

0	8.1	8.1	8.1	8.1	8.1	8.1				
2	8.2	8.2	8.1	8.2	8.2	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	477	482	484	1541	1545	1546				
2	469	470	469	1363	1365	1554				

DO (mg/L) (**40-100% saturation at test temp.**)

0	8.1	8.1	8.1	8.2	8.2	8.2				
2	8.1	8.1	8.1	8.1	8.1	8.1				

Temperature (°C) (range: **18-22 °C**)

0	19	19	19	19	19	19				
2	19	19	19	19	19	19				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar C1 Jar(s) mortality 7 days prior to test (must be ≤25%) 0

QA (previous month)

Days to first brood (≤12 days) 9

Average number of young produced (≥15 young) 27

Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - (must be ≤10%) 0.1

Sample

DO (mg/L) of sample prior to aeration: 9.3 Temperature (°C) of sample prior to aeration: 20

DO % of sample prior to aeration: 116 Is aeration required (<40% or >100%)? (Yes) or No

Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20min Filtered with 110um screen prior to testing Yes or (No)

Hardness (mg $CaCO_3$/L) of 100% : 950 Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —

Alkalinity of 100% sample (mg $CaCO_3$/L): 2608

Dilution Water

Pail label / preparation date 1:01/18 09

Hardness of dilution water (mg/L) 223 AW

Antiscalant

Final Concentration in Sample: 2.5 mg/L AW 15.8 ST

Volume of sample: 500mL Volume of antiscalant: 39.5 uL

Comments/Observations:

0hrs: No ppt

48hrs: No ppt

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Reviewed By: MG Date Reviewed: 2022/01/18

APPENDIX C – Chain-of-custody form

Teck

Page 1 of 1

COC ID: 2022-01-10_SP03 **TURNAROUND TIME:** Regular (default) **RUSH: NO**

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name	WLC AWTF			Lab Name	Nautilus Environmental			Report Format / Distribution		Excel	PDF	EDD
Project Manager	Brett Mason			Lab Contact	Tamara Pomeroy			Email 1:	DL-WLC-Lab@teck.com	X	X	X
Email	brett.mason@teck.com			Email	tamara@nautilusenvironmental.ca			Email 2:	H20.lab.results@teck.com	X	X	X
Address	15 Km North HWY 43			Address	10823 27th Street SE			Email 3:	TeckCoal@equisonline.com			X
								Email 4:	Tricia.Hill@teck.com	X	X	X
City	Sparwood	Province	BC	City	Calgary	Province	AB	Email 5:	Marty.Hafke@teck.com	X	X	X
Postal Code	V0B 2G0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada	Email 6:				
Phone Number	250 425 4837			Phone Number	403 253 7121			PO number		VPO00807029		

2022/01/11
09:00
Manitoulin
JC
1x20L carboy, 3x1L bottles
NaOS/NaI
Good Condition

1070
Sample ID 2122-~~1071~~

SAMPLE DETAILS								ANALYSIS REQUESTED																
								Please indicate below Filtered, Perserved or both (F, P, F/P)																
								ANALYSIS	NAUT_96Hr_RT_Single_Concentration_Toxicity Test	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 10C	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 20C	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 20C + Antiscalant	°C										
Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.																	
LC_WTF_IN_2022-01-10_NP_0800	LC_WTF_IN	WS		2022/01/10	8:00	G	4		X	X	X	X	7.6											

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	Date	Time	ACCEPTED BY/AFFILIATION	Date	Time
	Vanessa Turner	2022/01/10				

SERVICE REQUEST (rush - subject to availability)					
Regular (default)	X	Sampler's Name	Gilroy James	Mobile #	
Priority (2-3 business days) - 50% surcharge					
Emergency (1 Business Day) - 100% surcharge		Sampler's Signature		Date/Time	10-Jan-22
For Emergency <1 Day, ASAP or Weekend - Contact ALS					

END OF REPORT

Acute Toxicity Test Results

Sample collected January 24, 2022

Final Report

March 2, 2022

Submitted to: **Teck Coal Ltd.**
Sparwood, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates			
	Collected	Received	Rainbow trout test initiation[1]	*Daphnia magna* 20˚C test initiation
WL_BFWB_OUT_SP21_2022-01-24_N_0900/ 2122-1194	24-Jan-22 at 0900h	25-Jan-22 at 0950h	27-Jan-22 at 1417h	26-Jan-22 at 1515h

[1]According to information provided by Nautilus Environmental (Burnaby, BC)

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
WL_BFWB_OUT_SP21_2022-01-24_N_0900	10.6°C	769	219

TEST TYPES

- Rainbow trout 96-h single concentration screening test conducted at Nautilus Environmental Burnaby, BC
- *Daphnia magna* 48-h single concentration screening test

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample	
	Rainbow trout[1]	*Daphnia magna* 20˚C
WL_BFWB_OUT_SP21_2022-01-24_N_0900	100	100

[1]According to information provided by Nautilus Environmental (Burnaby, BC)

Sample ID	Percent Immobility in 100 (% v/v)
	Daphnia magna 20˚C
WL_BFWB_OUT_SP21_2022-01-24_N_0900	0

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
WL_BFWB_OUT_SP21_2022-01-24_N_0900	Rainbow trout[1]	None	None
	Daphnia magna	None	None

[1]According to information provided by Nautilus Environmental (Burnaby, BC)

QA/QC

QA/QC summary	Rainbow trout[3]	*Daphnia magna*
Reference toxicant LC50 (95% CL)	1.9 (1.3-2.9) g/L KCl[1]	7.1 (6.8-7.4) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	1.5 (1.0 -2.4) g/L KCl	6.5 (5.6-7.6) g/L NaCl
Reference toxicant CV	22.0%	5.0%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1]Test date, January 26, 2022; [2] Test Date February 2, 2022; [3]According to information provided by Nautilus Environmental (Burnaby, BC)
LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation



Report By:
Adam Wilson, BSc
Biologist



Reviewed By:
Courtney Bogstie, P. Biol.
Senior Biologist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test. [1]

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5-gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Vancouver tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

[1]According to information provided by Nautilus Environmental (Burnaby, BC)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Control/dilution water for antiscalant test	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L), Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

Rainbow Trout Summary Sheet

Client: Nautilus

Start Date/Time: Jan 27/22 @ 1417h

Work Order No.: 220140

Test Species: *Oncorhynchus mykiss*

Sample Information:

Sample ID: 2122-1194
Sample Date: January 24, 2022
Date Received: January 26, 2022
Sample Volume: 1 x 20L
Other: —

Test Validity Criteria:
≥ 90% Control Survival
WQ Ranges:
T (°C) = 15 ± 1; DO (mg/L) = 7.0 to 10.3; pH = 5.5 to 8.5

Dilution Water:

Type: Dechlorinated Municipal Tap Water
Hardness (mg/L $CaCO_3$): 22
Alkalinity (mg/L $CaCO_3$): 11

Test Organism Information:

Batch No.: 010622
Source: Lyndon Fish Hatcheries
No. Fish/Volume (L): 10/12L
Loading Density (g/L): 0.26
Mean Length ± SD (mm): 34 ± 2 Range: 30 - 36
Mean Weight ± SD (g): ~~0.30~~ 0.31 ± 0.06 Range: 0.20 - 0.38

KCl Reference Toxicant Results:

Reference Toxicant ID: RBTK06
Stock Solution ID: N/A
Date Initiated: January 26, 2022
96-h LC50 (95% CL) [g/L KCl]: 1.9 (1.3 - 2.4)

Reference Toxicant Mean and Historical Range [g/L KCl]: 1.5 (1.0 - 2.4)
Reference Toxicant CV (%): ~~23~~ 22

Test Results: 0% mortality at 96h in the 100% (v/v) undiluted sample.

Reviewed by: [signature]

Date reviewed: Feb-7, 2022

96-Hour Rainbow Trout Toxicity Test Data Sheet

Client/Project#: Nautilus
Sample I.D. 2122-1194
W.O. # 220140
RBT Batch #: 010622
Date Collected/Time: Jan 24/22 @ 0900h
Date Setup/Time: Jan 27/22 @ 14:17h
CER #: 7
Sample Setup By: HEC

Thermometer: CER7
D.O. meter/probe: DOS 15
Cond./Salinity meter/probe: C2/2
pH meter/probe: P2/2

Number Fish/Volume: 10/12L
7-d % Mortality: 0.49
Total Pre-aeration Time (mins): 120
Aeration rate adjusted to 6.5 ± 1 mL/min/L? (Y/N): Y

Undiluted Sample WQ			
Parameters	Initial WQ	Adjustment	30 min WQ
Temp °C	14.0		14.0
D.O. (mg/L)	12.6		11.9
pH	7.2		7.3
Cond. (µS/cm)	1719		1722
Salinity (ppt)	0.9		0.9

Concentration	# Survivors							Temperature (°C)					Dissolved Oxygen (mg/L)					pH					Conductivity (µS/cm)	
(% v/v)	1	2	4	24	48	72	96	0	24	48	72	96	0	24	48	72	96	0	24	48	72	96	0	96
Ctrl				10	10	10	10	14.0	14.0	14.0	14.5	14.5	10.5	10.1	9.9	10.1	9.6	7.2	7.1	7.0	7.2	7.1	50	54
100				10	10	10	10	14.0	14.0	14.0	14.5	14.5	10.7	10.1	9.9	10.3	9.7	7.7	8.2	8.3	8.3	~~8.7~~ 8.3	1720	~~1785~~ 1718
Initials				BAM	[illegible]	PYM	PYM	HEC	KYU/BAM	[illegible]	HEC	PYM	HEC	KYU/BAM	[illegible]	HEC	PYM	HEC	BAM	[illegible]	HEC	PYM	HEC	PYM

Sample Description/Comments: Clear colourless odourless liquid w/o particulates.

Fish Description at 96 h: All fish appear normal

Number of Stressed Fish at 96 h: Ø

Other Observations: No precipitate at 96h.

Reviewed by: [signature]

Date Reviewed: Feb. 7, 2022

Rainbow trout (Oncorhynchus mykiss) Length and Weight Sheet

Client: Nautilus
Sample ID: 2122-1194
W.O. #: 220140

Balance ID: Bal - 2
Date Initiated: Jan 27/22
Date Measured: Jan 31/22
Batch #: 010622

	Length (mm)	Weight (g)
1	34	0.32
2	36	0.36
3	35	0.38
4	33	0.28
5	35	0.33
6	35	0.37 tare
7	30	0.23
8	30	0.20
9	35	0.35
10	34	0.27
Total	337	3.029 tare
Mean	34	0.30 tare
Std. Dev.	2	0.06
Low	30	0.20
High	36	0.38

Volume Tested (L): 12

Loading Density (g/L): 0.25

Initials: PYK

Reviewed by: [signature] Date Reviewed: Feb 7, 2022

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS20 Client TEC164 Reference 2122-1194

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/01/26	1515	MFSC	2	KL
1	2022/01/27	1100	FP/MF	-	TP
2	2022/01/28	0755	MAF	3	JCC

Sample Information

Initial pH: 7.4
Initial EC (µS/cm): 1801
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

day	pH (units) (range: 6.0-8.5)									
0	8.0	7.9	7.9	7.9	8.0	8.0				
2	8.1	8.1	8.1	8.3	8.3	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

	EC (uS/cm)									
0	497	476	475	1763	1782	1787				
2	489	491	489	1692	1754	1849 MAF				

	DO (mg/L) (**40-100% saturation at test temp.**)									
0	7.9	7.9	7.9	7.9	7.9	7.9				
2	8.1	8.1	8.1	8.1	8.1	8.1				

	Temperature (°C) (range: **18-22 °C**)									
0	20	20	20	20	20	20				
2	19	19	19	19	19	19				

	Number Alive (I, immobile)									
0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar E3 Jar(s) mortality 7 days prior to test (must be ≤25%) 0

QA (previous month)
Days to first brood (≤12 days) 9
Average number of young produced (≥15 young) 33
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0

Sample
DO (mg/L) of sample prior to aeration: 13.6
DO % of sample prior to aeration: ~~170~~ 177
Duration of aeration (37.5 +/- 12.5 mL/min/L): 20 min
Hardness (mg $CaCO_3$/L) of 100% : 769
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 219

Temperature (°C) of sample prior to aeration: 21
Is aeration required (<40% or >100%)? **Yes or No**
Filtered with 110um screen prior to testing **Yes or No**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Dilution Water
Pail label / preparation date 2:01/17
Hardness of dilution water (mg/L) 186

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Comments/Observations:
0hr: no ppt
48hr: no ppt.

Reviewed By: CB Date Reviewed: 2022/02/23

APPENDIX C – Chain-of-custody form

Teck

Page 1 of 1

COC ID: 2022-01-24_SP21 | TURNAROUND TIME: Regular (default) | RUSH: NO

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name	WLC AWTF			Lab Name	Nautilus Environmental			Report Format / Distribution		Excel	PDF	EDD
Project Manager	Brett Mason			Lab Contact	Tamara Pomeroy			Email 1:	DL-WLC-Lab@teck.com	X	X	X
Email	brett.mason@teck.com			Email	tamara@nautilusenvironmental.ca			Email 2:	H20.lab.results@teck.com	X	X	X
Address	15 Km North HWY 43			Address	10823 27th Street SE			Email 3:	TeckCoal@equisonline.com			X
								Email 4:	Tricia.Hill@teck.com	X	X	X
City	Sparwood	Province	BC	City	Calgary	Province	AB	Email 5:	Marty.Hafke@teck.com	X	X	X
Postal Code	V0B 2G0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada	Email 6:				
Phone Number	250 425 4837			Phone Number	403 253 7121			PO number		VPO00807029		

2022/01/25
09:50
Manitoulin
JC
3x20L carboys, 3x1L bottles
NoS/NoT
Good condition
10.6°C

SAMPLE DETAILS								ANALYSIS REQUESTED															
								Please indicate below Filtered, Perserved or both (F, P, F/P)															
Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	ANALYSIS	NAUT_96Hr_RT_Single_Concentration_Toxicity Test	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 20C													
WL_BFWB_OUT_SP21_2022-01-24_N_0900	WL_BFWB_OUT_SP21	WS		1/24/2022	9:00	G	6		X	X													
2122-1194																							

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	Date	Time	ACCEPTED BY/AFFILIATION	Date	Time
Shipment includes 2 extra 20 L bladders and 2 extra 1.2 L plastic bottles.	Vanessa Turner	1/24/2022				

SERVICE REQUEST (rush - subject to availability)					
Regular (default)	X	Sampler's Name	Bella Chen	Mobile #	
Priority (2-3 business days) - 50% surcharge					
Emergency (1 Business Day) - 100% surcharge		Sampler's Signature		Date/Time	24-Jan-22
For Emergency <1 Day, ASAP or Weekend - Contact ALS					

END OF REPORT

Acute Toxicity Test Results

Sample collected January 24, 2022

Final Report

March 2, 2022

Submitted to: **Teck Coal Ltd.**
Sparwood, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates					
	Collected	Received	Rainbow trout test initiation[1]	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation	*Daphnia magna* antiscalant test initiation
LC_WTF_IN_2022-01-24_NP_0800/ 2122-1193	24-Jan-22 at 0800h	25-Jan-22 at 0950h	27-Jan-22 at 1139h	26-Jan-22 at 1425h	26-Jan-22 at 1420h	26-Jan-22 at 1420h

[1]According to information provided by Nautilus Environmental (Burnaby, BC)

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
LC_WTF_IN_2022-01-24_NP_0800	9.6°C	822	254

TEST TYPES

- Rainbow trout 96-h single concentration screening test conducted at Nautilus Environmental Burnaby, BC
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)
- *Daphnia magna* 48-h single concentration screening test (conducted with 2 mg/L antiscalant)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample			
	Rainbow trout[1]	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
LC_WTF_IN_2022-01-24_NP_0800	100	100	100	100

[1]According to information provided by Nautilus Environmental (Burnaby, BC)

Sample ID	Percent Immobility in 100 (% v/v)		
	Daphnia magna 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
LC_WTF_IN_2022-01-24_NP_0800	0	0	0

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
LC_WTF_IN_2022-01-24_NP_0800	Rainbow trout[1]	None	None
	Daphnia magna	None	None

[1]According to information provided by Nautilus Environmental (Burnaby, BC)

QA/QC

QA/QC summary	Rainbow trout[3]	*Daphnia magna*
Reference toxicant LC50 (95% CL)	1.9 (1.3-2.9) g/L KCl[1]	7.1 (6.8-7.4) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	1.5 (1.0 -2.4) g/L KCl	6.5 (5.6-7.6) g/L NaCl
Reference toxicant CV	22.0%	5.0%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1]Test date, January 26, 2022; [2] Test Date February 2, 2022; [3]According to information provided by Nautilus Environmental (Burnaby, BC)
LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation



Report By:
Adam Wilson, BSc
Biologist



Reviewed By:
Courtney Bogstie, P. Biol.
Senior Biologist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test. [1]

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Vancouver tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

[1]According to information provided by Nautilus Environmental (Burnaby, BC)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Control/dilution water for antiscalant test	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L), Na_2SeO_4 (2 µg Se/L) and 2 mg/L antiscalant
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

Rainbow Trout Summary Sheet

Client: Nautilus

Start Date/Time: Jan 27/22 @ 1139h

Work Order No.: 220140

Test Species: *Oncorhynchus mykiss*

Sample Information:

Sample ID: 2122-1193
Sample Date: January 24, 2022
Date Received: January 26, 2022
Sample Volume: 1 x 20L
Other: —

Test Validity Criteria:
≥ 90% Control Survival
WQ Ranges:
T (°C) = 15 ± 1; DO (mg/L) = 7.0 to 10.3; pH = 5.5 to 8.5

Dilution Water:

Type: Dechlorinated Municipal Tap Water
Hardness (mg/L $CaCO_3$): 22
Alkalinity (mg/L $CaCO_3$): 11

Test Organism Information:

Batch No.: 010622
Source: Lyndon Fish Hatcheries
No. Fish/Volume (L): 10/12L
Loading Density (g/L): 0.28
Mean Length ± SD (mm): 35 ± 2 Range: 32 - 41
Mean Weight ± SD (g): 0.33 ± 0.05 Range: 0.25 - 0.44

KCl Reference Toxicant Results:

Reference Toxicant ID: RBTRO6
Stock Solution ID: N/A
Date Initiated: January 26, 2022
96-h LC50 (95% CL) [g/L KCl]: 1.9 (1.3 - 2.4)

Reference Toxicant Mean and Historical Range [g/L KCl]: 1.5 (1.0 - 2.4)
Reference Toxicant CV (%): ~~25~~ 22

Test Results: 0% mortality at 96h in the 100% (v/v) undiluted sample.

Reviewed by: [signature]

Date reviewed: Feb 7, 2022

96-Hour Rainbow Trout Toxicity Test Data Sheet

Client/Project#: Nautilus
Sample I.D. 2122-1193
W.O. # 220140
RBT Batch #: 010822
Date Collected/Time: Jan 24/22 @ 0800h
Date Setup/Time: Jan 27/22 @ 11:39h
CER #: 7
Sample Setup By: HEC

Thermometer: CER7
D.O. meter/probe: DOS 15
Cond./Salinity meter/probe: C2/2
pH meter/probe: P2/2

Number Fish/Volume: 10/12L
7-d % Mortality: 0.49
Total Pre-aeration Time (mins): 30
Aeration rate adjusted to 6.5 ± 1 mL/min/L? (Y/N): Y

Undiluted Sample WQ			
Parameters	Initial WQ	Adjustment	30 min WQ
Temp °C	14.0		14.0
D.O. (mg/L)	10.3		10.3
pH	8.0		8.1
Cond. (µS/cm)	1621		1625
Salinity (ppt)	0.8		0.8

Concentration	# Survivors							Temperature (°C)					Dissolved Oxygen (mg/L)					pH					Conductivity (µS/cm)	
(% v/v)	1	2	4	24	48	72	96	0	24	48	72	96	0	24	48	72	96	0	24	48	72	96	0	96
Ctrl				10	10	10	10	14.0	14.0	14.0	14.5	14.5	10.3	10.2	10.0	10.4	9.6	7.0	7.2	7.0	7.3	7.0	50	54
100				10	10	10	10	14.0	14.0	14.0	14.5	14.5	10.3	10.1	10.1	10.3	9.7	8.1	8.3	8.3	8.4	8.4	1625	1623
Initials				KWV/BAM	Ine	PYN	PYN	HEC	KWV/BAM	Ine	HEC	PYN	HEC	KWV/BAM	Ine	HEC	PYN	HEC	BAM	Ine	HEC	PYN	HEC	PYN

Sample Description/Comments: Clear colourless odourless liquid w/o particulates.

Fish Description at 96 h: All fish appear normal

Number of Stressed Fish at 96 h: Ø

Other Observations: No precipitate at 96h

Reviewed by: [signature]

Date Reviewed: Feb. 7, 2022

Rainbow trout (Oncorhynchus mykiss) Length and Weight Sheet

Client: Nautilus
Sample ID: 2122-1193
W.O. #: 220140

Balance ID: Bal - 2
Date Initiated: Jan 27/22
Date Measured: Jan 31/22
Batch #: 010622

	Length (mm)	Weight (g)
1	35	0.36
2	36	0.34
3	32	0.25
4	34	0.30
5	35	0.34
6	35	0.33
7	41	0.44
8	35	~~0.22~~ Inc 0.36
9	32	0.26 ~~0.26~~ ~~0.36~~
10	35	~~0.19~~ Inc 0.35
Total	350	~~303~~ 3 Inc 3
Mean	35	~~0.30~~ 3 Inc 3
Std. Dev.	2	~~0.07~~ Inc 0.05
Low	32	~~0.19~~ Inc 0.25
High	41	0.44

Volume Tested (L): 12

Loading Density (g/L): 0.28

Initials: PYH

Reviewed by: [signature] Date Reviewed: Feb. 7, 2022

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS Client TEC164 Reference 2122-1193

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/01/26	1420	ST	3	LGM
1	2022/01/27	1030	EP/MF	-	TP
2	2022/01/28	0755	MAF	3	JCC

Sample Information

Initial pH:	8.1
Initial EC (µS/cm):	1777
Salinity (ppt):	3

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	7.7	7.8	7.8	8.0	8.1	8.1				
2	8.2	8.2	8.2	8.2	8.2	8.2				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	~~452~~	460	473	~~1658~~ 1628	~~1665~~	1650	* 1648			
2	489	479	480	1618	1634	1628				

DO (mg/L) (**40-100% saturation at test temp.**)

0	8.1	8.1	8.1	8.2	8.2	8.2				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	19	19	19	18	18	18				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar E4 Jar(s) mortality 7 days prior to test (must be ≤25%) 5%

QA (previous month)

Days to first brood (≤12 days) 9

Average number of young produced (≥15 young) 33

Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - 0 (must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 9.7 Temperature (°C) of sample prior to aeration: 19

DO % of sample prior to aeration: 119 Is aeration required (<40% or >100%)? **Yes or No**

Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20 min Filtered with 110um screen prior to testing **Yes or No**

Hardness (mg $CaCO_3$/L) of 100% : 822 Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) -

Alkalinity of 100% sample (mg $CaCO_3$/L): 254

Dilution Water

Pail label / preparation date 2:01117

Hardness of dilution water (mg/L) 186

Comments/Observations:

0h: NOppt

96h: nopt.

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Reviewed By: CB Date Reviewed: 2022/02/23

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS Client TEC164 Reference 2122-1193 1

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/01/26	1425	ST	3	KTM
1	2022/01/27	1115	MF	-	TP
2	2022/01/28	0805	MF	3	JCC

Sample Information

Initial pH: 8.1
Initial EC (µS/cm): 1777
Salinity (ppt): 3

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	8.0	8.0	8.0	8.0	8.0	8.0				
2	8.0	8.0	8.0	8.2	8.2	8.2				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	466	468	472	1658	1661	1675				
2	503	493	489	1643	1649	1696				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar E4 Jar(s) mortality 7 days prior to test (must be ≤25%) ~~50~~ 5%

QA (previous month)
Days to first brood (≤12 days) 9
Average number of young produced (≥15 young) 33
Were test treatments randomized on test tray? (Yes) No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0

Sample
DO (mg/L) of sample prior to aeration: 10.6 Temperature (°C) of sample prior to aeration: 10
DO % of sample prior to aeration: 106 Is aeration required (<40% or >100%)? (Yes) or No
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20 min Filtered with 110um screen prior to testing Yes or (No)
Hardness (mg $CaCO_3$/L) of 100% : 822 Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 254

Dilution Water
Pail label / preparation date 2:01117
Hardness of dilution water (mg/L) 186

DO Levels (40-100% saturation) - corrected for altitude -
4.1 to 10.3 mg/L at 8°C
4.0 to 10.0 mg/L at 9°C
3.9 to 9.8 mg/L at 10°C
3.8 to 9.6 mg/L at 11°C
3.7 to 9.4 mg/L at 12°C

Comments/Observations:
0h: No ppt
96h: no ppt

Reviewed By: CB Date Reviewed: 2022/02/23

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS Client TEC164 Reference 2122-1193

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/01/26	1420	ST	3	KGW
1	2022/01/27	1030	FP/MF	-	JR
2	2022/01/28	0955	MAF	3	JCC

Sample Information

Initial pH: 8.1
Initial EC (µS/cm): 1777
Salinity (ppt): 3

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	8.1	8.0	8.0	8.1	8.1	8.1				
2	8.2	8.2	8.2	8.3	8.3	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	472	469	473	1659	1652	1654				
2	496	483	479	1625	1650	1659				

DO (mg/L) (**40-100% saturation at test temp.**)

0	8.1	8.1	8.1	7.9	7.9	7.9				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	19	19	19	20	20	20				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar E4 Jar(s) mortality 7 days prior to test (must be ≤25%) 5%

QA (previous month)
Days to first brood (≤12 days) 9
Average number of young produced (≥15 young) 33
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0

Sample
DO (mg/L) of sample prior to aeration: 9.7 Temperature (°C) of sample prior to aeration: 19
DO % of sample prior to aeration: 119 Is aeration required (<40% or >100%)? **Yes or No**
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20min Filtered with 110um screen prior to testing **Yes or No**
Hardness (mg $CaCO_3$/L) of 100% : 322 Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) -
Alkalinity of 100% sample (mg $CaCO_3$/L): 254

Dilution Water
Pail label / preparation date 2:01117
Hardness of dilution water (mg/L) 186

Antiscalant
Final Concentration in Sample: 2 mg/L
Volume of sample: 500 ml Volume of antiscalant: 15.8 uL

Comments/Observations:
0h: No ppt
96h: no ppt

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Reviewed By: CB Date Reviewed: 20220223

APPENDIX C – Chain-of-custody form

Teck

Page 1 of 1

COC ID: 2022-01-24_SP03 | TURNAROUND TIME: Regular (default) | RUSH: NO

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name	WLC AWTF			Lab Name	Nautilus Environmental			Report Format / Distribution		Excel	PDF	EDD
Project Manager	Brett Mason			Lab Contact	Tamara Pomeroy			Email 1:	DL-WLC-Lab@teck.com	X	X	X
Email	brett.mason@teck.com			Email	tamara@nautilusenvironmental.ca			Email 2:	H20.lab.results@teck.com	X	X	X
Address	15 Km North HWY 43			Address	10823 27th Street SE			Email 3:	TeckCoal@equisonline.com			X
								Email 4:	Tricia.Hill@teck.com	X	X	X
City	Sparwood	Province	BC	City	Calgary	Province	AB	Email 5:	Marty.Hafke@teck.com	X	X	X
Postal Code	V0B 2G0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada	Email 6:				
Phone Number	250 425 4837			Phone Number	403 253 7121			PO number		VPO00807029		

SAMPLE DETAILS

2022/01/25
09:50
Manitou in
QC
1x20L carboys, 3x1L bottles
NoS/NoI
Good Condition
9.6°C

ANALYSIS REQUESTED

Please indicate below Filtered, Perserved or both (F, P, F/P)

Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	ANALYSIS	NAUT_96Hr_RT_Single_Concentration_Toxicity Test	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 10C	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 20C	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 20C + Antiscalant
LC_WTF_IN_2022-01-24_NP_0800	LC_WTF_IN	WS		1/24/2022	8:00	G	4		X	X	X	X

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	Date	Time	ACCEPTED BY/AFFILIATION	Date	Time
	Vanessa Turner	1/24/2022				

SERVICE REQUEST (rush - subject to availability)

Regular (default)	X
Priority (2-3 business days) - 50% surcharge	
Emergency (1 Business Day) - 100% surcharge	
For Emergency <1 Day, ASAP or Weekend - Contact ALS	

Sampler's Name	Bella Chen	Mobile #	
Sampler's Signature		Date/Time	24-Jan-22

END OF REPORT

Acute Toxicity Test Results

Sample collected February 7, 2022

Final Report

March 3, 2022

Submitted to: **Teck Coal Ltd.**
Sparwood, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates			
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 20˚C test initiation
WL_BFWB_OUT_SP21_2022-02-07_N_0900 / 2122-1319	7-Feb-22 at 0900h	8-Feb-22 at 1000h	10-Feb-22 at 1045h	8-Feb-22 at 1545h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
WL_BFWB_OUT_SP21_2022-02-07_N_0900	8.7°C	734	194

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample	
	Rainbow trout	*Daphnia magna* 20˚C
WL_BFWB_OUT_SP21_2022-02-07_N_0900	100	100

Sample ID	Percent Immobility in 100 (% v/v)
	Daphnia magna 20˚C
WL_BFWB_OUT_SP21_2022-02-07_N_0900	0

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
WL_BFWB_OUT_SP21_2022-02-07_N_0900	Rainbow trout	None	None
	Daphnia magna	None	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	2.9 (2.2-3.5) g/L KCl[1]	6.4 (6.2 - 6.6) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.4 (2.5 -4.6) g/L KCl	6.5 (5.6 - 7.6) g/L NaCl
Reference toxicant CV	10.0%	5.0%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, January 29, 2022; [2] Test Date February 14, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation



Report By:
Mia Fearey, BIT
Biologist



Reviewed By:
Sara Thiessen, BSc
Senior Biologist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC164 Reference 2122 - 1319 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022-02-10	1045 *	EP / CH	1	CE
1	2022-02-11	0740	JCC	-	TP
2	2022-02-12	0745	CC	-	KM
3	2022-02-13	0900	JCC	-	
4	2022-02-14	1000	MAF AB	1	

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 7.5 u
Initial EC (µS/cm): 1658 1648
Salinity (ppt): 3

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L (yes/no)

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	11.0	8.6			
Temp (°C) of 100%	16				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	7.8	7.7						
Day 4	8.2	8.3						
EC (uS/cm)								
Day 0	476	1683						
Day 4	487	1704						
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	8.6	8.6						
Day 4	8.6	8.6						
Temperature (°C) (range: 14-16°C)								
Day 0	16	16						
Day 4	16	16						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.8	0.4
2	3.2	0.3
3	3.8	0.6
4	3.8	0.5
5	2.9	0.2
6	3.0	0.23
7	2.8	0.2
8	3.1	0.3
9	3.1	0.3
10	3.4	0.4

Loading Density (g/L): 0.2 (must be ≤0.5 g/L)
Mean Length (cm): 3.3
Length Range (cm): 2.8 - 3.8
Mean Weight (g): 0.4 (Must be ≥0.3g)
Weight Range: (g): 0.2 - 0.6

Test Organism Information

Batch 20211222 TR
Source Trout Lodge
Tank # 2
Days Held at 15± 2°C (must be ≥14 days): 27
Percent stock mortality (7 days prior to test, must be ≤2%): 0.23
Test Volume (L): 18

Comments: nappt.

Reviewed By: W Date Reviewed: 2022/02/28

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC164 Reference 2122-1319

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/02/08	1545	CM/MA	2	JEC
1	2022/02/09	0855	EP	-	—
2	2022/02/10	1050	KH	2	CS

Sample Information

Initial pH: 7.5
Initial EC (µS/cm): 1648
Salinity (ppt): 3

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	8.0	8.0	8.0	7.6	7.6	7.6				
2	7.9	7.9	7.9	8.1	8.1	8.1				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	463	478	472	1772	1796	1804				
2	4107	4100	4178	1749	1786	1782				

DO (mg/L) (**40-100% saturation at test temp.**)

0	8.1	8.1	8.1	9.4	9.4	9.4				
2	8.1	8.1	8.1	8.1	8.1	8.1				

Temperature (°C) (range: **18-22 °C**)

0	19	19	19	18	18	18				
2	19	19	19	19	19	19				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10(1I)	10				
2	10	10	10	10	9 KH	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar C1 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)

Days to first brood (≤12 days) 9
Average number of young produced (≥15 young) 35
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - (must be ≤10%) 0%

Sample

DO (mg/L) of sample prior to aeration: 14.6
DO % of sample prior to aeration: 178%
Duration of aeration (37.5 +/- 12.5 mL/min/L): 20min
Hardness (mg $CaCO_3$/L) of 100% : 234
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 194

Temperature (°C) of sample prior to aeration: 18
Is aeration required (<40% or >100%)? **Yes or No**
Filtered with 110um screen prior to testing **Yes or No**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Dilution Water

Pail label / preparation date L:0201
Hardness of dilution water (mg/L) 1266

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Comments/Observations:

0hr: noppt.
48hr: no ppt

* ~~Dried to side of jar, found on day 1~~
** Dried to side of test vessel exclude from mortality

Reviewed By: KH Date Reviewed: 2022/02/28

APPENDIX C – Chain-of-custody form

Teck

Page 1 of 1

COC ID: 2022-02-07_SP21 **TURNAROUND TIME:** Regular (default) **RUSH:** NO

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name	WLC AWTF			Lab Name	Nautilus Environmental			Report Format / Distribution		Excel	PDF	EDD
Project Manager	Brett Mason			Lab Contact	Tamara Pomeroy			Email 1:	DL-WLC-Lab@teck.com	X	X	X
Email	brett.mason@teck.com			Email	tamara@nautilusenvironmental.ca			Email 2:	H20.lab.results@teck.com	X	X	X
Address	15 Km North HWY 43			Address	10823 27th Street SE			Email 3:	TeckCoal@equisonline.com			X
								Email 4:	Tricia.Hill@teck.com	X	X	X
City	Sparwood	Province	BC	City	Calgary	Province	AB	Email 5:	Marty.Hafke@teck.com	X	X	X
Postal Code	V0B 2G0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada	Email 6:				
Phone Number	250 425 4837			Phone Number	403 253 7121			PO number		VPO00807029		

2022/02/08
10:00
Manitoulin
JC
3x20L carboys, 3x1L bottles
NGS/NoI
Good Condition
8.7°C

SAMPLE DETAILS								ANALYSIS REQUESTED															
								Please indicate below Filtered, Perserved or both (F, P, F/P)															
Sample ID 2122-1319	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	ANALYSIS	NAUT_96Hr_RT_Single_Concentration_Toxicity Test	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 20C													
WL_BFWB_OUT_SP21_2022-02-07_N_0900	WL_BFWB_OUT_SP21	WS		2/7/2022	9:00	G	6		X	X													

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	Date	Time	ACCEPTED BY/AFFILIATION	Date	Time
Shipment includes 2 extra 20 L bladders and 2 extra 1.2 L plastic bottles.	Nicholas Krajnc	2/7/2022				

SERVICE REQUEST (rush - subject to availability)	
Regular (default)	X
Priority (2-3 business days) - 50% surcharge	
Emergency (1 Business Day) - 100% surcharge	
For Emergency <1 Day, ASAP or Weekend - Contact ALS	

Sampler's Name	Gurpreet Singh	Mobile #	
Sampler's Signature		Date/Time	7-Feb-22

END OF REPORT

Acute Toxicity Test Results

Sample collected February 7, 2022

Final Report

March 3, 2022

Submitted to: **Teck Coal Ltd.**
Sparwood, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates					
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation	*Daphnia magna* antiscalant test initiation
LC_WTF_IN_2022-02-07_NP_0800/ 2122-1318	7-Feb-22 at 0800h	8-Feb-22 at 1000h	9-Feb-22 at 1535h	8-Feb-22 at 1440h	8-Feb-22 at 1440h	8-Feb-22 at 1435h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
LC_WTF_IN_2022-02-07_NP_0800	10.2°C	930	195

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)
- *Daphnia magna* 48-h single concentration screening test (conducted with 2 mg/L antiscalant)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample			
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
LC_WTF_IN_2022-02-07_NP_0800	100	100	100	100

Sample ID	Percent Immobility in 100 (% v/v)		
	Daphnia magna 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
LC_WTF_IN_2022-02-07_NP_0800	0	0	0

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
LC_WTF_IN_2022-02-07_NP_0800	Rainbow trout	Precipitate observed on bottom of tank	None
	Daphnia magna	None	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	2.9 (2.2-3.5) g/L KCl[1]	6.4 (6.2-6.6) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.4 (2.5 -4.6) g/L KCl	6.5 (5.6-7.6) g/L NaCl
Reference toxicant CV	10.0%	5.0%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, January 29, 2021; [2] Test Date February 14, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation



Report By:
Adam Wilson, BSc
Biologist



Reviewed By:
Courtney Bogstie, P. Biol.
Senior Biologist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5-gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Control/dilution water for antiscalant test	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L), Na_2SeO_4 (2 µg Se/L) and 2 mg/L antiscalant
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS ENVIRONMENTAL

Trout Bench Sheet

Method TRS Client TECK4 Reference 2022-BR Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	20221021109	1535 *	DW/CH	1	ST
1	20221021110	0915	CH	-	ST
2	20221021111	0740	JPC	-	TP
3	20221021112	0745	CC	-	VW
4	20221021113	0910	JC	1	MF

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 8.1
Initial EC (µS/cm): 1528
Salinity (ppt): 3

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L **yes/no**

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	9.2	9.0	8.6		
Temp (°C) of 100%	16				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: **5.5-8.5**)								
Day 0	7.8	7.9						
Day 4	8.1	8.1						
EC (uS/cm)								
Day 0	478	1517						
Day 4	484	1514						
DO (mg/L) (**70-100% saturation at test temp.**)								
Day 0	8.8	8.6						
Day 4	8.8	8.9						
Temperature (°C) (range: **14-16°C**)								
Day 0	15	14.6						
Day 4	15	15						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.9	1.0
2	3.0	0.3
3	3.0	0.3
4	3.1	0.3
5	3.4	0.4
6	3.0	0.3
7	3.1	0.3
8	3.4	0.4
9	3.1	0.4
10	3.5	0.5

Loading Density (g/L): 0.3 (must be ≤0.5 g/L)
Mean Length (cm): 3.3
Length Range (cm): 3.0-3.9
Mean Weight (g): 0.5 (Must be ≥0.3g)
Weight Range: (g): 0.3-1.0

Test Organism Information

Batch 20211222TR
Source troutlodge
Tank # 2
Days Held at 15± 2°C 26 (must be ≥14 days)
Percent stock mortality 0.23 (7 days prior to test, must be ≤2%)
Test Volume (L) 18

Comments : 96hr: ppt on bottom of tank

Reviewed By: CB Date Reviewed: 20221021124

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC164 Reference 2122-1318-01 KTM

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/02/08	1440	AW/KTM	2	MF
1	2022/02/09	0840	FP	-	ST
2	2022/02/10	0855	KTM/FP	2	DJ

Sample Information

Initial pH: 8.1
Initial EC (µS/cm): 1528
Salinity (ppt): 3

Lab Code	CTL A	CTL B	CTL C	100 A	100 B	100 C				

pH (units) (range: 6.0-8.5)

day										
0	7.8	7.8	7.8	7.8	7.9	7.9				
2	8.0	8.1	8.1	8.2	8.2	8.2				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	469	473	479	1658	1663	1679				
2	470	479	480	1623	1646	1647				

DO (mg/L) (**40-100% saturation at test temp.**)

0	8.2	8.2	8.2	8.2	8.2	8.2				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	18	18	18	18	18	18				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	FP 10	10				
1	10	10	10	10	~~9~~ ~~10~~ ~~9~~	10				
2	10	10	10	10	9	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar D1 Jar(s) mortality 7 days prior to test (must be ≤25%) 0

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 33
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 8.2 Temperature (°C) of sample prior to aeration: 18
DO % of sample prior to aeration: 100.1 Is aeration required (<40% or >100%)? Yes or (No)
Duration of aeration (37.5 +/- 12.5 mL/min/L) : — Filtered with 110um screen prior to testing Yes or (No)
Hardness (mg $CaCO_3$/L) of 100% : 930 Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 195

Dilution Water
Pail label / preparation date 1:02/01
Hardness of dilution water (mg/L) 226

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Comments/Observations:
0Hr: No ppt
48Hr: no ppt
* Dried to side of jar on day 1 ^ found; not included in mortality

Reviewed By: CB Date Reviewed: 2022/02/24

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC164 Reference 2122-1318

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/02/08	1440	AW/KTM	2	MF
1	2022/02/09	EP 0900	EP	-	ST
2	2022/02/10	1030	KM	2	CB

Sample Information

Initial pH:	KTM ~~8.5~~ 8.1
Initial EC (µS/cm):	1528
Salinity (ppt):	3

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	7.9	7.9	7.9	7.9	8.0	8.0				
2	8.3	8.3	8.3	8.3	8.4	8.4				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	488	487	487	1659	1667	1678				
2	485	485	491	1687	1715	1712				

DO (mg/L) (**40-100% saturation at test temp.**)

0	~~8.1~~ 9.4	~~8.1~~ 9.4	~~8.1~~ 9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	~~19~~ 12	~~19~~ 12	~~19~~ 12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar C3 Jar(s) mortality 7 days prior to test (must be ≤25%) 0

QA (previous month)

Days to first brood (≤12 days) 9

Average number of young produced (≥15 young) 35

Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - (must be ≤10%) 0

Sample

DO (mg/L) of sample prior to aeration: 10.3 Temperature (°C) of sample prior to aeration: 12 °C

DO % of sample prior to aeration: ~~106~~ 110 Is aeration required (<40% or >100%)? **Yes or No**

Duration of aeration (37.5 +/- 12.5 mL/min/L) : 30 mins Filtered with 110um screen prior to testing **Yes or No**

Hardness (mg $CaCO_3$/L) of 100% : 930 Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —

Alkalinity of 100% sample (mg $CaCO_3$/L): 195

Dilution Water

Pail label / preparation date 1:02/01

Hardness of dilution water (mg/L) 226

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

Comments/Observations: 0Hr: no ppt

48Hr: no ppt

Reviewed By: CB Date Reviewed: 2022/02/24

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS Client TEC164 Reference 2122-1318

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/02/08	1435	AW/KTM	2	MF
1	2022/02/09	EP 0830	EP	-	SL
2	2022/02/10	1030	KL	2	CB

Sample Information

Initial pH: 8.1
Initial EC (µS/cm): 1528
Salinity (ppt): 3

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	7.9	7.9	7.9	7.8	7.9	7.9				
2	8.1	8.1	8.1	8.3	8.3	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	467	471	480	1625	1639	1688				
2	487	489	485	1610	1653	1603				

DO (mg/L) (**40-100% saturation at test temp.**)

0	8.1	8.1	8.1	8.2	8.2	8.2				
2	7.9	7.9	7.9	7.9	7.9	7.8				

Temperature (°C) (range: **18-22 °C**)

0	19	19	19	18	18	18				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar C4 Jar(s) mortality 7 days prior to test (must be ≤25%) 0

QA (previous month)
Days to first brood (≤12 days) 9
Average number of young produced (≥15 young) 35
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0

Sample
DO (mg/L) of sample prior to aeration: 8.2 Temperature (°C) of sample prior to aeration: 18
DO % of sample prior to aeration: 100.1 Is aeration required (<40% or >100%)? **Yes or (No)**
Duration of aeration (37.5 +/- 12.5 mL/min/L) : — Filtered with 110um screen prior to testing **Yes or (No)**
Hardness (mg $CaCO_3$/L) of 100% : ~~1528~~ 1630 930 Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or (No)**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 195

Dilution Water
Pail label / preparation date 1:07/01
Hardness of dilution water (mg/L) 226

Antiscalant
Final Concentration in Sample: 2mg/L
Volume of sample: 500mL Volume of antiscalant: 15.84mL

Comments/Observations:
0Hr: No ppt
48Hr: no ppt

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C 3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C 3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C

Reviewed By: CS Date Reviewed: 2022/02/24

APPENDIX C – Chain-of-custody form

Teck

Page 1 of 1

COC ID: 2022-02-07_SP03 **TURNAROUND TIME:** Regular (default) **RUSH:** NO

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name	WLC AWTF			Lab Name	Nautilus Environmental			Report Format / Distribution		Excel	PDF	EDD
Project Manager	Brett Mason			Lab Contact	Tamara Pomeroy			Email 1:	DL-WLC-Lab@teck.com	X	X	X
Email	brett.mason@teck.com			Email	tamara@nautilusenvironmental.ca			Email 2:	H20.lab.results@teck.com	X	X	X
Address	15 Km North HWY 43			Address	10823 27th Street SE			Email 3:	TeckCoal@equisonline.com			X
								Email 4:	Tricia.Hill@teck.com	X	X	X
City	Sparwood	Province	BC	City	Calgary	Province	AB	Email 5:	Marty.Hafke@teck.com	X	X	X
Postal Code	V0B 2G0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada	Email 6:				
Phone Number	250 425 4837			Phone Number	403 253 7121			PO number		VPO00807029		

SAMPLE DETAILS | **ANALYSIS REQUESTED**

2022/02/08
10:00
Manitoulin
JC
1x20L carboys, 3x1L bottles
NGS/NG6
Good Condition
10.2°C

Please indicate below Filtered, Preserved or both (F, P, F/P)

Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	ANALYSIS	NAUT_96Hr_RT_Single_Concentration_Toxicity Test	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 10C	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 20C	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 20C + Antiscalant
2122-1318												
LC_WTF_IN_2022-02-07_NP_0800	LC_WTF_IN	WS		2/7/2022	8:00	G	4		X	X	X	X

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	Date	Time	ACCEPTED BY/AFFILIATION	Date	Time
	Nicholas Krajnc	2/7/2022				

SERVICE REQUEST (rush - subject to availability)

Regular (default)	X
Priority (2-3 business days) - 50% surcharge	
Emergency (1 Business Day) - 100% surcharge	
For Emergency <1 Day, ASAP or Weekend - Contact ALS	

Sampler's Name	Gurpreet Singh	Mobile #	
Sampler's Signature		Date/Time	7-Feb-22

END OF REPORT

Acute Toxicity Test Results

Samples collected February 21, 2022

Final Report

March 16, 2022

Submitted to: **Teck Coal Ltd.**
Sparwood, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates			
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 20˚C test initiation
WL_BFWB_OUT_SP21_2022-02-21_N_0900/ 2122-1450	21-Feb-22 at 0900h	22-Feb-22 at 1400h	24-Feb-22 at 1530h	23-Feb-22 at 1525h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
WL_BFWB_OUT_SP21_2022-02-21_N_0900	9.1°C	928	231

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample	
	Rainbow trout	*Daphnia magna* 20˚C
WL_BFWB_OUT_SP21_2022-02-21_N_0900	100	97

Sample ID	Percent Immobility in 100 (% v/v)
	Daphnia magna 20˚C
WL_BFWB_OUT_SP21_2022-02-21_N_0900	3

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
WL_BFWB_OUT_SP21_2022-02-21_N_0900	Rainbow trout	Precipitate observed on the bottom of test vessel	None
	Daphnia magna	None	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	3.8 (3.4-4.2) g/L KCl[1]	6.4 (6.2-6.6) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.4 (2.5-4.6) g/L KCl	6.5 (5.6-7.6) g/L NaCl
Reference toxicant CV	10.1%	4.9%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, March 1, 2022; [2] Test Date February 28, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation



Report By:
Katheryn Munson, BSc
Biologist



Reviewed By:
Courtney Bogstie, P. Biol.
Senior Biologist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC164 Reference 2122-1450 Chamber 2

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2/24/2022	1530 *	CC/MAF/CH	cc 17	AW
1	2/25/2022	0700	JCC	-	MAF
2	2/26/2022	0900	AE	-	AW
3	2/27/2022	0920	CH	-	AW
4	2/28/2022	1070	CH/CC/SC	1	CB

Note: *; time when the test was loaded with fish

Sample Information

Initial pH: 7.4
Initial EC (µS/cm): 1834
Salinity (ppt): 5

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L : yes/no

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	11.7	11.6	10.9	10.4	9.6
Temp (°C) of 100%	15				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

	Conc.	CTL	100						
pH (units) (range: **5.5-8.5**)	Day 0	7.9	7.2						
	Day 4	8.2	8.3						
EC (uS/cm)	Day 0	512	1903						
	Day 4	476	1700						
DO (mg/L) (**70-100% saturation at test temp.**)	Day 0	8.9	9.6						
	Day 4	8.8	8.8						
Temperature (°C) (range: **14-16°C**)	Day 0	14	15						
	Day 4	15	15						
Number Alive (In brackets number stressed)	Day 0	10	10						
	Day 1	10	10						
	Day 2	10	10						
	Day 3	10	10						
	Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.5	0.5
2	3.5	0.4
3	3.5	0.6
4	3.7	0.6
5	3.5	0.5
6	3.3	0.4
7	3.6	0.7
8	3.5	0.5
9	3.2	0.5
10	3.4	0.4

Loading Density (g/L): 0.3 (must be ≤0.5 g/L)
Mean Length (cm): 3.4
Length Range (cm): 3.2-3.7
Mean Weight (g): 0.5 (Must be ≥0.3g)
Weight Range: (g): 0.4-0.7

Test Organism Information

Batch 20211222TR
Source Troutlodge
Tank # 7
Days Held at 15± 2°C 41 (must be ≥14 days)
Percent stock mortality 0.05 (7 days prior to test, must be ≤2%)
Test Volume (L) 18

Comments : 96 HRS: some ppt on bottom of tank

Reviewed By: SS Date Reviewed: 2022103104

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS20 Client TEC164 Reference 2122-1450

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/02/23	1525	MAF/JW	2	—
1	2022/02/24	0850	MAF	-	MAF
2	2022/02/25	0845	JC	2	JW

Sample Information

Initial pH: 7.4
Initial EC (µS/cm): 1834
Salinity (ppt): 5

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	8.2	8.2	8.2	7.9	8.0	8.0				
2	8.2	8.2	8.1	8.3	8.3	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	494	489	489	1780	1843	1854				
2	491	493	491	1790	1829	1845				

DO (mg/L) (**40-100% saturation at test temp.**)

0	8.1	8.1	8.1	8.4	8.4	8.4				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	19	19	19	20	20	20				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10(I)	10				
2	10	10	10	10	9	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar C2 Jar(s) mortality 7 days prior to test (must be ≤25%) 0/1

QA (previous month)
Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 37
Were test treatments randomized on test tray? (Yes) No

Control Validity Criteria
Mean % mortality at 48 hours - 0/1
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 11.3
DO % of sample prior to aeration: 140
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20m
Hardness (mg $CaCO_3$/L) of 100% : 928
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 231

Temperature (°C) of sample prior to aeration: 21
Is aeration required (<40% or >100%)? (Yes) or No
Filtered with 110um screen prior to testing Yes or (No)
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)

Dilution Water
Pail label / preparation date 2:02/17
Hardness of dilution water (mg/L) 239

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Comments/Observations: Chr: NCPPL.
48hrs no ppt

Reviewed By: SS Date Reviewed: 20220310 4

APPENDIX C – Chain-of-custody form

Teck

Page 1 of 1

COC ID: 2022-02-21_SP21 | TURNAROUND TIME: Regular (default) | RUSH: NO

PROJECT/CLIENT INFO

Facility Name	WLC AWTF		
Project Manager	Brett Mason		
Email	brett.mason@teck.com		
Address	15 Km North HWY 43		
City	Sparwood	Province	BC
Postal Code	V0B 2G0	Country	Canada
Phone Number	250 425 4837		

LABORATORY

Lab Name	Nautilus Environmental		
Lab Contact	Tamara Pomeroy		
Email	tamara@nautilusenvironmental.ca		
Address	10823 27th Street SE		
City	Calgary	Province	AB
Postal Code	T2Z 3V9	Country	Canada
Phone Number	403 253 7121		

OTHER INFO

Report Format / Distribution		Excel	PDF	EDD
Email 1:	DL-WLC-Lab@teck.com	X	X	X
Email 2:	H20.lab.results@teck.com	X	X	X
Email 3:	TeckCoal@equisonline.com			X
Email 4:	Tricia.Hill@teck.com	X	X	X
Email 5:	Marty.Hafke@teck.com	X	X	X
Email 6:				

PO number: VPO00807029

SAMPLE DETAILS

2022/02/22
14:00
Hotshot
JC
3x20L carboys, 3x1L bottles
NGS/NGL
Good Condition

Please indicate below Filtered, Perserved or both (F, P, F/P)

Sample ID 2122-1450	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	ANALYSIS: NAUT_96Hr_RT_Single_Concentration_Toxicity Test	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 20C	
WL_BFWB_OUT_SP21_2022-02-21_N_0900	WL_BFWB_OUT_SP21	WS		2/21/2022	9:00	G	6	X	X	9.1°C

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS

Shipment includes 2 extra 20 L bladders and 2 extra 1.2 L plastic bottles.

RELINQUISHED BY/AFFILIATION	Date	Time
Vanessa Turner	2/22/2022	

ACCEPTED BY/AFFILIATION	Date	Time

SERVICE REQUEST (rush - subject to availability)

Regular (default)	X
Priority (2-3 business days) - 50% surcharge	
Emergency (1 Business Day) - 100% surcharge	
For Emergency <1 Day, ASAP or Weekend - Contact ALS	

Sampler's Name	Mason Reimer	Mobile #	
Sampler's Signature		Date/Time	21-Feb-22

END OF REPORT

Acute Toxicity Test Results

Sample collected February 21, 2022

Final Report

March 16, 2022

Submitted to: **Teck Coal Ltd.**
Sparwood, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates					
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation	*Daphnia magna* antiscalant test initiation
LC_WTF_IN_2022-02-21_NP-0800/ 2122-1449	21-Feb-22 at 0800h	22-Feb-22 at 1400h	24-Feb-17 at 1300h	22-Feb-17 at 1525h	22-Feb-17 at 1545h	22-Feb-17 at 1520h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
LC_WTF_IN_2022-02-21_NP-0800	5.8°C	888	245

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)
- *Daphnia magna* 48-h single concentration screening test (conducted with 2 mg/L antiscalant)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample			
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
LC_WTF_IN_2022-02-21_NP-0800	100	100	100	100

Sample ID	Percent Immobility in 100 (% v/v)		
	Daphnia magna 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
LC_WTF_IN_2022-02-21_NP-0800	0	0	0

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
LC_WTF_IN_2022-02-21_NP-0800	Rainbow trout	Precipitate observed on the bottom of test vessel	None
	Daphnia magna	None	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	2.9 (2.2-3.5) g/L KCl[1]	6.4 (6.2-6.6) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.4 (2.5-4.6) g/L KCl	6.5 (5.6-7.6) g/L NaCl
Reference toxicant CV	10.0%	5.0%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, January 29, 2022; [2] Test Date February 14, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation

Report By:
Emma Pedersen, BSc
Biologist

Reviewed By:
Courtney Bogstie, P. Biol.
Senior Biologist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Control/dilution water for antiscalant test	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L), Na_2SeO_4 (2 µg Se/L) and 2 mg/L antiscalant
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC164 Reference 2122-1449 Chamber 2

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2/24/2022	1430 *	CC/MAF/CH	17	AJ
1	2/25/2022	0765	TCC	-	MAF
2	2/26/2022	0900	MAF	-	AW
3	2/27/2022	0926	CH	-	AJ
4	2/28/2022	1020	CH/CC/SL	1	CB

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 7.9
Initial EC (µS/cm): 1703
Salinity (ppt): 4

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L : **yes/no**

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	9.9	9.7	8.9		
Temp (°C) of 100%	14				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	7.7	7.9						
Day 4	7.9	8.2						
EC (uS/cm)								
Day 0	517	1769						
Day 4	481	1690						
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	8.9	8.9						
Day 4	8.8	8.8						
Temperature (°C) (range: 14-16°C)								
Day 0	14	14						
Day 4	15	15						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.5	0.6
2	3.9	0.7
3	3.4	0.5
4	3.2	0.4
5	3.6	0.6
6	3.5	0.5
7	3.1	0.5
8	3.5	0.5
9	3.7	0.6
10	3.4	0.5

Loading Density (g/L): 0.3 (must be ≤0.5 g/L)
Mean Length (cm): 3.4
Length Range (cm): 2.9-3.7
Mean Weight (g): 0.5 (Must be ≥0.3g)
Weight Range: (g): 0.3-0.6

Test Organism Information

Batch 20211222TR
Source Troutlodge
Tank # 7
Days Held at 15± 2°C 41 (must be ≥14 days)
Percent stock mortality 0.05 (7 days prior to test, must be ≤2%)
Test Volume (L) 18

Comments : 96 HRS: PPT on bottom of tank

Reviewed By: SS Date Reviewed: 2022/03/04

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS20 Client TEC164 Reference 2122-1449

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/02/23	1545	MAF/DW	2	–
1	2022/02/24	0855	MAF	-	MAF
2	2022/02/25	0915	DW	3	AU

Sample Information

Initial pH: 79
Initial EC (µS/cm): 1703
Salinity (ppt): 4

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				
day										
pH (units) (range: 6.0-8.5)										
0	8.2	8.2	8.2	8.1	8.1	8.1				
2	8.2	8.2	8.2	8.3	8.3	8.3				
The pH of the sample was not adjusted prior to test setting, unless noted in the comments below										
EC (uS/cm)										
0	487	490	487	1698	1709	1717				
2	465	475	463	1598	1593	1598				
DO (mg/L) (**40-100% saturation at test temp.**)										
0	8.1	8.1	8.1	8.4	8.4	8.4				
2	8.1	8.1	8.1	8.0	8.0	8.0				
Temperature (°C) (range: **18-22 °C**)										
0	19	19	19	20	20	20				
2	19	19	19	19	19	19				
Number Alive (I, immobile)										
0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar D3 Jar(s) mortality 7 days prior to test (must be ≤25%) 0

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 38
Were test treatments randomized on test tray? Yes / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0

Sample
DO (mg/L) of sample prior to aeration: 9.7
DO % of sample prior to aeration: 122
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20m
Hardness (mg $CaCO_3$/L) of 100% : 888
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 245

Temperature (°C) of sample prior to aeration: 20
Is aeration required (<40% or >100%)? Yes or No
Filtered with 110um screen prior to testing Yes or No
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or No

Dilution Water
Pail label / preparation date 2:02/17
Hardness of dilution water (mg/L) 239

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Comments/Observations: 0hrs Nappt.
48h: no ppt

Reviewed By: SS Date Reviewed: 2022/03/04

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method: DAS AS Client: TEC164 Reference: 2122-1449

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/02/23	1520	MAF/DW	2	
1	2022/02/24	0900	MAF	-	MAF
2	2022/02/25	0940	DW	3	AW

Sample Information

Initial pH: 7.9
Initial EC (µS/cm): 1703
Salinity (ppt): 4

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	8.1	8.1	8.1	8.0	8.0	8.0				
2	8.1	8.1	8.1	8.1	8.2	8.2				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	496	491	489	1660	1708	1715				
2	460	468	461	1570	1586	1592				

DO (mg/L) (**40-100% saturation at test temp.**)

0	8.1	8.1	8.1	8.4	8.4	8.4				
2	8.1	8.1	8.1	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	19	19	19	20	20	20				
2	19	19	19	20	20	20				

Number Alive (l, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar: DS Jar(s) mortality 7 days prior to test (must be ≤25%): 0/1

QA (previous month)
Days to first brood (≤12 days): 8
Average number of young produced (≥15 young): 38
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%): 0

Sample
DO (mg/L) of sample prior to aeration: 9.7
DO % of sample prior to aeration: 122
Duration of aeration (37.5 +/- 12.5 mL/min/L): 20m
Hardness (mg $CaCO_3$/L) of 100% : 888
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L): —
Alkalinity of 100% sample (mg $CaCO_3$/L): 245

Temperature (°C) of sample prior to aeration: 20
Is aeration required (<40% or >100%)? **Yes or No**
Filtered with 110um screen prior to testing **Yes or No**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Dilution Water
Pail label / preparation date: 2:02/17
Hardness of dilution water (mg/L): 239

Antiscalant
Final Concentration in Sample: 2mg/L
Volume of sample: 500 mL Volume of antiscalant: 15.8µL

Comments/Observations:
0hrs: No ppt
48hrs: No ppt

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Reviewed By: SS Date Reviewed: 20221031 04

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS10 Client TEC164 Reference 2122-1449

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/02/23	1625	MAF/DW	2	-
1	2022/02/24	0900	MAF	-	MAF
2	2022/02/25	0905	DW	3	AW

Sample Information

Initial pH: 7.9
Initial EC (µS/cm): 1703
Salinity (ppt): 4

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	8.2	8.2	8.2	8.0	8.0	8.0				
2	8.2	8.1	8.2	8.2	8.2	8.2				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	497	490	488	1683	1734	1139				
2	499	469	466	1637	1692	1633				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	10.1	10.1	10.1				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar C4. Jar(s) mortality 7 days prior to test (must be ≤25%) 0/.

QA (previous month)
Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 29.
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: ~~11.3~~ MAF 10.6
DO % of sample prior to aeration: MAF ~~110~~ 113%
Duration of aeration (37.5 +/- 12.5 mL/min/L): 20m
Hardness (mg $CaCO_3$/L) of 100% : 888
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) -
Alkalinity of 100% sample (mg $CaCO_3$/L): 245

Temperature (°C) of sample prior to aeration: ~~12~~ 20 MAF
Is aeration required (<40% or >100%)? **Yes or No**
Filtered with 110um screen prior to testing **Yes or No**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Dilution Water
Pail label / preparation date 2:02/17
Hardness of dilution water (mg/L) 239

DO Levels (40-100% saturation) - corrected for altitude -
4.1 to 10.3 mg/L at 8°C
4.0 to 10.0 mg/L at 9°C
3.9 to 9.8 mg/L at 10°C
3.8 to 9.6 mg/L at 11°C
3.7 to 9.4 mg/L at 12°C

Comments/Observations: 0hrs: No ppt
48hrs: No ppt

Reviewed By: SS Date Reviewed: 2022/03/04

APPENDIX C – Chain-of-custody form

Teck

Page 1 of 1

COC ID: 2022-02-21_SP03 | TURNAROUND TIME: Regular (default) | RUSH: NO

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name	WLC AWTF			Lab Name	Nautilus Environmental			Report Format / Distribution		Excel	PDF	EDD
Project Manager	Brett Mason			Lab Contact	Tamara Pomeroy			Email 1:	DL-WLC-Lab@teck.com	X	X	X
Email	brett.mason@teck.com			Email	tamara@nautilusenvironmental.ca			Email 2:	H20.lab.results@teck.com	X	X	X
Address	15 Km North HWY 43			Address	10823 27th Street SE			Email 3:	TeckCoal@equisonline.com			X
								Email 4:	Tricia.Hill@teck.com	X	X	X
City	Sparwood	Province	BC	City	Calgary	Province	AB	Email 5:	Marty.Hafke@teck.com	X	X	X
Postal Code	V0B 2G0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada	Email 6:				
Phone Number	250 425 4837			Phone Number	403 253 7121			PO number		VPO00807029		

SAMPLE DETAILS | **ANALYSIS REQUESTED**

2022/02/22
14:00
Hotshot
JC
1x20L carboy, 3x1L bottles
NoS/NoL
Good Cond.

Please indicate below Filtered, Perserved or both (F, P, F/P)

Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	NAUT_96Hr_RT_Single_Concentration_Toxicity Test	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 10C	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 20C	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 20C + Antiscalant	
2122-1449												
LC_WTF_IN_2022-02-21_NP_0800	LC_WTF_IN	WS		2/21/2022	8:00	G	4	X	X	X	X	5.8°C

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	Date	Time	ACCEPTED BY/AFFILIATION	Date	Time
	Vanessa Turner	2/22/2022				

SERVICE REQUEST (rush - subject to availability)					
Regular (default)	X	Sampler's Name	Mason Reimer	Mobile #	
Priority (2-3 business days) - 50% surcharge					
Emergency (1 Business Day) - 100% surcharge		Sampler's Signature		Date/Time	21-Feb-22
For Emergency <1 Day, ASAP or Weekend - Contact ALS					

END OF REPORT

Acute Toxicity Test Results

Sample collected March 7, 2022

Final Report

April 13, 2022

Submitted to: **Teck Coal Ltd.**
Sparwood, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates					
	Collected	Received	Rainbow trout test initiation[1]	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation	*Daphnia magna* antiscalant test initiation
LC_WTF_IN_2022-03-07_NP_0800/ 2122-1553	7-Mar-22 at 0800h	8-Mar-22 at 1215h	11-Mar-22 at 1517h	9-Mar-22 at 1515h	9-Mar-22 at 1525h	9-Mar-22 at 1520h

[1]According to information provided by Nautilus Environmental (Burnaby, BC)

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
LC_WTF_IN_2022-03-07_NP_0800	6.6°C	953	238

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)
- *Daphnia magna* 48-h single concentration screening test (conducted with 2 mg/L antiscalant)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample			
	Rainbow trout[1]	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
LC_WTF_IN_2022-03-07_NP_0800	100	100	100	100

[1]According to information provided by Nautilus Environmental (Burnaby, BC)

Sample ID	Percent Immobility in 100 (% v/v)		
	Daphnia magna 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
LC_WTF_IN_2022-03-07_NP_0800	0	7	0

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
LC_WTF_IN_2022-03-07_NP_0800	Rainbow trout[1]	Precipitate observed on airline	None
	Daphnia magna	None	None

[1]According to information provided by Nautilus Environmental (Burnaby, BC)

QA/QC

QA/QC summary	Rainbow trout[3]	*Daphnia magna*
Reference toxicant LC50 (95% CL)	1.0 (0.6-1.4) g/L KCl[1]	5.2 (4.9-5.6) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	1.7 (1.1-2.6) g/L KCl	6.5 (5.5-7.7) g/L NaCl
Reference toxicant CV	22%	5.8%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, March 11, 2022; [2] Test Date March 17, 2022; [3]According to information provided by Nautilus Environmental (Burnaby, BC)

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation



Report By:
Courtney Hewitt, BSc
Biologist



Reviewed By:
Courtney Bogstie, P. Biol.
Senior Biologist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test. [1]

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

[1]According to information provided by Nautilus Environmental (Burnaby, BC)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Control/dilution water for antiscalant test	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L), Na_2SeO_4 (2 µg Se/L) and 2 mg/L antiscalant
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

Rainbow Trout Summary Sheet

Client: Nautilus Environmental Calgary Start Date/Time: Mar 11/22 @ 1517 h

Work Order No.: 220383 Test Species: *Oncorhynchus mykiss*

Sample Information:

Sample ID: 2122-1553
Sample Date: Mar 7/22
Date Received: Mar 9/22
Sample Volume: 1 x 20 L
Other: –

Test Validity Criteria:
≥ 90% Control Survival
WQ Ranges:
T (°C) = 15 ± 1; DO (mg/L) = 7.0 to 10.3; pH = 5.5 to 8.5

Dilution Water:

Type: Dechlorinated Municipal Tap Water
Hardness (mg/L $CaCO_3$): 22
Alkalinity (mg/L $CaCO_3$): 22

Test Organism Information:

Batch No.: 022522
Source: Aqua Farms
No. Fish/Volume (L): 10/12 L
Loading Density (g/L): 0.24
Mean Length ± SD (mm): 34 ± 4 Range: 29 – 42
Mean Weight ± SD (g): 0.29 ± 0.13 Range: 0.13 – 0.55

KCl Reference Toxicant Results:

Reference Toxicant ID: RBTK16
Stock Solution ID: N/A
Date Initiated: Mar 11/22
96-h LC50 (95% CL) [g/L KCl]: 1.0 (0.6 – 1.4) g/l KCl

Reference toxicant LC50 value is slightly outside 2SD, but within 3SD of ~~this~~ the historical range.

Reference Toxicant Mean and Historical Range [g/L KCl]: 1.7 (1.1 – 2.6) g/l KCl
Reference Toxicant CV (%): 22%

Test Results: 0% mortality ~~100% survival~~ at 96 h in the 100% (v/v) undiluted sample.

Reviewed by: A Date reviewed: Mar 17/22

96-Hour Rainbow Trout Toxicity Test Data Sheet

Client/Project#: Nautilus Environmental Calgary
Sample I.D. 2122 - 1553
W.O. # 220383
RBT Batch #: 022522
Date Collected/Time: ~~03~~ - 07 - Mar - 22 @ 0800h
Date Setup/Time: 11 - Mar - 22 @ 1517h
CER #: 2
Sample Setup By: SMH / JRL / BS

Thermometer: CER # 2
D.O. meter/probe: DO - 2 / 2
Cond./Salinity meter/probe: C-5 / 5
pH meter/probe: pH 5 / 5

Number Fish/Volume: 10 / 12L
7-d % Mortality: 0.93
Total Pre-aeration Time (mins): ~~30~~ 30 Ao
Aeration rate adjusted to 6.5 ± 1 mL/min/L? (Y/N): Y

Undiluted Sample WQ			
Parameters	Initial WQ	Adjustment	30 min WQ
Temp °C	14.0		14.0
D.O. (mg/L)	10.5		10.3
pH	8.0		7.9
Cond. (µS/cm)	1670		1660
Salinity (ppt)	0.8		0.8

Concentration	# Survivors							Temperature (°C)					Dissolved Oxygen (mg/L)					pH					Conductivity (µS/cm)	
(% v/v)	1	2	4	24	48	72	96	0	24	48	72	96	0	24	48	72	96	0	24	48	72	96	0	96
Control				10	10	10	10	14.0	14.5	14.0	14.0	14.5	10.0	9.7	9.8	9.9	9.7	7.4	7.6	7.2	7.0	7.1	52	58
100				10	10	10	10	14.0	14.5	14.5	14.0	14.5	10.3	9.6	9.9	9.9	9.9	7.9	8.2	8.3	8.2	8.3	1660	1620
Initials				KML	HEC	SMH	JRL	JRL	KML	HEC	SMH	JRL	JRL	KML	HEC	SMH	JRL	JRL	KML	HEC	SMH	JRL	JRL	JRL

Sample Description/Comments: Clear, colourless, odourless liquid w/ no particulates.

Fish Description at 96 h: All fish appear normal
Number of Stressed Fish at 96 h: 0

Other Observations: Precipitate on airline @ 96h

Reviewed by: AM
Date Reviewed: Mar 17/22

Rainbow trout (Oncorhynchus mykiss) Length and Weight Sheet

Client: Nautilus Environmental Calgary
Sample ID: 2122 - 1553
W.O. #: 220383

Balance ID: Bal - 2
Date Initiated: Mar 11 /22
Date Measured: Mar 15 /22
Batch #: 022522

	Length (mm)	Weight (g)
1	34	0.29
2	29	0.20
3	33	0.27
4	39	0.42
5	30	0.13
6	42	0.55
7	32	0.15
8	33	0.32
9	32	0.23
10	38	0.38
Total	342	2.94
Mean	34	0.29
Std. Dev.	4	0.13
Low	29	0.13
High	42	0.55

Volume Tested (L): 12

Loading Density (g/L): 0.24

Initials: SMH

Reviewed by: A Date Reviewed: Mar 17/22

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS20 Client TEC164 Reference 2122-1553

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/03/09	1525	MAF/CC	2	NJ
1	2022/03/10	0845	MAF	-	ST
2	2022/03/11	0845	EP	2	ST

Sample Information

Initial pH: 8.0
Initial EC (µS/cm): 1601
Salinity (ppt): 3

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	8.1	8.1	8.1	8.0	8.0	8.0				
2	8.1	8.0	8.0	8.1	8.0	8.1				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	448	442	442	1656	1652	1653				
2	440	444	447	1612	1606	1644				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	8.4	8.4	8.4				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	19	19	19	20	20	20				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10(1)				
2	10	10	10	10	10(1)	10(1)				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar C7 Jar(s) mortality 7 days prior to test (must be ≤25%) 0

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 33
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0

Sample
DO (mg/L) of sample prior to aeration: 9.7
DO % of sample prior to aeration: 122.1
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20m
Hardness (mg $CaCO_3$/L) of 100% : 953
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 238

Temperature (°C) of sample prior to aeration: 21
Is aeration required (<40% or >100%)? **Yes or No**
Filtered with 110um screen prior to testing **Yes or (No)**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or (No)**

Dilution Water
Pail label / preparation date 1:03/03
Hardness of dilution water (mg/L) 217

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Comments/Observations:
0hr: ncppt.
48hr: no ppt

Reviewed By: SS Date Reviewed: 2022/03/22

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS10 Client TEC164 Reference 2122-1553

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022-03-09	1315	MAF/CC	2	AJ
1	2022-03-10	0850	MAF	-	ST
2	2022-03-11	0850	EP	2	KTM

Sample Information

Initial pH:	8.0
Initial EC (µS/cm):	1601
Salinity (ppt):	3

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	8.1	8.1	8.0	7.9	8.0	8.0				
2	8.0	8.0	8.0	8.2	8.2	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	448	442	442	1639	1669	1673				
2	444	447	451	1652	1648	1671				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar C1 Jar(s) mortality 7 days prior to test (must be ≤25%) 0

QA (previous month)

Days to first brood (≤12 days) 8

Average number of young produced (≥15 young) 33

Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 10.2

DO % of sample prior to aeration: 107 %

Duration of aeration (37.5 +/- 12.5 mL/min/L): 20m

Hardness (mg $CaCO_3$/L) of 100% : 953

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —

Alkalinity of 100% sample (mg $CaCO_3$/L): 238

Temperature (°C) of sample prior to aeration: 12

Is aeration required (<40% or >100%)? (Yes) or No

Filtered with 110um screen prior to testing (Yes) or No

Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)

Dilution Water

Pail label / preparation date 1:03/03

Hardness of dilution water (mg/L) 217

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

Comments/Observations:

0hr: nopt.

48hr: no ppt

Reviewed By: SS Date Reviewed: 2022/03/22

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS Client TEC164 Reference 2122-1553

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022-03-09	1520	MAF/CC	2	AW
1	2022-03-10	0845	MAF	-	ST
2	2022-03-11	0845	EP	2	MM

Sample Information

Initial pH: 8.0
Initial EC (µS/cm): 1601
Salinity (ppt): 3

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				
day										
pH (units) (range: 6.0-8.5)										
0	8.0	8.1	8.1	8.0	8.0	8.0				
2	8.1	8.0	8.0	8.2	8.3	8.3				
EC (uS/cm)										
0	446	443	441	1597	1646	1652				
2	428	445	446	1573	1621	1634				
DO (mg/L) (**40-100% saturation at test temp.**)										
0	7.9	7.9	7.9	8.3	8.3	8.3				
2	8.1	8.1	8.1	8.1	8.1	8.1				
Temperature (°C) (range: **18-22 °C**)										
0	20	20	20	21	21	21				
2	19	19	19	19	19	19				
Number Alive (I, immobile)										
0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar C1 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 33
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0

Sample
DO (mg/L) of sample prior to aeration: 9.6 Temperature (°C) of sample prior to aeration: 21
DO % of sample prior to aeration: 120% Is aeration required (<40% or >100%)? (Yes or No)
Duration of aeration (37.5 +/- 12.5 mL/min/L): 20m Filtered with 110um screen prior to testing Yes or (No)
Hardness (mg $CaCO_3$/L) of 100% : 953 Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) -
Alkalinity of 100% sample (mg $CaCO_3$/L): 238

Dilution Water
Pail label / preparation date 1:03/03
Hardness of dilution water (mg/L) 217

Antiscalant
Final Concentration in Sample: 2mg/L
Volume of sample: 500mL Volume of antiscalant: 15.8uL

Comments/Observations:
0hr: NCPPT.
48hr: NO PPT

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Reviewed By: SS Date Reviewed: 20221031122

APPENDIX C – Chain-of-custody form

Teck

COC ID: 2022-03-07_SP03 **TURNAROUND TIME:** Regular (default) **RUSH:** NO

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name	WLC AWTF			Lab Name	Nautilus Environmental			Report Format / Distribution		Excel	PDF	EDD
Project Manager	Brett Mason			Lab Contact	Tamara Pomeroy			Email 1:	DL-WLC-Lab@teck.com	X	X	X
Email	brett.mason@teck.com			Email	tamara@nautilusenvironmental.ca			Email 2:	H20.lab.results@teck.com	X	X	X
Address	15 Km North HWY 43			Address	10823 27th Street SE			Email 3:	TeckCoal@equisonline.com			X
								Email 4:	Tricia.Hill@teck.com	X	X	X
City	Sparwood	Province	BC	City	Calgary	Province	AB	Email 5:	Marty.Hafke@teck.com	X	X	X
Postal Code	V0B 2G0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada	Email 6:				
Phone Number	250 425 4837			Phone Number	403 253 7121			PO number	VPO00807029			

SAMPLE DETAILS / **ANALYSIS REQUESTED**

2022/03/08
12:15
Manitoulin
JC/SRS
1x20L carboys, 3x1L bottles
N6S/N6I
Good Condition

Please indicate below Filtered, Perserved or both (F, P, F/P)

Sample ID 2122-1554 3 JC	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	ANALYSIS	NAUT_96Hr_RT_Single_Concentration_Toxicity Test	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 10C	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 20C	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 20C + Antiscalant											
LC_WTF_IN_2022-03-07_NP_0800	LC_WTF_IN	WS		3/7/2022	8:00	G	4		X	X	X	X	6.6°C										

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	Date	Time	ACCEPTED BY/AFFILIATION	Date	Time
	Nicholas Krajnc	3/7/2022				

SERVICE REQUEST (rush - subject to availability)

Regular (default)	X	Sampler's Name	Axel Morin	Mobile #	
Priority (2-3 business days) - 50% surcharge					
Emergency (1 Business Day) - 100% surcharge		Sampler's Signature	Axel Morin	Date/Time	7-Mar-22
For Emergency <1 Day, ASAP or Weekend - Contact ALS					

END OF REPORT

Acute Toxicity Test Results

Sample collected March 7, 2022

Final Report

April 4, 2022

Submitted to: **Teck Coal Ltd.**
Sparwood, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates			
	Collected	Received	Rainbow trout test initiation[1]	*Daphnia magna* 20˚C test initiation
WL_BFWB_OUT_SP21_2022-03-07_N_0900/ 2122-1554	7-Mar-22 at 0900h	8-Mar-22 at 1215h	11-Mar-22 at 1700h	8-Mar-22 at 1505h

[1]According to information provided by Nautilus Environmental (Burnaby, BC)

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
WL_BFWB_OUT_SP21_2022-03-07_N_0900	6.8°C	839	229

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample	
	Rainbow trout[1]	*Daphnia magna* 20˚C
WL_BFWB_OUT_SP21_2022-03-07_N_0900	100	97

[1]According to information provided by Nautilus Environmental (Burnaby, BC)

Sample ID	Percent Immobility in 100 (% v/v)
	Daphnia magna 20˚C
WL_BFWB_OUT_SP21_2022-03-07_N_0900	3

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
WL_BFWB_OUT_SP21_2022-03-07_N_0900	Rainbow trout[1]	None	None
	Daphnia magna	None	None

[1]According to information provided by Nautilus Environmental (Burnaby, BC)

QA/QC

QA/QC summary	Rainbow trout[3]	*Daphnia magna*
Reference toxicant LC50 (95% CL)	1.0 (0.6-1.4) g/L KCl[1]	6.4 (6.2-6.6) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	1.7 (1.1-2.6) g/L KCl	6.5 (5.6-7.6) g/L NaCl
Reference toxicant CV	22%	4.9%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, May 11, 2022; [2] Test Date February 28, 2022; [3]According to information provided by Nautilus Environmental (Burnaby, BC)

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation

Report By:
Christine Chanhao, BSc
Biologist

Reviewed By:
Courtney Bogstie, P. Biol.
Senior Biologist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.[1]

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

[1]According to information provided by Nautilus Environmental (Burnaby, BC)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

Rainbow Trout Summary Sheet

Client: Nautilus Environmental Calgary Start Date/Time: Mar 11/22 @ 1700 h

Work Order No.: 220383 Test Species: *Oncorhynchus mykiss*

Sample Information:

Sample ID: 2122-1554
Sample Date: Mar 7/22
Date Received: Mar 9/22
Sample Volume: 1 x 20 L
Other: -

Test Validity Criteria:
≥ 90% Control Survival
WQ Ranges:
T (°C) = 15 ± 1; DO (mg/L) = 7.0 to 10.3; pH = 5.5 to 8.5

Dilution Water:

Type: Dechlorinated Municipal Tap Water
Hardness (mg/L $CaCO_3$): 22
Alkalinity (mg/L $CaCO_3$): 22

Test Organism Information:

Batch No.: 022522
Source: Aqua Farms
No. Fish/Volume (L): 10/12 L
Loading Density (g/L): 0.22
Mean Length ± SD (mm): 33 ± 2 Range: 29 - 36
Mean Weight ± SD (g): 0.26 ± 0.06 Range: 0.15 - 0.35

KCl Reference Toxicant Results:

Reference Toxicant ID: RBTK16
Stock Solution ID: N/A
Date Initiated: Mar 11/22
96-h LC50 (95% CL) [g/L KCl]: 1.0 (0.6 - 1.4) g/l KCl

Reference toxicant LC50 value is slightly outside 2SD, but within 3SD of ~~this~~ the historical range.

Reference Toxicant Mean and Historical Range [g/L KCl]: 1.7 (1.1 - 2.6) g/l KCl
Reference Toxicant CV (%): 22%

Test Results: 0% ~~100%~~ mortality ~~survival~~ at 96 h in the 100% (v/v) undiluted sample.

Reviewed by: A Date reviewed: Mar 17/22

96-Hour Rainbow Trout Toxicity Test Data Sheet

Client/Project#: Nautilus Environmental Calgary
Sample I.D. 2122 - 1554
W.O. # 220383
RBT Batch #: 022522
Date Collected/Time: ~~03~~ - 07 - Mar - 22 @ 0900h
Date Setup/Time: 11 - Mar - 22 @ 1700h
CER #: 2
Sample Setup By: SMH, TR

Thermometer: CER # 2
D.O. meter/probe: DO-2 / 2
Cond./Salinity meter/probe: C-5 / 5
pH meter/probe: pH-5 / 5

Number Fish/Volume: 10 / 12L
7-d % Mortality: 0.93
Total Pre-aeration Time (mins): 120min.
Aeration rate adjusted to 6.5 ± 1 mL/min/L? (Y/N): Y

Undiluted Sample WQ			
Parameters	Initial WQ	Adjustment	30 min WQ
Temp °C	15.0 ~~14.0~~		15.0
D.O. (mg/L)	11.8		11.8
pH	7.2		7.3
Cond. (µS/cm)	1794		1798
Salinity (ppt)	0.9		0.9

Concentration	# Survivors							Temperature (°C)					Dissolved Oxygen (mg/L)					pH					Conductivity (µS/cm)	
(% v/v)	1	2	4	24	48	72	96	0	24	48	72	96	0	24	48	72	96	0	24	48	72	96	0	96
Control				10	10	10	10	14.0	14.5	14.0	14.0	14.5	10.0	9.7	9.8	9.9	9.7	7.4	7.6	7.2	7.0	7.1	52	58
100				10	10	10	10	15.0	14.5	14.5	14.0	15.0	11.2	9.4	9.6	9.6	9.8	7.4	7.9	8.1	8.2	8.1	1792	1782
Initials				KML	HEC	SMH	TR	SM	KML	HEC	SMH	TR	SM	KML	HEC	SMH	TR	SM	KML	HEC	SMH	TR	SM	TR

Sample Description/Comments: Slightly turbid, slightly yellow, odourless liquid w/ no particulates.

Fish Description at 96 h: All fish appear normal. Number of Stressed Fish at 96 h: 0

Other Observations: No precipitate @ 96h

Reviewed by: [signature] Date Reviewed: Mar 17/22

Rainbow trout (Oncorhynchus mykiss) Length and Weight Sheet

Client: Nautilus Environmental Calgary
Sample ID: 2122 - 1554
W.O. #: 220383

Balance ID: Bal - 2
Date Initiated: Mar 11 /22
Date Measured: Mar 15 /22
Batch #: 022522

	Length (mm)	Weight (g)
1	36	0.33
2	34	0.28
3	33	0.27
4	34	0.28
5	36	0.35
6	31	0.15
7	34	0.27
8	35	0.30
9	30	0.22
10	29	0.18
Total	332	2.63
Mean	33	0.26
Std. Dev.	2	0.06
Low	29	0.15
High	36	0.35

Volume Tested (L): 12

Loading Density (g/L): 0.22

Initials: SMH

Reviewed by: A Date Reviewed: Mar 17/22

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DA326 Client TEC1164 Reference 2122-1554

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/03/08	1505	EP/KTM	3	AW
1	2022/03/09	0820	CC	-	JT
2	2022/03/10	0856	KTM	2	EP

Sample Information

Initial pH: 7.4
Initial EC (µS/cm): 1750
Salinity (ppt): 3

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	8.0	8.0	8.1	7.6	7.6	7.6				
2	8.1	8.1	8.1	8.2	8.3	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	460	464	464	1743	1820	1829				
2	436	457	454	1747	1778	1760				

DO (mg/L) (**40-100% saturation at test temp.**)

0	8.1	8.1	8.1	~~7.9~~ 9.0	~~7.9~~ 9.0	~~7.9~~ 9.0				
2	7.7	7.7	7.7	7.7	7.7	EP 7.7				

Temperature (°C) (range: **18-22 °C**)

0	19	19	19	20	20	20				
2	21	21	21	21	21	21				

Number Alive (l, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	9				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar E2 Jar(s) mortality 7 days prior to test (must be ≤25%) 0/1

QA (previous month)
Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) KTM ~~31~~ 24
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 12.9 Temperature (°C) of sample prior to aeration: 21
DO % of sample prior to aeration: 162% Is aeration required (<40% or >100%)? **Yes or No**
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20min Filtered with 110um screen prior to testing **Yes or (No)**
Hardness (mg $CaCO_3$/L) of 100% : 839 Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or (No)**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 229

Dilution Water
Pail label / preparation date 1:03/03
Hardness of dilution water (mg/L) 217

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Comments/Observations:
0hr: no ppt
48hr: no ppt

Reviewed By: SS Date Reviewed: 2022/03/22

APPENDIX C – Chain-of-custody form

Teck

Page 1 of 1

COC ID: 2022-03-07_SP21 **TURNAROUND TIME:** Regular (default) **RUSH:** NO

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO			
Facility Name	WLC AWTF			Lab Name	Nautilus Environmental			Report Format / Distribution		Excel	PDF	EDD
Project Manager	Brett Mason			Lab Contact	Tamara Pomeroy			Email 1:	DL-WLC-Lab@teck.com	X	X	X
Email	brett.mason@teck.com			Email	tamara@nautilusenvironmental.ca			Email 2:	H20.lab.results@teck.com	X	X	X
Address	15 Km North HWY 43			Address	10823 27th Street SE			Email 3:	TeckCoal@equisonline.com			X
								Email 4:	Tricia.Hill@teck.com	X	X	X
City	Sparwood	Province	BC	City	Calgary	Province	AB	Email 5:	Marty.Hafke@teck.com	X	X	X
Postal Code	V0B 2G0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada	Email 6:				
Phone Number	250 425 4837			Phone Number	403 253 7121			PO number	VPO00807029			

SAMPLE DETAILS / **ANALYSIS REQUESTED**

2022/03/08
12:15
Manitou Lin
OCWSRS
3x20L carboys, 3x1L bottles
NaS/NaL
Good Cond.
4
6.8°C

Please indicate below Filtered, Preserved or both (F, P, F/P)

Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	ANALYSIS: NAUT_96Hr_RT_Single_Concentration_Toxicity Test	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 20C														
WL_BFWB_OUT_SP21_2022-03-07_N_0900	WL_BFWB_OUT_SP21	WS		3/7/2022	9:00	G	6	X	X														

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	Date	Time	ACCEPTED BY/AFFILIATION	Date	Time
Shipment includes 2 extra 20 L bladders and 2 extra 1.2 L plastic bottles.	Nicholas Krajnc	3/7/2022				

SERVICE REQUEST (rush - subject to availability)

Regular (default)	X	Sampler's Name	Axel Morin	Mobile #	
Priority (2-3 business days) - 50% surcharge					
Emergency (1 Business Day) - 100% surcharge		Sampler's Signature	Axel Morin	Date/Time	7-Mar-22
For Emergency <1 Day, ASAP or Weekend - Contact ALS					

END OF REPORT

Acute Toxicity Test Results

Sample collected March 21, 2022

Final Report

April 21, 2022

Submitted to: **Teck Coal Ltd.**
Sparwood, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates					
	Collected	Received	Rainbow trout test initiation[1]	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation	*Daphnia magna* antiscalant test initiation
LC_WTF_IN_2022-03-21_NP_0800/ 2122-1648	21-Mar-22 at 0800h	22-Mar-22 at 0920h	26-Mar-22 at 1345h	26-Mar-22 at 1355h	25-Mar-22 at 1635h	26-Mar-22 at 1420h

[1]According to information provided by Nautilus Environmental (Point Edward, ON); results for this testing are provided in Appendix B

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
LC_WTF_IN_2022-03-21_NP_0800	8.3°C	992	268

TEST TYPES

- Rainbow trout 96-h single concentration screening test, performed by Nautilus Environmental Point Edward, Ontario
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)
- *Daphnia magna* 48-h single concentration screening test (conducted with 2 mg/L antiscalant)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample			
	Rainbow trout[1]	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
LC_WTF_IN_2022-03-21_NP_0800	100	100	90	100

[1]According to information provided by Nautilus Environmental Point Edward, Ontario

Sample ID	Percent Immobility in 100 (% v/v)		
	Daphnia magna 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
LC_WTF_IN_2022-03-21_NP_0800	0	13	0

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
LC_WTF_IN_2022-03-21_NP_0800	Rainbow trout	Not completed	Not completed
	Daphnia magna	Surficial precipitate observed in 10 and 20-degree test vessels	None

QA/QC

QA/QC summary	*Daphnia magna*
Reference toxicant LC50 (95% CL)	6.6 (6.0-7.2) g/L NaCl[1]
Reference toxicant historical mean (2 SD Range)	6.5 (5.5-7.7) g/L NaCl
Reference toxicant CV	5.7%
Organism health history	Acceptable
Protocol deviations	None
Water quality range deviations	None
Control performance	Acceptable
Test performance	Valid

[1]Test Date March 29, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation

Nautilus Environmental Point Edward, Ontario QA/QC information provided in Appendix B.

Report By:
Emma Pedersen, BSc
Biologist

Reviewed By:
Leila Oosterbroek, P Biol
Environmental Scientist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Control/dilution water for antiscalant test	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L), Na_2SeO_4 (2 µg Se/L) and 2 mg/L antiscalant
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

Certificate of Analysis

ACUTE LETHALITY BIOASSAY REPORT
(Single-Concentration Test)

CLIENT:
Nautilus Environmental, 10823 27 Street SE, Calgary, AB, T2Z 3V9

TEST RESULTS:

Sample Name[1]	Sample Number	Date Collected	Date Received	Date Tested	Test Species[2]	Percent Mortality[3]	Method Deviations
2122-1648	1510-0012219	21-Mar-22	24-Mar-22	26-Mar-22	RBT	0%	No

1 - Results relate only to the sample tested. Tested as received from client.
2 - Test Type and Species RBT = Rainbow Trout 96-hour 100% Effluent Concentration Acute Lethality Test
3 - Most regulations regard ≤50% mortality to be a "pass". Check your applicable regulatory requirements.

TEST PROTOCOLS:

Environment Canada, "Biological Test Method: Reference Method for Determining Acute Lethality of Effluents to Rainbow Trout", Environmental Technology Centre, Ottawa, Ontario, Report EPS 1/RM/13 Second Edition - December 2000, including May 2007 and February 2016 Amendments. (Nautilus Test Method RT-SC-R1.7)

REFERENCE/HEALTH DATA:

Trout

Date Reference Test Initiated: 31-Mar-22 **Reference Chemical:** Phenol **Fish Lot #:** LF040322
96-Hour LC50: 9.33 mg/L **95% Confidence Limits:** 7.53 mg/L; 11.57 mg/L
Historic Geometric Mean LC50: 8.93 mg/L **Historic Warning Limits (± 2 SD):** 6.39 mg/L; 12.48 mg/L

TEST RESULTS APPROVED BY:

Date: April 7, 2022

C.D'Andrea

Carol D'Andrea
Laboratory Supervisor

Y:\bioassays\2022\1000\1500-001\1510-0012219 T

704 Mara Street Point Edward, ON N7V 1X4
519-339-8787

NAUTILUS ENVIRONMENTAL RAINBOW TROUT TOXICITY TEST BENCH SHEET

Sample Information				Test Information					
Account	1510.001	Sample Method: Composite (Grab) Other		Test Type:	(Single Concentration)	LC50	TIE		Screen
Client	Nautilus AB	Sample Number	1510.001.2219	Date/Time Started	26.03.22	/	1345	Analyst Starting Test	JM
Person Collecting Sample		Sample Name	2122.1648	Date/Time Ended	30.03.22	/	1345	Fish Lot #	LF 040322
Date/Time Collected	21.03.22	Temperature Upon Receipt	15.7 °C	Test Volume	20 L Per Vessel	Number of Fish Per Vessel	10	Number of Vessels Per Conc.	(1) 2
Date/Time Received in Lab	24.03.22 / 1115	Pre-Aeration	No (Yes)	Pre-Aeration Duration	30 min	Pre-Aeration Rate	6.5 ±0.26 ml/min·L⁻¹		
Sample Description	clear, colourless	Sample Type Description	NA	Rate of Aeration During Test	6.5 ±0.26 ml/min·L⁻¹	Dilution Water	Dechlor	Sample pH Adjustment	(No) Yes
				Sample Point Description: MISA	(Other:			Storage Temperature	4.2 °C

Initial Sample Measurements Before Aeration - Cond.: 1198 µmhos D.O: 9.9 mg/L 99 % Temp: 15.7 °C pH: 7.9 Air Flow Meter Reading: 1150 L/min.
Instrument Identification- M/P #: 6A M/P #: 5/3 M/P #: 13/09 Meter #: 2

TOXICANT	CONC %	TOTAL NUMBER DEAD # OF HOURS FROM START OF TEST					Initial Measurements After Pre-Aeration						Meter/Probe			Initials	Final Measurements					Meter/Probe		Initials
		___	24	48	72	96	Time	Cond (umhos)	D.O. (mg/L)/%		°C	pH (units)	Cond	D.O./ Temp	pH		Date	Time	°C	D.O. (mg/L)/%	pH (units)	D.O./ Temp	pH	
Control			0	0	0	0	1338	216	9.3	92	15.2	8.1	6/7	5/5	12/09	JM	30.03.22	1345	14.3	9.4	91	7.9	5/5	12/09	JM
①	100%		0	0	0	0	↓	1177	9.7	97	15.6	7.8	↓	↓	↓	↓	↓	↓	14.4	9.3	91	8.2	↓	↓	↓
Time Initials			0915 CG	1000 ✓	0830 ✓	1345 JM	Number of Control Fish Showing Atypical Behaviour: <24h: 0 24h: 0 48h: 0 72h: 0 96h: 0																		

Percent Mortality	0 %	LENGTH (mm)		WEIGHT (g)	Initials: JM	Holding Mortalities 7-days Preceding Test	Number of Fish in Batch at Day (-)7 2000
LC50 (Lower; Upper Limit)	—	Mean (SD)	35.1 (2.5)	Mean (SD)	0.41 (0.10)	Number Dead (recorded daily for 7 days)	Total Number Dead for 7 days Preceding Test
Method	—	Min/Max	31 / 38	Min/Max	0.24 / 0.55	0 + 1 + 3 + 4 + 3 + 9 + 13	= 33
Verified By (initials)	CO	Sample Size	10	Loading Density	~~0.3~~ 0.21 g/L	7-Day Holding Mortality ([total number dead/number of fish in batch] x 100)	1.65%

Observations and notes:

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC164 Reference 7122-7648

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	20220312 S	1635	ICM/CC	2	SS
1	2022/03/26	0745	EP	-	SS
2	2022/03/27	0928	CC	2	B.N

Sample Information

Initial pH: 8.1
Initial EC (µS/cm): 1557
Salinity (ppt): 2

Lab Code	GLA	GLB	GLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	8.1 cc	8.1	8.1	7.9	7.9	7.9				
2	8.8	8.1	8.1	8.2	8.2	8.2				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	404	411	411	1501	1513	1517				
2	416	418	417	1481	1478	1471				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.7	7.7	7.7	7.7	7.7	7.7				
2	7.9	7.9	7.9	7.7	7.7	7.7				

Temperature (°C) (range: **18-22 °C**)

0	21	21	21	21	21	21				
2	20	20	20	21	21	21				

Number Alive (l, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10(1I)	10	8 7(1I)	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar C3/C4/C5 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 29
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0%
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 7.7
Temperature (°C) of sample prior to aeration: 21
DO % of sample prior to aeration: 100%
Is aeration required (<40% or >100%)? **Yes or (No)**
Duration of aeration (37.5 +/- 12.5 mL/min/L) : —
Filtered with 110um screen prior to testing **Yes or (No)**
Hardness (mg $CaCO_3$/L) of 100% : 998
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or (No)**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 268

Dilution Water
Pail label / preparation date 2:03/19
Hardness of dilution water (mg/L) 211

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Comments/Observations:
Ohw: neppt
48hr: Surficial ppt

Reviewed By: SP Date Reviewed: 2022/03/30.

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC164 Reference 2122-1648

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/03/26	1355	MF/ST	2	JCC
1	2022/03/27	0921	trm	-	JCC
2	2022/03/28	1130	CE	2	trm

Sample Information

Initial pH: 8.1
Initial EC (µS/cm): 1557
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	8.2	8.2	8.3	8.0	8.0	8.0				
2	8.3	8.3	8.3	8.4	8.4	8.4				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	428	405	401	1504	1523	1528				
2	~~450~~ 400	414	416	1505	1483	1524				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar 105 / 103 Jar(s) mortality 7 days prior to test (must be ≤25%) 5

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 23
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0%
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 9.0 Temperature (°C) of sample prior to aeration: 11
DO % of sample prior to aeration: 100 Is aeration required (<40% or >100%)? **Yes or No**
Duration of aeration (37.5 +/- 12.5 mL/min/L) : - Filtered with 110um screen prior to testing **Yes or No**
Hardness (mg $CaCO_3$/L) of 100% : 992 Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) -
Alkalinity of 100% sample (mg $CaCO_3$/L): 268

Dilution Water
Pail label / preparation date 2:03119
Hardness of dilution water (mg/L) 211

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

Comments/Observations:
0hrs: no ppt
48hrs: surficial ROb

Reviewed By: Date Reviewed: 2022/03/30

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS 2 Client TEC164 Reference 2122-1648

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/03/26	1420	MF/ST	2	JCC
1	2022/03/27	0835	km	-	JCC
2	2022/03/28	0935	km	2	cc ~~JJ~~ CC

Sample Information

Initial pH: 8.1
Initial EC (µS/cm): 1557
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				
day				pH (units) (range: 6.0-8.5)						
0	8.2	8.2	8.2	8.0	8.0	8.0				
2	8.3	8.2	8.2	8.4	8.4	8.4				
				The pH of the sample was not adjusted prior to test setting, unless noted in the comments below						
				EC (uS/cm)						
0	405	402	401	1494	1509	1504				
2	377	396	392	1440	1452	1442				
				DO (mg/L) (**40-100% saturation at test temp.**)						
0	7.9	7.9	7.9	7.7	7.7	7.7				
2	7.7	7.7	7.7	7.7	7.7	7.7				
				Temperature (°C) (range: **18-22 °C**)						
0	20	20	20	21	21	21				
2	21	21	21	21	21	21				
				Number Alive (I, immobile)						
0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	8*	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar D11D3 Jar(s) mortality 7 days prior to test (must be ≤25%) 5

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 23
Were test treatments randomized on test tray? Yes / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0

Sample
DO (mg/L) of sample prior to aeration: 7.7
Temperature (°C) of sample prior to aeration: 21
DO % of sample prior to aeration: 100
Is aeration required (<40% or >100%)? **Yes or No**
Duration of aeration (37.5 +/- 12.5 mL/min/L) : —
Filtered with 110um screen prior to testing **Yes or No**
Hardness (mg $CaCO_3$/L) of 100% : 992
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 768

Dilution Water
Pail label / preparation date 2:03119
Hardness of dilution water (mg/L) 211

Antiscalant
Final Concentration in Sample: 2 mg/L
Volume of sample: 500mL Volume of antiscalant: 15.8µL

Comments/Observations:
0hrs: no ppt
48hrs: no ppt

* 2 dried to side of jar, don't include in mortality
↳ not included in mortality.

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Reviewed By: [signature] Date Reviewed: 2022/03/30

APPENDIX C – Chain-of-custody form

Teck

Page 1 of 1

COC ID: 2022-03-21_SP03 | TURNAROUND TIME: Regular (default) | RUSH: NO

PROJECT/CLIENT INFO

Facility Name	WLC AWTF
Project Manager	Brett Mason
Email	brett.mason@teck.com
Address	15 Km North HWY 43
City	Sparwood
Province	BC
Postal Code	V0B 2G0
Country	Canada
Phone Number	250 425 4837

LABORATORY

Lab Name	Nautilus Environmental
Lab Contact	Tamara Pomeroy
Email	tamara@nautilusenvironmental.ca
Address	10823 27th Street SE
City	Calgary
Province	AB
Postal Code	T2Z 3V9
Country	Canada
Phone Number	403 253 7121

OTHER INFO

Report Format / Distribution		Excel	PDF	EDD
Email 1:	DL-WLC-Lab@teck.com	X	X	X
Email 2:	H20.lab.results@teck.com	X	X	X
Email 3:	TeckCoal@equisonline.com			X
Email 4:	Tricia.Hill@teck.com	X	X	X
Email 5:	Marty.Hafke@teck.com	X	X	X
Email 6:				

PO number: VPO00807029

SAMPLE DETAILS

2022/03/22
09:20
Manitoulin
DC
1x20L carboys, 8x1L bottles
NoS/NoI
Good Condition

ANALYSIS REQUESTED

Please indicate below Filtered, Perserved or both (F, P, F/P)

Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	ANALYSIS: NAUT_96Hr_RT_Single_Concentration_Toxicity Test	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 10C	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 20C	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 20C + Anticalant	
2122-1648												
LC_WTF_IN_2022-03-21_NP_0800	LC_WTF_IN	WS		3/21/2022	8:00	G	4	X	X	X	X	8.3°C

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS

RELINQUISHED BY/AFFILIATION

RELINQUISHED BY/AFFILIATION	Date	Time
Vanessa Turner	3/21/2022	

ACCEPTED BY/AFFILIATION

ACCEPTED BY/AFFILIATION	Date	Time

SERVICE REQUEST (rush - subject to availability)

Regular (default)	X
Priority (2-3 business days) - 50% surcharge	
Emergency (1 Business Day) - 100% surcharge	
For Emergency <1 Day, ASAP or Weekend - Contact ALS	

Sampler's Name	Bella Chen	Mobile #	
Sampler's Signature		Date/Time	21-Mar-22

END OF REPORT

Acute Toxicity Test Results

Samples collected March 21, 2022

Final Report

April 21, 2022

Submitted to: **Teck Coal Ltd.**
Sparwood, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates				
	Collected	Received	Rainbow trout test initiation[1]	*Daphnia magna* 20˚C test initiation	*Daphnia magna* antiscalant test initiation
WL_BFWB_OUT_SP21_2022-03-21_N_0900/ 2122-1649-01	21-Mar-22 at 0900h	22-Mar-22 at 0920h	26-Mar-22 at 1500h	25-Mar-22 at 1620h	-
WL_BFWB_OUT_SP21_2022-03-21_NP_0901_AS/ 2122-1649-02	21-Mar-22 at 0900h	22-Mar-22 at 0920h	-	-	25-Mar-22 at 1620h

[1]Rainbow trout testing for the sample was performed by Nautilus Environmental, Point Edward, ON; results for this testing are provided in Appendix B

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
WL_BFWB_OUT_SP21_2022-03-21_N_0900	9.3°C	993	251
WL_BFWB_OUT_SP21_2022-03-21_NP_0901_AS	9.3°C	993	251

TEST TYPES

- Rainbow trout 96-h single concentration screening test, performed by Nautilus Environmental, Point Edward, Ontario
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted with 5 mg/L antiscalant)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample		
	Rainbow trout[1]	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
WL_BFWB_OUT_SP21_2022-03-21_N_0900	100	100	-
WL_BFWB_OUT_SP21_2022-03-21_NP_0901_AS	-	-	100

[1]According to information provided by Nautilus Environmental, Point Edward, ON

Sample ID	Percent Immobility in 100 (% v/v)	
	Daphnia magna 20˚C	*Daphnia magna* antiscalant
WL_BFWB_OUT_SP21_2022-03-21_N_0900	0	-
WL_BFWB_OUT_SP21_2022-03-21_NP_0901_AS	-	0

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
WL_BFWB_OUT_SP21_2022-03-21_N_0900	Rainbow trout	Not completed	Not completed
	Daphnia magna	None	None
WL_BFWB_OUT_SP21_2022-03-21_NP_0901_AS	*Daphnia magna*	None	None

QA/QC

QA/QC summary	*Daphnia magna*
Reference toxicant LC50 (95% CL)	6.6 (6.0-7.2) g/L NaCl[1]
Reference toxicant historical mean (2 SD Range)	6.5 (5.5-7.7) g/L NaCl
Reference toxicant CV	5.7%
Organism health history	Acceptable
Protocol deviations	None
Water quality range deviations	None
Control performance	Acceptable
Test performance	Valid

[1]Test Date March 29, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation

Nautilus Environmental, Point Edward, ON QA/QC information provided in Appendix B.



Report By:
Courtney Hewitt, BSc
Biologist



Reviewed By:
Leila Oosterbroek, P Biol
Environmental Scientist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Control/dilution water for antiscalant test	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L), Na_2SeO_4 (2 µg Se/L) and 5 mg/L antiscalant
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS ENVIRONMENTAL

Certificate of Analysis

ACUTE LETHALITY BIOASSAY REPORT
(Single-Concentration Test)

CLIENT:
Nautilus Environmental, 10823 27 Street SE, Calgary, AB, T2Z 3V9

TEST RESULTS:

Sample Name[1]	Sample Number	Date Collected	Date Received	Date Tested	Test Species[2]	Percent Mortality[3]	Method Deviations
2122-1649-01	1510-0012220	21-Mar-22	24-Mar-22	26-Mar-22	RBT	0%	No

1 - Results relate only to the sample tested. Tested as received from client.
2 - Test Type and Species RBT = Rainbow Trout 96-hour 100% Effluent Concentration Acute Lethality Test
3 - Most regulations regard ≤50% mortality to be a "pass". Check your applicable regulatory requirements.

TEST PROTOCOLS:

Environment Canada, "Biological Test Method: Reference Method for Determining Acute Lethality of Effluents to Rainbow Trout", Environmental Technology Centre, Ottawa, Ontario, Report EPS 1/RM/13 Second Edition - December 2000, including May 2007 and February 2016 Amendments. (Nautilus Test Method RT-SC-R1.7)

REFERENCE/HEALTH DATA:

Trout

Date Reference Test Initiated: 31-Mar-22 **Reference Chemical:** Phenol **Fish Lot #:** LF040322
96-Hour LC50: 9.33 mg/L **95% Confidence Limits:** 7.53 mg/L; 11.57 mg/L
Historic Geometric Mean LC50: 8.93 mg/L **Historic Warning Limits (± 2 SD):** 6.39 mg/L; 12.48 mg/L

TEST RESULTS APPROVED BY:

Date: April 7, 2022

C.D'Andrea

Carol D'Andrea
Laboratory Supervisor

Y:\bioassays\2022\1000\1500-001\1510-0012220 T

704 Mara Street Point Edward, ON N7V 1X4
519-339-8787

NAUTILUS ENVIRONMENTAL RAINBOW TROUT TOXICITY TEST BENCH SHEET

Sample Information				Test Information					
Account	1510-001	Sample Method: Composite (Grab) Other		Test Type:	(Single Concentration)	LC50	TIE		Screen
Client	Nautilus AB	Sample Number	1510-0012220	Date/Time Started	26-03-22 / 1500		Analyst Starting Test	JM	
Person Collecting Sample		Sample Name	2122-1649-01	Date/Time Ended	30-03-22 / 1430		Fish Lot #	LF040322	
Date/Time Collected	21-03-22 / NA	Temperature Upon Receipt	16.7 °C	Test Volume	20 L Per Vessel	Number of Fish Per Vessel 10	Number of Vessels Per Conc.	(1)	2
Date/Time Received in Lab	24-03-22 / 1115	Pre-Aeration	No (Yes)	Pre-Aeration Duration 120 min		Pre-Aeration Rate	6.5	±0.26 ml/min·L^{-1}	
Sample Description	clear, light green	Sample Type Description	Effluent	Rate of Aeration During Test	6.5 ±0.26 ml/min·L^{-1}	Dilution Water	Dechlor	Sample pH Adjustment	(No) Yes
				Sample Point Description: MISA	(Other)			Storage Temperature	4.5 °C

Initial Sample Measurements Before Aeration - Cond.: 1323 µmhos D.O: 11.4 mg/L 118 % Temp: 14.7 °C pH: 7.4 Air Flow Meter Reading: 150 L/min.
Instrument Identification- M/P #: 6/7 M/P #: 5/5 M/P #: 12/59 Meter #: 7

TOXICANT	CONC %	TOTAL NUMBER DEAD # OF HOURS FROM START OF TEST					Initial Measurements After Pre-Aeration						Meter/Probe			Initials	Final Measurements					Meter/Probe		Initials
		—	24	48	72	96	Time	Cond (umhos)	D.O. (mg/L)/%		°C	pH (units)	Cond	D.O./ Temp	pH		Date	Time	°C	D.O. (mg/L)/%		pH (units)	D.O./ Temp	pH	
Control			0	0	0	0	1459	203	10.1	100	15.0	7.8	6/7	5/5	12/59	JM	30-03-22	1430	15.3	9.2	91	7.8	5/5	12/59	JM
1	100%		0	0	0	0	↓	1334	10.5	103	14.7	7.5	↓	↓	↓	↓	↓	↓	15.1	9.5	94	8.3	↓	↓	↓
Time Initials			0945 LS	1430 JM	0830 JM	1430 JM	Number of Control Fish Showing Atypical Behaviour: <24h: 0 24h: 0 48h: 0 72h: 0 96h: 0																		

Percent Mortality	0 %	LENGTH (mm)		WEIGHT (g)	Initials: JM	Holding Mortalities 7-days Preceding Test	Number of Fish in Batch at Day (-)7 2000
LC50 (Lower; Upper Limit)	—	Mean (SD)	35.2 (4.1)	Mean (SD)	0.43 (0.13)	Number Dead (recorded daily for 7 days)	Total Number Dead for 7 days Preceding Test
Method	—	Min/Max	27 / 42	Min/Max	0.18 / 0.64	0+1+3+4+3+9+13	= 33
Verified By (initials)		Sample Size	10	Loading Density	0.22 g/L	7-Day Holding Mortality ([total number dead/number of fish in batch] x 100)	1.65%

Observations and notes: DO@30 11.4 mg/L
DO@60 10.8 mg/L
DO@90 10.5 mg/L

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS20 Client TEC164 Reference 2122-1649-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/03/25	1620	KTM/CC	2	[illegible]
1	2022/03/26	0740	EP	-	ST
2	2022/03/27	0955	JCC	2	CC

Sample Information

Initial pH: 7.4
Initial EC (µS/cm): 1660
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				
day				pH (units) (range: 6.0-8.5)						
0	8.0	8.0	8.0	7.7	7.7	7.7				
2	8.0	8.0	8.0	8.1	8.1	8.2				
				The pH of the sample was not adjusted prior to test setting, unless noted in the comments below						
				EC (uS/cm)						
0	403	410	413	1623	1636	1632				
2	410	421	415	1617	1620	1630				
				DO (mg/L) (**40-100% saturation at test temp.**)						
0	7.7	7.7	7.7	7.7	7.7	7.7				
2	7.9	7.9	7.9	7.9	7.9	7.9				
				Temperature (°C) (range: **18-22 °C**)						
0	21	21	21	21	21	21				
2	20	20	20	20	20	20				
				Number Alive (I, immobile)						
0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar D3 Jar(s) mortality 7 days prior to test (must be ≤25%) 5%

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 23
Were test treatments randomized on test tray? Yes / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0

Sample
DO (mg/L) of sample prior to aeration: 11.3
Temperature (°C) of sample prior to aeration: 21
DO % of sample prior to aeration: 142%
Is aeration required (<40% or >100%)? **Yes or No**
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20min
Filtered with 110um screen prior to testing **Yes or No**
Hardness (mg $CaCO_3$/L) of 100% : 993
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 251

Dilution Water
Pail label / preparation date 2:03/19
Hardness of dilution water (mg/L) 211

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Comments/Observations:
0Hrs: no ppt
48Hrs: no ppt

Reviewed By: WO Date Reviewed: 2022/03/28

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS(5) Client TEC164 Reference 2122-1649-02

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/03/25	1620	KTM/CC	2	
1	2022/03/26	0745	EP		
2	2022/03/27	1005	TCC	2	CC

Sample Information

Initial pH:	7.4
Initial EC (µS/cm):	1660
Salinity (ppt):	2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	8.0	8.0	8.0	7.9	7.9	7.9				
2	8.1	8.1	8.1	8.2	8.2	8.2				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	395	411	412	1616	1634	1630				
2	401	406	415	1620	1616	1620				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.7	7.7	7.7	7.7	7.7	7.7				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	21	21	21	21	21	21				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar D3/D1 Jar(s) mortality 7 days prior to test (must be ≤25%) 5%

QA (previous month)

Days to first brood (≤12 days) 8

Average number of young produced (≥15 young) 23

Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - (must be ≤10%) 0

Sample

DO (mg/L) of sample prior to aeration: 10.1

DO % of sample prior to aeration: 128%

Duration of aeration (37.5 +/- 12.5 mL/min/L): 20ml

Hardness (mg $CaCO_3$/L) of 100% : 993

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —

Alkalinity of 100% sample (mg $CaCO_3$/L): 251

Temperature (°C) of sample prior to aeration: 21

Is aeration required (<40% or >100%)? **Yes or No**

Filtered with 110um screen prior to testing **Yes or No**

Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Dilution Water

Pail label / preparation date 2:03/19

Hardness of dilution water (mg/L) 211

Antiscalant

Final Concentration in Sample: 5mg/L

Volume of sample: 500mL Volume of antiscalant: 39.5mL

Comments/Observations: 0ppt

0Hrs:

48Hrs: 0ppt

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Reviewed By: VO Date Reviewed: 2022/03/28

APPENDIX C – Chain-of-custody form

Teck

Page 1 of 1

COC ID: 2022-03-21_SP21 **TURNAROUND TIME:** Regular (default) **RUSH: NO**

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name	WLC AWTF			Lab Name	Nautilus Environmental			Report Format / Distribution		Excel	PDF	EDD
Project Manager	Brett Mason			Lab Contact	Tamara Pomeroy			Email 1:	DL-WLC-Lab@teck.com	X	X	X
Email	brett.mason@teck.com			Email	tamara@nautilusenvironmental.ca			Email 2:	H20.lab.results@teck.com	X	X	X
Address	15 Km North HWY 43			Address	10823 27th Street SE			Email 3:	TeckCoal@equisonline.com			X
								Email 4:	Tricia.Hill@teck.com	X	X	X
City	Sparwood	Province	BC	City	Calgary	Province	AB	Email 5:	Marty.Hafke@teck.com	X	X	X
Postal Code	V0B 2G0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada	Email 6:				
Phone Number	250 425 4837			Phone Number	403 253 7121			PO number		VPO00807029		

SAMPLE DETAILS

~~2122~~ 2022/03/22
09:20
Manitou/in
SC/SRS
3x20L carboys, 4x1L bottles
NoS/NoS
Good Condition

ANALYSIS REQUESTED

Please indicate below Filtered, Preserved or both (F, P, F/P)

Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	ANALYSIS: NAUT_96Hr_RT_Single_Concentration_Toxicity Test	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 20C	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 20C + Antiscalant	
WL_BFWB_OUT_SP21_2022-03-21_N_0900 -01	WL_BFWB_OUT_SP21	WS		2022/03/21	9:00	G	6	X	X		4.3%
WL_BFWB_OUT_SP21_2022-03-21_NP_0901_AS -02	WL_BFWB_OUT_SP21	WS		2022/03/21	9:00	G	1			X	✓

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	Date	Time	ACCEPTED BY/AFFILIATION	Date	Time
Shipment includes 2 extra 20 L bladders and 2 extra 1.2 L plastic bottles.	Vanessa Turner	2022/03/21				

SERVICE REQUEST (rush - subject to availability)

Regular (default)	X
Priority (2-3 business days) - 50% surcharge	
Emergency (1 Business Day) - 100% surcharge	
For Emergency <1 Day, ASAP or Weekend - Contact ALS	

Sampler's Name	Bella Chen	Mobile #	
Sampler's Signature		Date/Time	21-Mar-22

END OF REPORT

Acute Toxicity Test Results

Sample collected April 4, 2022

Final Report

May 2, 2022

Submitted to: **Teck Coal Ltd.**
Sparwood, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates					
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation	*Daphnia magna* antiscalant test initiation
LC_WTF_IN_2022-04-04_NP_0800/ 2122-1780	4-Apr-22 at 0800h	5-Apr-22 at 1400h	8-Apr-22 at 1515h	5-Apr-22 at 1635h	5-Apr-22 at 1655h	5-Apr-22 at 1700h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
LC_WTF_IN_2022-04-04_NP_0800	7.9°C	856	215

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)
- *Daphnia magna* 48-h single concentration screening test (conducted with 5 mg/L antiscalant)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample			
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
LC_WTF_IN_2022-04-04_NP_0800	100	100	100	100

Sample ID	Percent Immobility in 100 (% v/v)		
	Daphnia magna 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
LC_WTF_IN_2022-04-04_NP_0800	0	0	0

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
LC_WTF_IN_2022-04-04_NP_0800	Rainbow trout	None	None
	Daphnia magna	None	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	3.1 (2.6-3.5) g/L KCl[1]	6.6 (6.0-7.2) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.3 (2.5-4.4) g/L KCl	6.5 (5.5-7.7) g/L NaCl
Reference toxicant CV	9.5%	5.7%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, April 4, 2022; [2] Test Date March 29, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation

Daphnia magna 48-h single concentration screening test was conducted with 5 mg/L antiscalant instead of 2 mg/L.

Report By:
Christine Chanhao, BSc
Biologist

Reviewed By:
Leila Oosterbroek, P Biol
Environmental Scientist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Control/dilution water for antiscalant test	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L), Na_2SeO_4 (2 µg Se/L) and 5 mg/L antiscalant
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC 164 Reference 2122-1780 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022-04-08	1515 *	CH/LC/EP	47	SC
1	2022-04-09	0915	NA	- EP	MAF
2	2022-04-10	0940	DM	-	DM
3	2022-04-11	0846	KTM	-	KTM
4	2022-04-12	1020	DM/LC/CC	1	CB

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 8.1
Initial EC (µS/cm): 1826
Salinity (ppt): 3

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L: **yes/no**

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	9.3	9.3	8.8		
Temp (°C) of 100%	15				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	7.5	8.1						
Day 4	8.3	8.3						
EC (uS/cm)								
Day 0	572	1824						
Day 4	816	1630						
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	8.8	8.8						
Day 4	8.8	8.8						
Temperature (°C) (range: 14-16°C)								
Day 0	15	15						
Day 4	15	15						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.2	0.3
2	3.5	0.5
3	3.1	0.4
4	4.0	0.8
5	3.9	0.6
6	4.0	0.7
7	3.2	0.4
8	4.0	0.8
9	3.4	0.4
10	3.0	0.3

Loading Density (g/L): 0.3
(must be ≤0.5 g/L)
Mean Length (cm): 3.5
Length Range (cm): 3.0 - 4.0
Mean Weight (g): 0.5
(Must be ≥0.3g)
Weight Range: (g): 0.3 - 0.8

Test Organism Information

Batch 20220309TR
Source Sam Livingston
Tank # 3
Days Held at 15± 2°C 30
(must be ≥14 days)
Percent stock mortality 0.88
(7 days prior to test, must be ≤2%)
Test Volume (L) 18

Comments : 96 hr: no fish

Reviewed By: VO Date Reviewed: 2022/04/13

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS20 Client TEC164 Reference 2122-1780

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/04/05	1655	CC/KM	2	SJ
1	2022/04/06	0830	CM	-	SJ
2	2022/04/07	0910	EP	2	KM

Sample Information

Initial pH: 8.1
Initial EC (µS/cm): 1826
Salinity (ppt): 3

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	8.3	8.2	8.2	8.1	8.1	8.1				
2	8.4	8.3	8.3	8.2	8.3	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	512	530	545	1807	1801	1815				
2	532	540	547	1742	1778	1798				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.7	7.7	7.7	7.6	7.6	7.6				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	21	21	21	22	22	22				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar C3/C5 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 32
Were test treatments randomized on test tray? (Yes) No

Control Validity Criteria
Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 9.9
Temperature (°C) of sample prior to aeration: 22
DO % of sample prior to aeration: 130%
Is aeration required (<40% or >100%)? (Yes) or No
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20 min
Filtered with 110um screen prior to testing Yes or (No)
Hardness (mg $CaCO_3$/L) of 100% : 856
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 215

Dilution Water
Pail label / preparation date 1:04/01
Hardness of dilution water (mg/L) 231

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Comments/Observations:
0hrs: No ppt
48hrs: no ppt

Reviewed By: KM Date Reviewed: 2022/04/13

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS10 Client TEC164 Reference 2122-1780

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/04/05	1635	CC/KTM	2	ST
1	2022/04/06	0830	CH	-	ST
2	2022/04/07	0825	EP	2	ktm

Sample Information

Initial pH: 8.1
Initial EC (µS/cm): 1820
Salinity (ppt): 3

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	8.2	8.3	8.2	8.0	8.0	8.0				
2	8.4	8.4	8.4	8.5	8.5	8.5				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	531	542	540	1834	1828	1842				
2	579	555	560	1812	1819	1818				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar C4 Jar(s) mortality 7 days prior to test (must be ≤25%) 0 %

QA (previous month)

Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 32
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 9.4
DO % of sample prior to aeration: 103%
Duration of aeration (37.5 +/- 12.5 mL/min/L) : —
Hardness (mg $CaCO_3$/L) of 100% : 856
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 215

Temperature (°C) of sample prior to aeration: 12
Is aeration required (<40% or >100%)? **Yes or (No)**
Filtered with 110um screen prior to testing **Yes or (No)**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or (No)**

Dilution Water

Pail label / preparation date 1;04/01
Hardness of dilution water (mg/L) 231

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

Comments/Observations: 0hrs: No ppt
48hrs: no ppt

Reviewed By: KM Date Reviewed: 2022/04/13

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS 5 Client TEC164 Reference 2122-1780

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/04/05	1700	CC/KTM	2	
1	2022/04/06	0830	CH	-	
2	2022/04/07	0900	EP	2	KTM

Sample Information

Initial pH: 8.1
Initial EC (µS/cm): 1820
Salinity (ppt): 3

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	8.2	8.2	8.2	8.1	8.1	8.1				
2	8.4	8.3	8.3	8.4	8.4	8.4				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	550	547	547	1802	1797	1813				
2	535	545	547	1769	1789	1793				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.7	7.7	7.7	7.6	7.6	7.6				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	21	21	21	22	22	22				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar E2 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 27
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0

Sample
DO (mg/L) of sample prior to aeration: 9.9 Temperature (°C) of sample prior to aeration: 22
DO % of sample prior to aeration: 130% Is aeration required (<40% or >100%)? **Yes or No**
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20min, Filtered with 110um screen prior to testing **Yes or No**
Hardness (mg $CaCO_3$/L) of 100% : 856 Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 215

Dilution Water
Pail label / preparation date 11:04/01
Hardness of dilution water (mg/L) 231

Antiscalant
Final Concentration in Sample: 5mg/L
Volume of sample: 500 mL Volume of antiscalant: 89.5µL

Comments/Observations: 0hrs: No ppt
48hrs: no ppt

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Reviewed By: KO Date Reviewed: 2022/04/13

APPENDIX C – Chain-of-custody form

Teck

Page 1 of 1

COC ID: 2022-04-04_SP03 **TURNAROUND TIME:** Regular (default) **RUSH:** NO

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name	WLC AWTF			Lab Name	Nautilus Environmental			Report Format / Distribution		Excel	PDF	EDD
Project Manager	Brett Mason			Lab Contact	Tamara Pomeroy			Email 1:	DL-WLC-Lab@teck.com	X	X	X
Email	brett.mason@teck.com			Email	tamara@nautilusenvironmental.ca			Email 2:	H20.lab.results@teck.com	X	X	X
Address	15 Km North HWY 43			Address	10823 27th Street SE			Email 3:	TeckCoal@equisonline.com			X
								Email 4:	Tricia.Hill@teck.com	X	X	X
City	Sparwood	Province	BC	City	Calgary	Province	AB	Email 5:	Marty.Hafke@teck.com	X	X	X
Postal Code	V0B 2G0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada	Email 6:				
Phone Number	250 425 4837			Phone Number	403 253 7121			PO number		VPO00822031		

SAMPLE DETAILS / **ANALYSIS REQUESTED**

Please indicate below Filtered, Preserved or both (F, P, F/P)

Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	NAUT_96Hr_RT_Single_Concentration_Toxicity Test	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 10C	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 20C	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 20C + Antiscalant
2022/04/05 14:00 Manitoulin JC 1x20L carboy, 3x1L bottles NoS/NoZ Good Condition 7.9°C											
LC_WTF_IN_2022-04-04_NP_0800	LC_WTF_IN	WS		2022/04/04	8:00	G	4	X	X	X	X

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	Date	Time	ACCEPTED BY/AFFILIATION	Date	Time
	Vanessa Turner	2022/04/04				

SERVICE REQUEST (rush - subject to availability)	
Regular (default)	X
Priority (2-3 business days) - 50% surcharge	
Emergency (1 Business Day) - 100% surcharge	
For Emergency <1 Day, ASAP or Weekend - Contact ALS	

Sampler's Name	Gilroy James	Mobile #	
Sampler's Signature		Date/Time	04-Apr-22

END OF REPORT

Acute Toxicity Test Results

Sample collected April 4, 2022

Final Report

May 4, 2022

Submitted to: **Teck Coal Ltd.**
Sparwood, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates			
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 20˚C test initiation
WL_BFWB_OUT_SP21_2022-04-04_N_0900/ 2122-1781	4-Apr-22 at 0900h	5-Apr-22 at 1400h	8-Apr-22 at 1545h	5-Apr-22 at 1745h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
WL_BFWB_OUT_SP21_2022-04-04_N_0900	8.8°C	803	214

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample	
	Rainbow trout	*Daphnia magna* 20˚C
WL_BFWB_OUT_SP21_2022-04-04_N_0900	100	100

Sample ID	Percent Immobility in 100 (% v/v)
	Daphnia magna 20˚C
WL_BFWB_OUT_SP21_2022-04-04_N_0900	0

Precipitate observations

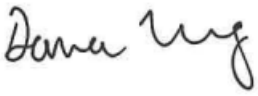
Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
WL_BFWB_OUT_SP21_2022-04-04_N_0900	Rainbow trout	None	None
	Daphnia magna	None	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	3.1 (2.6-3.5) g/L KCl[1]	6.6 (6.0-7.2) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.3 (2.5-4.4) g/L KCl	6.5 (5.5-7.7) g/L NaCl
Reference toxicant CV	9.5%	5.7%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, April 4, 2022; [2] Test Date March 29, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation



Report By:
Dana Wong, BSc
Biologist



Reviewed By:
Courtney Bogstie, P. Biol.
Senior Biologist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC 164 Reference 2122-1781 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022-04-08	1545*	CH/LC/EP	X7	JC
1	2022-04-09	0915	NA	- EP	MAF
2	2022-04-10	0940	DM	-	DW
3	2022-04-11	0840	KTM	-	DW
4	2022-04-12	1015	DW/LC/CC		MF

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 7.8
Initial EC (µS/cm): 1839
Salinity (ppt): 3

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L: **yes/no**

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	10.6	9.7	9.2	8.8	
Temp (°C) of 100%	15				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	7.7	7.6						
Day 4	8.3	8.4						
EC (uS/cm)								
Day 0	572	1998						
Day 4	803	1803						
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	8.8	8.8						
Day 4	8.8	8.8						
Temperature (°C) (range: 14-16°C)								
Day 0	15	15						
Day 4	15	15						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.5	0.4
2	3.5	0.4
3	3.8	0.6
4	3.6	0.5
5	3.5	0.6
6	3.7	0.5
7	3.1	0.3
8	3.6	0.5
9	3.8	0.6
10	3.0	0.3

Loading Density (g/L): 0.3
(must be ≤0.5 g/L)
Mean Length (cm): 3.5
Length Range (cm): 3.0 - 3.8
Mean Weight (g): 0.5
(Must be ≥0.3g)
Weight Range: (g): 0.3-0.6

Test Organism Information

Batch 20220309TR
Source Sam Livingston
Tank # 913CH
Days Held at 15± 2°C 30
(must be ≥14 days)
Percent stock mortality 0.88
(7 days prior to test, must be ≤2%)
Test Volume (L) 15

Comments : 96 hr: no ppt

Reviewed By: LO Date Reviewed: 2022/04/13

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS20 Client TEC164 Reference 2122-1781

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/04/05	0745	ST/MH	2	ST
1	2022/04/06	0820	CH	-	SS
2	2022/04/07	0900	EP	2	KMM

Sample Information

Initial pH: 7.8
Initial EC (µS/cm): 1839
Salinity (ppt): 3

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	8.2	8.2	8.2	7.8	7.8	7.8				
2	8.3	8.3	8.2	8.3	8.3	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	541	546	547	1852	1869	1870				
2	528	542	548	1927	1941	1959				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	8.6	8.8	8.7				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	19	19	19				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar C1/C2/C4 Jar(s) mortality 7 days prior to test (must be ≤25%) 0

QA (previous month)

Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 32
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 13.4
Temperature (°C) of sample prior to aeration: 18
DO % of sample prior to aeration: 166
Is aeration required (<40% or >100%)? **Yes or No**
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20 min
Filtered with 110um screen prior to testing **Yes or No**
Hardness (mg $CaCO_3$/L) of 100% : 803
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 214

Dilution Water

Pail label / preparation date 1:04/01
Hardness of dilution water (mg/L) 231

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Comments/Observations: 0hrs: No ppt
48hrs: no ppt

Reviewed By: [illegible] Date Reviewed: 2022/04/13

APPENDIX C – Chain-of-custody form

Teck

Page 1 of 1

COC ID: 2022-04-04_SP21 (1) **TURNAROUND TIME:** Regular (default) **RUSH: NO**

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name	WLC AWTF			Lab Name	Nautilus Environmental			Report Format / Distribution		Excel	PDF	EDD
Project Manager	Brett Mason			Lab Contact	Tamara Pomeroy			Email 1:	DL-WLC-Lab@teck.com	X	X	X
Email	brett.mason@teck.com			Email	tamara@nautilusenvironmental.ca			Email 2:	H20.lab.results@teck.com	X	X	X
Address	15 Km North HWY 43			Address	10823 27th Street SE			Email 3:	TeckCoal@equisonline.com			X
								Email 4:	Tricia.Hill@teck.com	X	X	X
City	Sparwood	Province	BC	City	Calgary	Province	AB	Email 5:	Marty.Hafke@teck.com	X	X	X
Postal Code	V0B 2G0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada	Email 6:				
Phone Number	250 425 4837			Phone Number	403 253 7121			PO number	VPO00822031			

SAMPLE DETAILS — **ANALYSIS REQUESTED**

2022/04/05
14:00
Manitoulin
SC
3x 20L carboys, 3x1L bottles
NoS/NoI
Good Condition
8.8°C

Please indicate below Filtered, Perserved or both (F, P, F/P)

Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	ANALYSIS: NAUT_96Hr_RT_Single_Concentration_Toxicity Test	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @20C
WL_BFWB_OUT_SP21_2022-04-04_N_0900	WL_BFWB_OUT_SP21	WS		2022/04/04	9:00	G	6	X	X

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	Date	Time	ACCEPTED BY/AFFILIATION	Date	Time
Shipment includes 2 extra 20 L bladders and 2 extra 1.2 L plastic bottles.	Vanessa Turner	2022/04/04				

SERVICE REQUEST (rush - subject to availability)					
Regular (default)	X	Sampler's Name	Gilroy James	Mobile #	
Priority (2-3 business days) - 50% surcharge					
Emergency (1 Business Day) - 100% surcharge		Sampler's Signature		Date/Time	04-Apr-22
For Emergency <1 Day, ASAP or Weekend - Contact ALS					

END OF REPORT

Acute Toxicity Test Results

Sample collected April 18, 2022

Final Report

May 20, 2022

Submitted to: **Teck Coal Ltd.**
Sparwood, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates					
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation	*Daphnia magna* antiscalant test initiation
LC_WTF_IN_2022-04-18_NP_0800/ 2122-1940	18-Apr-22 at 0800h	19-Apr-22 at 1146h	21-Apr-22 at 1425h	20-Apr-22 at 1515h	20-Apr-22 at 1540h	20-Apr-22 at 1535h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
LC_WTF_IN_2022-04-18_NP_0800	9.6°C	895	242

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)
- *Daphnia magna* 48-h single concentration screening test (conducted with 2 mg/L antiscalant)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample			
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
LC_WTF_IN_2022-04-18_NP_0800	100	100	100	100

Sample ID	Percent Immobility in 100 (% v/v)		
	Daphnia magna 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
LC_WTF_IN_2022-04-18_NP_0800	0	0	0

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
LC_WTF_IN_2022-04-18_NP_0800	Rainbow trout	None	None
	Daphnia magna	Surficial precipitate and precipitate observed on the test vessel in the 20-degree test	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	3.9 (3.5-4.4) g/L KCl[1]	6.5 (6.0 - 7.0) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.3 (2.5 -4.5) g/L KCl	6.5 (5.5 - 7.7) g/L NaCl
Reference toxicant CV	9.7%	5.7%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, April 11, 2022; [2] Test Date April 25, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation



Report By:
Ali Epp
Biologist



Reviewed By:
Leila Oosterbroek, P Biol
Environmental Scientist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Control/dilution water for antiscalant test	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L), Na_2SeO_4 (2 µg Se/L) and 2 mg/L antiscalant
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC 164 Reference 2122-1940 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022-04-21	1425 *	CH / KO	1	EP
1	2022-04-22	0750	CH	-	MF
2	2022-04-23	0745	CH	-	mmf
3	2022-04-24	0830	JCC	-	DJ
4	2022-04-25	0940	CC/KO	1	AJ

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 8.1
Initial EC (µS/cm): 1430
Salinity (ppt): 1

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L: **yes/no**

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	9.4	8.8			
Temp (°C) of 100%	16				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	7.8	8.2						
Day 4	8.2	8.2						
EC (uS/cm)								
Day 0	416	1456 cc						
Day 4	cc 473 459	~~2350~~ 1545						
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	8.8	8.8						
Day 4	8.6	8.8						
Temperature (°C) (range: 14-16°C)								
Day 0	15	15						
Day 4	16	15						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.3	0.4
2	3.3	0.4
3	3.3	0.3
4	3.6	0.5
5	3.5	0.5
6	3.4	0.4
7	3.4	0.4
8	3.1	0.3
9	3.5	0.4
10	3.3	0.4

Loading Density (g/L): 0.2 (must be ≤0.5 g/L)
Mean Length (cm): 3.4
Length Range (cm): 3.1-3.6
Mean Weight (g): 0.4 (Must be ≥0.3g)
Weight Range: (g): 0.3-0.5

Test Organism Information

Batch 20220224TR
Source Troutlodge
Tank # 7
Days Held at 15± 2°C 29 (must be ≥14 days)
Percent stock mortality 0.15 (7 days prior to test, must be ≤2%)
Test Volume (L) 18

Comments :
96hr: ~~ppt on bottom & side of tank~~ cc NO ppt

Reviewed By: SS Date Reviewed: 2022105102

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS20 Client TECH4 Reference 2122-1940

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/04/20	1540	EP/DW	2	MF
1	2022/04/21	0845	IC	-	EP
2	2022/04/22	0930	CH	3	MAF

Sample Information

Initial pH: 8.1
Initial EC (µS/cm): 1430
Salinity (ppt): 1

Lab Code	CTLA	CTLB	CTLC	WDA	WDB	WDC				

pH (units) (range: 6.0-8.5)

day										
0	8.0	8.0	8.0	7.8	7.8	7.8				
2	8.3	8.3	8.3	8.3	8.3	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	465	462	460	1523	1575	1583				
2	417	422	422	1394	1429	1428				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.7	7.7	7.7	7.7	7.7	7.7				
2	7.7	7.7	7.7	7.7	7.7	7.7				

Temperature (°C) (range: **18-22 °C**)

0	21	21	21	21	21	21				
2	21	21	21	21	21	21				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar EU Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 26
Were test treatments randomized on test tray? Yes / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0

Sample
DO (mg/L) of sample prior to aeration: 9.3
Temperature (°C) of sample prior to aeration: 22
DO % of sample prior to aeration: 127
Is aeration required (<40% or >100%)? **Yes or No**
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20min
Filtered with 110um screen prior to testing **Yes or No**
Hardness (mg $CaCO_3$/L) of 100% : 895
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 242

Dilution Water
Pail label / preparation date 2:04/14
Hardness of dilution water (mg/L) 226

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Comments/Observations:
0 hr: NO PPT
48 hr: surficial ppt, ppt on jar

Reviewed By: SS Date Reviewed: 2022/05/02

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC 164 Reference 2122-1940

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/04/20	1515	EP/DW	2	MF
1	2022/04/21	0905	CC	-	EP
2	2022/04/22	0945	CM	3	MAF

Sample Information

Initial pH:	8.1
Initial EC (µS/cm):	1430
Salinity (ppt):	1

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	7.6	7.6	7.6	7.6	7.6	7.6				
2	8.3	8.3	8.3	8.3	8.4	8.4				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	435	453	473	1611	1623	1615				
2	427	480	425	1414	1448	1453				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (l, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar C5 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%.

QA (previous month)

Days to first brood (≤12 days) EP 7 8

Average number of young produced (≥15 young) EP 30 27

Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - 0

(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 9.4 Temperature (°C) of sample prior to aeration: 12

DO % of sample prior to aeration: 100 Is aeration required (<40% or >100%)? **Yes or (No)**

Duration of aeration (37.5 +/- 12.5 mL/min/L) : — Filtered with 110um screen prior to testing **Yes or (No)**

Hardness (mg $CaCO_3$/L) of 100% : 895 Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or (No)**

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —

Alkalinity of 100% sample (mg $CaCO_3$/L): 242

Dilution Water

Pail label / preparation date 2:04/14

Hardness of dilution water (mg/L) 226

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C

4.0 to 10.0 mg/L at 9°C

3.9 to 9.8 mg/L at 10°C

3.8 to 9.6 mg/L at 11°C

3.7 to 9.4 mg/L at 12°C

Comments/Observations:

0hr: no ppt

48hr: NO ppt

Reviewed By: SS Date Reviewed: 2022105102

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS (2) Client TEC 164 Reference 2122-1940

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/04/20	1535	EP/DW	2	MF
1	2022/04/21	1345	IC	-	EP
2	2022/04/22	0945	CM	CM	MAF

Sample Information

Initial pH: 8.1
Initial EC (µS/cm): 1430
Salinity (ppt): 1

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	7.9	7.9	7.9	7.8	7.8	7.9				
2	8.3	8.3	8.2	8.4	8.4	8.4				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	446	456	457	1519	1567	1583				
2	418	424	424	1382	1437	1438				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.7	7.7	7.7				
2	7.7	7.7	7.7	7.7	7.7	7.7				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	21	21	21				
2	21	21	21	21	21	21				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar E4 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 26
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 8.9
Temperature (°C) of sample prior to aeration: 22
DO % of sample prior to aeration: 117
Is aeration required (<40% or >100%)? **Yes or No**
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20 min
Filtered with 110um screen prior to testing **Yes or No**
Hardness (mg $CaCO_3$/L) of 100% : 895
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 242

Dilution Water
Pail label / preparation date 2.04/14
Hardness of dilution water (mg/L) 226
9hr: EP
48hr:

Antiscalant
Final Concentration in Sample: 1 mg/L
Volume of sample: 500mL Volume of antiscalant: 158 µL

Comments/Observations:
9hr: no ppt
48hr: NO ppt

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Reviewed By: SS Date Reviewed: 2022/05/02

APPENDIX C – Chain-of-custody form

Teck

COC ID: 2022-04-18_SP03 TURNAROUND TIME: Regular (default) RUSH: NO

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name	WLC AWTF			Lab Name	Nautilus Environmental			Report Format / Distribution		Excel	PDF	EDD
Project Manager	Brett Mason			Lab Contact	Tamara Pomeroy			Email 1:	DL-WLC-Lab@teck.com	X	X	X
Email	brett.mason@teck.com			Email	tamara@nautilusenvironmental.ca			Email 2:	H20.lab.results@teck.com	X	X	X
Address	15 Km North HWY 43			Address	10823 27th Street SE			Email 3:	TeckCoal@equisonline.com			X
								Email 4:	Tricia.Hill@teck.com	X	X	X
City	Sparwood	Province	BC	City	Calgary	Province	AB	Email 5:	Marty.Hafke@teck.com	X	X	X
Postal Code	V0B 2G0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada	Email 6:				
Phone Number	250 425 4837			Phone Number	403 253 7121			PO number	VPO00822031			

SAMPLE DETAILS

2022/04/19
11:46
Manitoulin
SRS
NoS NoI
Good Condition
4x 20L carbals

ANALYSIS REQUESTED

Please indicate below Filtered, Perserved or both (F, P, F/P)

Sample ID 2122-1940	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	ANALYSIS	NAUT_96Hr_RT_Single_Concentration_Toxicity Test	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 10C	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 20C	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 20C + Antiscalant	
LC_WTF_IN_2022-04-18_NP_0800	LC_WTF_IN	WS		4/18/2022	8:00	G	4		X	X	X	X	9.6°C

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	Date	Time	ACCEPTED BY/AFFILIATION	Date	Time
	Vanessa Turner	4/18/2022				

SERVICE REQUEST (rush - subject to availability)					
Regular (default)	X	Sampler's Name	Adrian Larez	Mobile #	
Priority (2-3 business days) - 50% surcharge					
Emergency (1 Business Day) - 100% surcharge		Sampler's Signature	Larez	Date/Time	18-Apr-22
For Emergency <1 Day, ASAP or Weekend - Contact ALS					

END OF REPORT

Acute Toxicity Test Results

Sample collected April 18, 2022

Final Report

May 18, 2022

Submitted to: **Teck Coal Ltd.**
Sparwood, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates			
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 20˚C test initiation
WL_BFWB_OUT_SP21_2022-04-18_N_0900 / 2122-1941	18-Apr-22 at 0900h	19-Apr-22 at 0915h	21-Apr-22 at 1500h	20-Apr-22 at 1530h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
WL_BFWB_OUT_SP21_2022-04-18_N_0900	10.1°C	887	186

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample	
	Rainbow trout	*Daphnia magna* 20˚C
WL_BFWB_OUT_SP21_2022-04-18_N_0900	100	100

Sample ID	Percent Immobility in 100 (% v/v)
	Daphnia magna 20˚C
WL_BFWB_OUT_SP21_2022-04-18_N_0900	0

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
WL_BFWB_OUT_SP21_2022-04-18_N_0900	Rainbow trout	None	None
	Daphnia magna	None	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	3.9 (3.5-4.4) g/L KCl[1]	6.5 (6.0-7.0) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.3 (2.5 -4.5) g/L KCl	6.5 (5.5-7.7) g/L NaCl
Reference toxicant CV	9.7%	5.7%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date April 11, 2022; [2] Test Date April 25, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation



Report By:
Jamie Craig, B.Sc.
Biologist



Reviewed By:
Leila Oosterbroek, P Biol
Environmental Scientist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC 164 Reference 2122-1941 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022-04-21	1500 *	CH / KO	1	MF
1	2022-04-22	0730	CH	-	ME
2	2022-04-23	0745	CH	-	MF
3	2022-04-24	0935	JCC	-	DJ
4	2022-04-25	0935	CH/KO	1	DJ

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 7.4
Initial EC (µS/cm): 1537
Salinity (ppt): 1

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L **yes/no**

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	10.7	9.9	9.6	8.8	
Temp (°C) of 100%	16				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	7.8	7.6						
Day 4	8.2	8.9						
EC (uS/cm)								
Day 0	416	1537						
Day 4	469	1635						
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	8.8	8.8						
Day 4	8.8	8.8						
Temperature (°C) (range: 14-16°C)								
Day 0	15	15						
Day 4	15	15						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.2	0.3
2	3.2	0.3
3	3.0	0.3
4	3.6	0.5
5	3.3	0.3
6	3.2	0.3
7	3.3	0.4
8	3.1	0.3
9	3.0	0.3
10	3.4	0.4

Loading Density (g/L): 0.2 (must be ≤0.5 g/L)
Mean Length (cm): 3.2
Length Range (cm): 3.0-3.6
Mean Weight (g): 0.3 (Must be ≥0.3g)
Weight Range: (g): 0.3-0.5

Test Organism Information

Batch 20220224TR
Source Troutlodge
Tank # 7
Days Held at 15± 2°C 29 (must be ≥14 days)
Percent stock mortality 0.15 (7 days prior to test, must be ≤2%)
Test Volume (L) 18

Comments :
96hr: NO PPT

Reviewed By: CB Date Reviewed: 2022/05/09

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS Client TEC 164 Reference 2122-1941

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/04/20	1530	EB/DW	2	MF
1	2022/04/21	0850	LC	-	EP
2	2022/04/22	0940	CH	3	MAF

Sample Information

Initial pH: 7.4
Initial EC (µS/cm): 1534
Salinity (ppt): 1

Lab Code	CTL A	CTL B	CTL C	100 A	100 B	100 C				

pH (units) (range: 6.0-8.5)

day										
0	7.8	7.8	7.8	7.3	7.3	7.3				
2	8.3	8.3	8.3	8.3	8.3	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	437	454	461	1643	1702	1708				
2	417	425	426	1488	1536	1542				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	8.8	8.8	8.8				
2	7.7	7.7	7.7	7.37 CH	7.7	7.7				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	22	22	22				
2	21	21	21	21	21	21				

Number Alive (l, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar E1 Jar(s) mortality 7 days prior to test (must be ≤25%) 0 %.

QA (previous month)
Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 26
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 13.9
DO % of sample prior to aeration: ~~193~~ 183
Duration of aeration (37.5 +/- 12.5 mL/min/L): 20 min
Hardness (mg $CaCO_3$/L) of 100% : 887
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 186

Temperature (°C) of sample prior to aeration: 22
Is aeration required (<40% or >100%)? (Yes) or No
Filtered with 110um screen prior to testing Yes or (No)
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)

Dilution Water
Pail label / preparation date 2:04/14
Hardness of dilution water (mg/L) 226

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Comments/Observations:
0hr: no ppt
48hr: NO ppt

Reviewed By: CB Date Reviewed: 20221105 09

APPENDIX C – Chain-of-custody form

Teck

Page 1 of 1

COC ID: 2022-04-18_SP21 | TURNAROUND TIME: Regular (default) | RUSH: NO

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name	WLC AWTF			Lab Name	Nautilus Environmental			Report Format / Distribution		Excel	PDF	EDD
Project Manager	Brett Mason			Lab Contact	Tamara Pomeroy			Email 1:	DL-WLC-Lab@teck.com	X	X	X
Email	brett.mason@teck.com			Email	tamara@nautilusenvironmental.ca			Email 2:	H20.lab.results@teck.com	X	X	X
Address	15 Km North HWY 43			Address	10823 27th Street SE			Email 3:	TeckCoal@equisonline.com			X
								Email 4:	Tricia.Hill@teck.com	X	X	X
City	Sparwood	Province	BC	City	Calgary	Province	AB	Email 5:	Marty.Hafke@teck.com	X	X	X
Postal Code	V0B 2G0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada	Email 6:				
Phone Number	250 425 4837			Phone Number	403 253 7121			PO number		VPO00822031		

2022/04/19
09:15
Magitouln
SRS
3 x 20L carboys, 3 x 1 L bottles
NOS NOI
Good Condition

SAMPLE DETAILS								ANALYSIS REQUESTED				
								Please indicate below Filtered, Perserved or both (F, P, F/P)				
Sample ID 2022-1941	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	NAUT_96Hr_RT_Single_Concentration_Toxicity Test	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 20C			
WL_BFWB_OUT_SP21_2022-04-18_N_0900	WL_BFWB_OUT_SP21	WS		4/18/2022	9:00	G	6	X	X	10, 1°C		

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	Date	Time	ACCEPTED BY/AFFILIATION	Date	Time
Shipment includes 2 extra 20 L bladders and 2 extra 1.2 L plastic bottles.	Vanessa Turner	4/18/2022				

SERVICE REQUEST (rush - subject to availability)					
Regular (default)	X	Sampler's Name	Adrian Larez	Mobile #	
Priority (2-3 business days) - 50% surcharge		Sampler's Signature		Date/Time	18-Apr-22
Emergency (1 Business Day) - 100% surcharge					
For Emergency <1 Day, ASAP or Weekend - Contact ALS					

END OF REPORT

Acute Toxicity Test Results

Sample collected May 2, 2022

Final Report

June 2, 2022

Submitted to: **Teck Coal Ltd.**
Sparwood, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates			
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 20˚C test initiation
WL_BFWB_OUT_SP21_2022-05-02_N_0900 / 2122-2071	2-May-22 at 0900h	3-May-22 at 1255h	4-May-22 at 1525h	3-May-22 at 1620h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
WL_BFWB_OUT_SP21_2022-05-02_N_0900	10.1°C	1179	254

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample	
	Rainbow trout	*Daphnia magna* 20˚C
WL_BFWB_OUT_SP21_2022-05-02_N_0900	100	97

Sample ID	Percent Immobility in 100 (% v/v)
	Daphnia magna 20˚C
WL_BFWB_OUT_SP21_2022-05-02_N_0900	3

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
WL_BFWB_OUT_SP21_2022-05-02_N_0900	Rainbow trout	Precipitate observed on the bottom of test vessel	None
	Daphnia magna	None	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	3.9 (3.5-4.4) g/L KCl[1]	6.3 (5.9-6.6) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.3 (2.5-4.5) g/L KCl	6.5 (5.6-7.6) g/L NaCl
Reference toxicant CV	9.7%	5.2%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, April 11, 2022; [2] Test Date May 10, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation



Report By:
Lily Cole, B.Sc.
Laboratory Biologist



Reviewed By:
Jacklyn Poole, BSc
Laboratory and Quality Manager

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APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS ENVIRONMENTAL

Trout Bench Sheet

Method TRS Client TEC164 Reference 2122-2071 Chamber 2

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022/05/04	1525 *	CC/NA/KCRM	1	KTM
1	2022/05/05	0955	NA	-	KTM
2	2022/05/06	0800	MAF	-	MF
3	2022/05/07	0850	CH	-	MAF
4	2022/05/08	~~0810~~ 1C	LC/DM	1	JCC

Note: * : time when the test was loaded with fish

Sample Information

Initial pH: 7.5
Initial EC (µS/cm): 1403
Salinity (ppt): 2

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L : yes/no 0950

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	11.3	8.8			
Temp (°C) of 100%	15				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	8.3	8.2						
Day 4	8.2	8.3						
EC (uS/cm)								
Day 0	430	1807						
Day 4	481	1832						
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	8.8	8.8						
Day 4	8.8	8.8						
Temperature (°C) (range: 14-16°C)								
Day 0	15	15						
Day 4	15	15						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	2.8	0.2
2	2.8	0.2
3	3.0	0.3
4	3.7	0.6
5	2.8	0.2
6	2.9	0.2
7	2.5	0.2
8	3.1	0.3
9	3.1	0.3
10	3.2	0.4

Loading Density (g/L): 0.2
(must be ≤0.5 g/L)

Mean Length (cm): 3.0

Length Range (cm): 2.5 - 3.7

Mean Weight (g): 0.3
(Must be ≥0.3g)

Weight Range: (g): 0.2-0.6

Test Organism Information

Batch 20220224TR
Source Troutlodge
Tank # 8
Days Held at 15± 2°C (must be ≥14 days) 42
Percent stock mortality (7 days prior to test, must be <2%) 0.82
Test Volume (L) 18

Comments :

96HRS: ppt present on bottom of tank.

Reviewed By: EV Date Reviewed: 2022/05/19

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS20 Client TEC164 Reference 7122-7071

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/05/03	1620	KTM/LC	3	JCC
1	2022/05/04	0900	LC	-	MN
2	2022/05/05	0800	CH	3	CC

Sample Information

Initial pH: 7.5
Initial EC (µS/cm): 1963
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	8.1	8.1	8.1	7.9	7.9	7.9				
2	8.4	8.4	8.3	8.4	8.4	8.4				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	456	468	470	1884	1940	1940				
2	465	481	481	1882	2020	1913				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.9	11.1	11.0				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	19	19	19				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	9	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar wed C1 Jar(s) mortality 7 days prior to test (must be ≤25%) 5%

QA (previous month)

Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 35
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 12.3
DO % of sample prior to aeration: 150%
Duration of aeration (37.5 +/- 12.5 mL/min/L): 20mm
Hardness (mg $CaCO_3$/L) of 100% : 1179
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 254

Temperature (°C) of sample prior to aeration: 18
Is aeration required (<40% or >100%)? **Yes or No**
Filtered with 110um screen prior to testing **Yes or No**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Dilution Water

Pail label / preparation date 1:04/29
Hardness of dilution water (mg/L) 179

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Comments/Observations:

0hr: no ppt
48hr: NO PPT

Reviewed By: EV Date Reviewed: 2022/05/19

APPENDIX C – Chain-of-custody form

Teck

COC ID: 2022-05-02_SP21 **TURNAROUND TIME:** Regular (default) **RUSH:** NO

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name	WLC AWTF			Lab Name	Nautilus Environmental			Report Format / Distribution		Excel	PDF	EDD
Project Manager	Brett Mason			Lab Contact	Tamara Pomeroy			Email 1:	DL-WLC-Lab@teck.com	X	X	X
Email	brett.mason@teck.com			Email	tamara@nautilusenvironmental.ca			Email 2:	H20.lab.results@teck.com	X	X	X
Address	15 Km North HWY 43			Address	10823 27th Street SE			Email 3:	TeckCoal@equisonline.com			X
								Email 4:	Tricia.Hill@teck.com	X	X	X
City	Sparwood	Province	BC	City	Calgary	Province	AB	Email 5:	Marty.Hafke@teck.com	X	X	X
Postal Code	V0B 2G0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada	Email 6:				
Phone Number	250 425 4837			Phone Number	403 253 7121			PO number	VPO00822031			

SAMPLE DETAILS / **ANALYSIS REQUESTED**

2022/05/03 12.55
Manitoulin
SRS
~~6x20L carboys~~ 3x20L carboys
NoS NoI 3x1L bottles
Good condition

Please indicate below Filtered, Perserved or both (F, P, F/P)

Sample ID 2122-2071	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	ANALYSIS	NAUT_96Hr_RT_Single_Concentration_Toxicity Test	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 20C	
WL_BFWB_OUT_SP21_2022-05-02_N_0900	WL_BFWB_OUT_SP21	WS		2022/05/02	9:00	G	6		X	X	10.1°C

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	Date	Time	ACCEPTED BY/AFFILIATION	Date	Time
Shipment includes 2 extra 20 L bladders and 2 extra 1.2 L plastic bottles.	Vanessa Turner	2022/05/02				

SERVICE REQUEST (rush - subject to availability)					
Regular (default)	X	Sampler's Name	Mason Reimer	Mobile #	
Priority (2-3 business days) - 50% surcharge					
Emergency (1 Business Day) - 100% surcharge		Sampler's Signature		Date/Time	02-May-22
For Emergency <1 Day, ASAP or Weekend - Contact ALS					

END OF REPORT

Acute Toxicity Test Results

Sample collected May 2, 2022

Final Report

June 2, 2022

Submitted to: **Teck Coal Ltd.**
Sparwood, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates					
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation	*Daphnia magna* antiscalant test initiation
LC_WTF_IN_2022-05-02_NP_0800/ 2122-2072	2-May-22 at 0800h	3-May-22 at 1255h	3-May-22 at 1515h	3-May-22 at 1620h	3-May-22 at 1605h	3-May-22 at 1630h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
LC_WTF_IN_2022-05-02_NP_0800	10.1°C	1207	309

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)
- *Daphnia magna* 48-h single concentration screening test (conducted with 2 mg/L antiscalant)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample			
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
LC_WTF_IN_2022-05-02_NP_0800	100	100	100	100

Sample ID	Percent Immobility in 100 (% v/v)		
	Daphnia magna 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
LC_WTF_IN_2022-05-02_NP_0800	0	0	0

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
LC_WTF_IN_2022-05-02_NP_0800	Rainbow trout	None	None
LC_WTF_IN_2022-05-02_NP_0800	*Daphnia magna*	None	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	3.9 (3.5-4.4) g/L KCl1	6.5 (6.0 - 7.0) g/L NaCl2
Reference toxicant historical mean (2 SD Range)	3.3 (2.5 -4.5) g/L KCl	6.5 (5.5 - 7.7) g/L NaCl
Reference toxicant CV	9.7%	5.7%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date April 11, 2022; [2] Test Date April 25, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation



Report By:
Kristin McKenzie
Biologist



Reviewed By:
Leila Oosterbroek, P Biol
Environmental Scientist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Control/dilution water for antiscalant test	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L), Na_2SeO_4 (2 µg Se/L) and 2 mg/L antiscalant
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC164 Reference 2122-2072 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022-05-03	1519 *	CH /DM	1	OCC
1	2022-05-04	0900	AE	-	DJ
2	2022-05-05	1010	NA	-	KM
3	2022-05-06	0915	KO/MAF	-	MF
4	2022-05-07	09:30	AE/CH	7	MAP

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 8.2
Initial EC (µS/cm): 1833
Salinity (ppt): 2

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L: yes/no

	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
Preaeration time					
DO(mg/L) of 100%	9.8	8.8			
Temp (°C) of 100%	15				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	7.7	8.1						
Day 4	8.2	8.3						
EC (uS/cm)								
Day 0	434	1730						
Day 4	437	1651						
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	8.8	8.8						
Day 4	8.3	8.3						
Temperature (°C) (range: 14-16°C)								
Day 0	15	15						
Day 4	16	16						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.1	0.3
2	3.4	0.4
3	3.3	0.4
4	3.2	0.3
5	2.7	0.2
6	3.3	0.4
7	3.2	0.3
8	3.2	0.3
9	3.5	0.4
10	3.0	0.3

Loading Density (g/L): 0.2 (must be ≤0.5 g/L)
Mean Length (cm): 3.2
Length Range (cm): 2.7-3.5
Mean Weight (g): 0.3 (Must be ≥0.3g)
Weight Range: (g): 0.2-0.4

Test Organism Information

Batch 20220224TR
Source Troutlodge
Tank # 8
Days Held at 15± 2°C 41 (must be ≥14 days)
Percent stock mortality 0.82 (7 days prior to test, must be <2%)
Test Volume (L) 18

Comments:
96hr: NO PPK

Reviewed By: MF Date Reviewed: 2022/05/11

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS20 Client TEC164 Reference ~~YM~~ 2122-2072

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/05/03	1105	KM/LL	3	JCC
1	2022/05/04	0905	CH	-	KW
2	2022/05/05	~~08~~ 0945	MAF	3	KM

Sample Information

Initial pH:	8.2
Initial EC (µS/cm):	1833
Salinity (ppt):	2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	8.1	8.1	8.2	8.2	8.2	8.2				
2	8.3	8.3	8.3	8.3	8.4	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	461	468	468	1821	1849	1850				
2	493	481	478	1758	1825	1816				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	9.0	9.1	9.1				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	18	18	18				
2	20	20	20	20	20	20				

Number Alive (l, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar Med C2 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)

Days to first brood (≤12 days) 7

Average number of young produced (≥15 young) 35

Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - 0

(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 9.3 Temperature (°C) of sample prior to aeration: 18

DO % of sample prior to aeration: 113% Is aeration required (<40% or >100%)? (Yes) or No

Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20mn Filtered with 110um screen prior to testing Yes or (No)

Hardness (mg $CaCO_3$/L) of 100% : 1207 Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —

Alkalinity of 100% sample (mg $CaCO_3$/L): 309

Dilution Water

Pail label / preparation date 1:04129

Hardness of dilution water (mg/L) 179

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Comments/Observations:

0hr: nappt

48hr: nappt.

Reviewed By: ML Date Reviewed: 2022/05/11

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS10 Client TEC164 Reference 2122-2072

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/05/03	1620	KIM/LC	3	JCC
1	2022/05/04	0900	CH	-	KW
2	2022/05/05	1015	AE	2	KIM

Sample Information

Initial pH: 8.2
Initial EC (µS/cm): 1033
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	8.1	8.1	8.1	8.1	8.1	8.2				
2	8.2	8.2	8.2	8.3	8.2	8.2				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	458	469	470	1815	1853	1854				
2	465	465	475	1764	1802	1840				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.1	~~9.2~~ 9.1 AE	9.2	9.2	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12	LC			
2	11	10	10	10	10	11				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar WedDB Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 26
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 10.9
DO % of sample prior to aeration: 116%
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 25mm
Hardness (mg $CaCO_3$/L) of 100% : 1267
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 309
Temperature (°C) of sample prior to aeration: 12
Is aeration required (<40% or >100%)? (Yes) or No
Filtered with 110um screen prior to testing Yes or (No)
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)

Dilution Water
Pail label / preparation date 1:04129
Hardness of dilution water (mg/L) 179

DO Levels (40-100% saturation) - corrected for altitude -
4.1 to 10.3 mg/L at 8°C
4.0 to 10.0 mg/L at 9°C
3.9 to 9.8 mg/L at 10°C
3.8 to 9.6 mg/L at 11°C
3.7 to 9.4 mg/L at 12°C

Comments/Observations:
0hr: no ppt
48hr: NO PPT

Reviewed By: MG Date Reviewed: 2022/05/11

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS Client TEC164 Reference 2122-2072

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/05/03	1630	KMILL	3	JCC
1	2022/05/04	0900	LC	-	DW
2	2022/05/05	0945	MAF	3	KM

Sample Information

Initial pH: 8.2
Initial EC (µS/cm): 1833
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				
day	pH (units) (range: 6.0-8.5)									
0	8.1	8.1	8.1	8.1	8.2	8.2				
2	8.3	8.3	8.3	8.5	8.5	8.5				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

	EC (uS/cm)									
0	455	471	472	1805	1849	1848				
2	483	495	492	1784	1875	1875				

	DO (mg/L) (**40-100% saturation at test temp.**)									
0	7.7	7.9	7.9	7.9	7.9	7.9				
2	7.9	7.9	7.9	7.9	7.9	7.9				

	Temperature (°C) (range: **18-22 °C**)									
0	21	20	20	20	20	20				
2	20	20	20	20	20	20				

	Number Alive (I, immobile)									
0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar wed C3 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 35
Were test treatments randomized on test tray? Yes / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0

Sample
DO (mg/L) of sample prior to aeration: 9.3
DO % of sample prior to aeration: 113%
Duration of aeration (37.5 +/- 12.5 mL/min/L): 20min
Hardness (mg $CaCO_3$/L) of 100%: 1207
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 309

Temperature (°C) of sample prior to aeration: 18
Is aeration required (<40% or >100%)? Yes or No
Filtered with 110um screen prior to testing Yes or No
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or No

Dilution Water
Pail label / preparation date 1:04/29
Hardness of dilution water (mg/L) 179

Antiscalant
Final Concentration in Sample: 2 mg/L
Volume of sample: 500mL Volume of antiscalant: 15.8 mL

Comments/Observations:
0hr: noppt
48hr: noppt.

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Reviewed By: MG Date Reviewed: 2022/05/11

APPENDIX C – Chain-of-custody form

Teck

Page 1 of 1

COC ID: 2022-05-02_SP03 **TURNAROUND TIME:** Regular (default) **RUSH: NO**

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name	WLC AWTF			Lab Name	Nautilus Environmental			Report Format / Distribution		Excel	PDF	EDD
Project Manager	Brett Mason			Lab Contact	Tamara Pomeroy			Email 1:	DL-WLC-Lab@teck.com	X	X	X
Email	brett.mason@teck.com			Email	tamara@nautilusenvironmental.ca			Email 2:	H20.lab.results@teck.com	X	X	X
Address	15 Km North HWY 43			Address	10823 27th Street SE			Email 3:	TeckCoal@equisonline.com			X
								Email 4:	Tricia.Hill@teck.com	X	X	X
City	Sparwood	Province	BC	City	Calgary	Province	AB	Email 5:	Marty.Hafke@teck.com	X	X	X
Postal Code	V0B 2G0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada	Email 6:				
Phone Number	250 425 4837			Phone Number	403 253 7121			PO number		VPO00822031		

SAMPLE DETAILS

2022/05/03 12:55
Manitoulin
SRS
~~2~~ 4 X 20 L carboys, 2x 1 L bottles
NOS NOI
Good condition

Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	ANALYSIS: NAUT_96Hr_RT_Single_Concentration_Toxicity Test	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 10C	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 20C	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 20C + Antiscalant	
								ANALYSIS REQUESTED: Please indicate below Filtered, Perserved or both (F, P, F/P)				
LC_WTF_IN_2022-05-02_NP_0800	LC_WTF_IN	WS		2022/05/02	8:00	G	4	X	X	X	X	10.1°C

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	Date	Time	ACCEPTED BY/AFFILIATION	Date	Time
	Vanessa Turner	2022/05/02				

SERVICE REQUEST (rush - subject to availability)					
Regular (default)	X	Sampler's Name	Mason Reimer	Mobile #	
Priority (2-3 business days) - 50% surcharge					
Emergency (1 Business Day) - 100% surcharge		Sampler's Signature		Date/Time	02-May-22
For Emergency <1 Day, ASAP or Weekend - Contact ALS					

END OF REPORT

Acute Toxicity Test Results

Sample collected May 16, 2022

Final Report

June 21, 2022

Submitted to: **Teck Coal Ltd.**
Sparwood, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates					
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation	*Daphnia magna* antiscalant test initiation
LC_WTF_IN_2022-05-16_NP_0800/ 2122-2238	16-May-22 at 0800h	17-May-22 at 1000h	18-May-22 at 1515h	19-May-22 at 1600h	19-May-22 at 1545h	19-May-22 at 1550h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
LC_WTF_IN_2022-05-16_NP_0800	11.9°C	1084	312

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)
- *Daphnia magna* 48-h single concentration screening test (conducted with 5 mg/L antiscalant); 2 mg/L was requested, however due to a technical error, the test was conducted with 5 mg/L

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample			
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
LC_WTF_IN_2022-05-16_NP_0800	100	100	100	100

Sample ID	Percent Immobility in 100 (% v/v)		
	Daphnia magna 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
LC_WTF_IN_2022-05-16_NP_0800	0	0	0

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
LC_WTF_IN_2022-05-16_NP_0800	Rainbow trout	Precipitate observed on the test vessel	None
	Daphnia magna	Surficial precipitate observed in the 20-degree test	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	3.8 (3.3-4.3) g/L KCl[1]	5.9 (5.6-6.2) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.4 (2.6-4.4) g/L KCl	6.5 (5.6-7.6) g/L NaCl
Reference toxicant CV	8.7%	5.0%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, May 17, 2022; [2] Test Date May 18, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation



Report By:
Courtney Hewitt, BSc
Biologist



Reviewed By:
Leila Oosterbroek, P Biol
Environmental Scientist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Control/dilution water for antiscalant test	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L), Na_2SeO_4 (2 µg Se/L) and 5 mg/L antiscalant
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS ENVIRONMENTAL

Trout Bench Sheet

Method TRS Client TEC164 Reference 2122-2238 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022/05/18	1515 *	CC/AM	1	EP
1	2022/05/19	1045	AM	-	MAF
2	2022/05/20	0900	KLM	-	MAF
3	2022/05/21	0850	NA	-	MAF
4	2022/05/22	0930	NA/DM	1	UM

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 8.0
Initial EC (µS/cm): 1784
Salinity (ppt): 1

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L: yes/no

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	9.4	8.6			
Temp (°C) of 100%	16				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100					
pH (units) (range: 5.5-8.5)							
Day 0	7.9	8.2					
Day 4	8.2	8.2					
EC (uS/cm)							
Day 0	409	1866					
Day 4	426	1702					
DO (mg/L) (70-100% saturation at test temp.)							
Day 0	8.8	8.6					
Day 4	8.8	8.8					
Temperature (°C) (range: 14-16°C)							
Day 0	15	16					
Day 4	15	15					
Number Alive (In brackets number stressed)							
Day 0	10	10					
Day 1	10	10					
Day 2	10	10					
Day 3	10	10					
Day 4	10	10					

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	2.8	0.3
2	3.4	0.4
3	3.3	0.4
4	3.5	0.5
5	3.6	0.6
6	3.3	0.3
7	3.3	0.3
8	3.3	0.3
9	2.8	0.3
10	2.8	0.3

Loading Density (g/L): 0.2 (must be ≤0.5 g/L)
Mean Length (cm): 3.2
Length Range (cm): 2.8-3.6
Mean Weight (g): 0.4 (Must be ≥0.3g)
Weight Range: (g): 0.3-0.6

Test Organism Information

Batch 20220428TR
Source LSL
Tank # 3
Days Held at 15± 2°C 20 (must be ≥14 days)
Percent stock mortality 0.3 (7 days prior to test, must be <2%)
Test Volume (L) 18

Comments :
96Hrs: mild ppt. on bottom/sides of tank.

Reviewed By: MF Date Reviewed: 2022/05/27

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC164 Reference 2122-2238

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/05/19	1545	LTM/NA	3	DN
1	2022/05/20	0920	CM	-	mae
2	2022/05/21	1053	LC	3	CM

Sample Information

Initial pH: 8.0
Initial EC (µS/cm): 1784
Salinity (ppt): 1

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				
day										
0	7.9	7.8	7.8	7.9	7.9	7.9				
2	8.2	8.2	8.2	8.3	8.3	8.3				

pH (units) (range: 6.0-8.5)

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

0	401	412	413	1705	1762	1850				
2	413	416	423	1822	1748	1844				

EC (uS/cm)

0	7.9	7.9	7.9	8.5	8.5	8.5				
2	7.9	7.9	7.9	7.9	7.9	7.8				

DO (mg/L) (**40-100% saturation at test temp.**)

0	20	20	20	20	20	20				
2	20	20	20	20	20	20				

Temperature (°C) (range: **18-22 °C**)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Number Alive (I, immobile)

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar: Med DJ

Jar(s) mortality 7 days prior to test (must be ≤25%): 0%

QA (previous month)

Days to first brood (≤12 days): 7
Average number of young produced (≥15 young): 18
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - (must be ≤10%): 0

Sample

DO (mg/L) of sample prior to aeration: 8.7
Temperature (°C) of sample prior to aeration: 21
DO % of sample prior to aeration: 110%
Is aeration required (<40% or >100%)? **Yes or No**
Duration of aeration (37.5 +/- 12.5 mL/min/L): 20min
Filtered with 110um screen prior to testing **Yes or No**
Hardness (mg $CaCO_3$/L) of 100% : 1084
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L): —
Alkalinity of 100% sample (mg $CaCO_3$/L): 312

Dilution Water

Pail label / preparation date: 2: 05/10
Hardness of dilution water (mg/L): 184

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Comments/Observations:

0 hr: no ppt
48 hr: ppt present on surface.

Reviewed By: MG Date Reviewed: 2022/05/27

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS 5 Client TEC164 Reference 2122-2238

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/05/19	1550	KTM/NA	3	[illegible]
1	2022/05/20	0925	CH	-	[illegible]
2	2022/05/21	1050	LC	3	CH

Sample Information

Initial pH: 8.0
Initial EC (µS/cm): 1784
Salinity (ppt): 1

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				
day				pH (units) (range: 6.0-8.5)						
0	7.9	7.9	7.9	7.9	7.9	7.9				
2	8.1	8.1	8.2	8.4	8.4	8.4				
				The pH of the sample was not adjusted prior to test setting, unless noted in the comments below						
				EC (uS/cm)						
0	403	413	414	1753	1845	1778				
2	411	427	433	1806	1769	1777				
				DO (mg/L) (**40-100% saturation at test temp.**)						
0	7.9	7.9	7.9	8.4	8.4	8.4				
2	7.9	7.9	7.9	7.9	7.9	7.8				
				Temperature (°C) (range: **18-22 °C**)						
0	20	20	20	20	20	20				
2	20	20	20	20	20	20				
				Number Alive (I, immobile)						
0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar WedDR Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 18
Were test treatments randomized on test tray? Yes / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0

Sample
DO (mg/L) of sample prior to aeration: 88
DO % of sample prior to aeration: 111%
Duration of aeration (37.5 +/- 12.5 mL/min/L): 20min
Hardness (mg $CaCO_3$/L) of 100%: 1084
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 312

Temperature (°C) of sample prior to aeration: 21
Is aeration required (<40% or >100%)? Yes or No
Filtered with 110um screen prior to testing Yes or No
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or No

Dilution Water
Pail label / preparation date 2:05/10
Hardness of dilution water (mg/L) 184

Antiscalant
Final Concentration in Sample: 5mg/L
Volume of sample: 500mL Volume of antiscalant: 39.5mL

Comments/Observations:
0 hr: no ppt
48 hr: no ppt

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Reviewed By: MG Date Reviewed: 2022/05/27

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC164 Reference 2122-2238

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/05/19	1600	KTM/NA	3	DW
1	2022/05/20	0920	CH	-	MAF
2	2022/05/21	1032	LC	3	CH

Sample Information

Initial pH: 8.0
Initial EC (µS/cm): 1784
Salinity (ppt): 1

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				
day				pH (units) (range: 6.0-8.5)						
0	7.9	7.9	7.9	8.0	8.0	8.0				
2	8.0	8.0	8.0	8.3	8.3	8.3				
				The pH of the sample was not adjusted prior to test setting, unless noted in the comments below						
				EC (uS/cm)						
0	396	412	414	1778	1873	1806				
2	417	420	430	1792	1815	1881				
				DO (mg/L) (**40-100% saturation at test temp.**)						
0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				
				Temperature (°C) (range: **8-12 °C**)						
0	12	12	12	12	12	12				
2	12	12	12	12	12	12				
				Number Alive (I, immobile)						
0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar Med D1/D3 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 18
Were test treatments randomized on test tray? Yes / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0

Sample
DO (mg/L) of sample prior to aeration: ~~8.~~ 10.3 ktm
DO % of sample prior to aeration: ~~110%~~ 110%
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20min
Hardness (mg $CaCO_3$/L) of 100% : 1084
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 312

Temperature (°C) of sample prior to aeration: ~~21~~ 12 ktm
Is aeration required (<40% or >100%)? Yes or No
Filtered with 110um screen prior to testing Yes or No
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or No

Dilution Water
Pail label / preparation date 2:05/10
Hardness of dilution water (mg/L) 184

DO Levels (40-100% saturation) - corrected for altitude -
4.1 to 10.3 mg/L at 8°C
4.0 to 10.0 mg/L at 9°C
3.9 to 9.8 mg/L at 10°C
3.8 to 9.6 mg/L at 11°C
3.7 to 9.4 mg/L at 12°C

Comments/Observations:
0 hr: 1ppt
48 hr: no ppt

Reviewed By: MG Date Reviewed: 2022/05/27

APPENDIX C – Chain-of-custody form

Teck

Page 1 of 1

COC ID: 2022-05-16_SP03 **TURNAROUND TIME:** Regular (default) **RUSH: NO**

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO			
Facility Name	WLC AWTF			Lab Name	Nautilus Environmental			Report Format / Distribution		Excel	PDF	EDD
Project Manager	Brett Mason			Lab Contact	Tamara Pomeroy			Email 1:	DL-WLC-Lab@teck.com	X	X	X
Email	brett.mason@teck.com			Email	tamara@nautilusenvironmental.ca			Email 2:	H20.lab.results@teck.com	X	X	X
Address	15 Km North HWY 43			Address	10823 27th Street SE			Email 3:	TeckCoal@equisonline.com			X
								Email 4:	Tricia.Hill@teck.com	X	X	X
City	Sparwood	Province	BC	City	Calgary	Province	AB	Email 5:	Marty.Hafke@teck.com	X	X	X
Postal Code	V0B 2G0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada	Email 6:				
Phone Number	250 425 4837			Phone Number	403 253 7121			PO number	VPO00822031			

SAMPLE DETAILS

2022/05/17
16:00
Manitoulin
Jer/SRS
1x20L carboys, 3x1L bottles
N06/N07
Good Cond

ANALYSIS REQUESTED

Please indicate below Filtered, Perserved or both (F, P, F/P)

Sample ID 2122-2238	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	ANALYSIS: NAUT_96Hr_RT_Single_Concentration_Toxicity Test	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 10C	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 20C	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 20C + Antiscalant	
LC_WTF_IN_2022-05-16_NP_0800	LC_WTF_IN	WS		5/16/2022	8:00	G	4	X	X	X	X	11.4°C

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	Date	Time	ACCEPTED BY/AFFILIATION	Date	Time
	Nicholas Krajnc	5/16/2022				

SERVICE REQUEST (rush - subject to availability)

Regular (default)	X
Priority (2-3 business days) - 50% surcharge	
Emergency (1 Business Day) - 100% surcharge	
For Emergency <1 Day, ASAP or Weekend - Contact ALS	

Sampler's Name	Adrian Larez	Mobile #	
Sampler's Signature		Date/Time	16-May-22

END OF REPORT

Acute Toxicity Test Results

Sample collected May 16, 2022

Final Report

June 29, 2022

Submitted to: **Teck Coal Ltd.**
Sparwood, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates			
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 20˚C test initiation
WL_BFWB_OUT_SP21_2022-05-16_N_0900/ 2122-2239	16-May-22 at 0900h	17-May-22 at 1000h	18-May-22 at 1550h	20-May-22 at 1420h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
WL_BFWB_OUT_SP21_2022-05-16_N_0900	11.3°C	837	220

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample	
	Rainbow trout	*Daphnia magna* 20˚C
WL_BFWB_OUT_SP21_2022-05-16_N_0900	100	100

Sample ID	Percent Immobility in 100 (% v/v)
	Daphnia magna 20˚C
WL_BFWB_OUT_SP21_2022-05-16_N_0900	0

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
WL_BFWB_OUT_SP21_2022-05-16_N_0900	Rainbow trout	None	None
	Daphnia magna	None	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	3.8 (3.3-4.3) g/L KCl[1]	6.3 (6.0-6.5) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.4 (2.6-4.4) g/L KCl	6.5 (5.5-7.6) g/L NaCl
Reference toxicant CV	8.7%	5.3%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, May 17, 2022; [2] Test Date June 3, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation



Report By:
Courtney Hewitt, BSc
Biologist



Reviewed By:
Leila Oosterbroek, P Biol
Environmental Scientist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS ENVIRONMENTAL

Trout Bench Sheet

Method TRS Client TEC164 Reference 2122-2239 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022/05/18	1550 *	CC/AM	1	EP
1	2022/05/19	1043	AM	-	MAF
2	2022/05/20	0900	KLM	-	MAF
3	2022/05/21	0950	NA	-	MAF
4	2022/05/22	0935	NA/DM	1	WM

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 8.0
Initial EC (µS/cm): 1622
Salinity (ppt): 1

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L (yes/no)

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	10.3	9.0	8.6		
Temp (°C) of 100%	~~17~~ 16				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	7.7	7.9						
Day 4	8.2	8.4						
EC (uS/cm)								
Day 0	411	1653						
Day 4	408	1597						
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	8.8	~~9.0~~ AM 8.6						
Day 4	8.8	8.8						
Temperature (°C) (range: 14-16°C)								
Day 0	15	16						
Day 4	15	15						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.0	0.3
2	3.0	0.3
3	2.6	0.2
4	3.3	0.5
5	2.6	0.2
6	2.6	0.2
7	3.4	0.5
8	3.1	0.3
9	3.1	0.4
10	2.8	0.3

Loading Density (g/L): 0.2 (must be ≤0.5 g/L)
Mean Length (cm): 3.0
Length Range (cm): 2.6-3.4
Mean Weight (g): 0.3 (Must be ≥0.3g)
Weight Range: (g): 0.2-0.5

Test Organism Information

Batch 20220428TR
Source LSL
Tank # 3
Days Held at 15± 2°C 20 (must be ≥14 days)
Percent stock mortality 0.3 (7 days prior to test, must be <2%)
Test Volume (L) 18

Comments :
96Hrs: no ppt.

Reviewed By: MG Date Reviewed: 2022/05/27

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS Client TEC164 Reference 2122-2239

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/05/20	1420	AE/CH	2	MAF
1	2022/05/21	0945	LC	-	MAP
2	2022/05/22	1050	NA	2	MAP

Sample Information

Initial pH: 8.0
Initial EC (µS/cm): 1622
Salinity (ppt): 1

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	8.0	8.0	8.0	7.9	7.9	7.9				
2	7.8	8.0	7.8	8.0	8.1	8.1				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	A19	A20	A20	1692	1728	1741				
2	436	428	429	1767	1766	1762				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.9	7.9	7.9				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	20	20	20				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar Mom C1 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 21
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0%
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: CH 9.9 Temperature (°C) of sample prior to aeration: 20
DO % of sample prior to aeration: ~~100~~ 125%
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20 min Is aeration required (<40% or >100%)? (Yes) or No
Hardness (mg $CaCO_3$/L) of 100% : 837 Filtered with 110um screen prior to testing Yes or (No)
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) -
Alkalinity of 100% sample (mg $CaCO_3$/L): 220

Dilution Water
Pail label / preparation date D1: 05116
Hardness of dilution water (mg/L) ~~80~~ 161 CH

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Comments/Observations:
0 hr: NO PPT
48 hr: no ppt.

Reviewed By: MG Date Reviewed: 2022/05/27

APPENDIX C – Chain-of-custody form

Teck

Page 1 of 1

COC ID: 2022-05-16_SP21 **TURNAROUND TIME:** Regular (default) **RUSH:** NO

PROJECT/CLIENT INFO

Facility Name	WLC AWTF		
Project Manager	Brett Mason		
Email	brett.mason@teck.com		
Address	15 Km North HWY 43		
City	Sparwood	Province	BC
Postal Code	V0B 2G0	Country	Canada
Phone Number	250 425 4837		

LABORATORY

Lab Name	Nautilus Environmental		
Lab Contact	Tamara Pomeroy		
Email	tamara@nautilusenvironmental.ca		
Address	10823 27th Street SE		
City	Calgary	Province	AB
Postal Code	T2Z 3V9	Country	Canada
Phone Number	403 253 7121		

OTHER INFO

Report Format / Distribution		Excel	PDF	EDD
Email 1:	DL-WLC-Lab@teck.com	X	X	X
Email 2:	H20.lab.results@teck.com	X	X	X
Email 3:	TeckCoal@equisonline.com			X
Email 4:	Tricia.Hill@teck.com	X	X	X
Email 5:	Marty.Hafke@teck.com	X	X	X
Email 6:				

PO number: VPO00822031

SAMPLE DETAILS

2022/05/17
10:00
Manitoulin
GC/SRC
3x20L carboys, 3x1L bottles
N6S/N6L
Good Cond.

ANALYSIS REQUESTED

Please indicate below Filtered, Perserved or both (F, P, F/P)

Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	ANALYSIS: NAUT_96Hr_RT_Single_Concentration_Toxicity Test	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 20C	
WL_BFWB_OUT_SP21_2022-05-16_N_0900	WL_BFWB_OUT_SP21	WS		5/16/2022	9:00	G	6	X	X	11.3°C

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS

Shipment includes 2 extra 20 L bladders and 2 extra 1.2 L plastic bottles.

RELINQUISHED BY/AFFILIATION	Date	Time	ACCEPTED BY/AFFILIATION	Date	Time
Nicholas Krajnc	5/16/2022				

SERVICE REQUEST (rush - subject to availability)

Regular (default)	X
Priority (2-3 business days) - 50% surcharge	
Emergency (1 Business Day) - 100% surcharge	
For Emergency <1 Day, ASAP or Weekend - Contact ALS	

Sampler's Name	Adrian Larez	Mobile #	
Sampler's Signature		Date/Time	16-May-22

END OF REPORT

Acute Toxicity Test Results

Sample collected May 30, 2022

Final Report

July 18, 2022

Submitted to: **Teck Coal Ltd.**
Sparwood, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates					
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation	*Daphnia magna* antiscalant test initiation
LC_WTF_IN_2022-05-30_NP_0800/ 2122-2361	30-May-22 at 0800h	31-May-22 at 0925h	1-Jun-22 at 1445h	1-Jun-22 at 1410h	1-Jun-22 at 1420h	1-Jun-22 at 1435h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
LC_WTF_IN_2022-05-30_NP_0800	8.3°C	1032	294

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)
- *Daphnia magna* 48-h single concentration screening test (conducted with 2 mg/L antiscalant)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample			
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
LC_WTF_IN_2022-05-30_NP_0800	100	100	100	100

Sample ID	Percent Immobility in 100 (% v/v)		
	Daphnia magna 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
LC_WTF_IN_2022-05-30_NP_0800	0	0	0

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
LC_WTF_IN_2022-05-30_NP_0800	Rainbow trout	Precipitate observed on the test vessel	None
	Daphnia magna	Surficial precipitate observed in the 20-degree test	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	3.8 (3.3-4.3) g/L KCl[1]	5.7 (5.4-5.9) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.4 (2.6-4.4) g/L KCl	6.5 (5.5-7.6) g/L NaCl
Reference toxicant CV	8.7%	5.4%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	See Below
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, May 17, 2022; [2] Test Date, June 1, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation

The temperature, pH, and dissolved oxygen of all test vessels was not measured at test completion in the 20 degree *Daphnia magna* test, resulting in a protocol deviation.



Report By:
Courtney Hewitt, BSc
Biologist



Reviewed By:
Leila Oosterbroek, P Biol
Environmental Scientist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	Moderately-hard reconstituted water supplemented with B12 (2 µg/L)
Control/dilution water for antiscalant test	Moderately-hard reconstituted water supplemented with B12 (2 µg/L) and 2 mg/L antiscalant
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	Moderately-hard reconstituted water supplemented with B12 (2 µg/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC164 Reference 2122-2361 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022/06/01	1445 *	AM/KO	1	CC
1	2022/06/02	1145	KO/AM	-	MAF
2	2022/06/03	0930	KO	-	MAF
3	2022/06/04	0830	CM	-	KTM
4	2022/06/05	0930	KO	1	KTM

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 8.0
Initial EC (µS/cm): 1677
Salinity (ppt): 2

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L : (yes)/no

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	10.0	9.5	8.6		
Temp (°C) of 100%	16				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	8.0	7.7						
Day 4	8.2	8.1						
EC (uS/cm)								
Day 0	478	1694						
Day 4	507	1671						
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	8.6	8.6						
Day 4	8.6	8.6						
Temperature (°C) (range: 14-16°C)								
Day 0	16	16						
Day 4	16	16						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.3	0.4
2	3.7	0.6
3	3.3	0.4
4	2.5	0.2
5	2.7	0.2
6	3.6	0.6
7	3.4	0.5
8	3.6	0.6
9	3.2	0.4
10	3.2	0.4

Loading Density (g/L): 0.2
(must be ≤0.5 g/L)
Mean Length (cm): 3.3
Length Range (cm): 2.5-3.7
Mean Weight (g): 0.4
(Must be ≥0.3g)
Weight Range: (g): 0.2-0.6

Test Organism Information

Batch 20220428TR
Source LSL
Tank # 4
Days Held at 15± 2°C 34
(must be ≥14 days)
Percent stock mortality 0.6
(7 days prior to test, must be <2%)
Test Volume (L) 18

Comments :
96 hrs: ppt on sides and bottom of tank

Reviewed By: SS Date Reviewed: 20221006107

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC 164 Reference 2122-2361

Test Log CH/LC/CC

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/06/01	1420	~~NA/EP~~	2	WM
1	2022/06/02	0945	CH	-	MAF
2	2022/06/03	1030	DM/AG	2	MAF

Sample Information

Initial pH: 8.0
Initial EC (µS/cm): 1677
Salinity (ppt): 2

Lab Code	CTL A	CTL B	CTL C	100 A	100 B	100 C

pH (units) (range: 6.0-8.5)

day										
0	8.0	7.9	7.9	7.9	7.9	7.9				
2										

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	304	309	312	1649	1702	1650				
2										

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.9	7.9	7.9				
2										

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	20	20	20				
2										

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	9*	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar Wed E2 Jar(s) mortality 7 days prior to test (must be ≤25%) 15%

QA (previous month)
Days to first brood (≤12 days) 9
Average number of young produced (≥15 young) 28
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 9.2
Temperature (°C) of sample prior to aeration: 21
DO % of sample prior to aeration: 117%
Is aeration required (<40% or >100%)? **Yes or No**
Duration of aeration (37.5 +/- 12.5 mL/min/L): 20m
Filtered with 110um screen prior to testing **Yes or No**
Hardness (mg $CaCO_3$/L) of 100% : 1032
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 294

Dilution Water
Pail label / preparation date (MH/RW) DB:05/28
Hardness of dilution water (mg/L) 80

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Comments/Observations:
0hr: NO PPT
48hr: ~~NO~~ Superficial ppt
* 1 killed by tech - Disclude from mortality

Reviewed By: SS Date Reviewed: 2022/06/07

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS 2 Client TEC 164 Reference 2122-2361

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/06/01	1435	LC/CH	CC 2	KM
1	2022/06/02	0945	CH	-	MAF
2	2022/06/03	1055	AE/DM	2	CC

Sample Information
Initial pH: 8.0
Initial EC (µS/cm): 1677
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	7.8	7.8	7.7	7.9	7.9	7.9				
2	7.8	7.9	7.7	8.1	8.2	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	280	280	286	1651	1691	1709				
2	274	288	287	1612	1695	1707				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.6	7.6	7.6	7.7	7.7	7.7				
2	7.7	7.7	7.6	7.7	7.7	7.7				

Temperature (°C) (range: **18-22 °C**)

0	22	22	22	21	21	21				
2	21	21	21	21	21	21				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar Wed D1 Jar(s) mortality 7 days prior to test (must be ≤25%) 0/1

QA (previous month)
Days to first brood (≤12 days) 9
Average number of young produced (≥15 young) 35
Were test treatments randomized on test tray? (Yes) No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0

Sample
DO (mg/L) of sample prior to aeration: 9.6
DO % of sample prior to aeration: 119%
Duration of aeration (37.5 +/- 12.5 mL/min/L): 20m
Hardness (mg $CaCO_3$/L) of 100% : 1032
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 294

Temperature (°C) of sample prior to aeration: 20
Is aeration required (<40% or >100%)? **Yes or No**
Filtered with 110um screen prior to testing **Yes or No**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Dilution Water
Pail label / preparation date (MHRW) D3:05\28
Hardness of dilution water (mg/L) 80

Antiscalant
Final Concentration in Sample: 2 mg/L
Volume of sample: 500mL Volume of antiscalant: 15.8 mL

Comments/Observations:
0hr: NO PPT
48hr: NO PPT

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Reviewed By: SS Date Reviewed: 2022/06/07

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC 164 Reference 2122-2361

Test Log CH/LC/CC

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/06/01	1410	~~NA/EP~~	2	KTM
1	2022/06/02	0945	CH	-	MAE
2	2022/06/03	1100	AE/DM	2	CC

Sample Information

Initial pH: 8.0
Initial EC (µS/cm): 1677
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	8.3	8.1	8.0	7.8	7.8	7.8				
2	7.9	7.8	7.8	8.1	8.3	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	305	312	312	1679	1723	1731				
2	322	321	325	1617	1689	1748				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.7	9.3	9.4	~~9.6~~ 9.4 AE	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	10	10	10	10	10	10				

Number Alive (l, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar WRD E1 / E2 Jar(s) mortality 7 days prior to test (must be ≤25%) 10/15 SS 12.5%

QA (previous month)

Days to first brood (≤12 days) 9
Average number of young produced (≥15 young) 28
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 10.1 Temperature (°C) of sample prior to aeration: 12
DO % of sample prior to aeration: 109% Is aeration required (<40% or >100%)? **Yes or No**
Duration of aeration (37.5 +/- 12.5 mL/min/L): 20m Filtered with 110um screen prior to testing **Yes or No**
Hardness (mg $CaCO_3$/L) of 100% : 1032 Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 294

Dilution Water

Pail label / preparation date (MHRW) D3:05/28
Hardness of dilution water (mg/L) 80

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

Comments/Observations:

0hr: NO PPT
48hr: NO PPT

Reviewed By: SS Date Reviewed: 20221061107

APPENDIX C – Chain-of-custody form

Teck

Page 1 of 1

COC ID: 2022-05-30_SP03 | TURNAROUND TIME: Regular (default) | RUSH: NO

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO			
Facility Name	WLC AWTF			Lab Name	Nautilus Environmental			Report Format / Distribution		Excel	PDF	EDD
Project Manager	Brett Mason			Lab Contact	Tamara Pomeroy			Email 1:	DL-WLC-Lab@teck.com	X	X	X
Email	brett.mason@teck.com			Email	tamara@nautilusenvironmental.ca			Email 2:	H20.lab.results@teck.com	X	X	X
Address	15 Km North HWY 43			Address	10823 27th Street SE			Email 3:	TeckCoal@equisonline.com			X
								Email 4:	Tricia.Hill@teck.com	X	X	X
City	Sparwood	Province	BC	City	Calgary	Province	AB	Email 5:	Marty.Hafke@teck.com	X	X	X
Postal Code	V0B 2G0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada	Email 6:				
Phone Number	250 425 4837			Phone Number	403 253 7121			PO number	VPO00822031			

SAMPLE DETAILS | **ANALYSIS REQUESTED**

2022/05/31
09:25
Manitoulin
5C/5R3/AC
1x20L carboy, 3x1L bottles
N6S/N6L
Good Cond.
8.3°C

Please indicate below Filtered, Perserved or both (F, P, F/P)

Sample ID 2122-2361	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	ANALYSIS: NAUT_96Hr_RT_Single_Concentration_Toxicity Test	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 10C	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 20C	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 20C + Antiscalant
LC_WTF_IN_2022-05-30_NP_0800	LC_WTF_IN	WS		5/30/2022	8:00	G	4	X	X	X	X

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	Date	Time	ACCEPTED BY/AFFILIATION	Date	Time
	Katrina Leboeuf	5/30/2022				

SERVICE REQUEST (rush - subject to availability)

Regular (default)	X	Sampler's Name	Mason Reimer	Mobile #	
Priority (2-3 business days) - 50% surcharge		Sampler's Signature		Date/Time	30-May-22
Emergency (1 Business Day) - 100% surcharge					
For Emergency <1 Day, ASAP or Weekend - Contact ALS					

END OF REPORT

Acute Toxicity Test Results

Sample collected May 30, 2022

Final Report

July 18, 2022

Submitted to: **Teck Coal Ltd.**
Sparwood, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates			
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 20˚C test initiation
WL_BFWB_OUT_SP21_2022-05-30_N_0900/ 2122-2362	30-May-22 at 0900h	31-May-22 at 0925h	1-Jun-22 at 1430h	31-May-22 at 1345h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
WL_BFWB_OUT_SP21_2022-05-30_N_0900	9.9°C	1108	244

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample	
	Rainbow trout	*Daphnia magna* 20˚C
WL_BFWB_OUT_SP21_2022-05-30_N_0900	100	100

Sample ID	Percent Immobility in 100 (% v/v)
	Daphnia magna 20˚C
WL_BFWB_OUT_SP21_2022-05-30_N_0900	0

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
WL_BFWB_OUT_SP21_2022-05-30_N_0900	Rainbow trout	None	None
	Daphnia magna	None	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	3.8 (3.3-4.3) g/L KCl[1]	5.7 (5.4-5.9) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.4 (2.6-4.4) g/L KCl	6.5 (5.5-7.6) g/L NaCl
Reference toxicant CV	8.7%	5.4%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, May 17, 2022; [2] Test Date, June 1, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation



Report By:
Courtney Hewitt, BSc
Biologist



Reviewed By:
Leila Oosterbroek, P Biol
Environmental Scientist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	Moderately hard reconstituted water amended with B12 (2 µg/L)
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC164 Reference 2122-2362 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022/06/01	1430 *	AM/KO	1	EC
1	2022/06/02	1150	KO/AM	-	MAF
2	2022/06/03	0830	KO	-	MAF
3	2022/06/04	0830	CH	-	KTH
4	2022/06/05	0930	KO	1	KTH

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 7.6
Initial EC (µS/cm): 1904
Salinity (ppt): 2

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L (yes/no)

	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
Preaeration time					
DO(mg/L) of 100%	12.4	8.6			
Temp (°C) of 100%	16				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	8.0	7.8						
Day 4	8.2	8.4						
EC (uS/cm)								
Day 0	482	1903						
Day 4	464	1810						
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	8.8	8.6						
Day 4	8.6	8.6						
Temperature (°C) (range: 14-16°C)								
Day 0	15	16						
Day 4	15	16						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	2.9	0.3
2	3.3	0.5
3	3.2	0.4
4	2.8	0.3
5	~~3.0~~ 3.50	0.4
6	2.9	0.3
7	3.6	0.6
8	3.2	0.4
9	3.3	0.4
10	3.6	0.5

Loading Density (g/L): 0.2 (must be ≤0.5 g/L)
Mean Length (cm): 3.2
Length Range (cm): 2.8-3.6
Mean Weight (g): 0.4 (Must be ≥0.3g)
Weight Range: (g): 0.3-0.6

Test Organism Information

Batch 20220428TR
Source LSL
Tank # 4
Days Held at 15± 2°C 34 (must be ≥14 days)
Percent stock mortality 0.6 (7 days prior to test, must be <2%)
Test Volume (L) 18

Comments :
96 hrs: no ppt

Reviewed By: SS Date Reviewed: 2022/06/07

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC164 Reference 2122-2362

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/05/31	1345	KW/AE	2	AE
1	2022/06/01	1020	CH	2	MAE
2	2022/06/02	1005	CH	2	AE

Sample Information

Initial pH: 7.6
Initial EC (µS/cm): 1904
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	7.7	7.7	7.7	7.6	7.6	7.6				
2	7.8	7.8	7.8	8.3	8.3	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	299	312	317	1943	1944	1949				
2	306	314	321	1870	1926	1945				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	9.8	9.8	9.8				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	20	20	20				
2	20	20	20	20	20	20				

Number Alive (l, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar WEDC1 102 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)

Days to first brood (≤12 days) 9
Average number of young produced (≥15 young) 36
Were test treatments randomized on test tray? Yes / No

Control Validity Criteria

Mean % mortality at 48 hours - (must be ≤10%) 0

Sample

DO (mg/L) of sample prior to aeration: 15.5
Temperature (°C) of sample prior to aeration: 19
DO % of sample prior to aeration: 188%
Is aeration required (<40% or >100%)? **Yes or No**
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20min
Filtered with 110um screen prior to testing **Yes or No**
Hardness (mg $CaCO_3$/L) of 100% : 1108
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 244

Dilution Water

Pail label / preparation date drum 3 / 05128
Hardness of dilution water (mg/L) 80

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Comments/Observations:

0 hr: Neopt
48 hr: NO ppt

Reviewed By: SS Date Reviewed: 20221006107

APPENDIX C – Chain-of-custody form

Teck

Page 1 of 1

COC ID: 2022-05-30_SP21 | TURNAROUND TIME: Regular (default) | RUSH: NO

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name	WLC AWTF			Lab Name	Nautilus Environmental			Report Format / Distribution		Excel	PDF	EDD
Project Manager	Brett Mason			Lab Contact	Tamara Pomeroy			Email 1:	DL-WLC-Lab@teck.com	X	X	X
Email	brett.mason@teck.com			Email	tamara@nautilusenvironmental.ca			Email 2:	H20.lab.results@teck.com	X	X	X
Address	15 Km North HWY 43			Address	10823 27th Street SE			Email 3:	TeckCoal@equisonline.com			X
								Email 4:	Tricia.Hill@teck.com	X	X	X
City	Sparwood	Province	BC	City	Calgary	Province	AB	Email 5:	Marty.Hafke@teck.com	X	X	X
Postal Code	V0B 2G0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada	Email 6:				
Phone Number	250 425 4837			Phone Number	403 253 7121			PO number	VPO00822031			

SAMPLE DETAILS

2022/05/31
09:25
Manitoulin
3x20L carboys, 3x1L bottles
SRS / RM / SC
No5 No I
Good Condition
9.9°C

ANALYSIS REQUESTED

Please indicate below Filtered, Perserved or both (F, P, F/P)

Sample ID 2122-2861	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	ANALYSIS	NAUT_96Hr_RT_Single_Concentration_Toxicity Test	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 20C
WL_BFWB_OUT_SP21_2022-05-30_N_0900	WL_BFWB_OUT_SP21	WS		5/30/2022	9:00	G	6		X	X

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	Date	Time	ACCEPTED BY/AFFILIATION	Date	Time
Shipment includes 2 extra 20 L bladders and 2 extra 1.2 L plastic bottles.	Katrina Leboeuf	5/30/2022				

SERVICE REQUEST (rush - subject to availability)

Regular (default)	X
Priority (2-3 business days) - 50% surcharge	
Emergency (1 Business Day) - 100% surcharge	
For Emergency <1 Day, ASAP or Weekend - Contact ALS	

Sampler's Name	Mason Reimer	Mobile #	
Sampler's Signature		Date/Time	30-May-22

END OF REPORT

Acute Toxicity Test Results

Sample collected June 13, 2022

Final Report

July 21, 2022

Submitted to: **Teck Coal Ltd.**
Sparwood, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates					
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation	*Daphnia magna* antiscalant test initiation
LC_WTF_IN_2022-06-13-NP_0800 / 2122-2535	13-Jun-22 at 0800h	14-Jun-22 at 0945h	15-Jun-22 at 1440h	17-Jun-22 at 1440h	17-Jun-22 at 1435h	17-Jun-22 at 1445h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
LC_WTF_IN_2022-06-13-NP_0800	8.6°C	689	318

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)
- *Daphnia magna* 48-h single concentration screening test (conducted with 2 mg/L antiscalant)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample			
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant test initiation
LC_WTF_IN_2022-06-13-NP_0800	100	100	100	100

Sample ID	Percent Immobility in 100 (% v/v)		
	Daphnia magna 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant test initiation
LC_WTF_IN_2022-06-13-NP_0800	0	0	0

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
LC_WTF_IN_2022-06-13-NP_0800	Rainbow trout	None	None
	Daphnia magna	None	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	3.5 (3.0 - 4.0) g/L KCl[1]	5.6 (5.1 – 6.0) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.4 (2.6 - 4.4) g/L KCl	6.4 (5.4-7.6) g/L NaCl
Reference toxicant CV	8.7%	5.7%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, June 13, 2022; [2] Test Date June 17, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation



Report By:
Mia Fearey, BIT
Biologist



Reviewed By:
Jacklyn Poole, BSc
Laboratory and Quality Manager

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	Moderately-hard reconstituted water supplemented with B12 (2 µg/L)
Control/dilution water for antiscalant test	Moderately-hard reconstituted water supplemented with B12 (2 µg/L) and 2 mg/L antiscalant
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	Moderately-hard reconstituted water supplemented with B12 (2 µg/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC164 Reference 2122-2535 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022-06-15	1440 *	AM/ML	71	AF
1	2022-06-16	1050	ML	-	KM
2	2022-06-17	0845	ML	-	EP
3	2022-06-18	1100	KO	-	MAP
4	2022-06-19	0938	CC/EP	1	AJ

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 7.6
Initial EC (µS/cm): 1287
Salinity (ppt): 2.

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L: **yes/no**

	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
Preaeration time					
DO(mg/L) of 100%	8.6	8.8			
Temp (°C) of 100%	16				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	7.2	7.7						
Day 4	8.0	8.2						
EC (uS/cm)								
Day 0	428	1135						
Day 4	428	1082						
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	8.6	8.8						
Day 4	8.6	8.5						
Temperature (°C) (range: 14-16°C)								
Day 0	16	15						
Day 4	16	15						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.2	0.4
2	3.0	0.3
3	3.4	0.6
4	2.8	0.2
5	3.0	0.3
6	3.0	0.4
7	3.4	0.6
8	3.2	0.4
9	2.9	2.3
10	3.3	0.4

Loading Density (g/L): 0.2 (must be ≤0.5 g/L)
Mean Length (cm): 3.1
Length Range (cm): 2.8-3.4
Mean Weight (g): 0.4 (Must be ≥0.3g)
Weight Range: (g): 0.2-0.6

Test Organism Information

Batch 20220526TR
Source LSL
Tank # 1
Days Held at 15± 2°C 20 (must be ≥14 days)
Percent stock mortality 0.74 (7 days prior to test, must be <2%)
Test Volume (L) 18

Comments :
96 hrs No ppt

Reviewed By: EV Date Reviewed: 2022/06/21

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC 164 Reference 2122-2535

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/06/17	1435	CH/CC	2	AE
1	2022/06/18	0840	MAF	-	CH
2	2022/06/19	1140	DN	2	CC

Sample Information

Initial pH: 7.6
Initial EC (µS/cm): 1287
Salinity (ppt): 2

Lab Code	CTL A	CTL B	CTL C	100 A	100 B	100 C				
day				pH (units) (range: 6.0-8.5)						
0	8.0	7.8	7.8	7.5	7.5	7.5				
2	7.9	7.8	7.8	8.3	8.3	8.3				
				The pH of the sample was not adjusted prior to test setting, unless noted in the comments below						
				EC (uS/cm)						
0	341	320	317	1291	1328	1330				
2	370	330	327	1280	1303	1316				
				8.2						
				DO (mg/L) (**40-100% saturation at test temp.**)						
0	7.7	7.9	7.7	~~7.7~~ CH	8.2	8.2				
2	7.7	7.7	7.7	7.5	7.5	7.5				
				18						
				Temperature (°C) (range: **18-22 °C**)						
0	21	20	21	~~21~~ CH	18	18				
2	21	21	21	21	21	21				
				Number Alive (I, immobile)						
0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar Wed C2 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 47
Were test treatments randomized on test tray? Yes / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0

Sample
DO (mg/L) of sample prior to aeration: 8.2
Temperature (°C) of sample prior to aeration: 18
DO % of sample prior to aeration: 100%
Is aeration required (<40% or >100%)? **Yes or No**
Duration of aeration (37.5 +/- 12.5 mL/min/L) : —
Filtered with 110um screen prior to testing **Yes or No**
Hardness (mg $CaCO_3$/L) of 100% : 689
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 318

Dilution Water
Pail label / preparation date (MHRW) D2:06115
Hardness of dilution water (mg/L) 81

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Comments/Observations:
0h: NO PPt
48h: no ppt

Reviewed By: EV Date Reviewed: 2022/06/21

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC 164 Reference 2122-2535

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/06/17	1440	CH/CC	2	AE
1	2022/06/18	0855	MAF	-	CH
2	2022/06/19	1200	[illegible]	2	CC

Sample Information

Initial pH: 7.6
Initial EC (µS/cm): 1287
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				
day										
pH (units) (range: 6.0-8.5)										
0	7.7	7.7	7.7	~~7.8~~ EV 7.8	7.8	7.8				
2	7.3	7.3	7.3	8.2	8.2	8.2				
EC (uS/cm)										
0	313	317	316	1275	1317	1322				
2	324	318	324	1272	1311	1302				
DO (mg/L) (**40-100% saturation at test temp.**)										
0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.6				
Temperature (°C) (range: **8-12 °C**)										
0	12	12	12	12	12	12				
2	12	12	12	12	12	12				
Number Alive (l, immobile)										
0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar Wed C1 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 47
Were test treatments randomized on test tray? Yes / No

Control Validity Criteria
Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 9.8
DO % of sample prior to aeration: 100%
Duration of aeration (37.5 +/- 12.5 mL/min/L): —
Hardness (mg $CaCO_3$/L) of 100% : 689
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 318

Temperature (°C) of sample prior to aeration: 10
Is aeration required (<40% or >100%)? **Yes or No**
Filtered with 110um screen prior to testing **Yes or No**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Dilution Water
Pail label / preparation date (MHRW) D2:06115
Hardness of dilution water (mg/L) 81

DO Levels (40-100% saturation) - corrected for altitude -
4.1 to 10.3 mg/L at 8°C
4.0 to 10.0 mg/L at 9°C
3.9 to 9.8 mg/L at 10°C
3.8 to 9.6 mg/L at 11°C
3.7 to 9.4 mg/L at 12°C

Comments/Observations:
0h: NO ppt
48h: no ppt

Reviewed By: EV Date Reviewed: 2022/06/21

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS 2 Client TEC 164 Reference 2122-2535

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/06/17	1445	CH/CC	2	AE
1	2022/06/18	0830	MAF	-	CM
2	2022/06/19	1140	DN	2	CC

Sample Information

Initial pH: 7.6
Initial EC (µS/cm): 1287
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				
day				pH (units) (range: 6.0-8.5)						
0	7.7	7.7	7.7	7.5	7.5	7.5				
2	7.9	7.9	7.9	8.3	8.3	8.3				
				The pH of the sample was not adjusted prior to test setting, unless noted in the comments below						
				EC (uS/cm)						
0	307	317	317	1286	1322	1329				
2	322	329	330	1261	1286	1281				
				DO (mg/L) (**40-100% saturation at test temp.**)						
0	7.9	7.9	7.9	8.2	8.2	8.2				
2	7.7	7.7	7.7	7.7	7.7	7.7				
				Temperature (°C) (range: **18-22 °C**)						
0	20	20	20	~~20~~ 18	18	18				
2	21	21	21	21	21	21				
				Number Alive (I, immobile)						
0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar Wed C1 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 47
Were test treatments randomized on test tray? Yes / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0

Sample
DO (mg/L) of sample prior to aeration: 8.2
DO % of sample prior to aeration: 100%
Duration of aeration (37.5 +/- 12.5 mL/min/L): —
Hardness (mg $CaCO_3$/L) of 100% : 689
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 318

Temperature (°C) of sample prior to aeration: 18
Is aeration required (<40% or >100%)? **Yes or No**
Filtered with 110um screen prior to testing **Yes or No**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Dilution Water
Pail label / preparation date (MHRW) D2:06/15
Hardness of dilution water (mg/L) 81

Antiscalant
Final Concentration in Sample: 2mg/L
Volume of sample: 500mL Volume of antiscalant: 15.8mL

Comments/Observations:
0h: NO PPt
48h: NO PPt

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Reviewed By: EV Date Reviewed: 2022/06/21

APPENDIX C – Chain-of-custody form

Teck

Page 1 of 1

COC ID: 2022-06-13_SP03 | TURNAROUND TIME: Regular (default) | RUSH: NO

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name	WLC AWTF			Lab Name	Nautilus Environmental			Report Format / Distribution		Excel	PDF	EDD
Project Manager	Brett Mason			Lab Contact	Tamara Pomeroy			Email 1:	DL-WLC-Lab@teck.com	X	X	X
Email	brett.mason@teck.com			Email	tamara@nautilusenvironmental.ca			Email 2:	H20.lab.results@teck.com	X	X	X
Address	15 Km North HWY 43			Address	10823 27th Street SE			Email 3:	TeckCoal@equisonline.com			X
								Email 4:	Tricia.Hill@teck.com	X	X	X
City	Sparwood	Province	BC	City	Calgary	Province	AB	Email 5:	Marty.Hafke@teck.com	X	X	X
Postal Code	V0B 2G0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada	Email 6:				
Phone Number	250 425 4837			Phone Number	403 253 7121			PO number		VPO00822031		

SAMPLE DETAILS

2022/06/14
09:45
Manitoulin
2x 20 L carboy, 2x 1 L bottles
SRS / RM / AC
Nos NoI
Good condition

Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	ANALYSIS: NAUT_96Hr_RT_Single_Concentration_Toxicity Test	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 10C	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 20C	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 20C + Antiscalant	
								Please indicate below Filtered, Perserved or both (F, P, F/P)				
LC_WTF_IN_2022-06-13_NP_0800	LC_WTF_IN	WS		6/13/2022	8:00	G	4	X	X	X	X	8.6°C

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	Date	Time	ACCEPTED BY/AFFILIATION	Date	Time
	Katrina Leboeuf	6/13/2022				

SERVICE REQUEST (rush - subject to availability)					
Regular (default)	X	Sampler's Name	Blair Peebles	Mobile #	
Priority (2-3 business days) - 50% surcharge					
Emergency (1 Business Day) - 100% surcharge		Sampler's Signature	B Peebles	Date/Time	13-Jun-22
For Emergency <1 Day, ASAP or Weekend - Contact ALS					

END OF REPORT

Acute Toxicity Test Results

Sample collected June 13, 2022

Final Report

July 21, 2022

Submitted to: **Teck Coal Ltd.**
Sparwood, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates			
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 20˚C test initiation
WL_BFWB_OUT_SP21_2022-06-13_N_0900 / 2122-2536	13-Jun-22 at 0900h	14-Jun-22 at 0945h	15-Jun-22 at 1440h	17-Jun-22 at 1435h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
WL_BFWB_OUT_SP21_2022-06-13_N_0900	8.9°C	614	238

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample	
	Rainbow trout	*Daphnia magna* 20˚C
WL_BFWB_OUT_SP21_2022-06-13_N_0900	100	100

Sample ID	Percent Immobility in 100 (% v/v)
	Daphnia magna 20˚C
WL_BFWB_OUT_SP21_2022-06-13_N_0900	0

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
WL_BFWB_OUT_SP21_2022-06-13_N_0900	Rainbow trout	None	None
	Daphnia magna	None	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	3.5 (3.0 - 4.0) g/L KCl[1]	6.3 (6.0 - 6.5) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.4 (2.6 - 4.4) g/L KCl	6.4 (5.5 - 7.6) g/L NaCl
Reference toxicant CV	8.7%	5.3%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, June 13, 2022; [2] Test Date, June 20, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation



Report By:
Mia Fearey, BIT
Biologist



Reviewed By:
Jacklyn Poole, BSc
Laboratory and Quality Manager

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC164 Reference 2122-2536 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022-06-15	1440 *	AM/ML	7+	DW
1	2022-06-16	1050	ML	-	WM
2	2022-06-17	0845	ML	-	EP
3	2022-06-18	1100	KO	-	MAP
4	2022-06-19	0935	CC/EP	1	DW

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 7.5
Initial EC (µS/cm): 1465
Salinity (ppt): 2

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L : **yes/no**

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	8.6	8-8			
Temp (°C) of 100%	16				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	7.6	7.6						
Day 4	8.1	8.3						
EC (uS/cm)								
Day 0	434	1300						
Day 4	428	1318						
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	8.8	8.8						
Day 4	8.8	8.8						
Temperature (°C) (range: 14-16°C)								
Day 0	15	15						
Day 4	15	15						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.4	0.5
2	2.9	0.3
3	3.5	0.5
4	3.0	0.3
5	3.3	0.5
6	3.0	0.4
7	2.7	0.2
8	3.0	0.4
9	3.1	0.3
10	3.0	0.3

Loading Density (g/L): 0.2
(must be ≤0.5 g/L)
Mean Length (cm): 3.1
Length Range (cm): 2.7-3.5
Mean Weight (g): 0.4
(Must be ≥0.3g)
Weight Range: (g): 0.2-0.5

Test Organism Information

Batch 20220526TR
Source LSL
Tank # 1
Days Held at 15± 2°C 20
(must be ≥14 days)
Percent stock mortality 0.74
(7 days prior to test, must be <2%)
Test Volume (L) 18

Comments :
96 hrs NO ppt

Reviewed By: EV Date Reviewed: 2022/06/23

Daphnia Bench Sheet

NAUTILUS ENVIRONMENTAL

Method: DAS 20 | Client: TEC 164 | Reference: 2122-2536

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/06/17	1435	CH CC	2	AE
1	2022/06/18	0840	MAE	-	CH
2	2022/06/19	1135	AW	2	CC

Sample Information

Initial pH: 7.5
Initial EC (µS/cm): 1465
Salinity (ppt): 2

Lab Code	CTL A	CTL B	CTL C	100 A	100 B	100 C

pH (units) (range: 6.0-8.5)

day	CTL A	CTL B	CTL C	100 A	100 B	100 C
0	8.0	8.0	8.0	7.9	7.9	7.9
2	8.2	8.2	8.1	8.3	8.3	8.3

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	499	510	510	1427	1478	1486
2	511	514	512	1447	1451	1447

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	8.2	8.2	8.2
2	7.9	7.9	7.9	7.7	7.7	7.7

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	18	18	18
2	20	20	20	21	21	21

Number Alive (I, immobile)

0	10	10	10	10	10	10
1	10	10	10	10	10	10
2	10	10	10	10	10	10

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar: MonE1 — Jar(s) mortality 7 days prior to test (must be ≤25%): 5%

QA (previous month)
Days to first brood (≤12 days): 10
Average number of young produced (≥15 young): 23
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 8.2 — Temperature (°C) of sample prior to aeration: 18
DO % of sample prior to aeration: 100% — Is aeration required (<40% or >100%)? Yes or (No)
Duration of aeration (37.5 +/- 12.5 mL/min/L): — — Filtered with 110um screen prior to testing Yes or (No)
Hardness (mg $CaCO_3$/L) of 100%: 614 — Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L): —
Alkalinity of 100% sample (mg $CaCO_3$/L): 238

Dilution Water
Pail label / preparation date: (TAP) DI:06/13
Hardness of dilution water (mg/L): 218

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Comments/Observations:
0h: NO PPT
48h: NO PPT

Reviewed By: EV — Date Reviewed: 2022/06/23

APPENDIX C – Chain-of-custody form

Teck

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COC ID: 2022-06-13_SP21 | TURNAROUND TIME: Regular (default) | RUSH: NO

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name	WLC AWTF			Lab Name	Nautilus Environmental			Report Format / Distribution		Excel	PDF	EDD
Project Manager	Brett Mason			Lab Contact	Tamara Pomeroy			Email 1:	DL-WLC-Lab@teck.com	X	X	X
Email	brett.mason@teck.com			Email	tamara@nautilusenvironmental.ca			Email 2:	H20.lab.results@teck.com	X	X	X
Address	15 Km North HWY 43			Address	10823 27th Street SE			Email 3:	TeckCoal@equisonline.com			X
								Email 4:	Tricia.Hill@teck.com	X	X	X
City	Sparwood	Province	BC	City	Calgary	Province	AB	Email 5:	Marty.Hafke@teck.com	X	X	X
Postal Code	V0B 2G0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada	Email 6:				
Phone Number	250 425 4837			Phone Number	403 253 7121			PO number		VPO00822031		

SAMPLE DETAILS

2022/06/14
09:45
Manitou
3x20 L carboys, 3x1 L bottles
SAS/RM/AC
Nos Nol
Good Condition

ANALYSIS REQUESTED

Please indicate below Filtered, Perserved or both (F, P, F/P)

Sample ID 21222536	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	ANALYSIS	NAUT_96Hr_RT_Single_Concentration_Toxicity Test	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 20C	8.9°C											
WL_BFWB_OUT_SP21_2022-06-13_N_0900	WL_BFWB_OUT_SP21	WS		6/13/2022	9:00	G	6		X	X												

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	Date	Time	ACCEPTED BY/AFFILIATION	Date	Time
Shipment includes 2 extra 20 L bladders and 2 extra 1.2 L plastic bottles.	Katrina Leboeuf	6/13/2022				

SERVICE REQUEST (rush - subject to availability)					
Regular (default)	X	Sampler's Name	Blair Peebles	Mobile #	
Priority (2-3 business days) - 50% surcharge					
Emergency (1 Business Day) - 100% surcharge		Sampler's Signature	B. Peebles	Date/Time	13-Jun-22
For Emergency <1 Day, ASAP or Weekend - Contact ALS					

END OF REPORT

Acute Toxicity Test Results

Sample collected June 27, 2022

Final Report

July 22, 2022

Submitted to: **Teck Coal Ltd.**
Sparwood, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates			
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 20˚C test initiation
WL_BFWB_OUT_SP21_2022-06-27_N_0900 / 2122-2719	27-Jun-22 at 0900h	28-Jun-22 at 0845h	29-Jun-22 at 1445h	29-Jun-22 at 1400h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
WL_BFWB_OUT_SP21_2022-06-27_N_0900	13.6°C	631	257

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample	
	Rainbow trout	*Daphnia magna* 20˚C
WL_BFWB_OUT_SP21_2022-06-27_N_0900	100	100

Sample ID	Percent Immobility in 100 (% v/v)
	Daphnia magna 20˚C
WL_BFWB_OUT_SP21_2022-06-27_N_0900	0

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
WL_BFWB_OUT_SP21_2022-06-27_N_0900	Rainbow trout	None	None
	Daphnia magna	None	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	3.5 (3.1 - 4.0) g/L KCl[1]	5.7 (5.4 - 5.9) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.4 (2.6 - 4.4) g/L KCl	6.4 (5.4 - 7.6) g/L NaCl
Reference toxicant CV	8.7%	5.6%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, June 20, 2022; [2] Test Date, June 28, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation



Report By:
Mia Fearey, BIT
Biologist



Reviewed By:
Jacklyn Poole, BSc
Laboratory and Quality Manager

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	Moderately hard reconstituted water amended with B12 (2 µg/L)
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC 164 Reference 2122-2719 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022/06/29	1445 *	KO/AM	1	EP
1	2022/06/30	0840	NA	-	MAF
2	2022/07/01	0800	ML	-	MAF
3	2022/07/02	0745	ML	-	MAF
4	2022/07/03	0900	ML	1	MM

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 7.7
Initial EC (µS/cm): 1202
Salinity (ppt): 1

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L (yes/no)

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	9.7	9.4	8.6		
Temp (°C) of 100%	16				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	8.1	7.6						
Day 4	8.2	8.4						
EC (uS/cm)								
Day 0	346	1210						
Day 4	348	1169						
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	8.6	8.6						
Day 4	8.6	8.6						
Temperature (°C) (range: 14-16°C)								
Day 0	16	16						
Day 4	16	16						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.0	0.3
2	3.7	0.6
3	3.2	0.4
4	3.0	0.3
5	3.4	0.5
6	3.4	0.4
7	3.4	0.4
8	3.2	0.4
9	3.6	0.5
10	3.1	0.3

Loading Density (g/L): 0.2 (must be ≤0.5 g/L)
Mean Length (cm): 3.3
Length Range (cm): 3.0-3.7
Mean Weight (g): 0.4 (Must be ≥0.3g)
Weight Range: (g): 0.3-0.6

Test Organism Information

Batch 20220506TR
Source Trout Lodge
Tank # 3
Days Held at 15± 2°C: 31 (must be ≥14 days)
Percent stock mortality: 0 (7 days prior to test, must be <2%)
Test Volume (L): 18

Comments :
96h: No ppt

Reviewed By: EV Date Reviewed: 2022/07/06

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC 164 Reference 2122-2719

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/06/29	1400	EP/DM	2	AW
1	2022/06/30	0900	MI	-	MAF
2	2022/06/31 07/01	0755	NA	2	LC
	EP				

Sample Information

Initial pH: 7.7
Initial EC (µS/cm): 1202
Salinity (ppt): 1

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	7.7	7.7	7.7	7.8	7.8	7.8				
2	7.9	7.9	7.9	8.3	8.3	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	293	310	312	1236	1246	1250				
2	311	314	317	1207	1227	1239				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.4	7.9	7.9	7.9	7.9	7.9				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	20	20	20				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar Wed E3 Jar(s) mortality 7 days prior to test (must be ≤25%) 12%

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 30
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0%
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 10.0 Temperature (°C) of sample prior to aeration: 20
DO % of sample prior to aeration: 127 % Is aeration required (<40% or >100%)? **Yes or No**
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20 min Filtered with 110um screen prior to testing **Yes or No**
Hardness (mg $CaCO_3$/L) of 100% : 631 Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 257

Dilution Water
Pail label / preparation date 3:06/20
Hardness of dilution water (mg/L) 80

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Comments/Observations:
0hr: No ppt
48hr: no ppt.

Reviewed By: EV Date Reviewed: 2022/07/06

APPENDIX C – Chain-of-custody form

Teck

Page 1 of 1

COC ID: 2022-06-27_SP21 **TURNAROUND TIME:** Regular (default) **RUSH:** NO

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name	WLC AWTF			Lab Name	Nautilus Environmental			Report Format / Distribution		Excel	PDF	EDD
Project Manager	Brett Mason			Lab Contact	Tamara Pomeroy			Email 1:	DL-WLC-Lab@teck.com	X	X	X
Email	brett.mason@teck.com			Email	tamara@nautilusenvironmental.ca			Email 2:	H20.lab.results@teck.com	X	X	X
Address	15 Km North HWY 43			Address	10823 27th Street SE			Email 3:	TeckCoal@equisonline.com			X
								Email 4:	Tricia.Hill@teck.com	X	X	X
City	Sparwood	Province	BC	City	Calgary	Province	AB	Email 5:	Marty.Hafke@teck.com	X	X	X
Postal Code	V0B 2G0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada	Email 6:				
Phone Number	250 425 4837			Phone Number	403 253 7121			PO number	VPO00822031			

SAMPLE DETAILS

2022/06/28
08:45
Manitoulin
4 x 20 L carboys, 2 x 1 L bottles
SRS IJC
NO9 NO I
Good Condition
17.6°C

ANALYSIS REQUESTED

Please indicate below Filtered, Perserved or both (F, P, F/P)

Sample ID 2022-2719	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	ANALYSIS: NAUT_96Hr_RT_Single_Concentration_Toxicity Test	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 20C
WL_BFWB_OUT_SP21_2022-06-27_N_0900	WL_BFWB_OUT_SP21	WS		6/27/2022	9:00	G	6	X	X

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	Date	Time	ACCEPTED BY/AFFILIATION	Date	Time
Shipment includes 2 extra 20 L bladders and 2 extra 1.2 L plastic bottles.	Nicholas Krajnc	6/27/2022				

SERVICE REQUEST (rush - subject to availability)

Regular (default)	X
Priority (2-3 business days) - 50% surcharge	
Emergency (1 Business Day) - 100% surcharge	
For Emergency <1 Day, ASAP or Weekend - Contact ALS	

Sampler's Name	Gilroy James	Mobile #	
Sampler's Signature		Date/Time	27-Jun-22

END OF REPORT

Acute Toxicity Test Results

Sample collected June 27, 2022

Final Report

July 22, 2022

Submitted to: **Teck Coal Ltd.**
Sparwood, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates					
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation	*Daphnia magna* antiscalant test initiation
LC_WTF_IN_2022-06-27_NP_0800/ 2122-2720	27-Jun-22 at 0800h	28-Jun-22 at 0845h	29-Jun-22 at 1500h	29-Jun-22 at 1400h	29-Jun-22 at 1400h	29-Jun-22 at 1400h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
LC_WTF_IN_2022-06-27_NP_0800	13.2°C	702	330

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)
- *Daphnia magna* 48-h single concentration screening test (conducted with 2 mg/L antiscalant)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample			
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
LC_WTF_IN_2022-06-27_NP_0800	100	100	100	100

Sample ID	Percent Immobility in 100 (% v/v)		
	Daphnia magna 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
LC_WTF_IN_2022-06-27_NP_0800	0	0	0

Precipitate observations

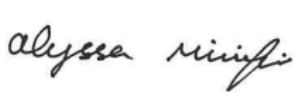
Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
LC_WTF_IN_2022-06-27_NP_0800	Rainbow trout	None	None
	Daphnia magna	None	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	3.5 (3.1-4.0) g/L KCl[1]	5.7 (5.4-5.9) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.4 (2.6-4.4) g/L KCl	6.4 (5.4-7.6) g/L NaCl
Reference toxicant CV	8.7%	5.6%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, June 20, 2022; [2] Test Date June 28, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation



Report By:
Alyssa Minifie, BSc
Laboratory Biologist



Reviewed By:
Jacklyn Poole, BSc
Laboratory and Quality Manager

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APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory contro
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	Moderately-hard reconstituted water supplemented with B12 (2 µg/L)
Control/dilution water for antiscalant test	Moderately-hard reconstituted water supplemented with B12 (2 µg/L) and 2 mg/L antiscalant
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	Moderately-hard reconstituted water supplemented with B12 (2 µg/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC 164 Reference 2122-2720 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022/06/29	1500 *	KO/AM	1	EP
1	2022/06/30	0840	N/A	-	MAF
2	2022/07/01	0800	ML	-	MAF
3	2022/07/02	0745	ML	-	MAF
4	2022/07/03	0900	ML	1	MAF

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 7.8
Initial EC (µS/cm): 1167
Salinity (ppt): 1

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L : yes/no

	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
Preaeration time					
DO(mg/L) of 100%	9.8	9.3	8.6		
Temp (°C) of 100%	16				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: **5.5-8.5**)								
Day 0	8.1	7.7						
Day 4	8.2	8.2						
EC (uS/cm)								
Day 0	346	1170						
Day 4	352	1021						
DO (mg/L) (**70-100% saturation at test temp.**)								
Day 0	9.6	8.6						
Day 4	8.6	8.6						
Temperature (°C) (range: **14-16°C**)								
Day 0	16	16						
Day 4	16	16						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.6	0.5
2	3.0	0.3
3	3.4	0.4
4	3.0	0.3
5	2.7	0.2
6	3.0	0.3
7	3.4	0.4
8	2.8	0.2
9	3.2	0.4
10	2.8	0.3

Loading Density (g/L): 0.2 (must be ≤0.5 g/L)
Mean Length (cm): 3.1
Length Range (cm): 2.7-3.6
Mean Weight (g): 0.3 (Must be ≥0.3g)
Weight Range: (g): 0.2-0.5

Test Organism Information

Batch 20220506TR
Source Trout Lodge
Tank # 3
Days Held at 15± 2°C 31 (must be ≥14 days)
Percent stock mortality 0 (7 days prior to test, must be <2%)
Test Volume (L) 18

Comments:
96h: No ppt

Reviewed By: EV Date Reviewed: 2022/07/06

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC164 Reference 2122-2720

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/06/29	1400	EP/DM	2	AW
1	2022/06/30	0845	AT	-	MAF
2	2022/07/01	0820	NA	2	LC

Sample Information

Initial pH: 7.8
Initial EC (µS/cm): 1167
Salinity (ppt): 1

Lab Code	CTL A	CTL B	CTL C	100 A	100 B	100 C

pH (units) (range: 6.0-8.5)

day										
0	7.9	7.8	7.8	7.8	7.8	7.8				
2	8.0	7.9	7.9	8.3	8.4	8.4				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	307	311	312	1146	1191	1200				
2	315	310	314	1142	1180	1168				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.7	7.7	7.7	7.7	7.7	7.7				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	21	21	21	21	21	21				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar WedEZ Jar(s) mortality 7 days prior to test (must be ≤25%) 5%

QA (previous month)

Days to first brood (≤12 days) 8

Average number of young produced (≥15 young) 30

Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - 0% (must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 9.3 Temperature (°C) of sample prior to aeration: 21

DO % of sample prior to aeration: 117% Is aeration required (<40% or >100%)? **Yes or No**

Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20 min Filtered with 110um screen prior to testing **Yes or No**

Hardness (mg $CaCO_3$/L) of 100% : 302 Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —

Alkalinity of 100% sample (mg $CaCO_3$/L): 330

Dilution Water

Pail label / preparation date 3:06/20

Hardness of dilution water (mg/L) 80

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Comments/Observations:

0HR: No ppt

48HR: No ppt.

Reviewed By: EV Date Reviewed: 2022/07/04

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC 164 Reference 2122-2720

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/06/29	1400	EP/DM	2	AJ
1	2022/06/30	0940	AJ	-	mat
2	2022/~~06/31~~ 07/01 DM	0820	NA	2	LL

Sample Information

Initial pH:	7.8
Initial EC (µS/cm):	1167
Salinity (ppt):	1

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	7.7	7.7	7.6	7.5	7.5	7.5				
2	7.8	7.8	7.8	8.3	8.3	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	294	304	312	1163	1210	1210				
2	307	316	313	1152	1191	1181				

DO (mg/L) (**40-100% saturation** DM **at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar Wed E1 Jar(s) mortality 7 days prior to test (must be ≤25%) 10%

QA (previous month)

Days to first brood (≤12 days) 6

Average number of young produced (≥15 young) 30

Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - 0% (must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 9.4

DO % of sample prior to aeration: 100 %

Duration of aeration (37.5 +/- 12.5 mL/min/L) : -

Hardness (mg $CaCO_3$/L) of 100% : 702

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) -

Alkalinity of 100% sample (mg $CaCO_3$/L): 330

Temperature (°C) of sample prior to aeration: 12

Is aeration required (<40% or >100%)? **Yes or (No)**

Filtered with 110um screen prior to testing **Yes or (No)**

Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or (No)**

Dilution Water

Pail label / preparation date 3:06/20

Hardness of dilution water (mg/L) 80

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

Comments/Observations:

0hr: NO ppt

48hr: No ppt.

Reviewed By: EV Date Reviewed: 2022/07/06

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS 2 Client TEC164 Reference 2122-2720

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/06/29	1400	DM/EP	2	DM
1	2022/06/30	0855	AA	-	MAF
2	2022/07/01	0820	NA	2	LC

Sample Information

Initial pH: 7.8
Initial EC (µS/cm): 1167
Salinity (ppt): 1

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				
day	pH (units) (range: 6.0-8.5)									
0	7.9	7.7	7.7	7.8	7.8	7.8				
2	8.0	7.9	7.9	8.4	8.4	8.4				
	The pH of the sample was not adjusted prior to test setting, unless noted in the comments below									
	EC (uS/cm)									
0	294	310	312	1152	1194	1196				
2	310	313	313	1140	1176	1168				
	DO (mg/L) (**40-100% saturation at test temp.**)									
0	7.7	7.7	7.7	7.7	7.7	7.7				
2	7.7	7.7	7.7	7.7	7.7	7.7				
	Temperature (°C) (range: **18-22 °C**)									
0	21	21	21	21	21	21				
2	21	21	21	21	21	21				
	Number Alive (I, immobile)									
0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar Wed E2 Jar(s) mortality 7 days prior to test (must be ≤25%) 5%

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 30
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0%

Sample
DO (mg/L) of sample prior to aeration: 9.3
DO % of sample prior to aeration: 117%
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20min
Hardness (mg $CaCO_3$/L) of 100% : 702
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 330

Temperature (°C) of sample prior to aeration: 21
Is aeration required (<40% or >100%)? **Yes or No**
Filtered with 110um screen prior to testing **Yes or No** EP
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Dilution Water
Pail label / preparation date 3:06/20
Hardness of dilution water (mg/L) 80

Antiscalant
Final Concentration in Sample: 2 mg/L
Volume of sample: 500mL Volume of antiscalant: 15.8 µL

Comments/Observations:
0HR: no ppt
48HR: No ppt.

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Reviewed By: EV Date Reviewed: 2022/07/06

APPENDIX C – Chain-of-custody form

Teck

Page 1 of 1

COC ID: 2022-06-27_SP03 **TURNAROUND TIME:** Regular (default) **RUSH:** NO

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name	WLC AWTF			Lab Name	Nautilus Environmental			Report Format / Distribution		Excel	PDF	EDD
Project Manager	Brett Mason			Lab Contact	Tamara Pomeroy			Email 1:	DL-WLC-Lab@teck.com	X	X	X
Email	brett.mason@teck.com			Email	tamara@nautilusenvironmental.ca			Email 2:	H20.lab.results@teck.com	X	X	X
Address	15 Km North HWY 43			Address	10823 27th Street SE			Email 3:	TeckCoal@equisonline.com			X
								Email 4:	Tricia.Hill@teck.com	X	X	X
City	Sparwood	Province	BC	City	Calgary	Province	AB	Email 5:	Marty.Hafke@teck.com	X	X	X
Postal Code	V0B 2G0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada	Email 6:				
Phone Number	250 425 4837			Phone Number	403 253 7121			PO number		VPO00822031		

SAMPLE DETAILS

20221061128
08:45
Manitoulin
1 X 20 L Carboy, 3 x 1 L bottles
SRSIJC
No's No I
Good condition
17.2oC

ANALYSIS REQUESTED

Please indicate below Filtered, Preserved or both (F, P, F/P)

Sample ID 2122-2220	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	ANALYSIS: NAUT_96Hr_RT_Single_Concentration_Toxicity Test	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 10C	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 20C	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 20C + Antiscalant
LC_WTF_IN_2022-06-27_NP_0800	LC_WTF_IN	WS		6/27/2022	8:00	G	4	X	X	X	X

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	Date	Time	ACCEPTED BY/AFFILIATION	Date	Time
	Nicholas Krajnc	6/27/2022				

SERVICE REQUEST (rush - subject to availability)

Regular (default)	X
Priority (2-3 business days) - 50% surcharge	
Emergency (1 Business Day) - 100% surcharge	
For Emergency <1 Day, ASAP or Weekend - Contact ALS	

Sampler's Name	Gilroy James	**Mobile #**	
Sampler's Signature		**Date/Time**	27-Jun-22

END OF REPORT

Acute Toxicity Test Results

Sample collected July 11, 2022

Final Report

August 31, 2022

Submitted to: **Teck Coal Ltd.**
Sparwood, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates			
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 20˚C test initiation
WL_BFWB_OUT_SP21_2022-07-11_N_0900/ 2122-2871	11-Jul-22 at 0900h	12-Jul-22 at 1000h	13-Jul-22 at 1450h	12-Jul-22 at 1505h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
WL_BFWB_OUT_SP21_2022-07-11_N_0900	14.6°C	1010	283

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample	
	Rainbow trout	*Daphnia magna* 20˚C
WL_BFWB_OUT_SP21_2022-07-11_N_0900	100	100

Sample ID	Percent Immobility in 100 (% v/v)
	Daphnia magna 20˚C
WL_BFWB_OUT_SP21_2022-07-11_N_0900	0

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
WL_BFWB_OUT_SP21_2022-07-11_N_0900	Rainbow trout	Precipitate observed on the test vessel	None
	Daphnia magna	None	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	3.5 (3.1-4.0) g/L KCl[1]	5.7 (5.4-5.9) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.4 (2.6-4.4) g/L KCl	6.4 (5.4-7.6) g/L NaCl
Reference toxicant CV	8.7%	5.6%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, June 20, 2022; [2] Test Date June 28, 2022;

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation



Report By:
Alyssa Minifie, BSc
Laboratory Biologist



Reviewed By:
Leila Oosterbroek, P Biol
Environmental Scientist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	Moderately-hard reconstituted water supplemented with B12 (2 µg/L)
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC 164 Reference 2122-2871 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022-07-13	1450 *	KO/AM	1	LC
1	2022-07-14	0730	ML	-	CC
2	2022-07-15	0715	ML	-	MAF
3	2022-07-16	0800	ML	-	MAF
4	2022-07-17	0945	ML	1	LCM

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 8.1
Initial EC (µS/cm): 1459
Salinity (ppt): 0

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L : yes/no

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	9.2	8.6			
Temp (°C) of 100%	16				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.5 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: **5.5-8.5**)								
Day 0	8.3	7.9						
Day 4	8.0	8.3						
EC (uS/cm)								
Day 0	364	1509						
Day 4	373	1460						
DO (mg/L) (**70-100% saturation at test temp.**)								
Day 0	8.6	8.6						
Day 4	8.6	8.6						
Temperature (°C) (range: **14-16°C**)								
Day 0	16	16						
Day 4	16	16						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.9	0.7
2	4.0	0.8
3	3.0	0.3
4	3.5	0.5
5	3.5	0.5
6	4.1	0.8
7	3.3	0.5
8	4.7	1.2
9	3.1	0.3
10	3.5	0.5

Loading Density (g/L): 0.3 (must be ≤0.5 g/L)
Mean Length (cm): 3.7
Length Range (cm): 3.0-4.7
Mean Weight (g): 0.6 (Must be ≥0.3g)
Weight Range: (g): 0.3-1.2

Test Organism Information

Batch 20220506TR
Source Trout Lodge
Tank # 8
Days Held at 15± 2°C 45 (must be ≥14 days)
Percent stock mortality 0.38 (7 days prior to test, must be <2%)
Test Volume (L) 18

Comments :
96h: ppt at the bottom of tank

Reviewed By: SS Date Reviewed: 2022/07/19

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC 164 Reference 2122-2871

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/07/12	1505	NA/LC	2	NA
1	2022/07/13	0900	AI	-	MAF
2	2022/07/14	1040	AI	2	DM

Sample Information

Initial pH: ~~7.6~~ 8.1 NA
Initial EC (µS/cm): 1459
Salinity (ppt): 0

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	7.8	7.8	7.8	8.3	8.3	8.3				
2	7.7	7.7	7.7	8.2	8.3	~~8.4~~				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm) AI

0	290	291	292	1497	1528	1526				
2	296	293	293	1502	1544	1517				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.7	7.7	7.7				
2	7.7	7.9	7.9	7.9	7.9	7.7				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	21	21	21				
2	21	20	20	20	20	21				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar WED C1 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 48
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 9.1
DO % of sample prior to aeration: 117 %
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20min
Hardness (mg $CaCO_3$/L) of 100% : NA / 1010
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 283

Temperature (°C) of sample prior to aeration: 21
Is aeration required (<40% or >100%)? (Yes) or No
Filtered with 110um screen prior to testing Yes or (No)
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)

Dilution Water
Pail label / preparation date 3:07/04
Hardness of dilution water (mg/L) 80

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Comments/Observations:
0hr: No ppt.
48hr: No ppt

Reviewed By: SS Date Reviewed: 2022/07/19

APPENDIX C – Chain-of-custody form

Teck

Page 1 of 1

COC ID: 2022-07-11_SP21 | TURNAROUND TIME: Regular (default) | RUSH: NO

PROJECT/CLIENT INFO

Facility Name	WLC AWTF		
Project Manager	Brett Mason		
Email	brett.mason@teck.com		
Address	15 Km North HWY 43		
City	Sparwood	Province	BC
Postal Code	V0B 2G0	Country	Canada
Phone Number	250 425 4837		

LABORATORY

Lab Name	Nautilus Environmental		
Lab Contact	Tamara Pomeroy		
Email	tamara@nautilusenvironmental.ca		
Address	10823 27th Street SE		
City	Calgary	Province	AB
Postal Code	T2Z 3V9	Country	Canada
Phone Number	403 253 7121		

OTHER INFO

Report Format / Distribution		Excel	PDF	EDD
Email 1:	DL-WLC-Lab@teck.com	X	X	X
Email 2:	H20.lab.results@teck.com	X	X	X
Email 3:	TeckCoal@equisonline.com			X
Email 4:	Tricia.Hill@teck.com	X	X	X
Email 5:	Marty.Hafke@teck.com	X	X	X
Email 6:				

PO number: VPO00842118

SAMPLE DETAILS

2022/07/12
10:00
Manitowoc
4 x 20 L carboys, 2 x 1 L bottles
SRS / AC / NZ
No3 No I
Good Condition
4°C

ANALYSIS REQUESTED

Please indicate below Filtered, Perserved or both (F, P, F/P)

Sample ID 2022-2871	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	ANALYSIS: NAUT_96Hr_RT_Single_Concentration_Toxicity Test	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 20C
WL_BFWB_OUT_SP21_2022-07-11_N_0900	WL_BFWB_OUT_SP21	WS		7/11/2022	9:00	G	6	X	X

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS

Shipment includes 2 extra 20 L bladders and 2 extra 1.2 L plastic bottles.

RELINQUISHED BY/AFFILIATION	Date	Time	ACCEPTED BY/AFFILIATION	Date	Time
Katrina Leboeuf	7/11/2022				

SERVICE REQUEST (rush - subject to availability)

Regular (default)	X
Priority (2-3 business days) - 50% surcharge	
Emergency (1 Business Day) - 100% surcharge	
For Emergency <1 Day, ASAP or Weekend - Contact ALS	

Sampler's Name	Blair Peebles	Mobile #	
Sampler's Signature	B Peebles	Date/Time	11-Jul-22

END OF REPORT

Acute Toxicity Test Results

Sample collected July 11, 2022

Final Report

September 5, 2022

Submitted to: **Teck Coal Ltd.**
Sparwood, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates					
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation	*Daphnia magna* antiscalant test initiation
LC_WTF_IN_2022-07-11_NP_0800/ 2122-2876	11-Jul-22 at 0800h	12-Jul-22 at 1000h	13-Jul-22 at 1440h	13-Jul-22 at 1405h	13-Jul-22 at 1410h	13-Jul-22 at 1415h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
LC_WTF_IN_2022-07-11_NP_0800	13.1°C	845	351

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)
- *Daphnia magna* 48-h single concentration screening test (conducted with 2 mg/L antiscalant)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample			
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
LC_WTF_IN_2022-07-11_NP_0800	100	100	100	100

Sample ID	Percent Immobility in 100 (% v/v)		
	Daphnia magna 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
LC_WTF_IN_2022-07-11_NP_0800	0	0	0

Precipitate observations

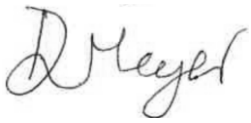
Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
LC_WTF_IN_2022-07-11_NP_0800	Rainbow trout	None	None
	Daphnia magna	Surficial precipitate observed and precipitate on the bottom of the test vessel observed in the 20 degree test	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	3.5 (3.1-4.0) g/L KCl[1]	5.9 (5.6-6.2) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.4 (2.6-4.4) g/L KCl	6.3 (5.4-7.5) g/L NaCl
Reference toxicant CV	8.7%	5.8%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, June 20, 2022; [2] Test date, July 18, 2022

LC = Lethal Concentration; CL = Confidence Limit; SD = Standard Deviation; CV = Coefficient of Variation



Report By:
Daisy Meyer, BSc
Laboratory Biologist



Reviewed By:
Emma Marus, BSc
Biologist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Control/dilution water for antiscalant test	Moderately-hard reconstituted water supplemented with B12 (2 µg/L) and 2 mg/L antiscalant
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	Moderately-hard reconstituted water supplemented with B12 (2 µg/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC 164 Reference 2122-2876 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022-07-13	1440 *	KO/AM	1	LC
1	2022-07-14	0730	ML	-	CC
2	2022-07-15	0745	ML	-	MAF
3	2022-07-16	0800	ML	-	MAF
4	2022-07-17	0945	ML	1	MAF

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 7.8
Initial EC (µS/cm): 1434
Salinity (ppt): 0

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L **yes/no**

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	9.7	8.9			
Temp (°C) of 100%	14				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	7.6	7.8						
Day 4	8.4 8.3	8.2						
EC (uS/cm)								
Day 0	368	1421						
Day 4	440	1386						
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	8.6	8.9						
Day 4	8.6	8.6						
Temperature (°C) (range: 14-16°C)								
Day 0	16	14						
Day 4	16	16						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.8	0.7
2	3.8	0.7
3	3.8	0.6
4	3.6	0.5
5	3.6	0.5
6	3.6	0.5
7	3.8	0.6
8	3.8	0.5
9	3.6	0.6
10	4.0	0.8

Loading Density (g/L): 0.3 (must be ≤0.5 g/L)
Mean Length (cm): 3.7
Length Range (cm): 3.6-4.0
Mean Weight (g): 0.6 (Must be ≥0.3g)
Weight Range: (g): 0.5-0.8

Test Organism Information

Batch 20220506TR
Source Trout Lodge
Tank # 8
Days Held at 15± 2°C 45 (must be ≥14 days)
Percent stock mortality 0.38 (7 days prior to test, must be <2%)
Test Volume (L) 18

Comments :
96h: No ppt

Reviewed By: ML Date Reviewed: 2022/07/19

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method: DAS 20 | Client: TEC 164 | Reference: 2122-2876

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/07/13	1410	EP/AI	2	IC
1	2022/07/14	0830	DM/BS	-	CC
2	2022/07/15	1030	DM/BS	2	LC

Sample Information

Initial pH: 7.8
Initial EC (µS/cm): 1434
Salinity (ppt): 0

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	7.7	7.6	7.6	7.8	7.9	7.9				
2	7.9	7.9	7.8	8.3	8.3	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	281	287	290	1411	1468	1480				
2	~~1263~~	290	292	~~1380~~ 1371	1425	1440				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.9	7.9	7.9				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	20	20	20				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1 *	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar: wcd E1 | Jar(s) mortality 7 days prior to test (must be ≤25%): 0%

QA (previous month)

Days to first brood (≤12 days): 7
Average number of young produced (≥15 young): 35
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - (must be ≤10%): 0%

Sample

DO (mg/L) of sample prior to aeration: 9.4 | Temperature (°C) of sample prior to aeration: 20
DO % of sample prior to aeration: 120 | Is aeration required (<40% or >100%)? **Yes or No**
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20 | Filtered with 110um screen prior to testing **Yes or No**
Hardness (mg $CaCO_3$/L) of 100% : 845 | Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L): —
Alkalinity of 100% sample (mg $CaCO_3$/L): 351

Dilution Water

Pail label / preparation date: 3:07104
Hardness of dilution water (mg/L): 80

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Comments/Observations:

0 hrs: no ppt
48 hrs: Surficial ppt, ppt on jar.

* lots stuck at surface in both CTL's and 100's at 24hrs

Reviewed By: ML | Date Reviewed: 2022/07/19

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC 164 Reference 2122-2876

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/07/13	1405	EP/AI	2	LC
1	2022/07/14	0915	BS/SM	-	LC
2	2022/07/15	1030	DM/BS	2	LC

Sample Information

Initial pH: 7.8
Initial EC (µS/cm): 1434
Salinity (ppt): 0

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	7.9	7.8	7.8	7.5	7.5	7.5				
2	7.6	7.6	7.6	8.3	8.3	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	294	291	289	1436	1480	1472				
2	289	289	290	1396	1462	1477				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar wed E1 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)

Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 35
Were test treatments randomized on test tray? (Yes) No

Control Validity Criteria

Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 9.4
DO % of sample prior to aeration: 100
Duration of aeration (37.5 +/- 12.5 mL/min/L) : —
Hardness (mg $CaCO_3$/L) of 100% : 845
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 351

Temperature (°C) of sample prior to aeration: 12
Is aeration required (<40% or >100%)? **Yes or (No)**
Filtered with 110um screen prior to testing **Yes or (No)**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or (No)**

Dilution Water

Pail label / preparation date 3:07104
Hardness of dilution water (mg/L) 80

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

Comments/Observations:

0 hrs: no ppt
48 hrs: no ppt

Reviewed By: MG Date Reviewed: 2022/07/19

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS 2 Client TEC 164 Reference 2122-2876

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/07/13	1415	EP/AI	2	LC
1	2022/07/14	0930	DM/BS	-	LC
2	2022/07/15	1030	DM/SS	2	LC

Sample Information

Initial pH: 7.8
Initial EC (µS/cm): 1434
Salinity (ppt): 0

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	7.5	7.5	7.5	7.8	7.8	7.8				
2	7.4	7.5	7.4	8.3	8.4	8.4				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	275	286	288	1427	1464	1479				
2	278	290	292	1400	1458	1466				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.9	7.9	7.9				
2	7.9	7.9	7.9	7.9	7.4	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	20	20	20				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar Wed C2 Jar(s) mortality 7 days prior to test (must be ≤25%) 0 %

QA (previous month)
Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 48
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0%

Sample

DO (mg/L) of sample prior to aeration: 9.4
Temperature (°C) of sample prior to aeration: 20
DO % of sample prior to aeration: 120
Is aeration required (<40% or >100%)? **(Yes) or No**
Duration of aeration (37.5 +/- 12.5 mL/min/L): 20
Filtered with 110um screen prior to testing **Yes or (No)**
Hardness (mg $CaCO_3$/L) of 100% : 845
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or (No)**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 351

Dilution Water
Pail label / preparation date 3:07104
Hardness of dilution water (mg/L) 80

Antiscalant
Final Concentration in Sample: 2 mg/L
Volume of sample: 300mL Volume of antiscalant: 15.8 µL

Comments/Observations:
0 hrs: no ppt
48 hrs: No ppt.

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Reviewed By: MG Date Reviewed: 2022/07/19

APPENDIX C – Chain-of-custody form

Teck

Page 1 of 1

COC ID: 2022-07-11_SP03 **TURNAROUND TIME:** Regular (default) **RUSH: NO**

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO			
Facility Name	WLC AWTF			Lab Name	Nautilus Environmental			Report Format / Distribution		Excel	PDF	EDD
Project Manager	Brett Mason			Lab Contact	Tamara Pomeroy			Email 1:	DL-WLC-Lab @ teck.com	X	X	X
Email	brett.mason@teck.com			Email	tamara@nautilusenvironmental.ca			Email 2:	H20.lab.results @ teck.com	X	X	X
Address	15 Km North HWY 43			Address	10823 27th Street SE			Email 3:	TeckCoal @ equisonline.com			X
								Email 4:	Tricia.Hill @ teck.com	X	X	X
City	Sparwood	Province	BC	City	Calgary	Province	AB	Email 5:	Marty.Hafke @ teck.com	X	X	X
Postal Code	V0B 2G0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada	Email 6:				
Phone Number	250 425 4837			Phone Number	403 253 7121			PO number	VPO00842118			

SAMPLE DETAILS

2022/07/12
10:00
manitoulin
SRSIACINZ
1x20L carboy, 3x 1L bottles
noS InoI
good cond.
2122 - 2876

ANALYSIS REQUESTED

Please indicate below Filtered, Perserved or both (F, P, F/P)

Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont	ANALYSIS: NAUT_96Hr_RT_Single_Concentration_Toxicity Test	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 10C	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 20C	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 20C + Antiscalant	
LC_WTF_IN_2022-07-11_NP_0800	LC_WTF_IN	WS		2022/07/11	8:00	G	4	X	X	X	X	13.1°C

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	Date	Time	ACCEPTED BY/AFFILIATION	Date	Time
	Katrina Lebocuf	2022/07/11				

SERVICE REQUEST (rush - subject to availability)

Regular (default)	X
Priority (2-3 business days) - 50% surcharge	
Emergency (1 Business Day) - 100% surcharge	
For Emergency <1 Day, ASAP or Weekend - Contact ALS	

Sampler's Name	Blair Peebles	Mobile #	
Sampler's Signature		Date/Time	11-Jul-22

END OF REPORT

Acute Toxicity Test Results

Sample collected July 25, 2022

Final Report

September 19, 2022

Submitted to: **Teck Coal Ltd.**
Sparwood, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates			
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 20˚C test initiation
WL_BFWB_OUT_SP21_2022-07-25_N_0900/ 2122-3004	25-Jul-22 at 0900h	26-Jul-22 at 0845h	26-Jul-22 at 1545h	28-Jul-22 at 1530h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
WL_BFWB_OUT_SP21_2022-07-25_N_0900	14.3°C	1034	276

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample	
	Rainbow trout	*Daphnia magna* 20˚C
WL_BFWB_OUT_SP21_2022-07-25_N_0900	100	100

Sample ID	Percent Immobility in 100 (% v/v)
	Daphnia magna 20˚C
WL_BFWB_OUT_SP21_2022-07-25_N_0900	0

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
WL_BFWB_OUT_SP21_2022-07-25_N_0900	Rainbow trout	None	None
	Daphnia magna	None	None

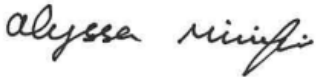
QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	4.8 (4.3-5.2) g/L KCl[1]	5.3 (4.8-5.7) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.5 (2.6-5.7) g/L KCl	6.2 (5.2-7.4) g/L NaCl
Reference toxicant CV	9.6%	5.9%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, July 22, 2022; [2] Test date, July 27, 2022

LC = Lethal Concentration; CL = Confidence Limit; SD = Standard Deviation; CV = Coefficient of Variation

The LC50 result of the reference toxicant test initiated on July 22, 2022, fell outside of two standard deviations of the historical mean; this is expected to happen 5% of the time. An investigation occurred and all testing and culturing procedures were followed appropriately.



Report By:
Alyssa Minifie, BSc
Laboratory Biologist



Reviewed By:
Emma Marus, BSc
Biologist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method: TRS | Client: TEC164 | Reference: 2122-3004 | Chamber: 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022/07/26	1545 *	KCRM/AM/NA	1	LC
1	2022/07/27	0840	AM	-	CC
2	2022/07/28	0745	ML	-	MM
3	2022/07/29	0830	ML	-	EP
4	2022/07/30	1100	ML/KD	1	MAP

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 7.6
Initial EC (µS/cm): 1596
Salinity (ppt): 0

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L: **yes/no**

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	10.6	8.6			
Temp (°C) of 100%	16				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	AM 8.0 / 8.1	8.1						
Day 4	8.4	8.5						
EC (uS/cm)								
Day 0	AM 364 / 1606	1606						
Day 4	386	1573						
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	AM 8.6 / 8.9	8.6						
Day 4	8.6	8.6						
Temperature (°C) (range: 14-16°C)								
Day 0	16	16						
Day 4	16	16						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.4	0.4
2	3.7	0.5
3	3.6	0.6
4	3.4	0.4
5	3.4	0.4
6	3.6	0.5
7	3.3	0.4
8	3.3	0.4
9	3.4	0.4
10	3.2	0.3

Loading Density (g/L): 0.2 (must be ≤0.5 g/L)
Mean Length (cm): 3.4
Length Range (cm): 3.2-3.7
Mean Weight (g): 0.4 (Must be ≥0.3g)
Weight Range: (g): 0.3-0.6

Test Organism Information

Batch: 20220706TR
Source: LSL
Tank #: 10
Days Held at 15± 2°C: 20 (must be ≥14 days)
Percent stock mortality: 0.11 (7 days prior to test, must be <2%)
Test Volume (L): 18

Comments :

96 hr: No ppt

Reviewed By: TP

Date Reviewed: SEP 16 2022

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC 164 Reference 2122-3004

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/07/28	1530	CC/DM	2	NA
1	2022/07/29	0930	BS	-	EP
2	2022/07/30	0930	AL/BS	2	EP

Sample Information

Initial pH: 7.6
Initial EC (µS/cm): 1596
Salinity (ppt): 0

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	8.1	8.1	8.1	7.7	7.7	7.7				
2	8.2	8.2	8.2	8.4	8.4	8.4				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	389	377	375	1596	1668	1686				
2	365	372	375	1579	1636	1642				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.7	7.7	7.7	9.8	9.8	9.8				
2	7.7	7.7	7.7	7.7	7.7	7.7				

Temperature (°C) (range: **18-22 °C**)

0	21	21	21	18	18	18				
2	21	21	21	21	21	21				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar Wed E3 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%.

QA (previous month)
Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 28
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 10.7 Temperature (°C) of sample prior to aeration: 18°
DO % of sample prior to aeration: cc MB 131% Is aeration required (<40% or >100%)? **Yes or No**
Duration of aeration (37.5 +/- 12.5 mL/min/L): 20 min. Filtered with 110um screen prior to testing **Yes or No**
Hardness (mg $CaCO_3$/L) of 100%: 1034 Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) -
Alkalinity of 100% sample (mg $CaCO_3$/L): 276

Dilution Water
Pail label / preparation date 1:07/21
Hardness of dilution water (mg/L) 165

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Comments/Observations:
0 hrs: No ppt
48 hrs: No ppt

Reviewed By: TP Date Reviewed: SEP 16 2022

APPENDIX C – Chain-of-custody form

Teck

Page 1 of 1

COC ID: 2022-07-25_SP21 | TURNAROUND TIME: Regular (default) | RUSH: NO

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name	WLC AWTF			Lab Name	Nautilus Environmental			Report Format / Distribution		Excel	PDF	EDD
Project Manager	Brett Mason			Lab Contact	Tamara Pomeroy			Email 1:	DL-WLC-Lab@teck.com	X	X	X
Email	brett.mason@teck.com			Email	tamara@nautilusenvironmental.ca			Email 2:	H20.lab.results@teck.com	X	X	X
Address	15 Km North HWY 43			Address	10823 27th Street SE			Email 3:	TeckCoal@equisonline.com			X
								Email 4:	Tricia.Hill@teck.com	X	X	X
City	Sparwood	Province	BC	City	Calgary	Province	AB	Email 5:	Marty.Hafke@teck.com	X	X	X
Postal Code	V0B 2G0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada	Email 6:				
Phone Number	250 425 4837			Phone Number	403 253 7121			PO number	VPO00842118			

2022/07/26
09:45
Manitoulin
3 x 20 L carboys, 3 x 1 L bottles
SRS/AC
No's NOI
Good Condition

SAMPLE DETAILS								ANALYSIS REQUESTED				
								Please indicate below Filtered, Preserved or both (F, P, F/P)				
Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	NAUT_96Hr_RT_Single_Concentration_Toxicity Test	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 20C			
WL_BFWB_OUT_SP21_2022-07-25_N_0900	WL_BFWB_OUT_SP21	WS		7/25/2022	9:00	G	6	X	X	14.3°C		

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	Date	Time	ACCEPTED BY/AFFILIATION	Date	Time
Shipment includes 2 extra 20 L bladders and 2 extra 1.2 L plastic bottles.	Katrina Leboeuf	7/25/2022				

SERVICE REQUEST (rush - subject to availability)					
Regular (default)	X	Sampler's Name	Mason Reimer	Mobile #	
Priority (2-3 business days) - 50% surcharge					
Emergency (1 Business Day) - 100% surcharge		Sampler's Signature		Date/Time	25-Jul-22
For Emergency <1 Day, ASAP or Weekend - Contact ALS					

END OF REPORT

Acute Toxicity Test Results

Sample collected July 25, 2022

Final Report

September 9, 2022

Submitted to: **Teck Coal Ltd.**
Sparwood, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates					
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation	*Daphnia magna* antiscalant test initiation
LC_WTF_IN_2022-07-25_NP_0800/ 2122-3005	25-Jul-22 at 0800h	26-Jul-22 at 0845h	27-Jul-22 at 1550h	28-Jul-22 at 1500h	28-Jul-22 at 1450h	28-Jul-22 at 1455h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
LC_WTF_IN_2022-07-25_NP_0800	13.0°C	884	386

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)
- *Daphnia magna* 48-h single concentration screening test (conducted with 2 mg/L antiscalant)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample			
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
LC_WTF_IN_2022-07-25_NP_0800	100	100	100	90

Sample ID	Percent Immobility in 100 (% v/v)		
	Daphnia magna 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
LC_WTF_IN_2022-07-25_NP_0800	0	0	10

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
LC_WTF_IN_2022-07-25_NP_0800	Rainbow trout	Precipitate observed on the test vessel	None
	Daphnia magna	Surficial precipitate observed in 20-degree and antiscalant tests	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	4.8 (4.3-5.2) g/L KCl[1]	5.3 (4.8-5.7) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.5 (2.6-4.7) g/L KCl	6.2 (5.2-7.4) g/L NaCl
Reference toxicant CV	9.6%	5.9%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, July 22, 2022; [2] Test Date July 27, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation

The LC50 result of the rainbow trout reference toxicant test initiated on July 22, 2022, fell outside of two standard deviations of the historical mean; this is expected to happen 5% of the time. An investigation occurred and all testing and culturing procedures were followed appropriately.

Report By:
Alyssa Minifie, BSc
Laboratory Biologist

Reviewed By:
Leila Oosterbroek, P Biol
Environmental Scientist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Control/dilution water for antiscalant test	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L), Na_2SeO_4 (2 µg Se/L) and 2 mg/L antiscalant
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC 164 Reference 2122-3005 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022-07-27	1550 *	KO/AM	1	IC
1	2022-07-28	0730	ML	-	Karm
2	2022-07-29	0815	ML	-	ET
3	2022-07-30	0800	ML	-	GMF
4	2022-07-31	0940	ML/KRM	1	CC

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 7.8
Initial EC (µS/cm): 1560
Salinity (ppt): 0

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L : **yes/no**

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	10.5	8.6			
Temp (°C) of 100%	16				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	7.5	7.9						
Day 4	8.2	8.2						
EC (uS/cm)								
Day 0	350	1554						
Day 4	366	1388						
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	8.6	8.6						
Day 4	8.6	8.6						
Temperature (°C) (range: 14-16°C)								
Day 0	16	16						
Day 4	16	16						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.0	0.3
2	3.6	0.5
3	3.4	0.4
4	3.7	0.6
5	3.1	0.3
6	3.1	0.3
7	3.0	0.3
8	3.5	0.5
9	3.1	0.3
10	3.0	0.3

Loading Density (g/L): 0.2 (must be ≤0.5 g/L)
Mean Length (cm): 3.3
Length Range (cm): 3.0-3.7
Mean Weight (g): 0.4 (Must be ≥0.3g)
Weight Range: (g): 0.3-0.6

Test Organism Information

Batch 20220706 TR
Source LSL
Tank # 12
Days Held at 15± 2°C 21 (must be ≥14 days)
Percent stock mortality 0.05 (7 days prior to test, must be <2%)
Test Volume (L) 18

Comments :
96h: ML ~~NO~~ ppt at bottom of tank

Reviewed By: MG Date Reviewed: 2022/08/11

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 ~~&~~ cc Client TEC 164 Reference 2122-3005

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/07/28	1450	CC/DM	2	NA
1	2022/07/29	0935	AH	-	EP
2	2022/07/30	0935	M / BS	2	EP

Sample Information

Initial pH: 7.8
Initial EC (µS/cm): 1566
Salinity (ppt): 0

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	8.1	8.1	8.1	7.9	7.9	7.9				
2	8.3	8.1	8.3	8.3	8.3	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	363	374	374	1534	1598	1607				
2	371	379	380	1526	1557	1561				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.7	7.7	7.7	~~7.9~~ 7.7 cc	7.7	7.7				
2	7.7	7.7	7.7	7.7	7.7	7.7				

Temperature (°C) (range: **18-22 °C**)

0	21	21	21	21	21	21				
2	21	21	21	21	21	21				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar Wed E3 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)

Days to first brood (≤12 days) 7

Average number of young produced (≥15 young) 28

Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - (must be ≤10%) 0

Sample

DO (mg/L) of sample prior to aeration: 8.9 Temperature (°C) of sample prior to aeration: cc 20°

DO % of sample prior to aeration: 112% Is aeration required (<40% or >100%)? Yes or (No)

Duration of aeration (37.5 +/- 12.5 mL/min/L): 20 min Filtered with 110um screen prior to testing Yes or (No)

Hardness (mg $CaCO_3$/L) of 100% : 884 Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —

Alkalinity of 100% sample (mg $CaCO_3$/L): 386

Dilution Water

Pail label / preparation date 1:07/21

Hardness of dilution water (mg/L) 165

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Comments/Observations:

0 hrs: No ppt

48 hrs: Surficial ppt

Reviewed By: ML Date Reviewed: 2022/08/11

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC 164 Reference 2122-3005

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/07/28	1560	CC/DM	2	NA
1	2022/07/29	0935	AH	-	EP
2	2022/07/30	1100	BS/AH	2	EP

Sample Information

Initial pH: 7.8
Initial EC (µS/cm): 1560
Salinity (ppt): 0

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	8.1	8.1	8.1	8.0	8.0	8.0				
2	8.1	8.2	8.2	8.5	8.5	8.4				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	391	378	374	1535	1593	1610				
2	321	377	379	1542	1599	1612				

DO (mg/L) (**40-100% saturation at test temp.**)

0	cc 9.4 ~~7.7~~	9.4 ~~7.7~~	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	cc ~~8~~ 12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar Wed D2 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 33
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0

Sample

DO (mg/L) of sample prior to aeration: 10.2 ~~9.4~~ cc cc
DO % of sample prior to aeration: ~~100~~ 109%
Duration of aeration (37.5 +/- 12.5 mL/min/L) : ~~20 min~~ DM
Hardness (mg $CaCO_3$/L) of 100% : 884
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) -
Alkalinity of 100% sample (mg $CaCO_3$/L): 386

Temperature (°C) of sample prior to aeration: 12°
Is aeration required (<40% or >100%)? Yes or ~~No~~ MG
Filtered with 110um screen prior to testing Yes or No
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or ~~No~~

Dilution Water
Pail label / preparation date 1:07/21
Hardness of dilution water (mg/L) 165

DO Levels (40-100% saturation) - corrected for altitude -
4.1 to 10.3 mg/L at 8°C
4.0 to 10.0 mg/L at 9°C
3.9 to 9.8 mg/L at 10°C
3.8 to 9.6 mg/L at 11°C
3.7 to 9.4 mg/L at 12°C

Comments/Observations:
Dms: No ppt
Fishes: No ppt

Reviewed By: MG Date Reviewed: 2022/08/11

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS 2 Client TEC 164 Reference 2122-3005

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/07/28	1455	CC/DM	2	NA
1	2022/07/29	0845	AT	-	EP
2	2022/07/30	0930	BS/AT	2	EP

Sample Information

Initial pH: 7.8
Initial EC (µS/cm): 1560
Salinity (ppt): 0

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	8.0	8.0	8.0	7.9	7.9	7.9				
2	8.1	8.2	8.2	8.5	8.5	8.5				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	360	374	375	1510	1596	1606				
2	380	380	379	1529	1569	1590				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.7	7.7	7.7	7.7	7.7	7.7				
2	7.5	7.4	7.5	7.5	7.5	7.5				

Temperature (°C) (range: **18-22 °C**)

0	21	21	21	21	21	21				
2	21	21	21	21	21	21				

Number Alive (l, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	8	9	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar Wed C2 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 38
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0

Sample
DO (mg/L) of sample prior to aeration: 8.9
DO % of sample prior to aeration: 112%
Duration of aeration (37.5 +/- 12.5 mL/min/L): 20 min
Hardness (mg $CaCO_3$/L) of 100% : 884
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) ~
Alkalinity of 100% sample (mg $CaCO_3$/L): 386

Temperature (°C) of sample prior to aeration: 20°
Is aeration required (<40% or >100%)? Yes or No
Filtered with 110um screen prior to testing Yes or No
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or No

Dilution Water
Pail label / preparation date 1: 07/21
Hardness of dilution water (mg/L) 165

Antiscalant
Final Concentration in Sample: 2mg/L
Volume of sample: 500mL Volume of antiscalant: 15.8µL

Comments/Observations:
0 hrs: No ppt
48 hrs: Surface ppt

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Reviewed By: MG Date Reviewed: 2022/08/11

APPENDIX C – Chain-of-custody form

Teck

COC ID: 2022-07-25_SP03 **TURNAROUND TIME:** Regular (default) **RUSH:** NO

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name	WLC AWTF			Lab Name	Nautilus Environmental			Report Format / Distribution		Excel	PDF	EDD
Project Manager	Brett Mason			Lab Contact	Tamara Pomeroy			Email 1:	DL-WLC-Lab@teck.com	X	X	X
Email	brett.mason@teck.com			Email	tamara@nautilusenvironmental.ca			Email 2:	H20.lab.results@teck.com	X	X	X
Address	15 Km North HWY 43			Address	10823 27th Street SE			Email 3:	TeckCoal@equisonline.com			X
								Email 4:	Tricia.Hill@teck.com	X	X	X
City	Sparwood	Province	BC	City	Calgary	Province	AB	Email 5:	Marty.Hafke@teck.com	X	X	X
Postal Code	V0B 2G0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada	Email 6:				
Phone Number	250 425 4837			Phone Number	403 253 7121			PO number	VPO00842118			

SAMPLE DETAILS / **ANALYSIS REQUESTED**

2022/07/26
08:45
Manitoulin
1x 20 L carboy, 3 x 1L bottles
SRS/AC
No S No I
Good condition

Please indicate below Filtered, Perserved or both (F, P, F/P)

Sample ID 2122-3005	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	ANALYSIS: NAUT_96Hr_RT_Single_Concentration_Toxicity Test	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 10C	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 20C	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 20C + Antiscalant											
LC_WTF_IN_2022-07-25_NP_0800	LC_WTF_IN	WS		7/25/2022	8:00	G	4	X	X	X	X	13.0°C										

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	Date	Time	ACCEPTED BY/AFFILIATION	Date	Time
	Katrina Leboeuf	7/25/2022				

SERVICE REQUEST (rush - subject to availability)					
Regular (default)	X	Sampler's Name	Mason Reimer	Mobile #	
Priority (2-3 business days) - 50% surcharge					
Emergency (1 Business Day) - 100% surcharge		Sampler's Signature	[signature]	Date/Time	25-Jul-22
For Emergency <1 Day, ASAP or Weekend - Contact ALS					

END OF REPORT

Acute Toxicity Test Results

Sample collected August 8, 2022

Final Report

September 28, 2022

Submitted to: **Teck Coal Ltd.**
Sparwood, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates					
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation	*Daphnia magna* antiscalant test initiation
LC_WTF_IN_2022-08-08_NP_0800/ 2122-2123	8-Aug-22 at 0800h	9-Aug-22 at 0845h	9-Aug-22 at 1505h	9-Aug-22 at 1625h	9-Aug-22 at 1620h	9-Aug-22 at 1630h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
LC_WTF_IN_2022-08-08_NP_0800	11.1°C	1147	373

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)
- *Daphnia magna* 48-h single concentration screening test (conducted with 2 mg/L antiscalant)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample			
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
LC_WTF_IN_2022-08-08_NP_0800	100	100	100	100

Sample ID	Percent Immobility in 100 (% v/v)		
	Daphnia magna 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
LC_WTF_IN_2022-08-08_NP_0800	0	7	0

Precipitate observations

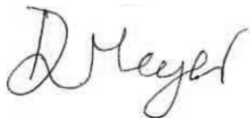
Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
LC_WTF_IN_2022-08-08_NP_0800	Rainbow trout	Precipitate observed on the bottom and sides of test vessel	None
	Daphnia magna	Surficial precipitate observed in the 20-degree test	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	3.5 (3.3-3.7) g/L KCl[1]	5.9 (5.6-6.2) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.5 (2.6-4.7) g/L KCl	6.2 (5.2-7.4) g/L NaCl
Reference toxicant CV	9.6%	6.0%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, August 4, 2022; [2] Test date, August 10, 2022

LC = Lethal Concentration; CL = Confidence Limit; SD = Standard Deviation; CV = Coefficient of Variation



Report By:
Daisy Meyer, BSc
Laboratory Biologist



Reviewed By:
Emma Marus, BSc
Biologist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Control/dilution water for antiscalant test	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L), Na_2SeO_4 (2 µg Se/L) and 2 mg/L antiscalant
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC 164 Reference 2122-3123 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022-08-09	1505*	KO/AM/CD	1	NA
1	2022-08-10	0730	KO	-	KP
2	2022-08-11	0745	ML	-	MAF
3	2022-08-12	0715	ML	-	MAF
4	2022-08-13	1050	ML/KO	1	MAF

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 7.9
Initial EC (µS/cm): 1505
Salinity (ppt): 0

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L (yes/no)

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	9.7	8.6			
Temp (°C) of 100%	16				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	8.1	7.8						
Day 4	8.1	8.0						
EC (uS/cm)								
Day 0	371	1710						
Day 4	388	1673						
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	8.6	8.6						
Day 4	8.6	8.6						
Temperature (°C) (range: 14-16°C)								
Day 0	16	16						
Day 4	16	16						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.3	0.4
2	3.4	0.5
3	3.3	0.4
4	3.3	0.4
5	3.4	0.5
6	3.6	0.6
7	3.1	0.4
8	3.1	0.5
9	3.4	0.5
10	3.7	0.7

Loading Density (g/L): 0.3 (must be ≤0.5 g/L)
Mean Length (cm): 3.4
Length Range (cm): 3.1-3.7
Mean Weight (g): 0.5 (Must be ≥0.3g)
Weight Range: (g): 0.4-0.7

Test Organism Information

Batch: 20220623TR
Source: Trout Lodge
Tank #: 8
Days Held at 15± 2°C: 28 (must be ≥14 days)
Percent stock mortality: 0.23 (7 days prior to test, must be <2%)
Test Volume (L): 18

Comments :
96h: ppt on sides and bottom of tank

Reviewed By: MG Date Reviewed: 2022/08/16

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC 164 Reference 2122-3123

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/08/09	1120	IC / AI	2	DM
1	2022/08/10	~~0805~~	~~AI~~	-	NA
2	2022/08/11	0925	AG	2	WTM

Sample Information

Initial pH:	7.9
Initial EC (µS/cm):	1805
Salinity (ppt):	0

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	8.0	8.0	8.0	7.9	7.9	7.9				
2	8.1	8.1	8.1	8.1	8.2	8.2				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	399	404	403	1854	1910	1915				
2	407	408	409	1784	1856	1844				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.7	7.7	7.7	7.7	7.7	7.7				
2	7.7	7.7	7.7	7.7	7.7	7.4				

Temperature (°C) (range: **18-22 °C**)

0	21	21	21	21	21	21				
2	21	21	21	21	21	21				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10(1i)	10(2i)				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar Wed01 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%.

QA (previous month)

Days to first brood (≤12 days) 7

Average number of young produced (≥15 young) 36

Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - 0 (must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 10.2 Temperature (°C) of sample prior to aeration: 21°C

DO % of sample prior to aeration: ~~114%~~ 127% Is aeration required (<40% or >100%)? Yes or No

Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20mins Filtered with 110um screen prior to testing Yes or (No)

Hardness (mg $CaCO_3$/L) of 100% : 1147 Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —

Alkalinity of 100% sample (mg $CaCO_3$/L): 373

Dilution Water

Pail label / preparation date temp 1

Hardness of dilution water (mg/L) 159

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Comments/Observations:

0 hr NO ppt

48 hr ppt on surface

Reviewed By: MG Date Reviewed: 2022/08/16

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC 164 Reference 2122-3123

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/08/09	1025	IC/AI	2	DM
1	2022/08/10	0905	AI	-	NA
2	2022/08/11	0900	DM	2	WM

Sample Information

Initial pH:	7.9
Initial EC (µS/cm):	1805
Salinity (ppt):	0

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	8.1	8.0	8.0	7.7	7.7	7.7				
2	8.2	8.2	8.2	8.35	8.35	8.4				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	401	404	405	1871	1921	1929				
2	405	405	407	1894	1900	1903				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.6	9.6	9.6				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar WedC3 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)

Days to first brood (≤12 days) 8

Average number of young produced (≥15 young) 45

Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - (must be ≤10%) 0%

Sample

DO (mg/L) of sample prior to aeration: 10.4

DO % of sample prior to aeration: 118.1

Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20 mins

Hardness (mg $CaCO_3$/L) of 100% : 1147

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —

Alkalinity of 100% sample (mg $CaCO_3$/L): 373

Temperature (°C) of sample prior to aeration: 12°C

Is aeration required (<40% or >100%)? (Yes) or No

Filtered with 110um screen prior to testing Yes or (No)

Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)

Dilution Water

Pail label / preparation date TRAY 1

Hardness of dilution water (mg/L) 159

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

Comments/Observations:

0 hr NO POT

48 hr NO POT

Reviewed By: ML Date Reviewed: 2022/08/16

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS 2 Client TEC 164 Reference 2122-3123

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/08/09	1630	JC / AI	2	DM
1	2022/08/10	0905	~~AI~~	-	NA
2	2022/08/11	0970	AG	2	VTM

Sample Information

Initial pH: 7.9
Initial EC (µS/cm): 1805
Salinity (ppt): 0

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	8.0	8.0	8.0	7.9	7.9	7.9				
2	8.2	8.1	8.1	8.4	~~8.5~~ 8.5	8.5				

The pH of the sample was not adjusted prior to test setup, unless noted in the comments below

EC (uS/cm)

0	400	406	406	1873	1909	1914				
2	436	417	415	1817	1877	1897				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.7	7.7	7.7	7.7	7.7	7.7				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	21	21	21	21	21	21				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	16				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar Wed C3 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 45
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0

Sample

DO (mg/L) of sample prior to aeration: 10.2 Temperature (°C) of sample prior to aeration: 21°C
DO % of sample prior to aeration: 127 % Is aeration required (<40% or >100%)? **Yes or No**
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20 MINS Filtered with 110um screen prior to testing **Yes or No**
Hardness (mg $CaCO_3$/L) of 100% : 1147 Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 373

Dilution Water
Pail label / preparation date temp 1
Hardness of dilution water (mg/L) 159

Antiscalant
Final Concentration in Sample: ~~15.8 mg~~ 2mg/L
Volume of sample: 150ml Volume of antiscalant: ~~2 mg/L~~ 15.8 mL

Comments/Observations:
0 hr no ppt
48 hr no ppt

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Reviewed By: MG Date Reviewed: 2022/08/16

APPENDIX C – Chain-of-custody form

Teck

Page 1 of 1

COC ID: 2022-08-08_SP03 **TURNAROUND TIME:** Regular (default) **RUSH:** NO

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name	WLC AWTF			Lab Name	Nautilus Environmental			Report Format / Distribution		Excel	PDF	EDD
Project Manager	Brett Mason			Lab Contact	Tamara Pomeroy			Email 1:	DL-WLC-Lab@teck.com	X	X	X
Email	brett.mason@teck.com			Email	tamara@nautilusenvironmental.ca			Email 2:	H20.lab.results@teck.com	X	X	X
Address	15 Km North HWY 43			Address	10823 27th Street SE			Email 3:	TeckCoal@equisonline.com			X
								Email 4:	Tricia.Hill@teck.com	X	X	X
City	Sparwood	Province	BC	City	Calgary	Province	AB	Email 5:	Marty.Hafke@teck.com	X	X	X
Postal Code	V0B 2G0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada	Email 6:				
Phone Number	250 425 4837			Phone Number	403 253 7121			PO number	VPO00842118			

SAMPLE DETAILS

2022/08/09
08:45
Mantamin
#1x 20 L carboys, 3 & 2 L bottles
SRS/AC
NOS NOI
Good condition
11.1°C

ANALYSIS REQUESTED

Please indicate below Filtered, Perserved or both (F, P, F/P)

Sample ID 2022-7173	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	ANALYSIS: NAUT_96Hr_RT_Single_Concentration_Toxicity Test	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 10C	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 20C	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 20C + Anticalant
LC_WTF_IN_2022-08-08_NP_0800	LC_WTF_IN	WS		8/8/2022	8:00	G	4	X	X	X	X

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	Date	Time	ACCEPTED BY/AFFILIATION	Date	Time
	Katrina Leboeuf	8/8/2022				

SERVICE REQUEST (rush - subject to availability)	
Regular (default)	X
Priority (2-3 business days) - 50% surcharge	
Emergency (1 Business Day) - 100% surcharge	
For Emergency <1 Day, ASAP or Weekend - Contact ALS	

Sampler's Name	Blair Peebles	Mobile #	
Sampler's Signature	B Peebles	Date/Time	8-Aug-22

END OF REPORT

Acute Toxicity Test Results

Sample collected August 8, 2022

Final Report

September 21, 2022

Submitted to: **Teck Coal Ltd.**
Sparwood, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates			
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 20˚C test initiation
WL_BFWB_OUT_SP21_2022-08-08_N_0900/ 2122-3135	8-Aug-22 at 0900h	9-Aug-22 at 0845h	9-Aug-22 at 1535h	10-Aug-22 at 1450h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
WL_BFWB_OUT_SP21_2022-08-08_N_0900	12.5°C	1100	367

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample	
	Rainbow trout	*Daphnia magna* 20˚C
WL_BFWB_OUT_SP21_2022-08-08_N_0900	100	100

Sample ID	Percent Immobility in 100 (% v/v)
	Daphnia magna 20˚C
WL_BFWB_OUT_SP21_2022-08-08_N_0900	0

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
WL_BFWB_OUT_SP21_2022-08-08_N_0900	Rainbow trout	Precipitate observed on the bottom of test vessel	None
	Daphnia magna	None	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	3.5 (3.3-3.7) g/L KCl[1]	5.9 (5.6-6.2) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.5 (2.6-4.7) g/L KCl	6.2 (5.2-7.4) g/L NaCl
Reference toxicant CV	9.6%	6.0%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, August 4, 2022; [2] Test date, August 10, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation



Report By:
Daisy Meyer, BSc
Laboratory Biologist



Reviewed By:
Emma Marus, BSc
Biologist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC 164 Reference 2122-3135 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022-08-09	15:35 *	KO/AM/CD	1	NA
1	2022-08-10	0900	KO	-	KO
2	2022-08-11	0745	ML	-	MAF
3	2022-08-12	0745	ML	-	MAF
4	2022-08-13	1105	ML/KO	1	MAF

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 8.0
Initial EC (µS/cm): 1544
Salinity (ppt): 2

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L : yes/no

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	12.6	8.6			
Temp (°C) of 100%	16				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	7.7	8.0						
Day 4	8.1	8.3						
EC (uS/cm)								
Day 0	390	1825						
Day 4	416	1760						
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	8.6	8.5						
Day 4	8.6	8.6						
Temperature (°C) (range: 14-16°C)								
Day 0	16	16						
Day 4	16	16						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.5	0.5
2	3.5	0.5
3	3.6	0.5
4	3.1	0.4
5	3.2	0.4
6	2.9	0.3
7	3.5	0.5
8	3.5	0.5
9	3.5	0.4
10	3.2	0.4

Loading Density (g/L): 0.2 (must be ≤0.5 g/L)
Mean Length (cm): 3.4
Length Range (cm): 2.9-3.6
Mean Weight (g): 0.4 (Must be ≥0.3g)
Weight Range: (g): 0.3-0.5

Test Organism Information

Batch 20220623TR
Source Trout Lodge
Tank # 8
Days Held at 15± 2°C 28 (must be ≥14 days)
Percent stock mortality 0.23 (7 days prior to test, must be <2%)
Test Volume (L) 18

Comments :
96h: ppt at the bottom of tank

Reviewed By: SS Date Reviewed: 2022/08/19

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method: DAS 20 | Client: TEC 164 | Reference: 2122-3135

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/08/10	1450	DM/AI	2	EP
1	2022/08/11	0940	DM	-	mae
2	2022/08/12	0930	BS/AI	2	NA

Sample Information

Initial pH: 8.0
Initial EC (µS/cm): 1844
Salinity (ppt): 2

Lab Code	CTL A	CTL B	CTL C	100 A	100 B	100 C				

pH (units) (range: 6.0-8.5)

day										
0	7.9	7.8	7.8	7.5	7.5	7.5				
2	8.1	8.1	8.1	8.2	8.3	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	404	424	428	1905	1985	2070				
2	415	432	431	1891	1970	1969				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.7	7.7	7.7	10.2	10.2	10.2				
2	7.7	7.7	7.7	7.7	7.7	7.7				

Temperature (°C) (range: **18-22 °C**)

0	21	21	21	21	21	21				
2	21	21	21	21	21	21				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar: wed ES
Jar(s) mortality 7 days prior to test (must be ≤25%): 6%

QA (previous month)
Days to first brood (≤12 days): 7
Average number of young produced (≥15 young): 38
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%): 0

Sample
DO (mg/L) of sample prior to aeration: 13.3
Temperature (°C) of sample prior to aeration: 21
DO % of sample prior to aeration: 167 %
Is aeration required (<40% or >100%)? **Yes or No**
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20min
Filtered with 110um screen prior to testing **Yes or No**
Hardness (mg $CaCO_3$/L) of 100% : 1100
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L): —
Alkalinity of 100% sample (mg $CaCO_3$/L): 367

Dilution Water
Pail label / preparation date: Pail 1
Hardness of dilution water (mg/L): 160

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Comments/Observations:
0h: NO PPT
48h: NO ppt

Reviewed By: SS | Date Reviewed: 2022/08/19

APPENDIX C – Chain-of-custody form

Teck

Page 1 of 1

COC ID: 2022-08-08_SP21 | TURNAROUND TIME: Regular (default) | RUSH: NO

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name	WLC AWTF			Lab Name	Nautilus Environmental			Report Format / Distribution		Excel	PDF	EDD
Project Manager	Brett Mason			Lab Contact	Tamara Pomeroy			Email 1:	DL-WLC-Lab@teck.com	X	X	X
Email	brett.mason@teck.com			Email	tamara@nautilusenvironmental.ca			Email 2:	H20.lab.results@teck.com	X	X	X
Address	15 Km North HWY 43			Address	10823 27th Street SE			Email 3:	TeckCoal@equisonline.com			X
								Email 4:	Tricia.Hill@teck.com	X	X	X
City	Sparwood	Province	BC	City	Calgary	Province	AB	Email 5:	Marty.Hafke@teck.com	X	X	X
Postal Code	V0B 2G0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada	Email 6:				
Phone Number	250 425 4837			Phone Number	403 253 7121			PO number	VPO00842118			

2022/08/09
08:45
Manitoulin
3 x 20 L carboys, 3 x 1 L bottles
SRS/AC
No S, No I
Good Condition
12.5° C

SAMPLE DETAILS								ANALYSIS REQUESTED															
									Please indicate below Filtered, Perserved or both (F, P, F/P)														
								ANALYSIS	NAUT_96Hr_RT_Single_Concentration_Toxicity Test	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 20C													
Sample ID 2122-3175	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.																
WL_BFWB_OUT_SP21_2022-08-08_N_0900	WL_BFWB_OUT_SP21	WS		8/8/2022	9:00	G	6		X	X													

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	Date	Time	ACCEPTED BY/AFFILIATION	Date	Time
Shipment includes 2 extra 20 L bladders and 2 extra 1.2 L plastic bottles.	Katrina Leboeuf	8/8/2022				

SERVICE REQUEST (rush - subject to availability)					
Regular (default)	X	Sampler's Name	Blair Peebles	Mobile #	
Priority (2-3 business days) - 50% surcharge					
Emergency (1 Business Day) - 100% surcharge		Sampler's Signature	Blair Peebles	Date/Time	8-Aug-22
For Emergency <1 Day, ASAP or Weekend - Contact ALS					

END OF REPORT

Acute Toxicity Test Results

Sample collected August 22, 2022

Final Report

October 5, 2022

Submitted to: **Teck Coal Ltd.**
Sparwood, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates					
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation	*Daphnia magna* antiscalant test initiation
LC_WTF_IN_2022-08-22_NP_0800 2122-3301	22-Aug-22 at 0800h	23-Aug-22 at 0900h	23-Aug-22 at 1440h	23-Aug-22 at 1455h	23-Aug-22 at 1445h	23-Aug-22 at 1455h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
LC_WTF_IN_2022-08-22_NP_0800	12.6°C	1088	329

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)
- *Daphnia magna* 48-h single concentration screening test (conducted with 2 mg/L antiscalant)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample			
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
LC_WTF_IN_2022-08-22_NP_0800	100	100	100	100

Sample ID	Percent Immobility in 100 (% v/v)		
	Daphnia magna 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
LC_WTF_IN_2022-08-22_NP_0800	0	0	0

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
LC_WTF_IN_2022-08-22_NP_0800	Rainbow trout	Precipitate observed on test vessel	None
	Daphnia magna	Surficial precipitate observed in the 20°C test	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	4.0 (3.5-4.4) g/L KCl[1]	5.6 (5.4 - 5.8) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.6 (2.7-4.8) g/L KCl	6.1 (5.2 - 7.3) g/L NaCl
Reference toxicant CV	9.4%	5.6%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, August 30, 2022; [2] Test date, August 24, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation

Report By:
Aishah Iqbal, BSc
Laboratory Biologist

Reviewed By:
Emma Marus, BSc
Biologist

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APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Control/dilution water for antiscalant test	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L), Na_2SeO_4 (2 µg Se/L) and 2 mg/L antiscalant
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC 164 Reference 2122-3301 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022/08/23	1440 *	AM/CD	1	KD
1	2022/08/24	0945	AM	-	EL
2	2022/08/25	0745	ML	-	NA
3	2022/08/26	0800	ML	-	MMF
4	2022/08/27	0920	ML/CD	1	CC

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 7.7
Initial EC (µS/cm): 1740
Salinity (ppt): 0

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L : yes/no

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	9.6	8.8			
Temp (°C) of 100%	16				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	7.5	7.6						
Day 4	8.0	7.9						
EC (uS/cm)								
Day 0	387	1719						
Day 4	441	1525						
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	8.6	8.8						
Day 4	8.6	8.6						
Temperature (°C) (range: 14-16°C)								
Day 0	16	15						
Day 4	16	16						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.4	0.5
2	3.5	0.5
3	3.3	0.4
4	3.7	0.7
5	3.2	0.4
6	3.3	0.5
7	3.0	0.3
8	3.3	0.4
9	3.5	0.5
10	3.2	0.4

Loading Density (g/L): 0.3 (must be ≤0.5 g/L)
Mean Length (cm): 3.3
Length Range (cm): 3.0-3.7
Mean Weight (g): 0.5 (Must be ≥0.3g)
Weight Range: (g): 0.3-0.7

Test Organism Information

Batch 20220623TR
Source Trout Lodge
Tank # 3
Days Held at 15± 2°C 42 (must be ≥14 days)
Percent stock mortality 0.19 (7 days prior to test, must be <2%)
Test Volume (L) 18

Comments :
96 hrs: ppt on bottom of tank

Reviewed By: CW. Date Reviewed: 20221109102

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC 164 Reference 2122-3301

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/08/23	1445	cc/NA	2	wm
1	2022/08/24	0800	BS	-	cc
2	2022/08/25	0910	AM	3	NA

Sample Information

Initial pH: 7.7
Initial EC (µS/cm): 1740
Salinity (ppt): 0

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	8.0	8.0	8.0	8.1	8.1	8.1				
2	7.2	8.1	8.1	8.2	8.2	8.2				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	491	488	486	1735	1802	1821				
2	471	475	477	1686	1691	1701				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.9	7.9	7.9				
2	7.7	7.7	7.7	7.7	7.7	7.7				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	20	20	20				
2	21	21	21	21	21	21				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar wed C3 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)

Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 42
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 9.6
Temperature (°C) of sample prior to aeration: 19°
DO % of sample prior to aeration: 117%
Is aeration required (<40% or >100%)? (Yes) or No
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20min
Filtered with 110um screen prior to testing Yes or (No)
Hardness (mg $CaCO_3$/L) of 100% : 1088
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 329

Dilution Water

Pail label / preparation date P1;08120
Hardness of dilution water (mg/L) 159

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Comments/Observations:

0 hr NO ppt
48 hr Surficial ppt

Reviewed By: CW Date Reviewed: 2022109102

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC 164 Reference 2122-3301

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/08/23	1455	CC/NA	2	WM
1	2022/08/24	0820	BS	-	CC
2	2022/08/25	1010	AI	3	NA

Sample Information

Initial pH: 7.7
Initial EC (µS/cm): 1740
Salinity (ppt): 0

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

day (CC)

pH (units) (range: 6.0-8.5)

0	7.9	7.9	7.9	8.1	8.1	8.1				
2	8.1	8.1	8.1	8.4	8.4	8.4				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	486	483	485	1740	1790	1811				
2	434	465	4666M	1609.	1726	1763				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar wed D4 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%.

QA (previous month)

Days to first brood (≤12 days) 8

Average number of young produced (≥15 young) 42

Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 10.9 Temperature (°C) of sample prior to aeration: 12°

DO % of sample prior to aeration: 116%. Is aeration required (<40% or >100%)? (Yes) or No

Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20 min. Filtered with 110um screen prior to testing Yes or (No)

Hardness (mg $CaCO_3$/L) of 100% : 1088 Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —

Alkalinity of 100% sample (mg $CaCO_3$/L): 329

Dilution Water

Pail label / preparation date P1: 08/20

Hardness of dilution water (mg/L) 159

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

Comments/Observations:

0 hr No ppt

48 hr No ppt

Reviewed By: CC Date Reviewed: 20220109102

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS 2.1 Client TEC 164 Reference 2122-3301

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/08/23	1455	CC/NA	2	WM
1	2022/08/24	0900	BS	-	CC
2	2022/08/25	0915	AH	3	NA

Sample Information

Initial pH: 7.7
Initial EC (µS/cm): 1740
Salinity (ppt): 0

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	7.9	7.9	7.9	8.1	8.1	8.1				
2	8.1	8.1	8.1	8.4	8.4	8.4				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	476	484	483	1765	1792	1798				
2	479	471	468	1705	1710	1719				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.7	7.7	7.7	7.9	7.9	7.9				
2	7.7	7.7	7.7	7.7	7.7	7.7				

Temperature (°C) (range: **18-22 °C**)

0	21	21	21	20	20	20				
2	21	21	21	21	21	21				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar: wed C3 — Jar(s) mortality 7 days prior to test (must be ≤25%): 0%

QA (previous month)
Days to first brood (≤12 days): 8
Average number of young produced (≥15 young): 42
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%): 0

Sample
DO (mg/L) of sample prior to aeration: 9.6 ~~12.5~~ cc
DO % of sample prior to aeration: 117 ~~154~~ cc
Duration of aeration (37.5 +/- 12.5 mL/min/L): 20min.
Hardness (mg $CaCO_3$/L) of 100% : 1088
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L): —
Alkalinity of 100% sample (mg $CaCO_3$/L): 329
Temperature (°C) of sample prior to aeration: 19° cc ~~20°~~
Is aeration required (<40% or >100%)? (Yes) or No
Filtered with 110um screen prior to testing (Yes) or No
Is hardness adjustment required (<25 mg $CaCO_3$/L)? (Yes) or No

Dilution Water
Pail label / preparation date: P1.08/26
Hardness of dilution water (mg/L): 159

Antiscalant
Final Concentration in Sample: 2mg/L cc
Volume of sample: 500mL Volume of antiscalant: ~~mg/L~~ 15.8 NL

Comments/Observations:
0 hr NO ppt
48 hr NO ppt

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Reviewed By: CW Date Reviewed: 20221091102

APPENDIX C – Chain-of-custody form

Teck

COC ID: 2022-08-22_SP03 TURNAROUND TIME: Regular (default) RUSH: NO

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name	WLC AWTF			Lab Name	Nautilus Environmental			Report Format / Distribution		Excel	PDF	EDD
Project Manager	Brett Mason			Lab Contact	Tamara Pomeroy			Email 1:	DL-WLC-Lab@teck.com	X	X	X
Email	brett.mason@teck.com			Email	tamara@nautilusenvironmental.ca			Email 2:	H20.lab.results@teck.com	X	X	X
Address	15 Km North HWY 43			Address	10823 27th Street SE			Email 3:	TeckCoal@equisonline.com			X
								Email 4:	Tricia.Hill@teck.com	X	X	X
City	Sparwood	Province	BC	City	Calgary	Province	AB	Email 5:	Marty.Hafke@teck.com	X	X	X
Postal Code	V0B 2G0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada	Email 6:				
Phone Number	250 425 4837			Phone Number	403 253 7121			PO number	VPO00842118			

SAMPLE DETAILS

2022/08/23
09:00
1X 20L carboy, 3X 1 L bottle
SRS 15K
NOS NOI
Good condition
Manitoulin
2122-3301

126°C

ANALYSIS REQUESTED

Please indicate below Filtered, Perserved or both (F, P, F/P)

Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	ANALYSIS	NAUT_96Hr_RT_Single_Concentration_Toxicity Test	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 10C	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 20C	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 20C + Antiscalant
LC_WTF_IN_2022-08-22_NP_0800	LC_WTF_IN	WS		8/22/2022	8:00	G	4		X	X	X	X

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	Date	Time	ACCEPTED BY/AFFILIATION	Date	Time
	Nicholas Krajne	8/22/2022				

SERVICE REQUEST (rush - subject to availability)					
Regular (default)	X	Sampler's Name	Alvin Frazier	Mobile #	
Priority (2-3 business days) - 50% surcharge					
Emergency (1 Business Day) - 100% surcharge		Sampler's Signature	Alvin Frazier	Date/Time	22-Aug-22
For Emergency <1 Day, ASAP or Weekend - Contact ALS					

END OF REPORT

Acute Toxicity Test Results

Sample collected August 22, 2022

Final Report

October 5, 2022

Submitted to: **Teck Coal Ltd.**
Sparwood, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates			
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 20˚C test initiation
WL_BFWB_OUT_SP21_2022-08-22_N_0900 / 2122-3302	22-Aug-22 at 0900h	23-Aug-22 at 0900h	23-Aug-22 at 1450h	23-Aug-22 at 1455h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
WL_BFWB_OUT_SP21_2022-08-22_N_0900	14.8°C	1083	284

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample	
	Rainbow trout	*Daphnia magna* 20˚C
WL_BFWB_OUT_SP21_2022-08-22_N_0900	100	100

Sample ID	Percent Immobility in 100 (% v/v)
	Daphnia magna 20˚C
WL_BFWB_OUT_SP21_2022-08-22_N_0900	0

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
WL_BFWB_OUT_SP21_2022-08-22_N_0900	Rainbow trout	None	None
	Daphnia magna	None	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	3.5 (3.3-3.7) g/L KCl[1]	5.6 (5.4-5.8) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.5 (2.6-4.7) g/L KCl	6.1 (5.2-7.3) g/L NaCl
Reference toxicant CV	9.6%	5.6%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	See below
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, August 4, 2022; [2] Test date, August 24, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation

In the test using *Daphnia magna*, the pH of one replicate in the 100% (v/v) test concentration was not measured during test termination.



Report By:
Kiara O'Shea, BSc
Laboratory Biologist



Reviewed By:
Emma Marus, BSc
Biologist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC 164 Reference 2122-3302 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022/08/23	1450 *	AM/CD	1	KD
1	2022/08/24	0950	AM	-	CC
2	2022/08/25	0745	ML	-	MA
3	2022/08/26	0900	ML	-	MAT
4	2022/08/27	0920	ML/CD	1	CC

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 7.5
Initial EC (µS/cm): 1830
Salinity (ppt): 0

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L : **yes/no**

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	12.7	8.6			
Temp (°C) of 100%	16				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	7.6	7.5						
Day 4	7.9	8.1						
EC (uS/cm)								
Day 0	382	1749						
Day 4	419	1642						
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	8.5	8.6						
Day 4	8.6	8.6						
Temperature (°C) (range: 14-16°C)								
Day 0	15	16						
Day 4	16	16						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	2.9	0.3
2	3.6	0.6
3	2.8	0.3
4	3.2	0.4
5	3.2	0.4
6	3.5	0.5
7	2.9	0.3
8	3.0	0.4
9	3.3	0.4
10	3.5	0.5

Loading Density (g/L): 0.2 (must be ≤0.5 g/L)
Mean Length (cm): 3.2
Length Range (cm): 2.8-3.6
Mean Weight (g): 0.4 (Must be ≥0.3g)
Weight Range: (g): 0.3-0.6

Test Organism Information

Batch 20220623TR
Source Trout Lodge
Tank # 3
Days Held at 15± 2°C 42 (must be ≥14 days)
Percent stock mortality 0.19 (7 days prior to test, must be <2%)
Test Volume (L) 18

Comments :
96 hrs: NO ppt

Reviewed By: CW Date Reviewed: 20220830

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC 164 Reference 2122-3302

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/08/23	1455	cc/NA	2	WM
1	2022/08/24	0800	BS	-	CC
2	2022/08/25	0910	BS	3	NA

Sample Information

Initial pH: 7.5
Initial EC (µS/cm): 1830
Salinity (ppt): 0

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day	CTLA	CTLB	CTLC	100A	100B	100C
0	7.9	7.9	7.9	7.8	7.8	7.9
2	8.1	8.0	8.1	8.3	8.4	

Though pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	482	484	482	1814	1876	1892
2	459	470	472	1739	1778	1884

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.9	7.9	7.9
2	7.7	7.7	7.7	7.7	7.7	7.7

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	20	20	20
2	21	21	21	21	21	21

Number Alive (I, immobile)

0	10	10	10	10	10	10
1	10	10	10	10	10	10
2	10	10	10	10	10	10

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar Wed D4 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 42
Were test treatments randomized on test tray? (Yes) No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0

Sample
DO (mg/L) of sample prior to aeration: 12.5 Temperature (°C) of sample prior to aeration: 20°
DO % of sample prior to aeration: 154 % Is aeration required (<40% or >100%)? (Yes) or No
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20min Filtered with 110um screen prior to testing Yes or (No)
Hardness (mg $CaCO_3$/L) of 100% : 1083 Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) -
Alkalinity of 100% sample (mg $CaCO_3$/L): 284

Dilution Water
Pail label / preparation date P1:08/20
Hardness of dilution water (mg/L) 159

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Comments/Observations:
0 hr No ppt
48 hr No ppt

Reviewed By: CW Date Reviewed: 2022 08 30

APPENDIX C – Chain-of-custody form

Teck

COC ID: 2022-08-22_SP21 | TURNAROUND TIME: Regular (default) | RUSH: NO

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name	WLC AWTF			Lab Name	Nautilus Environmental			Report Format / Distribution		Excel	PDF	EDD
Project Manager	Brett Mason			Lab Contact	Tamara Pomeroy			Email 1:	DL-WLC-Lab@teck.com	X	X	X
Email	brett.mason@teck.com			Email	tamara@nautilusenvironmental.ca			Email 2:	H20.lab.results@teck.com	X	X	X
Address	15 Km North HWY 43			Address	10823 27th Street SE			Email 3:	TeckCoal@equisonline.com			X
								Email 4:	Tricia.Hill@teck.com	X	X	X
City	Sparwood	Province	BC	City	Calgary	Province	AB	Email 5:	Marty.Hafke@teck.com	X	X	X
Postal Code	V0B 2G0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada	Email 6:				
Phone Number	250 425 4837			Phone Number	403 253 7121			PO number	VPO00842118			

SAMPLE DETAILS / **ANALYSIS REQUESTED**

2022/08/23
09:00
Manitoulin
3x 20L Carboys, 3x 1L bottles
SRS/SK
NOS No I
Good Condition
2122-3302
14.8°C

Please indicate below Filtered, Perserved or both (F, P, F/P)

Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	ANALYSIS: NAUT_96Hr_RT_Single_Concentration_Toxicity Test	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 20C
WL_BFWB_OUT_SP21_2022-08-22_N_0900	WL_BFWB_OUT_SP21	WS		8/22/2022	9:00	G	6	X	X

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	Date	Time	ACCEPTED BY/AFFILIATION	Date	Time
Shipment includes 2 extra 20 L bladders and 2 extra 1.2 L plastic bottles.	Nicholas Krajnc	8/22/2022				

SERVICE REQUEST (rush - subject to availability)					
Regular (default)	X	Sampler's Name	Alvin Frazier	Mobile #	
Priority (2-3 business days) - 50% surcharge					
Emergency (1 Business Day) - 100% surcharge		Sampler's Signature	Alvin Frazer	Date/Time	22-Aug-22
For Emergency <1 Day, ASAP or Weekend - Contact ALS					

END OF REPORT

Acute Toxicity Test Results

Sample collected September 5, 2022

Final Report

October 12, 2022

Submitted to: **Teck Coal Ltd.**
Sparwood, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates					
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation	*Daphnia magna* antiscalant test initiation
LC_WTF_IN_2022-09-05_NP_0800 / 2223-0048	5-Sept-22 at 0800h	6-Sept-22 at 1530h	7-Sept-22 at 1425h	7-Sept-22 at 1440h	7-Sept-22 at 1435h	7-Sept-22 at 1520h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
LC_WTF_IN_2022-09-05_NP_0800	8.6°C	836	273

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)
- *Daphnia magna* 48-h single concentration screening test (conducted with 2 mg/L antiscalant)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample			
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
LC_WTF_IN_2022-09-05_NP_0800	100	100	100	100

Sample ID	Percent Immobility in 100 (% v/v)		
	Daphnia magna 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
LC_WTF_IN_2022-09-05_NP_0800	0	0	0

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
LC_WTF_IN_2022-09-05_NP_0800	Rainbow trout	Precipitate observed on test vessel	None
	Daphnia magna	None	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	4.0 (3.5-4.4) g/L KCl[1]	5.6 (5.4 - 5.8) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.6 (2.7-4.8) g/L KCl	6.1 (5.2 - 7.3) g/L NaCl
Reference toxicant CV	9.4%	5.6%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, August 30, 2022; [2] Test date, August 24, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation

Report By:
Aishah Iqbal, BSc
Laboratory Biologist

Reviewed By:
Emma Marus, BSc
Biologist

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APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Control/dilution water for antiscalant test	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L), Na_2SeO_4 (2 µg Se/L) and 2 mg/L antiscalant
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS ENVIRONMENTAL

Trout Bench Sheet

Method TRS Client TEC 164 Reference 2223-0048 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022/09/07	1425 *	ML/KO/CD	7/1	AM
1	2022/09/08	0801	CD	-	ZC
2	2022/09/09	0750	CD	-	ZC
3	2022/09/10	0730	CD	-	ZC
4	2022/09/11	0805	ML/KC/RM	1/7	NA

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 7.8
Initial EC (µS/cm): 1704
Salinity (ppt): 3

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L (yes/no)

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	8.3	8.6			
Temp (°C) of 100%	16				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: **5.5-8.5**)								
Day 0	8.1	7.7						
Day 4	8.2	8.3						
EC (uS/cm)								
Day 0	387	1730						
Day 4	450	1598						
DO (mg/L) (**70-100% saturation at test temp.**)								
Day 0	8.6	8.6						
Day 4	8.6	8.6						
Temperature (°C) (range: **14-16°C**)								
Day 0	16	16						
Day 4	16	16						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10(1)	16						
Day 4	10	16						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.1	0.4
2	3.3	0.4
3	3.2	0.4
4	3.9	0.3
5	3.3	0.4
6	3.3	0.4
7	3.1	0.3
8	3.0	0.3
9	3.0	0.3
10	2.8	0.2

Loading Density (g/L): 0.2 (must be ≤0.5 g/L)
Mean Length (cm): 3.1
Length Range (cm): 2.8-3.3
Mean Weight (g): 0.3 (Must be ≥0.3g)
Weight Range: (g): 0.2-0.4

Test Organism Information

Batch 20220708TR
Source Trout Lodge
Tank # 1
Days Held at 15± 2°C 43 (must be ≥14 days)
Percent stock mortality 0.05 (7 days prior to test, must be <2%)
Test Volume (L) 18

Comments :
96 hrs ppt on bottom of tank

Reviewed By: TP Date Reviewed: SEP 16 2022

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC164 Reference 2223-0048

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/09/07	1435	AI/BS	2	EP
1	2022/09/08	0830	DM	-	EC
2	2022/09/09	0910	BS	2	DM

Sample Information

Initial pH: 7.8
Initial EC (µS/cm): 1704
Salinity (ppt): 3

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	8.1	8.1	8.1	7.8	7.9	7.9				
2	8.0	8.0	8.1	8.1	8.3	8.4				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	390	399	396	1635	1697	1716				
2	385	397	394	1602	1656	1665				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.9	7.9	7.9				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	20	20	20				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar Jed C3 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 35
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0%

Sample

DO (mg/L) of sample prior to aeration: 8.5
DO % of sample prior to aeration: 111
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20
Hardness (mg $CaCO_3$/L) of 100% : 836
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 273

Temperature (°C) of sample prior to aeration: 21
Is aeration required (<40% or >100%)? **Yes or No**
Filtered with 110um screen prior to testing **Yes or No**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Dilution Water
Pail label / preparation date Pail 2: 09/05
Hardness of dilution water (mg/L) 165

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Comments/Observations:
0 hr: NO ppt
48 hr: No ppt

Reviewed By: TP Date Reviewed: SEP 16 2022

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC164 Reference 2223-0048

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/09/07	1440	AI/BS	2	ET
1	2022/09/08	0905	DM	-	ZO
2	2022/09/09	0830	BS	2	DM

Sample Information

Initial pH:	7.8
Initial EC (µS/cm):	1704
Salinity (ppt):	3

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	8.1	8.1	8.1	7.8	7.9	7.9				
2	7.9	7.9	7.9	8.0	8.2	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	388	385	393	1637	1694	1687				
2	381	386	393	1584	1672	1664				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.7	9.6	9.6	9.6	9.6	9.6				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar Wed D3 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)

Days to first brood (≤12 days) 9

Average number of young produced (≥15 young) 39

Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - 0% (must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 10.4

Temperature (°C) of sample prior to aeration: 12

DO % of sample prior to aeration: 111

Is aeration required (<40% or >100%)? **Yes or No**

Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20

Filtered with 110um screen prior to testing **Yes or No**

Hardness (mg $CaCO_3$/L) of 100% : ~36

Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —

Alkalinity of 100% sample (mg $CaCO_3$/L): 273

Dilution Water

Pail label / preparation date Pail 2: 09/05

Hardness of dilution water (mg/L) 165

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

Comments/Observations:

0 hr: No ppt

48 hr: No ppt-

Reviewed By: TP Date Reviewed: SEP 16 2022

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS 2 Client TEC164 Reference 2223-0048

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/09/07	1520	AI/BS	2	EP
1	2022/09/08	0900	DM	-	DC
2	2022/09/09	0910	BS	2	DM

Sample Information

Initial pH: 7.8
Initial EC (µS/cm): 1704
Salinity (ppt): 3

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	7.9	7.9	7.9	7.9	8.1	8.1				
2	8.5	8.4	8.4	8.3	8.5	8.5				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	398	406	407	1700	1731	1736				
2	395	405	406	1646	1696	1700				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.9	7.9	7.9				
2	7.7	7.7	7.7	7.7	7.7	7.7				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	20	20	20				
2	21	21	21	21	21	21				

Number Alive (l, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar Wed D4 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 9
Average number of young produced (≥15 young) 39
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0%

Sample

DO (mg/L) of sample prior to aeration: 8.5
DO % of sample prior to aeration: 111
Duration of aeration (37.5 +/- 12.5 mL/min/L): 20
Hardness (mg $CaCO_3$/L) of 100% : 836
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 273

Temperature (°C) of sample prior to aeration: 21
Is aeration required (<40% or >100%)? **Yes or No**
Filtered with 110um screen prior to testing **Yes or No**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Dilution Water
Pail label / preparation date Pail 9: 09/05
Hardness of dilution water (mg/L) 165

Antiscalant
Final Concentration in Sample: 2 mg/L
Volume of sample: 500mL Volume of antiscalant: 15.8mL

Comments/Observations:
0 hr: No ppt
48 hr: No ppt

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Reviewed By: TP Date Reviewed: SEP 16 2022

APPENDIX C – Chain-of-custody form

Teck

Page 1 of 1

COC ID: 2022-09-05_SP03 **TURNAROUND TIME:** Regular (default) **RUSH:** NO

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name	WLC AWTF			Lab Name	Nautilus Environmental			Report Format / Distribution		Excel	PDF	EDD
Project Manager	Brett Mason			Lab Contact	Tamara Pomeroy			Email 1:	DL-WLC-Lab@teck.com	X	X	X
Email	brett.mason@teck.com			Email	tamara@nautilusenvironmental.ca			Email 2:	H20.lab.results@teck.com	X	X	X
Address	15 Km North HWY 43			Address	10823 27th Street SE			Email 3:	TeckCoal@equisonline.com			X
								Email 4:	Tricia.Hill@teck.com	X	X	X
City	Sparwood	Province	BC	City	Calgary	Province	AB	Email 5:	Marty.Hafke@teck.com	X	X	X
Postal Code	V0B 2G0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada	Email 6:				
Phone Number	250 425 4837			Phone Number	403 253 7121			PO Number		VPO00842118		

SAMPLE DETAILS | **ANALYSIS REQUESTED**

2022/09/05
16:30
Manitoulin
SC
1x20L carboy, 3x1L bottles
N6S/N6I
Good Cond.
8.8°C

Please indicate below Filtered, Perserved or both (F, P, FP)

Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	ANALYSIS: NAUT_96Hr_RT_Single_Concentration_Toxicity Test	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 10C	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 20C	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 20C + Antiscalant
LC_WTF_IN_2022-09-05_NP_0800	LC_WTF_IN	WS		9/5/2022	8:00	G	4	X	X	X	X

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	Date	Time	ACCEPTED BY/AFFILIATION	Date	Time
	Katrina Leboeuf	9/5/2022				

SERVICE REQUEST (rush - subject to availability)

Regular (default)	X
Priority (2-3 business days) - 50% surcharge	
Emergency (1 Business Day) - 100% surcharge	
For Emergency <1 Day, ASAP or Weekend - Contact ALS	

Sampler's Name	Blair Peebles	Mobile #	
Sampler's Signature	B Peebles	Date/Time	5-Sep-22

END OF REPORT

Acute Toxicity Test Results

Sample collected September 5, 2022

Final Report

October 12, 2022

Submitted to: **Teck Coal Ltd.**
Sparwood, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates			
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 20˚C test initiation
WL_BFWB_OUT_SP21_2022-09-05_N_0900 / 2223-0049	5-Sept-22 at 0900h	6-Sept-22 at 1530h	7-Sept-22 at 1430h	7-Sept-22 at 1445h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
WL_BFWB_OUT_SP21_2022-09-05_N_0900	9.7°C	991	272

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample	
	Rainbow trout	*Daphnia magna* 20˚C
WL_BFWB_OUT_SP21_2022-09-05_N_0900	90	100

Sample ID	Percent Immobility in 100 (% v/v)
	Daphnia magna 20˚C
WL_BFWB_OUT_SP21_2022-09-05_N_0900	0

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
WL_BFWB_OUT_SP21_2022-09-05_N_0900	Rainbow trout	Precipitate observed on the bottom of test vessel	None
	Daphnia magna	None	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	4.0 (3.5-4.4) g/L KCl[1]	6.9 (6.6-7.2) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.6 (2.7-4.8) g/L KCl	6.1 (5.2-7.2) g/L NaCl
Reference toxicant CV	9.4%	5.5%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, August 30, 2022; [2] Test date, September 21, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation



Report By:
Lily Cole, B.Sc.
Laboratory Biologist



Reviewed By:
Emma Marus, BSc
Biologist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS ENVIRONMENTAL

Trout Bench Sheet

Method TRS Client TEC 164 Reference 2223-0049 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022/09/07	1430 *	ML/KO/CD	71 1	AM
1	2022/09/08	0800	CD	-	ZC
2	2022/09/09	0750	CD	-	ZC
3	2022/09/10	0730	CD	-	ZC
4	2022/09/11	0930	ML/KC/RM	117	NA

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 8.3
Initial EC (µS/cm): 1933
Salinity (ppt): 3

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L : yes/no

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	8.6	8.6			
Temp (°C) of 100%	16				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	8.1	7.9						
Day 4	8.3	8.3 ML 8.5						
EC (uS/cm)								
Day 0	408	2046						
Day 4	427	2010						
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	8.6	8.6						
Day 4	8.6	8.6						
Temperature (°C) (range: 14-16°C)								
Day 0	16	16						
Day 4	16	16						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	9						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.3	0.4
2	3.3	0.4
3	3.0	0.3
4	3.3	0.4
5	3.0	0.3
6	3.1	0.3
7	3.0	0.3
8	3.5	0.5
9	3.0	0.2
10	2.7	0.2

Loading Density (g/L): 0.2 (must be ≤0.5 g/L)
Mean Length (cm): 3.1
Length Range (cm): 2.7-3.5
Mean Weight (g): 0.3 (Must be ≥0.3g)
Weight Range: (g): 0.2-0.5

Test Organism Information

Batch 20220708TR
Source Trout Lodge
Tank # 1
Days Held at 15± 2°C 43 (must be ≥14 days)
Percent stock mortality 0.05 (7 days prior to test, must be <2%)
Test Volume (L) 18

Comments :
96 hrs ppt on bottom of tank

Reviewed By: SG Date Reviewed: 2022/04/13

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC164 Reference 2223-0049

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/09/07	1445	AI/BS	2	EF
1	2022/09/08	0830	DM	-	AC
2	2022/09/09	0845	BS	2	DM

Sample Information

Initial pH: 8.3
Initial EC (µS/cm): 1933
Salinity (ppt): 3

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	8.1	8.1	8.1	7.7	7.7	7.7				
2	8.4	8.3	8.3	8.3	8.4	8.4				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	390	404	396	1912	1962	1973				
2	392	404	394	1874	1909	1925				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	10.4	10.5	10.5				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	20	20	20				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar Wed D3 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 9
Average number of young produced (≥15 young) 39
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0%
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 12.4
DO % of sample prior to aeration: 161
Duration of aeration (37.5 +/- 12.5 mL/min/L): 20
Hardness (mg $CaCO_3$/L) of 100% : 991
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 272

Temperature (°C) of sample prior to aeration: 21
Is aeration required (<40% or >100%)? **Yes or No**
Filtered with 110um screen prior to testing **Yes or No**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Dilution Water
Pail label / preparation date Pail 2: 09/05
Hardness of dilution water (mg/L) 165

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Comments/Observations:
0 hr: No ppt
48 hr: No ppt

Reviewed By: ST Date Reviewed: 2022/09/13

APPENDIX C – Chain-of-custody form

Teck

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COC ID: 2022-09-05_SP21 | TURNAROUND TIME: Regular (default) | RUSH: NO

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO			
Facility Name	WLC AWTF			Lab Name	Nautilus Environmental			Report Format / Distribution		Excel	PDF	EDD
Project Manager	Brett Mason			Lab Contact	Tamara Pomeroy			Email 1:	DL-WLC-Lab@teck.com	X	X	X
Email	brett.mason@teck.com			Email	tamara@nautilusenvironmental.ca			Email 2:	H20.lab.results@teck.com	X	X	X
Address	15 Km North HWY 43			Address	10823 27th Street SE			Email 3:	TeckCoal@equisonline.com			X
								Email 4:	Tricia.Hill@teck.com	X	X	X
City	Sparwood	Province	BC	City	Calgary	Province	AB	Email 5:	Marty.Hafke@teck.com	X	X	X
Postal Code	V0B 2G0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada	Email 6:				
Phone Number	250 425 4837			Phone Number	403 253 7121			PO number	VPO00842118			

SAMPLE DETAILS

2022/09/06
15:86
Manitoulin
SC
3x20L cardboys, 3x1L bottles
NoS/NoT
Good Condition
9.7°C

ANALYSIS REQUESTED

Please indicate below Filtered, Perserved or both (F, P, F/P)

Sample ID 2223-0040	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	ANALYSIS	NAUT_96Hr_RT_Single_Concentration_Toxicity Test	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 20C
WL_BFWB_OUT_SP21_2022-09-05_N_0900	WL_BFWB_OUT_SP21	WS		9/5/2022	9:00	G	6		X	X

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	Date	Time	ACCEPTED BY/AFFILIATION	Date	Time
Shipment includes 2 extra 20 L bladders and 2 extra 1.2 L plastic bottles.	Katrina Leboeuf	9/5/2022				

SERVICE REQUEST (rush - subject to availability)

Regular (default)	X
Priority (2-3 business days) - 50% surcharge	
Emergency (1 Business Day) - 100% surcharge	
For Emergency <1 Day, ASAP or Weekend - Contact ALS	

Sampler's Name	Blair Peebles	Mobile #	
Sampler's Signature	B Peebles	Date/Time	5-Sep-22

END OF REPORT

Acute Toxicity Test Results

Sample collected September 19, 2022

Final Report

October 16, 2022

Submitted to: **Teck Coal Ltd.**
Sparwood, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates					
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation	*Daphnia magna* antiscalant test initiation
LC_WTF_IN_2022-09-19_NP_0800/ 2223-0195	19-Sep-22 at 0800h	20-Sep-22 at 0900h	20-Sep-22 at 1430h	20-Sep-22 at 1425h	20-Sep-22 at 1420h	20-Sep-22 at 1425h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
LC_WTF_IN_2022-09-19_NP_0800	8.4°C	906	342

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)
- *Daphnia magna* 48-h single concentration screening test (conducted with 2 mg/L antiscalant)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample			
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
LC_WTF_IN_2022-09-19_NP_0800	100	100	100	100

Sample ID	Percent Immobility in 100 (% v/v)		
	Daphnia magna 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
LC_WTF_IN_2022-09-19_NP_0800	0	0	0

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
LC_WTF_IN_2022-09-19_NP_0800	Rainbow trout	Precipitate observed on the sides and bottom of test vessel	None
	Daphnia magna	Surficial precipitate observed in the 20˚C test	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	3.9 (2.9-4.3) g/L KCl[1]	6.9 (6.6 -7.2) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.6 (2.7-4.8) g/L KCl	6.1 (5.2-7.2) g/L NaCl
Reference toxicant CV	9.4%	5.5%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, September 14, 2022; [2] Test date, September 21, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation

Report By:
Maryam Lo, BSc
Laboratory Biologist

Reviewed By:
Emma Marus, BSc
Biologist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Control/dilution water for antiscalant test	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L), Na_2SeO_4 (2 µg Se/L) and 2 mg/L antiscalant
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC 164 Reference 2223-0195 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022-09-20	1430 *	KO/CD	1/7	MF
1	2022-09-21	0750	CD	-	MF
2	2022-09-22	0805	AI	-	MM
3	2022-09-23	0750	CD	-	JC
4	2022-09-24	1043	CD/KP	1/7	JC

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 7.7
Initial EC (µS/cm): 1786
Salinity (ppt): 2

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L : yes/no

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	9.9	8.3			
Temp (°C) of 100%	15				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	7.6	7.7						
Day 4	8.2	8.3						
EC (uS/cm)								
Day 0	407	1781						
Day 4	482	1643						
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	8.6	8.3						
Day 4	8.6	8.6						
Temperature (°C) (range: 14-16°C)								
Day 0	16	15						
Day 4	16	16						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.5	0.6
2	3.0	0.4
3	3.5	0.5
4	3.2	0.5
5	3.0	0.3
6	3.2	0.4
7	2.7	0.3
8	3.2	0.4
9	3.3	0.5
10	3.0	0.4

Loading Density (g/L): 0.2 (must be ≤0.5 g/L)
Mean Length (cm): 3.2
Length Range (cm): 2.7 - 3.5
Mean Weight (g): 0.4 (Must be ≥0.3g)
Weight Range: (g): 0.3 - 0.6

Test Organism Information

Batch 20220729TR
Source Sam Livingston
Tank # 6
Days Held at 15± 2°C 26 (must be ≥14 days)
Percent stock mortality 0.13 (7 days prior to test, must be <2%)
Test Volume (L) 18

Comments :
96h: PPT on sides and bottom

Reviewed By: MF Date Reviewed: 2022/09/30

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC 164 Reference 2223-0195

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/09/20	1420	AI/BS	3	DM
1	2022/09/21	0750	AG	-	MAF
2	2022/09/22	0825	NA	2	AI

Sample Information

Initial pH: 7.7
Initial EC (µS/cm): 1736
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5) M

day										
0	8.0	8.0	8.0	7.9	7.9	7.9				
2	8.1	8.1	8.1	~~7.34~~ 8.2	8.2	8.2				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	407	407	406	1753	1749	1724				
2	429	427	424	1709	1759	1781				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.7	7.7	7.7	8.1	8.1	8.1				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	21	21	21	19	19	19				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar Wed D4 Jar(s) mortality 7 days prior to test (must be ≤25%) 12

QA (previous month)
Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 48
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0%
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 9.3
DO % of sample prior to aeration: 113
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20 min
Hardness (mg $CaCO_3$/L) of 100% : 906
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) -
Alkalinity of 100% sample (mg $CaCO_3$/L): 342

Temperature (°C) of sample prior to aeration: 18
Is aeration required (<40% or >100%)? (Yes) or No
Filtered with 110um screen prior to testing Yes or (No)
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)

Dilution Water
Pail label / preparation date Pail 5 : 09/16
Hardness of dilution water (mg/L) 160

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Comments/Observations:
0hr: No ppt
48hr: Surficial ppt.

Reviewed By: MG Date Reviewed: 2022/09/30

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC 164 Reference 2223-0195

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/09/20	1425	AI/BS	3	DM
1	2022/09/21	0745	AG	-	MAF
2	2022/09/22	0825	NA	2	AI

Sample Information

Initial pH:	7.7
Initial EC (µS/cm):	1786
Salinity (ppt):	2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	8.0	8.0	8.0	7.9	7.9	8.0				
2	8.1	8.1	8.1	8.2	8.2	8.2				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	425	406	402	1735	1750	1740				
2	416	418	418	1707	1760	1749				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar Wed C5 Jar(s) mortality 7 days prior to test (must be ≤25%) 0

QA (previous month)

Days to first brood (≤12 days) 9

Average number of young produced (≥15 young) 45

Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - 0% (must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 10.7

DO % of sample prior to aeration: 113

Duration of aeration (37.5 +/- 12.5 mL/min/L): 20min

Hardness (mg $CaCO_3$/L) of 100% : 906

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) -

Alkalinity of 100% sample (mg $CaCO_3$/L): 342

Temperature (°C) of sample prior to aeration: 12

Is aeration required (<40% or >100%)? **Yes or No**

Filtered with 110um screen prior to testing **Yes or (No)**

Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or (No)**

Dilution Water

Pail label / preparation date Pail 5 : 09116

Hardness of dilution water (mg/L) 160

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

Comments/Observations:

0hr: NO ppt

48hr: NO ppt.

Reviewed By: MG Date Reviewed: 2022/09/30

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS 2 Client TEC 164 Reference 2223-0195

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/09/20	1425	AI/BS	3	DM
1	2022/09/21	0950	AG	-	MAF
2	2022/09/22	0840	NA	2	AI

Sample Information

Initial pH: 7.7
Initial EC (µS/cm): 1786
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				
day	pH (units) (range: 6.0-8.5)									
0	8.0	7.9	7.9	7.9	7.9	7.9				
2	8.0	8.0	8.0	8.2	8.2	8.3				
	The pH of the sample was not adjusted prior to test setting, unless noted in the comments below									
	EC (uS/cm)									
0	428	429	427	1659	1722	1715				
2	439	443	438	1727	1765	1752				
	DO (mg/L) (**40-100% saturation at test temp.**)									
0	7.9	7.9	7.9	7.9	7.9	7.9				
2	7.9	7.9	7.9	7.9	7.9	7.9				
	Temperature (°C) (range: **18-22 °C**)									
0	20	20	20	20	20	20				
2	20	20	20	20	20	20				
	Number Alive (I, immobile)									
0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar Wed E5 Jar(s) mortality 7 days prior to test (must be ≤25%) 6

QA (previous month)
Days to first brood (≤12 days) 9
Average number of young produced (≥15 young) 36
Were test treatments randomized on test tray? Yes / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0%

Sample
DO (mg/L) of sample prior to aeration: 9.4
DO % of sample prior to aeration: 114
Duration of aeration (37.5 +/- 12.5 mL/min/L): 20min
Hardness (mg $CaCO_3$/L) of 100% : 906
Temperature (°C) of sample prior to aeration: 18
Is aeration required (<40% or >100%)? **Yes or No**
Filtered with 110um screen prior to testing **Yes or No**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 342

Dilution Water
Pail label / preparation date Pail 5: 09/16
Hardness of dilution water (mg/L) 160

Antiscalant
Final Concentration in Sample: 2mg/L
Volume of sample: 500mL Volume of antiscalant: 15.8µl

Comments/Observations:
0hr: No ppt
48hr: No ppt.

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Reviewed By: MG Date Reviewed: 2022/09/30

APPENDIX C – Chain-of-custody form

Teck

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COC ID: 2022-09-19_SP03 **TURNAROUND TIME:** Regular (default) **RUSH:** NO

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name	WLC AWTF			Lab Name	Nautilus Environmental			Report Format / Distribution		Excel	PDF	EDD
Project Manager	Brett Mason			Lab Contact	Tamara Pomeroy			Email 1:	DL-WLC-Lab@teck.com	X	X	X
Email	brett.mason@teck.com			Email	tamara@nautilusenvironmental.ca			Email 2:	H20.lab.results@teck.com	X	X	X
Address	15 Km North HWY 43			Address	10823 27th Street SE			Email 3:	TeckCoal@equisonline.com			X
								Email 4:	Tricia.Hill@teck.com	X	X	X
City	Sparwood	Province	BC	City	Calgary	Province	AB	Email 5:	Marty.Hafke@teck.com	X	X	X
Postal Code	V0B 2G0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada	Email 6:				
Phone Number	250 425 4837			Phone Number	403 253 7121			PO number		VPO00842118		

SAMPLE DETAILS / **ANALYSIS REQUESTED**

2022/09/20
09:00
Manitoulin
SC/SRS
1x20L carboy, 8x1L bottles
N6S/N6L
Good Condition
8.4°C

Please indicate below Filtered, Perserved or both (F, P, F/P)

Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	ANALYSIS: NAUT_96Hr_RT_Single_Concentration_Toxicity Test	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 10C	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 20C	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 20C + Antiscalant
LC_WTF_IN_2022-09-19_NP_0800	LC_WTF_IN	WS		9/19/2022	8:00	G	4	X	X	X	X

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	Date	Time	ACCEPTED BY/AFFILIATION	Date	Time
	Katrina Leboeuf	9/19/2022				

SERVICE REQUEST (rush - subject to availability)

Regular (default)	X	Sampler's Name	Mason Reimer	Mobile #	
Priority (2-3 business days) - 50% surcharge					
Emergency (1 Business Day) - 100% surcharge		Sampler's Signature		Date/Time	19-Sep-22
For Emergency <1 Day, ASAP or Weekend - Contact ALS					

END OF REPORT

Acute Toxicity Test Results

Sample collected October 3, 2022

Final Report

November 1, 2022

Submitted to: **Teck Coal Ltd.**
Sparwood, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates					
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation	*Daphnia magna* 2 mg/L antiscalant test initiation
LC_WTF_IN_2022-10-03_NP_0800 / 2223-0367	3-Oct-22 at 0800h	4-Oct-22 at 0930h	4-Oct-22 at 1430h	5-Oct-22 at 1435h	5-Oct-22 at 1430h	5-Oct-22 at 1430h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
LC_WTF_IN_2022-10-03_NP_0800	8.5°C	1055	276

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)
- *Daphnia magna* 48-h single concentration screening test (conducted with 2 mg/L antiscalant)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample			
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* 2 mg/L antiscalant
LC_WTF_IN_2022-10-03_NP_0800	100	100	100	100

Sample ID	Percent Immobility in 100 (% v/v)		
	Daphnia magna 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* 2 mg/L antiscalant
LC_WTF_IN_2022-10-03_NP_0800	0	0	0

Precipitate observations

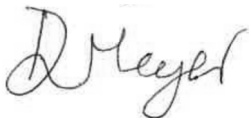
Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
LC_WTF_IN_2022-10-03_NP_0800	Rainbow trout	Precipitate observed on the test vessel	None
	Daphnia magna	None	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	3.8 (3.3-4.4) g/L KCl[1]	6.1 (5.8-6.4) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.6 (2.7-4.8) g/L KCl	6.1 (5.2-7.2) g/L NaCl
Reference toxicant CV	9.4%	5.5%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, October 3, 2022; [2] Test Date, October 5, 2022

LC = Lethal Concentration, CL = Confidence Limits, SD = Standard Deviation, CV = Coefficient of Variation



Report By:
Daisy Meyer, BSc
Laboratory Biologist



Reviewed By:
Mimi Tran, Dipl. T.
Biologist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Control/dilution water for antiscalant test	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L), Na_2SeO_4 (2 µg Se/L) and 2 mg/L antiscalant
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC 164 Reference 2223-0367 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022/10/04	1430 *	AM/ML	7	CC
1	2022/10/05	8:11	MS	-	CC
2	2022/10/06	9:49	MS	-	EP
3	2022/10/07	0900	MS	-	OV.
4	2022/10/08	0859	MS/MS/MO	7	NA

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 7.7
Initial EC (µS/cm): 1731
Salinity (ppt): 2

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L (yes/no)

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	9.8	8.9			
Temp (°C) of 100%	14				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	7.8	7.7						
Day 4	8.3	8.2						
EC (uS/cm)								
Day 0	410	1741						
Day 4	414	1646						
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	8.6	8.9						
Day 4	8.6	8.6						
Temperature (°C) (range: 14-16°C)								
Day 0	16	14						
Day 4	16	16						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10(1)						
Day 4	10	10(3)						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.0	0.4
2	2.8	0.3
3	2.7	0.2
4	3.4	0.4
5	2.8	0.3
6	2.8	0.3
7	2.9	0.3
8	3.3	0.5
9	2.9	0.3
10	3.0	0.3

Loading Density (g/L): 0.2 (must be ≤0.5 g/L)
Mean Length (cm): 3.0 ~~0.5~~ no.
Length Range (cm): 2.7-3.4
Mean Weight (g): 0.3 (Must be ≥0.3g)
Weight Range: (g): 0.2-0.5

Test Organism Information

Batch 20220825TR
Source LSL
Tank # 12
Days Held at 15± 2°C 40 (must be ≥14 days)
Percent stock mortality 0 (7 days prior to test, must be <2%)
Test Volume (L) 18

Comments: 96 hrs: day-3 → loss of buoyancy.
day-4 → loss of buoyancy, gasping for O2.
ppt on tank

Reviewed By: OV Date Reviewed: 2022/10/11

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC164 Reference 2223-0367

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/10/05	1430	DM/AG/BS	2	EP
1	2022/10/06	0755	BS	-	EP
2	2022/10/07	1120	BS	2	MM

Sample Information

Initial pH: 7.7
Initial EC (µS/cm): 1721
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	7.8	7.8	7.8	8.0	8.1	8.1				
2	8.0	7.9	7.9	8.0	8.2	8.2				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	400	418	420	1689	1713	1742				
2	409	421	422	1651	1703	1705				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	8.2	8.2	8.2				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	18	18	18				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	20				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar wed E5 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 4
Average number of young produced (≥15 young) 46
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0%
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 8.1
DO % of sample prior to aeration: 106
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20min
Hardness (mg $CaCO_3$/L) of 100% : 1055
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 276

Temperature (°C) of sample prior to aeration: 18
Is aeration required (<40% or >100%)? **Yes or No**
Filtered with 110um screen prior to testing **Yes or No**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Dilution Water
Pail label / preparation date PI: 10/03
Hardness of dilution water (mg/L) 155

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Comments/Observations:
0 hr: No ppt
48 hr: No ppt

Reviewed By: [illegible] Date Reviewed: 2022/10/11

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS 2 Client TEC 164 Reference 2223-0367

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/10/05	1430	DM/AG/BS	2	EP
1	2022/10/06	0750	BS	-	EP
2	2022/10/07	1120	BS	2	VM

Sample Information

Initial pH: 7.7
Initial EC (µS/cm): 1731
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				
day	pH (units) (range: 6.0-8.5)									
0	8.0	7.9	7.9	8.0	8.1	8.1				
2	7.8	7.8	7.8	8.2	8.2	8.2				
	The pH of the sample was not adjusted prior to test setting, unless noted in the comments below									
	EC (uS/cm)									
0	412	422	419	1706	1748	1748				
2	395	421	422	1679	1726	1707				
	DO (mg/L) (**40-100% saturation at test temp.**)									
0	7.9	7.9	7.9	8.2	8.2	8.2				
2	7.9	7.9	7.9	7.9	7.9	7.9				
	Temperature (°C) (range: **18-22 °C**)									
0	20	20	20	18	18	18				
2	20	20	20	20	20	20				
	Number Alive (I, immobile)									
0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar wed E5 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 40
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0%

Sample
DO (mg/L) of sample prior to aeration: 8.9
DO % of sample prior to aeration: 104
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20min
Hardness (mg $CaCO_3$/L) of 100% : 1055
Temperature (°C) of sample prior to aeration: 18
Is aeration required (<40% or >100%)? **Yes or No**
Filtered with 110um screen prior to testing **Yes or No**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 276

Dilution Water
Pail label / preparation date P1:10/03
Hardness of dilution water (mg/L) 155

Antiscalant
Final Concentration in Sample: 2 mg/L
Volume of sample: 500 mL Volume of antiscalant: 1.58mL

Comments/Observations:
0 HR NO ppt
48 HR NO ppt

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Reviewed By: GP Date Reviewed: 2022/10/11

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC 164 Reference 2223-0367

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/10/05	1435	DM/AG/BS	2	EP
1	2022/10/06	0745	BS	-	EP
2	2022/10/07	1045	BS	2	EP

Sample Information

Initial pH:	7.7
Initial EC (µS/cm):	1731
Salinity (ppt):	2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	8.0	7.9	7.9	7.8	7.9	7.9				
2	8.1	8.1	8.1	8.3	8.3	8.4				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	410	421	416	1685	1754	1728				
2	396	419	421	1682	1739	1697				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar Med C4 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)

Days to first brood (≤12 days) 6

Average number of young produced (≥15 young) 38

Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - 0% (must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 10.2 Temperature (°C) of sample prior to aeration: 12

DO % of sample prior to aeration: 106 Is aeration required (<40% or >100%)? (Yes) or No

Duration of aeration (37.5 +/- 12.5 mL/min/L): 20min Filtered with 110um screen prior to testing Yes or (No)

Hardness (mg $CaCO_3$/L) of 100% : 1055 Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —

Alkalinity of 100% sample (mg $CaCO_3$/L): 276

Dilution Water

Pail label / preparation date P1:10/03

Hardness of dilution water (mg/L) 155

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

Comments/Observations:

0 hr 0 ppt

48 hr 0 ppt

Reviewed By: SP Date Reviewed: 2022/10/11

APPENDIX C – Chain-of-custody form

Teck

COC ID: 2022-10-03_SP03 **TURNAROUND TIME:** Regular (default) **RUSH:** NO

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name	WLC AWTF			Lab Name	Nautilus Environmental			Report Format / Distribution		Excel	PDF	EDD
Project Manager	Brett Mason			Lab Contact	Tamara Pomeroy			Email 1:	DL-WLC-Lab@teck.com	X	X	X
Email	brett.mason@teck.com			Email	tamara@nautilusenvironmental.ca			Email 2:	H20.lab.results@teck.com	X	X	X
Address	15 Km North HWY 43			Address	10823 27th Street SE			Email 3:	TeckCoal@equisonline.com			X
								Email 4:	Tricia.Hill@teck.com	X	X	X
City	Sparwood	Province	BC	City	Calgary	Province	AB	Email 5:	Marty.Hafke@teck.com	X	X	X
Postal Code	V0B 2G0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada	Email 6:				
Phone Number	250 425 4837			Phone Number	403 253 7121			PO number	VPO00860174			

SAMPLE DETAILS / **ANALYSIS REQUESTED**

2022/10/04
09:30
Manitoulin
JC/SRS
4 x 20L carboy, 3 x 1L bottles
NoS/NoB
Good Condition
8.5°C

Please indicate below Filtered, Perserved or both (F, P, F/P)

Sample ID 2223-0367	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	ANALYSIS	NAUT_96Hr_RT_Single_Concentration_Toxicity Test	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 10C	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 20C	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 20C + Antiscalant
LC_WTF_IN_2022-10-03_NP_0800	LC_WTF_IN	WS		10/3/2022	8:00	G	4		X	X	X	X

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	Date	Time	ACCEPTED BY/AFFILIATION	Date	Time
	Katrina Leboeuf	10/3/2022				

SERVICE REQUEST (rush - subject to availability)					
Regular (default)	X	Sampler's Name	Blair Peebles	Mobile #	
Priority (2-3 business days) - 50% surcharge					
Emergency (1 Business Day) - 100% surcharge		Sampler's Signature	B Peebles	Date/Time	3-Oct-22
For Emergency <1 Day, ASAP or Weekend - Contact ALS					

END OF REPORT

Acute Toxicity Test Results

Sample collected October 3, 2022

Final Report

November 2, 2022

Submitted to: **Teck Coal Ltd.**
Sparwood, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates			
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 20˚C test initiation
WL_BFWB_OUT_SP21_2022-10-03_N_0900/ 2223-0368	3-Oct-22 at 0900h	4-Oct-22 at 0930h	5-Oct-22 at 1425h	5-Oct-22 at 1515h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
WL_BFWB_OUT_SP21_2022-10-03_N_0900	8.1°C	827	299

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample	
	Rainbow trout	*Daphnia magna* 20˚C
WL_BFWB_OUT_SP21_2022-10-03_N_0900	100	100

Sample ID	Percent Immobility in 100 (% v/v)
	Daphnia magna 20˚C
WL_BFWB_OUT_SP21_2022-10-03_N_0900	0

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
WL_BFWB_OUT_SP21_2022-10-03_N_0900	Rainbow trout	None	None
	Daphnia magna	None	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	3.8 (3.3-4.4) g/L KCl[1]	6.1 (5.8 - 6.4) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.6 (2.7-4.8) g/L KCl	6.1 (5.2 - 7.2) g/L NaCl
Reference toxicant CV	9.4%	5.5%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, October 3, 2022; [2] Test date, October 5, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation



Report By:
Aishah Iqbal, BSc
Laboratory Biologist



Reviewed By:
Emma Marus, BSc
Biologist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC 164 Reference 2223-0368 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022/10/04	1425 *	AM/ML	7	CC
1	2022/10/05	8:12	MI	-	CC
2	2022/10/06	8:43	MJ	-	EP
3	2022/10/07	0910	MS	-	CC.
4	2022/10/08	0906	MS/AT/KO	7	NA

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 7.5
Initial EC (µS/cm): 1791
Salinity (ppt): 2

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L : **yes/no**

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	13.8	8.8			
Temp (°C) of 100%	15				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	7.7	7.9						
Day 4	8.1	8.5						
EC (uS/cm)								
Day 0	409	1821						
Day 4	412	1760						
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	8.6	8.8						
Day 4	8.6	8.6						
Temperature (°C) (range: 14-16°C)								
Day 0	16	15						
Day 4	16	16						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.4	0.6
2	3.0	0.4
3	2.9	0.3
4	2.8	0.3
5	2.9	0.3
6	3.6	0.7
7	3.7	0.7
8	3.3	0.5
9	3.5	0.6
10	3.2	0.5

Loading Density (g/L): 0.3 (must be ≤0.5 g/L)
Mean Length (cm): 3.2
Length Range (cm): 2.8 - 3.7
Mean Weight (g): 0.5 (Must be ≥0.3g)
Weight Range: (g): 0.3 - 0.7

Test Organism Information

Batch 20220825TR
Source LSL
Tank # 11
Days Held at 15± 2°C 40 (must be ≥14 days)
Percent stock mortality 0.28 (7 days prior to test, must be <2%)
Test Volume (L) 18

Comments :
96 hrs: No ppt

Reviewed By: CW Date Reviewed: OCT 12 2022

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC 164 Reference 2223-0368

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/10/05	1515	AI/BS	2	CC
1	2022/10/06	0810	BS	-	ED
2	2022/10/07	1120	BS	2	KTM

Sample Information

Initial pH:	7.5
Initial EC (µS/cm):	1791
Salinity (ppt):	2

Lab Code	CTL A	CTL B	CTL C	100 A	100 B	100 C				
day	pH (units) (range: 6.0-8.5)									
0	7.8	7.7	7.7	7.7	7.7	7.7				
2	8.0	8.0	7.9	8.2	8.2	8.2				
	The pH of the sample was not adjusted prior to test setting, unless noted in the comments below									
	EC (uS/cm)									
0	405	420	420	1856	1845	1842				
2	428	432	431	1775	1817	1816				
	DO (mg/L) (**40-100% saturation at test temp.**)									
0	7.9	7.9	7.9	8.1	8.1	8.1				
2	7.7	7.7	7.7	7.9	7.9	7.9				
	Temperature (°C) (range: **18-22 °C**)									
0	20	20	20	19	19	19				
2	21	21	21	20	20	20				
	Number Alive (I, immobile)									
0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar Wed D2 Jar(s) mortality 7 days prior to test (must be ≤25%) 0

QA (previous month)

Days to first brood (≤12 days) 8

Average number of young produced (≥15 young) 39

Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - 0%
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: HH Temperature (°C) of sample prior to aeration: 18

DO % of sample prior to aeration: 175 Is aeration required (<40% or >100%)? **Yes or No**

Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20min Filtered with 110um screen prior to testing **Yes or No**

Hardness (mg $CaCO_3$/L) of 100% : 827 Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —

Alkalinity of 100% sample (mg $CaCO_3$/L): 299

Dilution Water

Pail label / preparation date Pail 1 10/03

Hardness of dilution water (mg/L) 155

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Comments/Observations:

0 HR NO ppt

48 HR No ppt

Reviewed By: CW Date Reviewed: OCT 12 2022

APPENDIX C – Chain-of-custody form

Teck

COC ID: 2022-10-03_SP21 **TURNAROUND TIME:** Regular (default) **RUSH:** NO

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name	WLC AWTF			Lab Name	Nautilus Environmental			Report Format / Distribution		Excel	PDF	EDD
Project Manager	Brett Mason			Lab Contact	Tamara Pomeroy			Email 1:	DL-WLC-Lab@teck.com	X	X	X
Email	brett.mason@teck.com			Email	tamara@nautilusenvironmental.ca			Email 2:	H20.lab.results@teck.com	X	X	X
Address	15 Km North HWY 43			Address	10823 27th Street SE			Email 3:	TeckCoal@equisonline.com			X
								Email 4:	Tricia.Hill@teck.com	X	X	X
City	Sparwood	Province	BC	City	Calgary	Province	AB	Email 5:	Marty.Hafke@teck.com	X	X	X
Postal Code	V0B 2G0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada	Email 6:				
Phone Number	250 425 4837			Phone Number	403 253 7121			PO number	VPO00860174			

SAMPLE DETAILS

2022/010/04
09:30
Manitoulin
OC/SRS
3x20L carboys, 3x1L bottles
NoS/NoL
Good Condition
8.1°C

ANALYSIS REQUESTED

Please indicate below Filtered, Perserved or both (F, P, F/P)

Sample ID 2223-0368	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	ANALYSIS	NAUT_96Hr_RT_Single_Concentration_Toxicity Test	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 20C
WL_BFWB_OUT_SP21_2022-10-03_N_0900	WL_BFWB_OUT_SP21	WS		10/3/2022	9:00	G	6		X	X

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	Date	Time	ACCEPTED BY/AFFILIATION	Date	Time
Shipment includes 2 extra 20 L bladders and 2 extra 1.2 L plastic bottles.	Katrina Leboeuf	10/3/2022				

SERVICE REQUEST (rush - subject to availability)					
Regular (default)	X	Sampler's Name	Blair Peebles	Mobile #	
Priority (2-3 business days) - 50% surcharge					
Emergency (1 Business Day) - 100% surcharge		Sampler's Signature	B Peebles	Date/Time	3-Oct-22
For Emergency <1 Day, ASAP or Weekend - Contact ALS					

END OF REPORT

Acute Toxicity Test Results

Sample collected October 17, 2022

Final Report

November 11, 2022

Submitted to: **Teck Coal Ltd.**
Sparwood, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates					
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation	*Daphnia magna* 5 mg/L antiscalant test initiation
LC_WTF_IN_2022-10-17_NP_0800 / 2223-0523	17-Oct-22 at 0800h	18-Oct-22 at 0900h	18-Oct-22 at 1430h	19-Oct-22 at 1515h	19-Oct-22 at 1515h	19-Oct-22 at 1515h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
LC_WTF_IN_2022-10-17_NP_0800	6.6°C	1078	302

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)
- *Daphnia magna* 48-h single concentration screening test (conducted with 5 mg/L antiscalant)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample			
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* 5 mg/L antiscalant
LC_WTF_IN_2022-10-17_NP_0800	100	100	100	100

Sample ID	Percent Immobility in 100 (% v/v)		
	Daphnia magna 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* 5 mg/L antiscalant
LC_WTF_IN_2022-10-17_NP_0800	0	0	0

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
LC_WTF_IN_2022-10-17_NP_0800	Rainbow trout	None	None
	Daphnia magna	Precipitate observed on the surface of test vessel in 20°C test	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	3.7 (3.3-4.2) g/L KCl[1]	6.7 (6.4-6.9) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.6 (2.7-4.8) g/L KCl	6.2 (5.3-7.2) g/L NaCl
Reference toxicant CV	9.4%	5.1%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, October 6, 2022; [2] Test Date, October 19, 2022

LC = Lethal Concentration, CL = Confidence Limits, SD = Standard Deviation, CV = Coefficient of Variation



Report By:
Lily Cole, B.Sc.
Laboratory Biologist



Reviewed By:
Mimi Tran, Dipl. T.
Biologist

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APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Control/dilution water for antiscalant test	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L), Na_2SeO_4 (2 µg Se/L) and 5 mg/L antiscalant
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC 164 Reference 2223-0523 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022/10/18	1430 *	ML/KO	7	WM
1	2022/10/19	0350	MS	-	WM
2	2022/10/20	0850	YC	-	NA
3	2022/10/21	0800	KO	-	YC
4	2022/10/22	1030	WM/KO/AA	7	NA

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 8.0
Initial EC (µS/cm): 1955
Salinity (ppt): 3

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L : (yes/no)

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	10.1	8.9			
Temp (°C) of 100%	14				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	8.0	8.0						
Day 4	8.1	8.2						
EC (uS/cm)								
Day 0	408	1929						
Day 4	408	1838						
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	8.8	8.9						
Day 4	8.0	8.6						
Temperature (°C) (range: 14-16°C)								
Day 0	15	14						
Day 4	16	16						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10(1)						
Day 3	10	10(1)						
Day 4	10	10(1)						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.4	0.3
2	3.8	0.4
3	3.5	0.3
4	2.4	0.1
5	3.2	0.2
6	3.3	0.3
7	4.4	0.7
8	3.1	0.2
9	3.6	0.3
10	3.4	0.3

Loading Density (g/L): 0.2
(must be ≤0.5 g/L)
Mean Length (cm): 3.4
Length Range (cm): 2.4-4.4
Mean Weight (g): 0.3
(Must be ≥0.3g)
Weight Range: (g): 0.1-0.7

Test Organism Information

Batch 20220818TR
Source Trout Lodge
Tank # 1
Days Held at 15± 2°C 42
(must be ≥14 days)
Percent stock mortality 0.27
(7 days prior to test, must be <2%)
Test Volume (L) 18

Comments :
96 hrs
nopp
day 2 → dark colour + little movement day 4 → dark colouring
day 3 → dark colouring

Reviewed By: [signature]
Date Reviewed: OCT 28 2022

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC164 Reference 2223-0523

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/10/19	1515	DM/AI	2	ZC
1	2022/10/20	0735	BS	-	DA
2	2022/10/21	1025	DM	2	ZC

Sample Information

Initial pH:	8.0
Initial EC (µS/cm):	1955
Salinity (ppt):	3

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	7.7	7.7	7.7	7.7	7.7	7.7				
2	7.9	7.8	7.8	8.1	8.1	8.2				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	428	440	434	1825	1868	1872				
2	429	440	439	1879	1247	1875				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar Wed Cl Jar(s) mortality 7 days prior to test (must be ≤25%) 0

QA (previous month)

Days to first brood (≤12 days) 8

Average number of young produced (≥15 young) 34

Were test treatments randomized on test tray? (Yes) No

Control Validity Criteria

Mean % mortality at 48 hours - 0%.
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 9.4 Temperature (°C) of sample prior to aeration: 12

DO % of sample prior to aeration: 100 Is aeration required (<40% or >100%)? **Yes or No**

Duration of aeration (37.5 +/- 12.5 mL/min/L) : - Filtered with 110um screen prior to testing **Yes or No**

Hardness (mg $CaCO_3$/L) of 100% : 1078 Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —

Alkalinity of 100% sample (mg $CaCO_3$/L): 302

Dilution Water

Pail label / preparation date Pail 5: 10/17

Hardness of dilution water (mg/L) 143

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

Comments/Observations:

0 hr: no ppt

48 hr: ppt

Reviewed By: SP Date Reviewed: OCT 2 8 2022

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC164 Reference 2223-0523

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/10/19	1515	DM/AI	2	MC
1	2022/10/20	0800	BS	-	NA
2	2022/10/21	0950	MC	2	MM

Sample Information

Initial pH:	8.0
Initial EC (µS/cm):	1955
Salinity (ppt):	3

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	7.7	7.7	7.7	7.7	7.7	7.7				
2	8.0	7.9	7.9	8.1	8.1	8.1				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	423	433	439	1841	1882	1886				
2	438	436	448	1808	1844	1838				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	8.2	8.2	8.2				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	18	18	18				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar Wed C3 Jar(s) mortality 7 days prior to test (must be ≤25%) 0

QA (previous month)

Days to first brood (≤12 days) 8

Average number of young produced (≥15 young) 34

Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - 0%. (must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 8.2 Temperature (°C) of sample prior to aeration: 18

DO % of sample prior to aeration: 100 Is aeration required (<40% or >100%)? **Yes or (No)**

Duration of aeration (37.5 +/- 12.5 mL/min/L) : - Filtered with 110um screen prior to testing **Yes or (No)**

Hardness (mg $CaCO_3$/L) of 100% : 1078 Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or (No)**

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) -

Alkalinity of 100% sample (mg $CaCO_3$/L): 302

Dilution Water

Pail label / preparation date Pail 5 : 10/17

Hardness of dilution water (mg/L) 143

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Comments/Observations:

0 hr: No ppt

48 hr: surficial ppt

Reviewed By: DM Date Reviewed: OCT 2 8 2022

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS 5 Client TEC164 Reference 2223-0523

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/10/19	1515	DM/AI	2	YC
1	2022/10/20	0755	BS	-	NA
2	2022/10/21	0939	YC	2	LTM

Sample Information

Initial pH:	8.0
Initial EC (µS/cm):	1955
Salinity (ppt):	3

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	7.7	7.7	7.7	7.7	7.7	7.7				
2	8.0	7.9	7.9	8.2	8.2	8.2				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	420	439	441	1852	1869	1864				
2	441	438	446	1834	1837	1812				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	8.2	8.2	8.2				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	18	18	18				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar Wed D2 Jar(s) mortality 7 days prior to test (must be ≤25%) 10

QA (previous month)

Days to first brood (≤12 days) 9

Average number of young produced (≥15 young) 31

Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - (must be ≤10%) 0%

Sample

DO (mg/L) of sample prior to aeration: 8.2 Temperature (°C) of sample prior to aeration: 18

DO % of sample prior to aeration: 100 Is aeration required (<40% or >100%)? **Yes or (No)**

Duration of aeration (37.5 +/- 12.5 mL/min/L) : — Filtered with 110um screen prior to testing **Yes or (No)**

Hardness (mg $CaCO_3$/L) of 100% : 1078 Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or (No)**

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —

Alkalinity of 100% sample (mg $CaCO_3$/L): 302

Dilution Water

Pail label / preparation date Pail 5: 10/17

Hardness of dilution water (mg/L) 143

Antiscalant

Final Concentration in Sample: 5 mg/L

Volume of sample: 500mL Volume of antiscalant: 39.5uL

Comments/Observations:

0 hr: No ppt

48 hr: No ppt

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Reviewed By: YC Date Reviewed: OCT 2 8 2022

APPENDIX C – Chain-of-custody form

Teck

Page 1 of 1

COC ID: 2022-10-17_SP03 | TURNAROUND TIME: Regular (default) | RUSH: NO

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name	WLC AWTF			Lab Name	Nautilus Environmental			Report Format / Distribution		Excel	PDF	EDD
Project Manager	Brett Mason			Lab Contact	Tamara Pomeroy			Email 1:	DL-WLC-Lab@teck.com	X	X	X
Email	brett.mason@teck.com			Email	tamara@nautilusenvironmental.ca			Email 2:	H20.lab.results@teck.com	X	X	X
Address	15 Km North HWY 43			Address	10823 27th Street SE			Email 3:	TeckCoal@equisonline.com			X
								Email 4:	Tricia.Hill@teck.com	X	X	X
City	Sparwood	Province	BC	City	Calgary	Province	AB	Email 5:	Marty.Hafke@teck.com	X	X	X
Postal Code	V0B 2G0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada	Email 6:				
Phone Number	250 425 4837			Phone Number	403 253 7121			PO number		VPO00860174		

SAMPLE DETAILS

2022/10/18
09:00
Manitoulin
JC/SRS
1x20L carboy, 3x1L bottles
NoS/NoL
Good Condition

ANALYSIS REQUESTED

Please indicate below Filtered, Perserved or both (F, P, F/P)

Sample ID 2223-0823	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	NAUT_96Hr_RT_Single_Concentration_Toxicity Test	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 10C	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 20C	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 20C + Antiscalant	6.6°C									
LC_WTF_IN_2022-10-17_NP_0800	LC_WTF_IN	WS		10/17/2022	8:00	G	4	X	X	X	X										

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	Date	Time	ACCEPTED BY/AFFILIATION	Date	Time
	Katrina Leboeuf	10/17/2022				

SERVICE REQUEST (rush - subject to availability)

Regular (default)	X
Priority (2-3 business days) - 50% surcharge	
Emergency (1 Business Day) - 100% surcharge	
For Emergency <1 Day, ASAP or Weekend - Contact ALS	

Sampler's Name	Gilroy James	Mobile #	
Sampler's Signature		Date/Time	17-Oct-22

END OF REPORT

Acute Toxicity Test Results

Sample collected October 17, 2022

Final Report

November 11, 2022

Submitted to: **Teck Coal Ltd.**
Sparwood, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates			
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 20˚C test initiation
WL_BFWB_OUT_SP21_2022-10-17_N_0900 / 2223-0524	17-Oct-22 at 0900h	18-Oct-22 at 0900h	18-Oct-22 at 1435h	19-Oct-22 at 1530h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
WL_BFWB_OUT_SP21_2022-10-17_N_0900	8.4°C	868	263

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample	
	Rainbow trout	*Daphnia magna* 20˚C
WL_BFWB_OUT_SP21_2022-10-17_N_0900	100	100

Sample ID	Percent Immobility in 100 (% v/v)
	Daphnia magna 20˚C
WL_BFWB_OUT_SP21_2022-10-17_N_0900	0

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
WL_BFWB_OUT_SP21_2022-10-17_N_0900	Rainbow trout	None	None
	Daphnia magna	None	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	3.7 (3.3-4.2) g/L KCl[1]	6.7 (6.4-6.9) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.6 (2.7-4.8) g/L KCl	6.2 (5.3-7.2) g/L NaCl
Reference toxicant CV	9.4%	5.1%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, October 6, 2022; [2] Test Date, October 19, 2022

LC = Lethal Concentration, CL = Confidence Limits, SD = Standard Deviation, CV = Coefficient of Variation



Report By:
Lily Cole, B.Sc.
Laboratory Biologist



Reviewed By:
Mimi Tran, Dipl. T.
Biologist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC 164 Reference 2223-0524 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022/10/18	1435 *	ML/KO	7	VTM
1	2022/10/19	0950	MS	-	VTM
2	2022/10/20	0855	MC	-	NA
3	2022/10/21	0800	KO	-	MC
4	2022/10/22	1030	VTM/KC/AL	7	NA

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 7.7
Initial EC (µS/cm): 1857
Salinity (ppt): 2

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L : yes/no

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	12.6	8.9			
Temp (°C) of 100%	14				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	8.0	8.0						
Day 4	8.1	8.3						
EC (uS/cm)								
Day 0	406	1824						
Day 4	411	1781						
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	8.8	8.9						
Day 4	8.6	8.50						
Temperature (°C) (range: 14-16°C)								
Day 0	15	14						
Day 4	16	16						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10(1)						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.5	0.3
2	3.5	0.4
3	3.8	0.4
4	3.6	0.3
5	3.8	0.4
6	3.7	0.4
7	3.8	0.4
8	4.1	0.6
9	3.3	0.3
10	3.5	0.3

Loading Density (g/L): 0.2 (must be ≤0.5 g/L)
Mean Length (cm): 3.7 ~~3.6~~
Length Range (cm): 3.3 – 4.1
Mean Weight (g): 0.4 (Must be ≥0.3g)
Weight Range: (g): 0.3 – 0.6

Test Organism Information

Batch: 20220818TR
Source: Trout Lodge
Tank #: 1
Days Held at 15± 2°C: 42 (must be ≥14 days)
Percent stock mortality: 0.27 (7 days prior to test, must be <2%)
Test Volume (L): 18

Comments :
96 hrs
hoppt
day 4 → eyes bulgy

Reviewed By: [signature]
Date Reviewed: OCT 28 2022

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC164 Reference 2223-0524

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/10/19	1530	DM/AI	2	ZC
1	2022/10/20	0800	BS	-	NA
2	2022/10/21	1650	DM	2	ZC

Sample Information

Initial pH:	7.7
Initial EC (µS/cm):	1857
Salinity (ppt):	2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	7.7	7.7	7.7	8.2	8.2	8.2				
2	7.9	7.9	7.8	8.1	8.1	8.1				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	433	437	435	1825	1858	1855				
2	426	444	444	1826	1861	1877				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.9	7.9	7.9				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	20	20	20				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar Wed D3 Jar(s) mortality 7 days prior to test (must be ≤25%) 0

QA (previous month)

Days to first brood (≤12 days) 9

Average number of young produced (≥15 young) 31

Were test treatments randomized on test tray? (Yes) No

Control Validity Criteria

Mean % mortality at 48 hours - 0%

(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 13.2 Temperature (°C) of sample prior to aeration: 21

DO % of sample prior to aeration: 167 % Is aeration required (<40% or >100%)? **Yes or No**

Duration of aeration (37.5 +/- 12.5 mL/min/L) : 30 20 min. Filtered with 110um screen prior to testing **Yes or No**

Hardness (mg $CaCO_3$/L) of 100% : 868 Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —

Alkalinity of 100% sample (mg $CaCO_3$/L): 263

Dilution Water

Pail label / preparation date Pails: 10/17

Hardness of dilution water (mg/L) 143

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Comments/Observations:

0 hr: no ppt

48 hr: no ppt

Reviewed By: ZC Date Reviewed: OCT 28 2022

APPENDIX C – Chain-of-custody form

Teck

COC ID: 2022-10-17_SP21 **TURNAROUND TIME:** Regular (default) **RUSH:** NO

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name	WLC AWTF			Lab Name	Nautilus Environmental			Report Format / Distribution		Excel	PDF	EDD
Project Manager	Brett Mason			Lab Contact	Tamara Pomeroy			Email 1:	DL-WLC-Lab@teck.com	X	X	X
Email	brett.mason@teck.com			Email	tamara@nautilusenvironmental.ca			Email 2:	H20.lab.results@teck.com	X	X	X
Address	15 Km North HWY 43			Address	10823 27th Street SE			Email 3:	TeckCoal@equisonline.com			X
								Email 4:	Tricia.Hill@teck.com	X	X	X
City	Sparwood	Province	BC	City	Calgary	Province	AB	Email 5:	Marty.Hafke@teck.com	X	X	X
Postal Code	V0B 2G0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada	Email 6:				
Phone Number	250 425 4837			Phone Number	403 253 7121			PO number	VPO00860174			

SAMPLE DETAILS / **ANALYSIS REQUESTED**

2022/10/18
09:00
Manitoulin
JC/SRS
3 2x20L carboys, 3x1L bottles
NoS/NoI
Good Condition

Please indicate below Filtered, Perserved or both (F, P, F/P)

Sample ID 2223-0524	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	ANALYSIS	NAUT_96Hr_RT_Single_Concentration_Toxicity Test	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 20C												
WL_BFWB_OUT_SP21_2022-10-17_N_0900	WL_BFWB_OUT_SP21	WS		10/17/2022	9:00	G	6		X	X	8.4°C											

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	Date	Time	ACCEPTED BY/AFFILIATION	Date	Time
Shipment includes 2 extra 20 L bladders and 2 extra 1.2 L plastic bottles.	Katrina Leboeuf	10/17/2022				

SERVICE REQUEST (rush - subject to availability)

Regular (default)	X	Sampler's Name	Gilroy James	Mobile #	
Priority (2-3 business days) - 50% surcharge					
Emergency (1 Business Day) - 100% surcharge		Sampler's Signature	[signature]	Date/Time	17-Oct-22
For Emergency <1 Day, ASAP or Weekend - Contact ALS					

END OF REPORT

Acute Toxicity Test Results

Sample collected October 31, 2022

Final Report

November 23, 2022

Submitted to: **Teck Coal Ltd.**
Sparwood, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates					
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation	*Daphnia magna* 2 mg/L antiscalant test initiation
LC_WTF_IN_2022-10-31_NP_0800 / 2223-0686	31-Oct-22 at 0800h	1-Nov-22 at 0910h	2-Nov-22 at 1430h	2-Nov-22 at 1425h	2-Nov-22 at 1415h	2-Nov-22 at 1430h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
LC_WTF_IN_2022-10-31_NP_0800	4.2°C	806	304

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)
- *Daphnia magna* 48-h single concentration screening test (conducted with 2 mg/L antiscalant)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample			
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* 2 mg/L antiscalant
LC_WTF_IN_2022-10-31_NP_0800	100	100	100	100

Sample ID	Percent Immobility in 100 (% v/v)		
	Daphnia magna 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* 2 mg/L antiscalant
LC_WTF_IN_2022-10-31_NP_0800	0	0	0

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
LC_WTF_IN_2022-10-31_NP_0800	Rainbow trout	Precipitate observed on sides and bottom of test vessel	None
	Daphnia magna	None	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	4.0 (3.6-4.4) g/L KCl[1]	6.6 (6.4-6.8) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.6 (2.7-4.9) g/L KCl	6.2 (5.3-7.2) g/L NaCl
Reference toxicant CV	9.4%	5.1%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date October 21, 2022; [2] Test date November 2, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation

Kiara O'Shea

Report By:
Kiara O'Shea, BSc
Laboratory Biologist

Reviewed By:
Mimi Tran, Dipl. T.
Biologist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Control/dilution water for antiscalant test	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L), Na_2SeO_4 (2 µg Se/L) and 2 mg/L antiscalant
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC 164 Reference 2223-0686 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022/11/02	1430	AM/BS	7	AI
1	2022/11/03	0945	ML	-	MAF
2	2022/11/04	0900	MAF	-	KO
3	2022/11/05	0800	MS	-	MAF
4	2022/11/06	0940	NATALIAH	7	AC

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 8.0
Initial EC (µS/cm): 1651
Salinity (ppt): 2

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L : yes/no

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	9.2	8:16			
Temp (°C) of 100%	16				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	7.7	7.9						
Day 4	8.3	8.3						
EC (uS/cm)								
Day 0	368	1670						
Day 4	362	~~1469~~ NA	1558					
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	8.9	8.6						
Day 4	8.8	8.8						
Temperature (°C) (range: 14-16°C)								
Day 0	14	16						
Day 4	15	15						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.4	0.3
2	3.4	0.3
3	3.3	0.3
4	3.7	0.4
5	3.5	0.3
6	3.2	0.3
7	2.9	0.2
8	3.5	0.4
9	3.5	0.3
10	3.5	0.3

Loading Density (g/L): 0.2 (must be ≤0.5 g/L)
Mean Length (cm): 3.4
Length Range (cm): 2.9-3.8
Mean Weight (g): 0.3 (Must be ≥0.3g)
Weight Range: (g): 0.2-0.4

Test Organism Information

Batch 20220818TR
Source Trout Lodge
Tank # 2
Days Held at 15± 2°C 57 (must be ≥14 days)
Percent stock mortality 0.21 (7 days prior to test, must be <2%)
Test Volume (L) 18

Comments :
96 hrs: ppt on bottom/sides of tank.

Reviewed By: SS Date Reviewed: 2022/11/10

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC164 Reference 2223-0686

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/11/02	1415	AG/AI	2	WM
1	2022/11/03	0905	BS	-	RMAF
2	2022/11/04	0900	BS	2	DM

Sample Information

Initial pH:	8.0
Initial EC (µS/cm):	1651
Salinity (ppt):	2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	7.8	7.8	7.8	8.0	8.0	8.0				
2	8.2	8.1	8.1	8.3	8.4	8.4				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	419	410	416	1672	1637	1665				
2	389	407	416	1567	1623	1655				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.9	7.9	7.9				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	20	20	20				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar Wed D2 Jar(s) mortality 7 days prior to test (must be ≤25%) 0

QA (previous month)

Days to first brood (≤12 days) 9

Average number of young produced (≥15 young) 36

Were test treatments randomized on test tray? (Yes) No

Control Validity Criteria

Mean % mortality at 48 hours - 0%

(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 9.4 Temperature (°C) of sample prior to aeration: 20

DO % of sample prior to aeration: 118 Is aeration required (<40% or >100%)? (Yes or No)

Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20m Filtered with 110um screen prior to testing (Yes or No)

Hardness (mg $CaCO_3$/L) of 100% : 806 Is hardness adjustment required (<25 mg $CaCO_3$/L)? (Yes or No)

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —

Alkalinity of 100% sample (mg $CaCO_3$/L): 304

Dilution Water

Pail label / preparation date P3: 10131

Hardness of dilution water (mg/L) 163

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Comments/Observations:

0 hr: No ppt

48 hr: No ppt

Reviewed By: SS Date Reviewed: 2022111110

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS 2~~0~~ 51 Client TEC164 Reference 2223-0686

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/11/02	1430	AG/AI	2	YAM
1	2022/11/03	0905	BS	-	MAF
2	2022/11/04	0900	BS	2	DM

Sample Information

Initial pH: 8.0
Initial EC (µS/cm): 1651
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				
day				pH (units) (range: 6.0-8.5)						
0	7.8	7.8	7.7	7.8	8.0	8.0				
2	8.2	8.1	8.1	8.4	8.4	8.4				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

				EC (uS/cm)						
0	422	396	410	1634	1664	1671				
2	416	397	410	1582	1635	1642				

				DO (mg/L) (**40-100% saturation at test temp.**)						
0	7.9	7.9	7.9	7.9	7.9	7.9				
2	7.9	7.9	7.9	7.9	7.9	7.9				

				Temperature (°C) (range: **18-22 °C**)						
0	20	20	20	20	20	20				
2	20	20	20	20	20	20				

				Number Alive (I, immobile)						
0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar Wed D3 Jar(s) mortality 7 days prior to test (must be ≤25%) 0

QA (previous month)
Days to first brood (≤12 days) 9
Average number of young produced (≥15 young) 36
Were test treatments randomized on test tray? Yes / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0%

Sample
DO (mg/L) of sample prior to aeration: 9.4 Temperature (°C) of sample prior to aeration: 20
DO % of sample prior to aeration: 118 Is aeration required (<40% or >100%)? Yes or No
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20m Filtered with 110um screen prior to testing Yes or No
Hardness (mg $CaCO_3$/L) of 100% : 806 Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or No
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 304

Dilution Water
Pail label / preparation date P3:10/31
Hardness of dilution water (mg/L) 163

Antiscalant
Final Concentration in Sample: 2 mg/L
Volume of sample: 500mL Volume of antiscalant: 15.8mL

Comments/Observations:
0 hr: No ppt
48 hr: No ppt

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Reviewed By: SS Date Reviewed: 2022/11/10

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC164 Reference 2223-0686

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/11/02	1425	AG/AI	2	WM
1	2022/11/03	0855	BS	-	MAF
2	2022/11/04	0845	BS	2	DM

Sample Information

Initial pH: 8.0
Initial EC (µS/cm): 1651
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	7.7	7.7	7.7	7.8	7.8	7.8				
2	8.0	8.1	8.1	8.3	8.3	8.4				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	410	422	423	1641	1695	1700				
2	404	422	425	1644	1698	1703				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar: Wed D7 — Jar(s) mortality 7 days prior to test (must be ≤25%): 0

QA (previous month)

Days to first brood (≤12 days): 9
Average number of young produced (≥15 young): 36
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - (must be ≤10%): 0%

Sample

DO (mg/L) of sample prior to aeration: 11.3
Temperature (°C) of sample prior to aeration: 12
DO % of sample prior to aeration: 120
Is aeration required (<40% or >100%)? **Yes or No**
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20m
Filtered with 110um screen prior to testing **Yes or No**
Hardness (mg $CaCO_3$/L) of 100% : 806
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L): —
Alkalinity of 100% sample (mg $CaCO_3$/L): 304

Dilution Water

Pail label / preparation date: P3:1091
Hardness of dilution water (mg/L): 163

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

Comments/Observations:

0 hr: No ppt
48 hr: No ppt

Reviewed By: SS Date Reviewed: 2022111110

APPENDIX C – Chain-of-custody form

Teck

COC ID: 2022-10-31_SP03 **TURNAROUND TIME:** Regular (default) **RUSH:** NO

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name	WLC AWTF			Lab Name	Nautilus Environmental			Report Format / Distribution		Excel	PDF	EDD
Project Manager	Brett Mason			Lab Contact	Tamara Pomeroy			Email 1:	DL-WLC-Lab@teck.com	X	X	X
Email	brett.mason@teck.com			Email	tamara@nautilusenvironmental.ca			Email 2:	H20.lab.results@teck.com	X	X	X
Address	15 Km North HWY 43			Address	10823 27th Street SE			Email 3:	TeckCoal@equisonline.com			X
								Email 4:	Tricia.Hill@teck.com	X	X	X
City	Sparwood	Province	BC	City	Calgary	Province	AB	Email 5:	Marty.Hafke@teck.com	X	X	X
Postal Code	V0B 2G0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada	Email 6:				
Phone Number	250 425 4837			Phone Number	403 253 7121			PO number	VPO00860174			

SAMPLE DETAILS / **ANALYSIS REQUESTED**

2022/11/01
09:10
Manitoulin
SC/SRS
1x20L carboy, 3x1L bottles
NoS/NoJ
Good Condition
4.2°C

Please indicate below Filtered, Perserved or both (F, P, F/P)

Sample ID 2223-0686	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	ANALYSIS	NAUT_96Hr_RT_Single_Concentration_Toxicity Test	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 10C	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 20C	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 20C + Antiscalant
LC_WTF_IN_2022-10-31_NP_0800	LC_WTF_IN	WS		10/31/2022	8:00	G	4		X	X	X	X

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	Date	Time	ACCEPTED BY/AFFILIATION	Date	Time
	Katrina Leboeuf	10/31/2022				

SERVICE REQUEST (rush - subject to availability)

Regular (default)	X
Priority (2-3 business days) - 50% surcharge	
Emergency (1 Business Day) - 100% surcharge	
For Emergency <1 Day, ASAP or Weekend - Contact ALS	

Sampler's Name	Blair Peebles	Mobile #	
Sampler's Signature	B. Peebles	Date/Time	31-Oct-22

END OF REPORT

Acute Toxicity Test Results

Sample collected October 31, 2022

Final Report

November 24, 2022

Submitted to: **Teck Coal Ltd.**
Sparwood, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates			
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 20˚C test initiation
WL_BFWB_OUT_SP21_2022-10-31_N_0900 / 2223-0687	31-Oct-22 at 0900h	1-Nov-22 at 0910h	2-Nov-22 at 1445h	2-Nov-22 at 1430h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
WL_BFWB_OUT_SP21_2022-10-31_N_0900	5.1°C	822	232

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample	
	Rainbow trout	*Daphnia magna* 20˚C
WL_BFWB_OUT_SP21_2022-10-31_N_0900	100	100

Sample ID	Percent Immobility in 100 (% v/v)
	Daphnia magna 20˚C
WL_BFWB_OUT_SP21_2022-10-31_N_0900	0

Precipitate observations

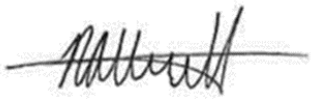
Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
WL_BFWB_OUT_SP21_2022-10-31_N_0900	Rainbow trout	None	None
	Daphnia magna	None	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	3.7 (3.3-4.2) g/L KCl[1]	6.6 (6.4-6.8) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.6 (2.7-4.8) g/L KCl	6.2 (5.3-7.2) g/L NaCl
Reference toxicant CV	9.4%	5.1%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, October 6, 2022; [2] Test Date, November 2, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation



Report By:
Naomi Attrill
Biologist



Reviewed By:
Mimi Tran, Dipl. T.
Biologist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC 164 Reference 2223-0687 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022/11/02	1445 *	AM/BS	7	AI
1	2022/11/03	0845	ML	-	MAF
2	2022/11/04	0900	MAF	-	KO
3	2022/11/05	0820	MS	-	MAF
4	2022/11/06	1005	NA/ML/AM	7	IC/M

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 7.6
Initial EC (µS/cm): 1701
Salinity (ppt): 1

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L : **yes/no**

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	11.7	10.3	8.6		
Temp (°C) of 100%	16				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	7.7	7.6						
Day 4	8.0	8.3						
EC (uS/cm)								
Day 0	385	1661						
Day 4	370	1569						
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	8.6	8.6						
Day 4	8.8	8.8						
Temperature (°C) (range: 14-16°C)								
Day 0	16	16						
Day 4	15	15						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	4.0	0.4
2	3.8	0.4
3	4.2	0.5
4	4.3	0.4
5	4.1	0.5
6	3.9	0.4
7	3.9	0.4
8	4.4	0.7
9	4.2	0.5
10	3.7	0.3

Loading Density (g/L): 0.3 (must be ≤0.5 g/L)
Mean Length (cm): ML 4.1
Length Range (cm): 3.7-4.4
Mean Weight (g): 0.5 (Must be ≥0.3g)
Weight Range: (g): 0.3-0.7

Test Organism Information

Batch 20220818TR
Source Trout Lodge
Tank # 2
Days Held at 15± 2°C 57 (must be ≥14 days)
Percent stock mortality 0.21 (7 days prior to test, must be <2%)
Test Volume (L) 18

Comments :
96 hrs: No ppt.

Reviewed By: MF Date Reviewed: 2022/11/08

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC164 Reference 2223-0687

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/11/02	1430	AG/AI	2	WM
1	2022/11/03	0905	BS	-	MAF
2	2022/11/04	0920	DM	2	AI

Sample Information

Initial pH: 7.6
Initial EC (µS/cm): 1701
Salinity (ppt): 1

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	7.8	7.8	7.8	8.0	8.0	8.0				
2	8.2	8.2	8.2	8.3	8.4	8.4				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	418	419	419	1664	1737	1732				
2	400	421	415	1624	1718	1718				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.9	7.9	7.9				
2	7.9	7.9	7.9	7.7	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	20	20	20				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar wed D3 Jar(s) mortality 7 days prior to test (must be ≤25%) 0

QA (previous month)
Days to first brood (≤12 days) 9
Average number of young produced (≥15 young) 36
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0%
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 13.0 Temperature (°C) of sample prior to aeration: 21
DO % of sample prior to aeration: 165 Is aeration required (<40% or >100%)? **Yes or No**
Duration of aeration (37.5 +/- 12.5 mL/min/L) : ~~30~~ 20 min Filtered with 110um screen prior to testing **Yes or No**
Hardness (mg $CaCO_3$/L) of 100% : 822 Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 232

Dilution Water
Pail label / preparation date P3:10/31
Hardness of dilution water (mg/L) 163

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Comments/Observations:
0 hr: NO ppt
48 hr: N o ppt.

Reviewed By: MH Date Reviewed: 2022/11/08

APPENDIX C – Chain-of-custody form

Teck

COC ID: 2022-10-31_SP21 **TURNAROUND TIME:** Regular (default) **RUSH:** NO

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name	WLC AWTF			Lab Name	Nautilus Environmental			Report Format / Distribution		Excel	PDF	EDD
Project Manager	Brett Mason			Lab Contact	Tamara Pomeroy			Email 1:	DL-WLC-Lab@teck.com	X	X	X
Email	brett.mason@teck.com			Email	tamara@nautilusenvironmental.ca			Email 2:	H20.lab.results@teck.com	X	X	X
Address	15 Km North HWY 43			Address	10823 27th Street SE			Email 3:	TeckCoal@equisonline.com			X
								Email 4:	Tricia.Hill@teck.com	X	X	X
City	Sparwood	Province	BC	City	Calgary	Province	AB	Email 5:	Marty.Hafke@teck.com	X	X	X
Postal Code	V0B 2G0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada	Email 6:				
Phone Number	250 425 4837			Phone Number	403 253 7121			PO number	VPO00860174			

SAMPLE DETAILS / **ANALYSIS REQUESTED**

2022/11/01
09:10
Manitoulin
JC/SPS
3x20L carboys, 3x1L bottles
NaS/NaJ
Good Condition
5.1°C

Please indicate below Filtered, Perserved or both (F, P, F/P)

Sample ID 2223-0687	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	ANALYSIS	NAUT_96Hr_RT_Single_Concentration_Toxicity Test	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 20C
WL_BFWB_OUT_SP21_2022-10-31_N_0900	WL_BFWB_OUT_SP21	WS		10/31/2022	9:00	G	6		X	X

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	Date	Time	ACCEPTED BY/AFFILIATION	Date	Time
Shipment includes 2 extra 20 L bladders and 2 extra 1.2 L plastic bottles.	Katrina Leboeuf	10/31/2022				

SERVICE REQUEST (rush - subject to availability)					
Regular (default)	X	Sampler's Name	Blair Peebles	Mobile #	
Priority (2-3 business days) - 50% surcharge					
Emergency (1 Business Day) - 100% surcharge		Sampler's Signature	B. Peebles	Date/Time	31-Oct-22
For Emergency <1 Day, ASAP or Weekend - Contact ALS					

END OF REPORT

Acute Toxicity Test Results

Sample collected November 14, 2022

Final Report

December 1, 2022

Submitted to: **Teck Coal Ltd.**
Sparwood, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates					
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation	*Daphnia magna* 2 mg/L antiscalant test initiation
LC_WTF_IN_2022-11-14_NP_0800/ 2223-0823	14-Nov-22 at 0800h	15-Nov-22 at 0925h	16-Nov-22 at 1450h	16-Nov-22 at 1445h	16-Nov-22 at 1415h	16-Nov-22 at 1420h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
LC_WTF_IN_2022-11-14_NP_0800	3.5°C	825	232

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)
- *Daphnia magna* 48-h single concentration screening test (conducted with 2 mg/L antiscalant)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample			
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* 2 mg/L antiscalant
LC_WTF_IN_2022-11-14_NP_0800	100	100	100	100

Sample ID	Percent Immobility in 100 (% v/v)		
	Daphnia magna 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* 2 mg/L antiscalant
LC_WTF_IN_2022-11-14_NP_0800	0	0	0

Precipitate observations

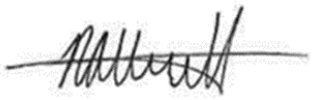
Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
LC_WTF_IN_2022-11-14_NP_0800	Rainbow trout	Precipitate observed on test vessel	None
	Daphnia magna	None	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	4.5 (4.1-5.0) g/L KCl[1]	6.8 (6.5-7.1) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.7 (2.8-4.9) g/L KCl	6.2 (5.3-7.2) g/L NaCl
Reference toxicant CV	9.1%	5.1%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, November 8, 2022; [2] Test Date, November 21, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation



Report By:
Naomi Attrill
Biologist



Reviewed By:
Emma Pedersen, BSc
Laboratory Biologist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Control/dilution water for antiscalant test	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L), Na_2SeO_4 (2 µg Se/L) and 2 mg/L antiscalant
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC 164 Reference 2223-0823 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022-11-16	1450 *	ML/BS	7	CC
1	2022-11-17	0825	BS	-	MAF
2	2022-11-18	0755	KC/MM	-	MAF
3	2022-11-19	0900	CC	-	MAF
4	2022-11-20	1005	KC/MM/ML	7	AM

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 8.0
Initial EC (µS/cm): 1588
Salinity (ppt): 4

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L (yes/no)

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	9.6	8.6			
Temp (°C) of 100%	16				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	8.1	8.1						
Day 4	8.1	8.3						
EC (uS/cm)								
Day 0	372	1674						
Day 4	395	1600						
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	8.8	8.6						
Day 4	8.6	8.6						
Temperature (°C) (range: 14-16°C)								
Day 0	15	16						
Day 4	16	16						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.5	0.3
2	3.3	0.3
3	3.7	0.4
4	3.7	0.4
5	3.6	0.4
6	3.7	0.4
7	4.0	0.5
8	3.6	0.4
9	3.6	0.4
10	3.6	0.4

Loading Density (g/L): 0.2 (must be ≤0.5 g/L)
Mean Length (cm): 3.6
Length Range (cm): 3.3-4.0
Mean Weight (g): 0.4 (Must be ≥0.3g)
Weight Range: (g): 0.3-0.5

Test Organism Information

Batch 20220928TR
Source LSL
Tank # 4
Days Held at 15± 2°C 49 (must be ≥14 days)
Percent stock mortality 0.15 (7 days prior to test, must be <2%)
Test Volume (L) 18

Comments :
96 hrs ppt on tank

Reviewed By: CW Date Reviewed: NOV 2 2 2022

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS Client TEC 164 Reference 2223-0823

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/11/16	1415	AI/AG	2	JC
1	2022/11/17	0900	AG	-	MAF
2	2022/11/18	0855	BS	2	CC

Sample Information

Initial pH: 8.0
Initial EC (µS/cm): 1588
Salinity (ppt): 4

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	7.8	7.8	7.8	8.0	8.1	8.1				
2	8.1	8.1	8.0	8.3	8.3	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	342	354	360	1627	1613	1599				
2	365	367	366	1558	1613	1589				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.9	7.9	7.9				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	20	20	20				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar Wed C4 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 35
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0%

Sample

DO (mg/L) of sample prior to aeration: 9.3
DO % of sample prior to aeration: 115
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20min
Hardness (mg $CaCO_3$/L) of 100% : 825
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 232

Temperature (°C) of sample prior to aeration: 21
Is aeration required (<40% or >100%)? **Yes or No**
Filtered with 110um screen prior to testing **Yes or (No)**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or (No)**

Dilution Water
Pail label / preparation date PA: 11/14
Hardness of dilution water (mg/L) 136

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Comments/Observations:
0 HR no ppt
48 HRS no ppt

Reviewed By: CW Date Reviewed: NOV 2 2 2022

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC 164 Reference 2223-0823

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/11/16	1445	AI/AG	2	YC
1	2022/11/17	0745	AG	-	MAF
2	2022/11/18	0650	BS	2	CC

Sample Information

Initial pH:	8.0
Initial EC (µS/cm):	1588
Salinity (ppt):	4

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	7.9	7.8	7.8	7.9	8.0	8.0				
2	8.1	8.1	8.1	8.3	8.3	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	343	364	360	1598	1639	1614				
2	370	379	379	1617	1648	1614				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar Wed C5 Jar(s) mortality 7 days prior to test (must be ≤25%) 0

QA (previous month)

Days to first brood (≤12 days) 8

Average number of young produced (≥15 young) 35

Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - 0% (must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 9.4 Temperature (°C) of sample prior to aeration: 12

DO % of sample prior to aeration: 100% Is aeration required (<40% or >100%)? **Yes or (No)**

Duration of aeration (37.5 +/- 12.5 mL/min/L) : — Filtered with 110um screen prior to testing **Yes or (No)**

Hardness (mg $CaCO_3$/L) of 100% : 825 Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or (No)**

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —

Alkalinity of 100% sample (mg $CaCO_3$/L): 232

Dilution Water

Pail label / preparation date P4: 11/14

Hardness of dilution water (mg/L) 138

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

Comments/Observations:

0 HR no ppt

48 HR No ppt

Reviewed By: CW Date Reviewed: NOV 2 2 2022

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS 2 Client TEC 164 Reference 2223-0823

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/11/16	1470	AI/AG	2	ZC
1	2022/11/17	0765	DM	-	MAF
2	2022/11/18	0855	BS	2	ZC

Sample Information

Initial pH: 8.0
Initial EC (µS/cm): ~~1528~~ 1588 cw
Salinity (ppt): 4

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	7.9	7.8	7.8	8.0	8.0	8.0				
2	8.0	8.0	8.0	8.3	8.3	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	371	362	361	1534	1601	1639				
2	361	362	360	1504	1579	1608				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.9	7.9	7.9				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	20	20	20				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar: Wed C1 — Jar(s) mortality 7 days prior to test (must be ≤25%): 0

QA (previous month)
Days to first brood (≤12 days): 9
Average number of young produced (≥15 young): 30
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%): 0%

Sample
DO (mg/L) of sample prior to aeration: 8.8
DO % of sample prior to aeration: 111 %
Duration of aeration (37.5 +/- 12.5 mL/min/L): 20min
Hardness (mg $CaCO_3$/L) of 100% : 825
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L): —
Alkalinity of 100% sample (mg $CaCO_3$/L): 232

Temperature (°C) of sample prior to aeration: 21
Is aeration required (<40% or >100%)? **Yes or No**
Filtered with 110um screen prior to testing **Yes or (No)**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or (No)**

Dilution Water
Pail label / preparation date: P4: 11/14
Hardness of dilution water (mg/L): 136

Antiscalant
Final Concentration in Sample: 2 mg/L
Volume of sample: 500 mL — Volume of antiscalant: 15.8 µL

Comments/Observations:
0 HR no ppt
48 HR No ppt

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Reviewed By: CW Date Reviewed: NOV 2 2 2022

APPENDIX C – Chain-of-custody form

Teck

COC ID: 2022-11-14_SP03 **TURNAROUND TIME:** Regular (default) **RUSH:** NO

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name	WLC AWTF			Lab Name	Nautilus Environmental			Report Format / Distribution		Excel	PDF	EDD
Project Manager	Brett Mason			Lab Contact	Tamara Pomeroy			Email 1:	DL-WLC-Lab@teck.com	X	X	X
Email	brett.mason@teck.com			Email	tamara@nautilusenvironmental.ca			Email 2:	H20.lab.results@teck.com	X	X	X
Address	15 Km North HWY 43			Address	10823 27th Street SE			Email 3:	TeckCoal@equisonline.com			X
								Email 4:	Tricia.Hill@teck.com	X	X	X
City	Sparwood	Province	BC	City	Calgary	Province	AB	Email 5:	Marty.Hafke@teck.com	X	X	X
Postal Code	V0B 2G0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada	Email 6:				
Phone Number	250 425 4837			Phone Number	403 253 7121			PO number	VPO00860174			

SAMPLE DETAILS / **ANALYSIS REQUESTED**

2022/11/15
09:25
Manitoulin
JC/SRS
1x20Learbox, 3x1Lbottles
NGS/NoI
Good Condition
3.5°C

Please indicate below Filtered, Perserved or both (F, P, F/P)

Sample ID 2223-0823	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	ANALYSIS	NAUT_96Hr_RT_Single_Concentration_Toxicity Test	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 10C	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 20C	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 20C + Antiscalant
LC_WTF_IN_2022-11-14_NP_0800	LC_WTF_IN	WS		11/14/2022	8:00	G	4		X	X	X	X

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	Date	Time	ACCEPTED BY/AFFILIATION	Date	Time
	Katrina Leboeuf	11/14/2022				

SERVICE REQUEST (rush - subject to availability)					
Regular (default)	X	Sampler's Name	Grant Fleming	Mobile #	
Priority (2-3 business days) - 50% surcharge					
Emergency (1 Business Day) - 100% surcharge		Sampler's Signature	[signature]	Date/Time	14-Nov-22
For Emergency <1 Day, ASAP or Weekend - Contact ALS					

END OF REPORT

Acute Toxicity Test Results

Sample collected November 14, 2022

Final Report

December 2, 2022

Submitted to: **Teck Coal Ltd.**
Sparwood, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates			
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 20˚C test initiation
WL_BFWB_OUT_SP21_2022-11-14_N_0900/ 2223-0824	14-Nov-22 at 0900h	15-Nov-22 at 0925h	16-Nov-22 at 1445h	16-Nov-22 at 1425h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
WL_BFWB_OUT_SP21_2022-11-14_N_0900	4.6°C	773	202

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample	
	Rainbow trout	*Daphnia magna* 20˚C
WL_BFWB_OUT_SP21_2022-11-14_N_0900	100	100

Sample ID	Percent Immobility in 100 (% v/v)
	Daphnia magna 20˚C
WL_BFWB_OUT_SP21_2022-11-14_N_0900	0

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
WL_BFWB_OUT_SP21_2022-11-14_N_0900	Rainbow trout	None	None
	Daphnia magna	None	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	4.5 (4.1-5.0) g/L KCl[1]	6.6 (6.4-6.8) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.7 (2.8-4.9) g/L KCl	6.2 (5.3-7.2) g/L NaCl
Reference toxicant CV	9.1%	5.1%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, November 8, 2022; [2] Test Date November 2, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation

Report By:
Maryam Lo, BSc
Laboratory Biologist

Reviewed By:
Emma Pedersen, BSc
Laboratory Biologist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14 with February 2016 amendments
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC 164 Reference 2223-0824 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022-11-16	1445 *	ML/BS	7	CC
1	2022-11-17	0830	BS	-	MAE
2	2022-11-18	0755	KCam	-	MAE
3	2022-11-19	0900	KC	-	MAE
4	2022-11-20	1010	KCam/ML	7	Am

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 7.5
Initial EC (µS/cm): 1681
Salinity (ppt): 3

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L (yes/no)

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	10.3	8.6			
Temp (°C) of 100%	16				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: **5.5-8.5**)								
Day 0	8.2	7.7						
Day 4	8.2	8.3						
EC (uS/cm)								
Day 0	413	1744						
Day 4	384	1632						
DO (mg/L) (**70-100% saturation at test temp.**)								
Day 0	8.8	8.6						
Day 4	8.5	8.6						
Temperature (°C) (range: **14-16°C**)								
Day 0	15	16						
Day 4	16	16						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10(1)						
Day 3	10	10(1)						
Day 4	10	10(1)						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.4	0.3
2	4.0	0.5
3	3.5	0.3
4	3.6	0.4
5	3.8	0.4
6	3.0	0.2
7	3.7	0.4
8	4.2	0.6
9	3.7	0.4
10	3.4	0.3

Loading Density (g/L): 0.2 (must be ≤0.5 g/L)
Mean Length (cm): 3.6
Length Range (cm): 3.0-4.2
Mean Weight (g): 0.4 (Must be ≥0.3g)
Weight Range: (g): 0.2-0.6

Test Organism Information

Batch 20220928TR
Source LSL
Tank # 4
Days Held at 15± 2°C 49 (must be ≥14 days)
Percent stock mortality 0.15 (7 days prior to test, must be <2%)
Test Volume (L) 18

Comments :
96 hrs NO PPT

Reviewed By: CW Date Reviewed: NOV 2 2 2022

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC 164 Reference 2223-0824

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/11/16	1425	AI/AG	2	
1	2022/11/17	~~1755~~ 1755	DM	-	MAF
2	2022/11/18	0955	BS	2	CW

Sample Information

Initial pH: 7.5
Initial EC (µS/cm): 1681
Salinity (ppt): 3

Lab Code	CTL A	CTLB	CTL C	100 A	100 B	100 C				
day	pH (units) (range: 6.0-8.5)									
0	7.9	7.8	7.8	8.1	8.1	8.1				
2	8.2	8.1	8.1	8.2	8.2	8.2				
	The pH of the sample was not adjusted prior to test setting, unless noted in the comments below									
	EC (uS/cm)									
0	354	366	364	1630	1705	1706				
2	366	361	362	1628	1695	1707				
	DO (mg/L) (**40-100% saturation at test temp.**)									
0	7.9	7.9	7.9	7.9	7.9	7.9				
2	7.9	7.9	7.9	7.9	7.9	7.9				
	Temperature (°C) (range: **18-22 °C**)									
0	20	20	20	20	20	20				
2	20	20	20	20	20	20				
	Number Alive (l, immobile)									
0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar Wed E1 Jar(s) mortality 7 days prior to test (must be ≤25%) 0

QA (previous month)
Days to first brood (≤12 days) 9
Average number of young produced (≥15 young) 30
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0%
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 12.9
Temperature (°C) of sample prior to aeration: 21
DO % of sample prior to aeration: 140%
Is aeration required (<40% or >100%)? **Yes or No**
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20min
Filtered with 110um screen prior to testing **Yes or No**
Hardness (mg $CaCO_3$/L) of 100% : 772
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 202

Dilution Water

Pail label / preparation date PA: 11/14
Hardness of dilution water (mg/L) 138

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Comments/Observations:
0 HR no ppt
48 HRS No ppt

Reviewed By: CW Date Reviewed: NOV 2 2 2022

APPENDIX C – Chain-of-custody form

Teck

Page 1 of 1

COC ID: 2022-11-14_SP21 | TURNAROUND TIME: Regular (default) | RUSH: NO

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO			
Facility Name	WLC AWTF			Lab Name	Nautilus Environmental			Report Format / Distribution		Excel	PDF	EDD
Project Manager	Brett Mason			Lab Contact	Tamara Pomeroy			Email 1:	DL-WLC-Lab@teck.com	X	X	X
Email	brett.mason@teck.com			Email	tamara@nautilusenvironmental.ca			Email 2:	H20.lab.results@teck.com	X	X	X
Address	15 Km North HWY 43			Address	10823 27th Street SE			Email 3:	TeckCoal@equisonline.com			X
								Email 4:	Tricia.Hill@teck.com	X	X	X
City	Sparwood	Province	BC	City	Calgary	Province	AB	Email 5:	Marty.Hafke@teck.com	X	X	X
Postal Code	V0B 2G0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada	Email 6:				
Phone Number	250 425 4837			Phone Number	403 253 7121			PO number		VPO00860174		

2022/11/15
09:25
Manitoulin
DC/SRS
3x20L cartoons, 3x1L bottles
N6S/N6I
Good Cond.
4.6°C

SAMPLE DETAILS | ANALYSIS REQUESTED

Please indicate below Filtered, Perserved or both (F, P, F/P)

Sample ID 2223-0824	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	ANALYSIS	NAUT_96Hr_RT_Single_Concentration_Toxicity Test	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 20C
WL_BFWB_OUT_SP21_2022-11-14_N_0900	WL_BFWB_OUT_SP21	WS		11/14/2022	9:00	G	6		X	X

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	Date	Time	ACCEPTED BY/AFFILIATION	Date	Time
Shipment includes 2 extra 20 L bladders and 2 extra 1.2 L plastic bottles.	Katrina Leboeuf	11/14/2022				

SERVICE REQUEST (rush - subject to availability)					
Regular (default)	X	Sampler's Name	Grant Fleming	Mobile #	
Priority (2-3 business days) - 50% surcharge					
Emergency (1 Business Day) - 100% surcharge		Sampler's Signature		Date/Time	14-Nov-22
For Emergency <1 Day, ASAP or Weekend - Contact ALS					

END OF REPORT

Acute Toxicity Test Results

Sample collected November 28, 2022

Final Report

December 20, 2022

Submitted to: **Teck Coal Ltd.**
Sparwood, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates					
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation	*Daphnia magna* 2 mg/L antiscalant test initiation
LC_WTF_IN_2022-11-28_NP_0800/ 2223-0938	28-Nov-22 at 0800h	29-Nov-22 at 1030h	30-Nov-22 at 1435h	30-Nov-22 at 1425h	30-Nov-22 at 1420h	30-Nov-22 at 1420h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
LC_WTF_IN_2022-11-28_NP_0800	-1.7°C	852	243

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)
- *Daphnia magna* 48-h single concentration screening test (conducted with 2 mg/L antiscalant)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample			
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* 2 mg/L *antiscalant*
LC_WTF_IN_2022-11-28_NP_0800	100	100	100	100

Sample ID	Percent Immobility in 100 (% v/v)		
	Daphnia magna 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* 2 mg/L antiscalant
LC_WTF_IN_2022-11-28_NP_0800	0	0	0

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
LC_WTF_IN_2022-11-28_NP_0800	Rainbow trout	None	None
	Daphnia magna	None	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	3.6 (3.3-4.0) g/L KCl[1]	6.5 (6.2-6.7) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.8 (3.0-4.8) g/L KCl	6.2 (5.3-7.2) g/L NaCl
Reference toxicant CV	7.8%	5.1%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, November 25, 2022; [2] Test Date November 30, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation



Report By:
Lily Cole, B.Sc.
Laboratory Biologist



Reviewed By:
Emma Pedersen, BSc
Laboratory Biologist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Control/dilution water for antiscalant test	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L), Na_2SeO_4 (2 µg Se/L) and 2 mg/L antiscalant
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14 with February 2016 amendments
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14 with February 2016 amendments
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC164 Reference 2223-0938 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022-11-30	1435 *	BS/ML	7	AM
1	2022-12-01	0900	MS	-	KO
2	2022-12-02	0945	MS	-	MAF
3	2022-12-03	0930	SC	-	EF
4	2022-12-04	0955	Kerm/ML	7	KO

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 7.9
Initial EC (µS/cm): 1546
Salinity (ppt): 2

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L (yes/no)

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	9.5	8.6			
Temp (°C) of 100%	16				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: **5.5-8.5**)								
Day 0	7.9	8.0						
Day 4	8.1	8.2						
EC (uS/cm)								
Day 0	442	1479						
Day 4	402	1335						
DO (mg/L) (**70-100% saturation at test temp.**)								
Day 0	8.6	8.6						
Day 4	8.8	8.8						
Temperature (°C) (range: **14-16°C**)								
Day 0	16	16						
Day 4	15	15						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.4	0.3
2	3.3	0.2
3	3.8	0.4
4	3.8	0.4
5	3.9	0.4
6	4.2	0.5
7	3.7	0.4
8	3.5	0.3
9	3.5	0.3
10	4.3	0.6

Loading Density (g/L): 0.2 (must be ≤0.5 g/L)
Mean Length (cm): 3.7
Length Range (cm): 3.3-4.3
Mean Weight (g): 0.4 (Must be ≥0.3g)
Weight Range: (g): 0.2-0.6

Test Organism Information

Batch 20221028TR
Source Smoky Trout Farm
Tank # 11
Days Held at 15± 2°C 33 (must be ≥14 days)
Percent stock mortality 0.43 (7 days prior to test, must be <2%)
Test Volume (L) 18

Comments :
96 hr: no ppt

Reviewed By: ML Date Reviewed: 2022/12/07

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS Client TEC 164 Reference 2223-0938

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/11/30	1420	KO/AG	2	YC
1	2022/12/01	0740	KO	-	cc
2	2022/12/02	1010	BS	2	EP

Sample Information

Initial pH: 7.9
Initial EC (µS/cm): 1540
Salinity (ppt): 2

Lab Code	CTL A	CTL B	CTL C	100 A	100 B	100 C				

pH (units) (range: 6.0-8.5)

day										
0	7.8	7.8	7.9	7.9	8.0	8.0				
2	8.2	8.2	8.2	8.3	8.3	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	428	444	443	1477	~~1545~~ 1544	1541				
2	430	443	443	1428	1508	1494				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.9	7.9	7.9				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	20	20	20				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar Mid C1 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 27
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0%
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 9.7
DO % of sample prior to aeration: 124 %
Duration of aeration (37.5 +/- 12.5 mL/min/L): 10 min
Hardness (mg $CaCO_3$/L) of 100% : 852
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 243
Temperature (°C) of sample prior to aeration: 20
Is aeration required (<40% or >100%)? Yes or No
Filtered with 110um screen prior to testing Yes or No
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or No

Dilution Water
Pail label / preparation date P3: 11/28
Hardness of dilution water (mg/L) 165

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Comments/Observations:
0 HR no ppt
48 HRS No ppt

Reviewed By: MG Date Reviewed: 2022/12/07

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC 164 Reference 2223-0938

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/11/30	1425	KO/AG	2	YC
1	2022/12/01	0730	AG	-	CC
2	2022/12/02	0946	BS	2	EP

Sample Information

Initial pH: 7.9
Initial EC (µS/cm): 1540
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	8.0	7.9	7.9	8.0	8.0	8.0				
2	8.1	8.2	8.2	8.3	8.3	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	444	448	448	1522	1566	1561				
2	438	442	450	1459	1528	1557				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar Wld E2
Jar(s) mortality 7 days prior to test (must be ≤25%) 10%

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 27
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0 %
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 10
DO % of sample prior to aeration: 110%
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20 min
Hardness (mg $CaCO_3$/L) of 100% : 852
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 243

Temperature (°C) of sample prior to aeration: 12
Is aeration required (<40% or >100%)? **Yes or No**
Filtered with 110um screen prior to testing **Yes or No**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Dilution Water
Pail label / preparation date P31 11/28
Hardness of dilution water (mg/L) 105

DO Levels (40-100% saturation) - corrected for altitude -
4.1 to 10.3 mg/L at 8°C
4.0 to 10.0 mg/L at 9°C
3.9 to 9.8 mg/L at 10°C
3.8 to 9.6 mg/L at 11°C
3.7 to 9.4 mg/L at 12°C

Comments/Observations:
0 HR NO ppt
48 HRS No ppt

Reviewed By: MG Date Reviewed: 2022/12/07

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS QS 2 Client TEC 164 Reference 2223-0938

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/11/30	1420	KO/AG	2	JC
1	2022/12/01	0740	KO	-	EC
2	2022/12/02	1010	BS	2	EP

Sample Information

Initial pH:	7.9
Initial EC (µS/cm):	1540
Salinity (ppt):	2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	7.9	7.9	7.9	8.0	8.0	8.0				
2	8.2	8.2	8.2	8.3	8.3	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	448	445	444	1484	1520	1533				
2	436	451	444	1458	1484	1494				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.9	7.9	7.9				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	20	20	20				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar Wed E2 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)

Days to first brood (≤12 days) 8

Average number of young produced (≥15 young) 24

Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - (must be ≤10%) 0%

Sample

DO (mg/L) of sample prior to aeration: 10.2

Temperature (°C) of sample prior to aeration: 20 RT NG

DO % of sample prior to aeration: 110%

Is aeration required (<40% or >100%)? **Yes or No**

Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20min

Filtered with 110um screen prior to testing **Yes or (No)**

Hardness (mg $CaCO_3$/L) of 100% : 852

Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or (No)**

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —

Alkalinity of 100% sample (mg $CaCO_3$/L): 243

Dilution Water

Pail label / preparation date PJ: 11/28

Hardness of dilution water (mg/L) 145

Antiscalant

Final Concentration in Sample: 2 mg/L

Volume of sample: 500mL Volume of antiscalant: 15.8µL

Comments/Observations:

0 HR no ppt

48 HRS No ppt.

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Reviewed By: MG Date Reviewed: 2022/12/07

APPENDIX C – Chain-of-custody form

Teck

Page 1 of 1

COC ID: 2022-11-28_SP03 | TURNAROUND TIME: Regular (default) | RUSH: NO

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name	WLC AWTF			Lab Name	Nautilus Environmental			Report Format / Distribution		Excel	PDF	EDD
Project Manager	Brett Mason			Lab Contact	Tamara Pomeroy			Email 1:	DL-WLC-Lab@teck.com	X	X	X
Email	brett.mason@teck.com			Email	tamara@nautilusenvironmental.ca			Email 2:	H20.lab.results@teck.com	X	X	X
Address	15 Km North HWY 43			Address	10823 27th Street SE			Email 3:	TeckCoal@equisonline.com			X
								Email 4:	Tricia.Hill@teck.com	X	X	X
City	Sparwood	Province	BC	City	Calgary	Province	AB	Email 5:	Marty.Hafke@teck.com	X	X	X
Postal Code	V0B 2G0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada	Email 6:				
Phone Number	250 425 4837			Phone Number	403 253 7121			PO number		VPO00860174		

2022/11/29
10:30
Monitoring
DC/SRS/AG
1x20L carboy, 3x1L bottles
NaS/NaL
Good Condition

SAMPLE DETAILS								ANALYSIS REQUESTED																		
								Please indicate below Filtered, Preserved or both (F, P, F/P)																		
Sample ID 2223-0436	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	ANALYSIS	NAUT_96Hr_RT_Single_Concentration_Toxicity Test	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 10C	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 20C	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 20C + Antiscalant														
LC_WTF_IN_2022-11-28_NP_0800	LC_WTF_IN	WS		11/28/2022	8:00	G	4		X	X	X	X	~1.7°C													

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	Date	Time	ACCEPTED BY/AFFILIATION	Date	Time
	Katrina Leboeuf	11/28/2022				

SERVICE REQUEST (rush - subject to availability)					
Regular (default)	X	Sampler's Name	Jesse Zakaria	Mobile #	
Priority (2-3 business days) - 50% surcharge					
Emergency (1 Business Day) - 100% surcharge		Sampler's Signature		Date/Time	28-Nov-22
For Emergency <1 Day, ASAP or Weekend - Contact ALS					

END OF REPORT

Acute Toxicity Test Results

Sample collected November 28, 2022

Final Report

December 16, 2022

Submitted to: **Teck Coal Ltd.**
Sparwood, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates			
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 20˚C test initiation
WL_BFWB_OUT_SP21_2022-11-28_N_0900/ 2223-0939	28-Nov-22 at 0900h	29-Nov-22 at 1030h	30-Nov-22 at 1435h	30-Nov-22 at 1440h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
WL_BFWB_OUT_SP21_2022-11-28_N_0900	1.6°C	830	256

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample	
	Rainbow trout	*Daphnia magna* 20˚C
WL_BFWB_OUT_SP21_2022-11-28_N_0900	100	100

Sample ID	Percent Immobility in 100 (% v/v)
	Daphnia magna 20˚C
WL_BFWB_OUT_SP21_2022-11-28_N_0900	0

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
WL_BFWB_OUT_SP21_2022-11-28_N_0900	Rainbow trout	None	None
	Daphnia magna	None	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	3.6 (3.3-4.0) g/L KCl[1]	6.5 (6.2-6.7) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.8 (3.0-4.8) g/L KCl	6.2 (5.3-7.2) g/L NaCl
Reference toxicant CV	7.8%	5.1%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, November 25, 2022; [2] Test Date November 30, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation

Report By:
Maryam Lo, BSc
Laboratory Biologist

Reviewed By:
Leila Oosterbroek, P Biol
Environmental Scientist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14 with February 2016 amendments
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC164 Reference 2223-0939 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022-11-30	1435 *	BS/ML	7	AM
1	2022-12-01	0900	MS	-	KO
2	2022-12-02	0950	MS	-	MAF
3	2022-12-03	0930	KC	-	FP
4	2022-12-04	1001	Kerm/ML	7	KO

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 7.4
Initial EC (µS/cm): 1694
Salinity (ppt): 2

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L (yes/no)

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	10.0	8.6			
Temp (°C) of 100%	16				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: **5.5-8.5**)								
Day 0	7.9	7.6						
Day 4	8.1	8.0						
EC (uS/cm)								
Day 0	435	1613						
Day 4	466	1515						
DO (mg/L) (**70-100% saturation at test temp.**)								
Day 0	8.8	8.6						
Day 4	8.8	8.8						
Temperature (°C) (range: **14-16°C**)								
Day 0	15	16						
Day 4	15	15						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.4	0.3
2	3.8	0.4
3	3.6	0.4
4	3.9	0.5
5	3.7	0.4
6	3.9	0.5
7	3.2	0.2
8	3.6	0.4
9	3.5	0.3
10	3.9	0.5

Loading Density (g/L): 0.2 (must be ≤0.5 g/L)
Mean Length (cm): 3.7
Length Range (cm): 3.2-3.9
Mean Weight (g): 0.4 (Must be ≥0.3g)
Weight Range: (g): 0.2-0.5

Test Organism Information

Batch 20221028TR
Source Smoky Trout Farm
Tank # 11
Days Held at 15± 2°C 33 (must be ≥14 days)
Percent stock mortality 0.43 (7 days prior to test, must be <2%)
Test Volume (L) 18

Comments :
96 hr: no PPT

Reviewed By: SS Date Reviewed: 20221121108

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS Client TEC 164 Reference 2223-0939

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/11/30	1440	KO/AG	2	YC
1	2022/12/01	0750	KO	-	CC
2	2022/12/02	0930	YC	3	EP

Sample Information

Initial pH: 7.4
Initial EC (µS/cm): 1694
Salinity (ppt): 2

Lab Code	CTL A	CTL B	CTL C	100 A	100 B	100 C

pH (units) (range: 6.0-8.5)

day	CTL A	CTL B	CTL C	100 A	100 B	100 C
0	8.0	8.0	7.9	7.7	7.8	7.8
2	8.2	8.1	8.2	8.3	8.3	8.3

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	447	444	451	1528	1626	1678
2	450	445	445	1639	1656	1651

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.9	7.9	7.9
2	7.9	7.9	7.9	7.9	7.9	7.9

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	20	20	20
2	20	20	20	20	20	20

Number Alive (I, immobile)

0	10	10	10	10	10	10
1	10	10	10	10	10	10
2	10	10	10	10	10	10

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar Wed C3 Jar(s) mortality 7 days prior to test (must be ≤25%) 0 %.

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 27
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0%.
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 11.6
DO % of sample prior to aeration: 147 %.
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 70 ml/L
Hardness (mg $CaCO_3$/L) of 100% : 830
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 256

Temperature (°C) of sample prior to aeration: 20
Is aeration required (<40% or >100%)? **Yes or No**
Filtered with 110um screen prior to testing **Yes or No**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Dilution Water
Pail label / preparation date PJ: 11/28
Hardness of dilution water (mg/L) ~~HB~~ 1605 AG

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Comments/Observations:
0 HR no ppt
48 HRS no ppt

Reviewed By: SS Date Reviewed: 2022/12/08

APPENDIX C – Chain-of-custody form

Teck

COC ID: 2022-11-28_SP21 **TURNAROUND TIME:** Regular (default) **RUSH:** NO

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name	WLC AWTF			Lab Name	Nautilus Environmental			Report Format / Distribution		Excel	PDF	EDD
Project Manager	Brett Mason			Lab Contact	Tamara Pomeroy			Email 1:	DL-WLC-Lab@teck.com	X	X	X
Email	brett.mason@teck.com			Email	tamara@nautilusenvironmental.ca			Email 2:	H20.lab.results@teck.com	X	X	X
Address	15 Km North HWY 43			Address	10823 27th Street SE			Email 3:	TeckCoal@equisonline.com			X
								Email 4:	Tricia.Hill@teck.com	X	X	X
City	Sparwood	Province	BC	City	Calgary	Province	AB	Email 5:	Marty.Hafke@teck.com	X	X	X
Postal Code	V0B 2G0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada	Email 6:				
Phone Number	250 425 4837			Phone Number	403 253 7121			PO number	VPO00860174			

SAMPLE DETAILS / **ANALYSIS REQUESTED**

2022/11/29
10:30
Manitoulin
JC/SRS/AG
3x20L ~~pa~~ carboys
3x1L bottles
NGS/NGJ
Good Condition

Please indicate below Filtered, Perserved or both (F, P, F/P)

Sample ID 2223-8439	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	ANALYSIS: NAUT_96Hr_RT_Single_Concentration_Toxicity Test	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 20C	
WL_BFWB_OUT_SP21_2022-11-28_N_0900	WL_BFWB_OUT_SP21	WS		11/28/2022	9:00	G	6	X	X	1.6°C

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	Date	Time	ACCEPTED BY/AFFILIATION	Date	Time
Shipment includes 2 extra 20 L bladders and 2 extra 1.2 L plastic bottles.	Katrina Leboeuf	11/28/2022				

SERVICE REQUEST (rush - subject to availability)

Regular (default)	X
Priority (2-3 business days) - 50% surcharge	
Emergency (1 Business Day) - 100% surcharge	
For Emergency <1 Day, ASAP or Weekend - Contact ALS	

Sampler's Name	Jesse Zakaria	Mobile #	
Sampler's Signature	[signature]	Date/Time	28-Nov-22

END OF REPORT

Acute Toxicity Test Results

Sample collected December 12, 2022

Final Report

January 6, 2023

Submitted to: **Teck Coal Ltd.**
Sparwood, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates					
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation	*Daphnia magna* 2 mg/L antiscalant test initiation
LC_WTF_IN_2022-12-12_NP_0800/ 2223-1079	12-Dec-22 at 0800h	13-Dec-22 at 0950h	14-Dec-22 at 1455h	14-Dec-22 at 1520h	14-Dec-22 at 1515h	14-Dec-22 at 1525h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
LC_WTF_IN_2022-12-12_NP_0800	3.5°C	791	243

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)
- *Daphnia magna* 48-h single concentration screening test (conducted with 2 mg/L antiscalant)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample			
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* 2 mg/L antiscalant
LC_WTF_IN_2022-12-12_NP_0800	100	100	100	100

Sample ID	Percent Immobility in 100 (% v/v)		
	Daphnia magna 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* 2 mg/L antiscalant
LC_WTF_IN_2022-12-12_NP_0800	0	0	0

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
LC_WTF_IN_2022-12-12_NP_0800	Rainbow trout	None	None
	Daphnia magna	None	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	4.6 (4.2-5.1) g/L KCl[1]	6.5 (6.2-6.7) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.8 (3.0-4.9) g/L KCl	6.2 (5.3-7.2) g/L NaCl
Reference toxicant CV	8.2%	5.1%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, December 13, 2022; [2] Test Date November 30, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation



Report By:
Lily Cole, B.Sc.
Laboratory Biologist



Reviewed By:
Emma Pedersen, BSc
Laboratory Biologist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Control/dilution water for antiscalant test	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L), Na_2SeO_4 (2 µg Se/L) and 2 mg/L antiscalant
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14 with February 2016 amendments
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14 with February 2016 amendments
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC164 Reference 2223-1079 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022-12-14	1455 *	BS/ML	7	AC
1	2022-12-15	0915	MS	-	EP
2	2022-12-16	0930	Karm	-	AM
3	2022-12-17	1150	MS	-	AC
4	2022-12-18	1030	ML/KO	7	kam

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 8.1
Initial EC (µS/cm): 1563
Salinity (ppt): 2

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L (yes/no)

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	9.5	8.8			
Temp (°C) of 100%	15				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	7.7	8.0						
Day 4	7.8	8.0						
EC (uS/cm)								
Day 0	440	1630						
Day 4	434	1559						
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	8.9	8.8						
Day 4	8.8	8.8						
Temperature (°C) (range: 14-16°C)								
Day 0	14	15						
Day 4	15	15						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.7	0.4
2	3.6	0.4
3	3.1	0.3
4	3.5	0.4
5	3.3	0.3
6	3.4	0.3
7	3.0	0.3
8	3.9	0.5
9	3.6	0.4
10	4.3	0.7

Loading Density (g/L): 0.2 (must be ≤0.5 g/L)
Mean Length (cm): 3.5
Length Range (cm): 3.0-4.3
Mean Weight (g): 0.4 (Must be ≥0.3g)
Weight Range: (g): 0.3-0.7

Test Organism Information

Batch 20221012TR
Source Sam Livingston
Tank # 5
Days Held at 15± 2°C 22 (must be ≥14 days)
Percent stock mortality 0.58 (7 days prior to test, must be <2%)
Test Volume (L) 18

Comments :
96 hr: No ppt

Reviewed By: CW Date Reviewed: DEC 20 2022

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS Client TEC 164 Reference 2223-1079

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/12/14	1515 LC	~~AM~~/DM	2	LCM
1	2022/12/15	0830	KO	-	EP
2	2022/12/16	0820	BS	2	OC

Sample Information

Initial pH: 8.1
Initial EC (µS/cm): 1567
Salinity (ppt): 2

Lab Code	CTL A	CTL B	CTL C	100 A	100 B	100C

pH (units) (range: 6.0-8.5)

day										
0	~~7.98~~ LC 8.0	7.8	7.8	8.0	8.0	8.0				
2	8.0	8.0	8.0	8.2	8.2	8.2				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	~~403~~ LC 411	418	419	1568	1588	1584				
2	401	418	422	1495	1562	1579				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.9	7.9	7.9				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	20	20	20				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar Wed D 12 LC
Jar(s) mortality 7 days prior to test (must be ≤25%) 0 %

QA (previous month)
Days to first brood (≤12 days) LC 8 9
Average number of young produced (≥15 young) ~~25~~ LC 38
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0%
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 9.6
Temperature (°C) of sample prior to aeration: 20°C
DO % of sample prior to aeration: 119%
Is aeration required (<40% or >100%)? (Yes) or No
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20 mins
Filtered with 110um screen prior to testing Yes or (No)
Hardness (mg $CaCO_3$/L) of 100% : 791
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 243

Dilution Water
Pail label / preparation date 5:12112
Hardness of dilution water (mg/L) 170

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Comments/Observations:
0 HR NO ppt
48 HRS No ppt

Reviewed By: CW Date Reviewed: DEC 2 0 2022

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC 164 Reference 2223-1079

Test Log

Day	Date	Time	Technician (LC/DM)	Chem. Cart	Daily Data Review
0	2022/12/14	1520	~~AM/DM~~ LC	2	KTM
1	2022/12/15	0825	KO	-	EP
2	2022/12/16	0810	BS	2	CC

Sample Information

Initial pH:	8.1
Initial EC (µS/cm):	1563
Salinity (ppt):	2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				
day				pH (units) (range: 6.0-8.5)						
0	7.9	7.8	7.8	8.1	8.1	8.1				
2	7.9	7.9	7.9	8.1	8.1	8.1				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

				EC (uS/cm)						
0	414	415	419	1574	1599	1594				
2	412	430	423	1543	1588	1604				

				DO (mg/L) (**40-100% saturation at test temp.**)						
0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

				Temperature (°C) (range: **8-12 °C**)						
0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

				Number Alive (I, immobile)						
0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar Wed D2 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)

Days to first brood (≤12 days) 9

Average number of young produced (≥15 young) 38

Were test treatments randomized on test tray? Yes / No

Control Validity Criteria

Mean % mortality at 48 hours - (must be ≤10%) 0%

Sample

DO (mg/L) of sample prior to aeration: 10.6

Temperature (°C) of sample prior to aeration: 12°C

DO % of sample prior to aeration: 111%

Is aeration required (<40% or >100%)? **Yes or No**

Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20 mins

Filtered with 110um screen prior to testing **Yes or No**

Hardness (mg $CaCO_3$/L) of 100% : 741

Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —

Alkalinity of 100% sample (mg $CaCO_3$/L): 243

Dilution Water

Pail label / preparation date 5:12/12

Hardness of dilution water (mg/L) 170

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C

4.0 to 10.0 mg/L at 9°C

3.9 to 9.8 mg/L at 10°C

3.8 to 9.6 mg/L at 11°C

3.7 to 9.4 mg/L at 12°C

Comments/Observations:

0 HR no ppt

48 HRS No ppt

Reviewed By: CW Date Reviewed: ~~DEC 0 2022~~ DEC 2 0 2022 CW

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS 2 Client TEC 164 Reference 2223-1065 79 LC

Test Log

Day	Date	Time	Technician LC/DM	Chem. Cart	Daily Data Review
0	2022/12/14	1525	~~AM/DM~~ LC	2	VM
1	2022/12/15	0745	KO	-	EP
2	2022/12/16	0820	BS	2	CC

Sample Information

Initial pH:	8.1
Initial EC (µS/cm):	1563
Salinity (ppt):	2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				
day	pH (units) (range: 6.0-8.5)									
0	7.9	7.8	7.8	8.0	8.0	8.0				
2	8.0	8.0	8.0	8.2	8.2	8.2				
	The pH of the sample was not adjusted prior to test setting, unless noted in the comments below									
	EC (uS/cm)									
0	414	418	419	1559	1588	1588				
2	404	423	422	1485	1568	1572				
	DO (mg/L) (**40-100% saturation at test temp.**)									
0	7.9	7.9	7.9	7.9	7.9	7.9				
2	7.9	7.9	7.9	7.9	7.9	7.9				
	Temperature (°C) (range: **18-22 °C**)									
0	20	20	20	20	20	20				
2	20	20	20	20	20	20				
	Number Alive (I, immobile)									
0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar WedE4 Jar(s) mortality 7 days prior to test (must be ≤25%) 16%

QA (previous month)

Days to first brood (≤12 days) 8

Average number of young produced (≥15 young) 32

Were test treatments randomized on test tray? Yes / No

Control Validity Criteria

Mean % mortality at 48 hours - (must be ≤10%) 0%

Sample

DO (mg/L) of sample prior to aeration: 9.9

Temperature (°C) of sample prior to aeration: 20°C

DO % of sample prior to aeration: 122%

Is aeration required (<40% or >100%)? **Yes or No**

Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20mins

Filtered with 110um screen prior to testing **Yes or No**

Hardness (mg $CaCO_3$/L) of 100% : 791

Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —

Alkalinity of 100% sample (mg $CaCO_3$/L): 243

Dilution Water

Pail label / preparation date 5:12/12

Hardness of dilution water (mg/L) 170

Antiscalant

Final Concentration in Sample: 2mg/L

Volume of sample: 500mL Volume of antiscalant: 15.80

Comments/Observations:

0 HR no ppt

48 HRS No ppt

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C

3.2 to 8.1 mg/L at 19°C

3.2 to 7.9 mg/L at 20°C

3.1 to 7.7 mg/L at 21°C

3.0 to 7.6 mg/L at 22°C

Reviewed By: CW Date Reviewed: DEC 20 2022

APPENDIX C – Chain-of-custody form

Teck

Page 1 of 1

COC ID: 2022-12-12_SP03 | **TURNAROUND TIME:** Regular (default) | **RUSH:** NO

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO			
Facility Name	WLC AWTF			Lab Name	Nautilus Environmental			Report Format / Distribution		Excel	PDF	EDD
Project Manager	Brett Mason			Lab Contact	Tamara Pomeroy			Email 1:	DL-WLC-Lab@teck.com	X	X	X
Email	brett.mason@teck.com			Email	tamara@nautilusenvironmental.ca			Email 2:	H20.lab.results@teck.com	X	X	X
Address	15 Km North HWY 43			Address	10823 27th Street SE			Email 3:	TeckCoal@equisonline.com			X
								Email 4:	Tricia.Hill@teck.com	X	X	X
City	Sparwood	Province	BC	City	Calgary	Province	AB	Email 5:	Marty.Hafke@teck.com	X	X	X
Postal Code	V0B 2G0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada	Email 6:				
Phone Number	250 425 4837			Phone Number	403 253 7121			PO number		VPO00860174		

2022/12/13
09:50
Monitoring
3C/SRS/ML
1x20L carboy
3x1L bottles
N6S/NoI
Good Condition
3.5°C

SAMPLE DETAILS								ANALYSIS REQUESTED																	
								Please indicate below Filtered, Perserved or both (F, P, F/P)																	
Sample ID 2223-1079	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	ANALYSIS	NAUT_96Hr_RT_Single_Concentration_Toxicity Test	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 10C	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 20C	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 20C + Antiscalant													
LC_WTF_IN_2022-12-12_NP_0800	LC_WTF_IN	WS		12/12/2022	8:00	G	4		X	X	X	X													

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	Date	Time	ACCEPTED BY/AFFILIATION	Date	Time
	Katrina Leboeuf	12/12/2022				

SERVICE REQUEST (rush - subject to availability)					
Regular (default)	X	Sampler's Name	Mason Reimer	Mobile #	
Priority (2-3 business days) - 50% surcharge		Sampler's Signature		Date/Time	12-Dec-22
Emergency (1 Business Day) - 100% surcharge					
For Emergency <1 Day, ASAP or Weekend - Contact ALS					

END OF REPORT

Acute Toxicity Test Results

Sample collected December 12, 2022

Final Report

January 6, 2023

Submitted to: **Teck Coal Ltd.**
Sparwood, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates			
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 20˚C test initiation
WL_BFWB_OUT_SP21_2022-12-12_N_0900/ 2223-1080	12-Dec-22 at 0900h	13-Dec-22 at 0950h	14-Dec-22 at 1500h	14-Dec-22 at 1530h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
WL_BFWB_OUT_SP21_2022-12-12_N_0900	4.3°C	801	172

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample	
	Rainbow trout	*Daphnia magna* 20˚C
WL_BFWB_OUT_SP21_2022-12-12_N_0900	100	100

Sample ID	Percent Immobility in 100 (% v/v)
	Daphnia magna 20˚C
WL_BFWB_OUT_SP21_2022-12-12_N_0900	0

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
WL_BFWB_OUT_SP21_2022-12-12_N_0900	Rainbow trout	None	None
	Daphnia magna	None	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	4.6 (4.2-5.1) g/L KCl[1]	6.5 (6.2-6.7) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.8 (3.0-4.9) g/L KCl	6.2 (5.3-7.2) g/L NaCl
Reference toxicant CV	8.2%	5.1%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, December 13, 2022; [2] Test Date November 30, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation

Report By:
Maryam Lo, BSc
Laboratory Biologist

Reviewed By:
Emma Pedersen, BSc
Laboratory Biologist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14 with February 2016 amendments
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC164 Reference 2223-1080 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022-12-14	1500 *	BS/ML	7	JC
1	2022-12-15	0915	MS	-	EP
2	2022-12-16	0900	Karm	-	KM
3	2022-12-17	1155	MS	-	JC
4	2022-12-18	1030	ML/KD	7	KM

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 7.5
Initial EC (µS/cm): 1713
Salinity (ppt): 3

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L : **yes/no**

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	11.9	8.8			
Temp (°C) of 100%	16				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	7.7	7.4						
Day 4	7.8	8.0						
EC (uS/cm)								
Day 0	440	1665						
Day 4	439	1695						
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	8.9	8.8						
Day 4	8.8	8.8						
Temperature (°C) (range: 14-16°C)								
Day 0	14	15						
Day 4	15	15						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	4.1	0.6
2	4.1	0.6
3	4.0	0.5
4	3.9	0.6
5	3.9	0.6
6	4.0	0.6
7	4.2	0.7
8	4.0	0.6
9	4.7	0.8
10	4.2	0.6

Loading Density (g/L): 0.3 (must be ≤0.5 g/L)
Mean Length (cm): 4.1
Length Range (cm): 3.8-4.7
Mean Weight (g): 0.6 (Must be ≥0.3g)
Weight Range: (g): ~~0.3-0.7~~ 0.5-0.8

Test Organism Information

Batch 20221012TR
Source Sam Livingston
Tank # 5
Days Held at 15± 2°C 22 (must be ≥14 days)
Percent stock mortality 0.58 (7 days prior to test, must be <2%)
Test Volume (L) 18

Comments :
96 hr: No ppt

Reviewed By: CW Date Reviewed: DEC 20 2022

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS Client TEC 164 Reference 2223-1080

Test Log (LC | DM)

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/12/14	1530	~~AM/DM~~ LC	2	DM
1	2022/12/15	0750	KO	-	EP
2	2022/12/16	0820	LC	2	DM

Sample Information

Initial pH: 7.5
Initial EC (µS/cm): 1713
Salinity (ppt): ~~3~~ 3 AQ

Lab Code	CTL A	CTL B	CTL C	100 A	100 B	100C

pH (units) (range: 6.0-8.5)

day										
0	7.9	7.9	7.8	8.0	8.0	8.0				
2	8.0	8.0	8.0	8.1	8.1	8.1				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	418	419	419	1622	1643	1641				
2	427	419	418	1616	1638	1631				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.9	7.9	7.9				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	20	20	20				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar WedE4 Jar(s) mortality 7 days prior to test (must be ≤25%) 16%

QA (previous month)

Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 32
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - 0%
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 14.0 Temperature (°C) of sample prior to aeration: 20°C
DO % of sample prior to aeration: 175% Is aeration required (<40% or >100%)? **Yes or No**
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20mins Filtered with 110um screen prior to testing **Yes or No**
Hardness (mg $CaCO_3$/L) of 100% : 801 Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 172

Dilution Water

Pail label / preparation date 5:12/12
Hardness of dilution water (mg/L) 170

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Comments/Observations:

0 HR no ppt
48 HRS no ppt

Reviewed By: CW Date Reviewed: DEC 20 2022

APPENDIX C – Chain-of-custody form

Teck

COC ID: 2022-12-12_SP21 **TURNAROUND TIME:** Regular (default) **RUSH:** NO

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name	WLC AWTF			Lab Name	Nautilus Environmental			Report Format / Distribution		Excel	PDF	EDD
Project Manager	Brett Mason			Lab Contact	Tamara Pomeroy			Email 1:	DL-WLC-Lab@teck.com	X	X	X
Email	brett.mason@teck.com			Email	tamara@nautilusenvironmental.ca			Email 2:	H20.lab.results@teck.com	X	X	X
Address	15 Km North HWY 43			Address	10823 27th Street SE			Email 3:	TeckCoal@equisonline.com			X
								Email 4:	Tricia.Hill@teck.com	X	X	X
City	Sparwood	Province	BC	City	Calgary	Province	AB	Email 5:	Marty.Hafke@teck.com	X	X	X
Postal Code	V0B 2G0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada	Email 6:				
Phone Number	250 425 4837			Phone Number	403 253 7121			PO number	VPO00860174			

SAMPLE DETAILS / **ANALYSIS REQUESTED**

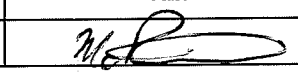
2022/12/13
09:50
Manitourlin
JC/SPS/ML
~~3x 2x~~ 3x20L carboys
3x1L bottles
NoS/NoP
Good Condition
4.3°C

Please indicate below Filtered, Perserved or both (F, P, F/P)

Sample ID 2223-1050	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	ANALYSIS: NAUT_96Hr_RT_Single_Concentration_Toxicity Test	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 20C
WL_BFWB_OUT_SP21_2022-12-12_N_0900	WL_BFWB_OUT_SP21	WS		12/12/2022	9:00	G	6	X	X

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	Date	Time	ACCEPTED BY/AFFILIATION	Date	Time
Shipment includes 2 extra 20 L bladders and 2 extra 1.2 L plastic bottles.	Katrina Leboeuf	12/12/2022				

SERVICE REQUEST (rush - subject to availability)					
Regular (default)	X	Sampler's Name	Mason Reimer	Mobile #	
Priority (2-3 business days) - 50% surcharge					
Emergency (1 Business Day) - 100% surcharge		Sampler's Signature	[signature]	Date/Time	12-Dec-22
For Emergency <1 Day, ASAP or Weekend - Contact ALS					



END OF REPORT

Acute Toxicity Test Results

Sample collected December 27, 2022

Final Report

January 13, 2023

Submitted to: **Teck Coal Ltd.**
Sparwood, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates					
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation	*Daphnia magna* antiscalant test initiation
LC_WTF_IN_2022-12-27_NP_0800 / 2223-1209	27-Dec-22 at 0800h	29-Dec-22 at 1510h	29-Dec-22 at 1430h	29-Dec-22 at 1515h	29-Dec-22 at 1515h	29-Dec-22 at 1530h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
LC_WTF_IN_2022-12-27_NP_0800	5.6°C	942	274

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)
- *Daphnia magna* 48-h single concentration screening test (conducted with 2 mg/L antiscalant)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample			
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
LC_WTF_IN_2022-12-27_NP_0800	100	97	100	100

Sample ID	Percent Immobility in 100 (% v/v)		
	Daphnia magna 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
LC_WTF_IN_2022-12-27_NP_0800	3	0	0

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
LC_WTF_IN_2022-12-27_NP_0800	Rainbow trout	None	None
	Daphnia magna	None	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	4.0 (3.4-4.5) g/L KCl[1]	6.8 (6.3-7.2) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.8 (3.0-4.9) g/L KCl	6.2 (5.3-7.3) g/L NaCl
Reference toxicant CV	8.1%	5.3%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date December 21, 2022; [2] Test date December 19, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation





Report By:
Kiara O'Shea, BSc
Laboratory Biologist

Reviewed By:
Leila Oosterbroek, P Biol
Environmental Scientist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Control/dilution water for antiscalant test	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L), Na_2SeO_4 (2 µg Se/L) and 2 mg/L antiscalant
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14 with February 2016 amendments
Statistical software	None
Test endpoints	Mean percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14 with February 2016 amendments
Statistical software	None
Test endpoints	Mean percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC164 Reference 2223-1209 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022-12-29	1430 *	BS/KCRM	7	MAF
1	2022-12-30	0935	KCRM	-	EP
2	2022-12-31	0900	NZ	-	EP
3	2023-01-01	0900	MAF	-	KCRM
4	2023-01-02	1035	KCRM/CC	7	MAF

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 8.2
Initial EC (µS/cm): 1545
Salinity (ppt): 2

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L (yes/no)

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	10.4	8.9			
Temp (°C) of 100%	8				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	8.1	8.1						
Day 4	8.2	8.3						
EC (uS/cm)								
Day 0	459	1619						
Day 4	455	1569						
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	8.9	8.9						
Day 4	8.8	8.8						
Temperature (°C) (range: 14-16°C)								
Day 0	14	14						
Day 4	15	15						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.4	0.3
2	4.2	0.5
3	3.6	0.3
4	3.5	0.3
5	3.9	0.4
6	3.8	0.4
7	4.6	0.8
8	3.5	0.3
9	4.0	0.4
10	4.2	0.5

Loading Density (g/L): 0.2 (must be ≤0.5 g/L)
Mean Length (cm): 3.9
Length Range (cm): 3.4-4.6
Mean Weight (g): 0.4 (Must be ≥0.3g)
Weight Range: (g): 0.3-0.8

Test Organism Information

Batch 20220921TR
Source Trout Lodge
Tank # 4
Days Held at 15± 2°C 77 (must be ≥14 days)
Percent stock mortality 0.32 (7 days prior to test, must be <2%)
Test Volume (L) 18

Comments :
96 hr: No ppt

Reviewed By: MAF Date Reviewed: 23/01/01

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC 164 Reference 2223-1209

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/12/29	1515	LC/AM	2	CC
1	2022/12/30	10.35	AM	-	EP
2	2022/12/31	1436	AM	2	EP

Sample Information

Initial pH: 8.2
Initial EC (µS/cm): 1545
Salinity (ppt): 1

Lab Code	CTL A	CTL B	CTL C	100 A	100 B	100 C

pH (units) (range: 6.0-8.5)

day										
0	7.9	7.9	7.9	8.0	8.0	8.1				
2	8.2	8.2	8.1	8.3	8.3	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	400	409	410	1512	1532	1532				
2	405	413	419	1443	1504	1526				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	8.6	8.6	8.6				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	19	19	19				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar WedE3 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 23
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours 0%
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 10.0
DO % of sample prior to aeration: 123.1
Duration of aeration (37.5 +/- 12.5 mL/min/L): 20mins
Hardness (mg $CaCO_3$/L) of 100% : 242
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) -
Alkalinity of 100% sample (mg $CaCO_3$/L): 274

Temperature (°C) of sample prior to aeration: 19°C
Is aeration required (<40% or >100%)? (Yes) or No
Filtered with 110um screen prior to testing Yes or (No)
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)

Dilution Water
Pail label / preparation date DP:12123
Hardness of dilution water (mg/L) 185

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Comments/Observations:
0 Hr: NO ppt
48 Hr: No ppt

Reviewed By: MAF Date Reviewed: 23/01/01

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method: DAS 10 | Client: TEC 164 | Reference: 2223-1209

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/12/29	1515	LC/AM	2	CC
1	2022/12/30	1025	AM	-	EP
2	2022/12/31	0820	AM/KCRM	2	EP

Sample Information

Initial pH:	8.2
Initial EC (µS/cm):	1545
Salinity (ppt):	2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	8.0	7.9	7.9	8.1	8.1	8.1				
2	8.2	8.1	8.1	8.3	8.3	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	408	406	406	1531	1538	1536				
2	450	419	418	1491	1557	1558				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	9	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar: WeDE3 — Jar(s) mortality 7 days prior to test (must be ≤25%): 0%

QA (previous month)

Days to first brood (≤12 days): 8

Average number of young produced (≥15 young): 23

Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - (must be ≤10%): 0%

Sample

DO (mg/L) of sample prior to aeration: 10.1 — Temperature (°C) of sample prior to aeration: 12°C

DO % of sample prior to aeration: 110% — Is aeration required (<40% or >100%)? (Yes) or No

Duration of aeration (37.5 +/- 12.5 mL/min/L): 20mins — Filtered with 110um screen prior to testing (Yes) or No

Hardness (mg $CaCO_3$/L) of 100%: 942 — Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L): —

Alkalinity of 100% sample (mg $CaCO_3$/L): 274

Dilution Water

Pail label / preparation date: P2: 12/23

Hardness of dilution water (mg/L): 185

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

Comments/Observations:

0Hr: NO PPT

48Hr: NO PPT

Reviewed By: MAE — Date Reviewed: 23/01/01

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS 2 Client TEC 164 Reference 2223-1209

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/12/29	1530	LC/AM	2	EP
1	2022/12/30	1030	DM	-	EP
2	2022/12/31	0955	AM	2	EP

Sample Information

Initial pH:	8.2
Initial EC (µS/cm):	1545
Salinity (ppt):	2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	8.0	7.9	7.9	8.0	8.1	8.1				
2	8.2	8.2	8.1	8.3	8.3	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	398	410	410	1521	1533	1531				
2	410	418	416	1517	1495	1508				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	8.7	8.7	8.7				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	18	18	18				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar Wed 04 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)

Days to first brood (≤12 days) 8

Average number of young produced (≥15 young) 26

Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - (must be ≤10%) 0%

Sample

DO (mg/L) of sample prior to aeration: 10.1 Temperature (°C) of sample prior to aeration: 18°C

DO % of sample prior to aeration: 121 Is aeration required (<40% or >100%)? (Yes) or No

Duration of aeration (37.5 +/- 12.5 mL/min/L): 20 mins Filtered with 110um screen prior to testing Yes or (No)

Hardness (mg $CaCO_3$/L) of 100%: 942 Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —

Alkalinity of 100% sample (mg $CaCO_3$/L): 274

Dilution Water

Pail label / preparation date P2:12123

Hardness of dilution water (mg/L) 185

Antiscalant

Final Concentration in Sample: 2 mg/L

Volume of sample: 500 mL Volume of antiscalant: 15.8

Comments/Observations:

0Hr: no ppt

48Hr: no ppt

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Reviewed By: MM Date Reviewed: 23/01/01

APPENDIX C – Chain-of-custody form

Teck

COC ID: 2022-12-27_SP03 **TURNAROUND TIME:** Regular (default) **RUSH:** NO

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name	WLC AWTF			Lab Name	Nautilus Environmental			Report Format / Distribution		Excel	PDF	EDD
Project Manager	Brett Mason			Lab Contact	Tamara Pomeroy			Email 1:	DL-WLC-Lab@teck.com	X	X	X
Email	brett.mason@teck.com			Email	tamara@nautilusenvironmental.ca			Email 2:	H20.lab.results@teck.com	X	X	X
Address	15 Km North HWY 43			Address	10823 27th Street SE			Email 3:	TeckCoal@equisonline.com			X
								Email 4:	Tricia.Hill@teck.com	X	X	X
City	Sparwood	Province	BC	City	Calgary	Province	AB	Email 5:	Marty.Hafke@teck.com	X	X	X
Postal Code	V0B 2G0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada	Email 6:				
Phone Number	250 425 4837			Phone Number	403 253 7121			PO number	VPO00860174			

SAMPLE DETAILS / **ANALYSIS REQUESTED**

2223-1209
2022/12/29
15:40
Mahitoulin
SRS
1x20L carboy, 3x1L bottles
NoS NoI
Good Condition
5.6°C

Please indicate below Filtered, Perserved or both (F, P, F/P)

Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	ANALYSIS: NAUT_96Hr_RT_Single_Concentration_Toxicity Test	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 10C	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 20C	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 20C + Antiscalant
LC_WTF_IN_2022-12-27_NP_0800	LC_WTF_IN	WS		12/27/2022	8:00	G	4	X	X	X	X

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	Date	Time	ACCEPTED BY/AFFILIATION	Date	Time
	Katrina Leboeuf	12/27/2022				

SERVICE REQUEST (rush - subject to availability)					
Regular (default)	X	Sampler's Name	Alvin Frazier	Mobile #	
Priority (2-3 business days) - 50% surcharge					
Emergency (1 Business Day) - 100% surcharge		Sampler's Signature	Alvin Frazier	Date/Time	27-Dec-22
For Emergency <1 Day, ASAP or Weekend - Contact ALS					

END OF REPORT

Acute Toxicity Test Results

Sample collected December 27, 2022

Final Report

January 13, 2023

Submitted to: **Teck Coal Ltd.**
Sparwood, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates			
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 20˚C test initiation
WL_BFWB_OUT_SP21_2022-12-27_N_0900 / 2223-1210	27-Dec-22 at 0900h	29-Dec-22 at 1510h	29-Dec-22 at 1430h	29-Dec-22 at 1520h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
WL_BFWB_OUT_SP21_2022-12-27_N_0900	7.2°C	941	237

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample	
	Rainbow trout	*Daphnia magna* 20˚C
WL_BFWB_OUT_SP21_2022-12-27_N_0900	100	100

Sample ID	Percent Immobility in 100 (% v/v)
	Daphnia magna 20˚C
WL_BFWB_OUT_SP21_2022-12-27_N_0900	0

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
WL_BFWB_OUT_SP21_2022-12-27_N_0900	Rainbow trout	None	None
	Daphnia magna	None	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	4.0 (3.4-4.5) g/L KCl[1]	6.8 (6.3-7.2) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.8 (3.0-4.9) g/L KCl	6.2 (5.3-7.3) g/L NaCl
Reference toxicant CV	8.1%	5.3%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date December 21, 2022; [2] Test date December 19, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation





Report By:
Kiara O'Shea, BSc
Laboratory Biologist

Reviewed By:
Leila Oosterbroek, P Biol
Environmental Scientist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5-gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14 with February 2016 amendments
Statistical software	None
Test endpoints	Mean percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC164 Reference 2223-1210 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022-12-29	1430 *	BS/KCRM	7	MAF
1	2022-12-30	0935	KCRM	-	EP
2	2022-12-31	0940	NZ	-	EP
3	2023-01-01	0800	MMF	-	CC
4	2023-01-02	1040	KCRM/CC	7	MAF

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 7.6
Initial EC (µS/cm): 1607
Salinity (ppt): 2

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L (yes)/no

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	13.2	8.9			
Temp (°C) of 100%	8				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	7.9	7.7						
Day 4	8.2	8.4						
EC (uS/cm)								
Day 0	376	1697						
Day 4	401	1684						
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	8.9	8.9						
Day 4	8.8	8.8						
Temperature (°C) (range: 14-16°C)								
Day 0	14	14						
Day 4	15	15						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	4.5	0.7
2	3.8	0.4
3	4.0	0.5
4	3.9	0.5
5	3.8	0.4
6	4.0	0.5
7	3.4	0.3
8	3.6	0.4
9	3.4	0.3
10	3.7	0.4

Loading Density (g/L): 0.2 (must be ≤0.5 g/L)
Mean Length (cm): 3.8
Length Range (cm): 3.4-4.5
Mean Weight (g): 0.4 (Must be ≥0.3g)
Weight Range: (g): 0.3-0.7

Test Organism Information

Batch 20220921TR
Source Trout Lodge
Tank # 4
Days Held at 15± 2°C 7 (must be ≥14 days)
Percent stock mortality 0.32 (7 days prior to test, must be <2%)
Test Volume (L) 18

Comments :
96 hr: no ppt

Reviewed By: MAF Date Reviewed: 23/01/01

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC 164 Reference 2223-1210

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/12/29	1520	LC/AM	2	CC
1	2022/12/30	1030	DM	-	EP
2	2022/12/31	0945	AM	2	EP

Sample Information

Initial pH: 7.6
Initial EC (µS/cm): 1607
Salinity (ppt): 2

Lab Code	CTL A	CTL B	CTL C	100 A	100 B	100 C				

pH (units) (range: 6.0-8.5)

day										
0	8.0	7.9	7.9	7.7	7.7	7.7				
2	8.1	8.1	8.1	8.2	8.2	8.2				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	404	410	410	1579	1604	1598				
2	393	414	416	1489	1586	1602				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	8.8	8.8	8.8				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	19	19	19				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar WedN3 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 26
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0%
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 13.9
Temperature (°C) of sample prior to aeration: 19°C
DO % of sample prior to aeration: 171%
Is aeration required (<40% or >100%)? **(Yes) or No**
Duration of aeration (37.5 +/- 12.5 mL/min/L): 20mins
Filtered with 110um screen prior to testing **Yes or (No)**
Hardness (mg $CaCO_3$/L) of 100% : 941
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or (No)**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 237

Dilution Water
Pail label / preparation date D2: 12123
Hardness of dilution water (mg/L) 185

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Comments/Observations:
0 Hr: no ppt
48 Hr: no ppt

Reviewed By: MAF Date Reviewed: 23/01/01

APPENDIX C – Chain-of-custody form

Teck

Page 1 of 1

COC ID: 2022-12-27_SP21 | TURNAROUND TIME: Regular (default) | RUSH: NO

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name	WLC AWTF			Lab Name	Nautilus Environmental			Report Format / Distribution		Excel	PDF	EDD
Project Manager	Brett Mason			Lab Contact	Tamara Pomeroy			Email 1:	DL-WLC-Lab@teck.com	X	X	X
Email	brett.mason@teck.com			Email	tamara@nautilusenvironmental.ca			Email 2:	H20.lab.results@teck.com	X	X	X
Address	15 Km North HWY 43			Address	10823 27th Street SE			Email 3:	TeckCoal@equisonline.com			X
								Email 4:	Tricia.Hill@teck.com	X	X	X
City	Sparwood	Province	BC	City	Calgary	Province	AB	Email 5:	Marty.Hafke@teck.com	X	X	X
Postal Code	V0B 2G0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada	Email 6:				
Phone Number	250 425 4837			Phone Number	403 253 7121			PO number		VPO00860174		

2223-1210
2022/12/29
15:40
Manitoulin
SRS
3x20 L carboys, 3x1 L bottles
Nos NoI
Good condition
7.2°C

SAMPLE DETAILS								ANALYSIS REQUESTED																
								Please indicate below Filtered, Perserved or both (F, P, F/P)																
Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	NAUT_96Hr_RT_Single_Concentration_Toxicity Test	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 20C															
WL_BFWB_OUT_SP21_2022-12-27_N_0900	WL_BFWB_OUT_SP21	WS		12/27/2022	9:00	G	6	X	X															

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	Date	Time	ACCEPTED BY/AFFILIATION	Date	Time
Shipment includes 2 extra 20 L bladders and 2 extra 1.2 L plastic bottles.	Katrina Leboeuf	12/27/2022				

SERVICE REQUEST (rush - subject to availability)					
Regular (default)	X	Sampler's Name	Alvin Frazier	Mobile #	
Priority (2-3 business days) - 50% surcharge		Sampler's Signature	Alvin Frazer	Date/Time	27-Dec-22
Emergency (1 Business Day) - 100% surcharge					
For Emergency <1 Day, ASAP or Weekend - Contact ALS					

END OF REPORT

Acute Toxicity Test Results

Sample collected January 4, 2022

Final Report

January 16, 2022

Submitted to: **Teck Coal Ltd.**
Sparwood, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates					
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation	*Daphnia magna* antiscalant test initiation
F2_BPO_WG_2022-01-04_N / 2122-1021-01	4-Jan-22 at 1020h	5-Jan-22 at 1045h	6-Jan-22 at 1520h	5-Jan-22 at 1330h	5-Jan-22 at 1400h	-
F2_BPO_WG_2022-01-04_N-AS / 2122-1021-02	4-Jan-22 at 1021h	5-Jan-22 at 1045h	-	-	-	5-Jan-22 at 1355h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
F2_BPO_WG_2022-01-04_N	1.6°C	969	352
F2_BPO_WG_2022-01-04_N-AS	2.0°C	969	352

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)
- *Daphnia magna* 48-h single concentration screening test (conducted with 20 mg/L antiscalant)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample			
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
F2_BPO_WG_2022-01-04_N	100	100	100	-
F2_BPO_WG_2022-01-04_N-AS	-	-	-	100

Sample ID	Percent Immobility in 100 (% v/v)		
	***Daphnia magna* 10˚C**	***Daphnia magna* 20˚C**	***Daphnia magna* antiscalant**
F2_BPO_WG_2022-01-04_N	0	0	-
F2_BPO_WG_2022-01-04_N-AS	-	-	0

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
F2_BPO_WG_2022-01-04_N	Rainbow trout	Precipitate observed on test vessel	None
	Daphnia magna	Surficial precipitate observed in 20˚C test vessel	None
F2_BPO_WG_2022-01-04_N-AS	*Daphnia magna*	None	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	3.3 (2.8-3.9) g/L KCl[1]	6.3 (5.9-6.7) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.4 (2.6 -4.5) g/L KCl	6.4 (5.5-7.4) g/L NaCl
Reference toxicant CV	9.1%	5.1%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, December 30, 2021; [2] Test Date January 4, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation



Report By:
Mia Fearey, BSc
Biologist



Reviewed By:
Kayla Knol, P. Biol.
Senior Biologist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ± 1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Control/dilution water for antiscalant test	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L), Na_2SeO_4 (2 µg Se/L) and 20 mg/L antiscalant
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC164 Reference 2122-1021-01 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022-01-06	1520 *	EP / CH / DW	1	KL
1	2022-01-07	0930	CH	-	CH
2	2022-01-08	0845	CH	-	DN
3	2022-01-09	0900	SL	-	KL
4	2022-01-10	0930	MF/CH	1	ST

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 7.5
Initial EC (µS/cm): 1839
Salinity (ppt): 1

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L : yes/no

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	8.8	8.8			
Temp (°C) of 100%	15				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	8.0	7.7						
Day 4	8.2	8.3						
EC (uS/cm)								
Day 0	405	1829						
Day 4	371	1544						
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	8.8	8.8						
Day 4	8.1	8.2						
Temperature (°C) (range: 14-16°C)								
Day 0	15	15						
Day 4	16	16						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10(2)						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.1	0.3
2	3.0	0.3
3	3.1	0.3
4	3.6	0.5
5	2.7	0.2
6	2.9	0.2
7	3.1	0.3
8	3.3	0.4
9	3.0	0.3
10	2.5	0.2

Loading Density (g/L): 0.2 (must be ≤0.5 g/L)
Mean Length (cm): 3.1
Length Range (cm): 2.5-3.6
Mean Weight (g): 0.3 (Must be ≥0.3g)
Weight Range: (g): 0.2-0.5

Test Organism Information

Batch 20211214TR
Source Smoky Trout Farm
Tank # 3
Days Held at 15± 2°C 24 (must be ≥14 days)
Percent stock mortality 0.19 (7 days prior to test, must be ≤2%)
Test Volume (L) 18

Comments : 96h: ppt coating bottom of tank

Reviewed By: CB Date Reviewed: 2022/01/10

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS20 Client TEC164 Reference 2122-1021-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/01/05	1357	CB/SC/CC	3	MF
1	2022/01/06	1000	DW/CC		
2	2022/01/07	1000	CC	2	DW

Sample Information

Initial pH: 7.5
Initial EC (µS/cm): 1839
Salinity (ppt): 1

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	8.2	8.2	8.2	8.2	8.2	8.2				
2	8.2	8.2	8.2	8.4	8.4	8.4				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	421	424	431	~~2760~~ 1823	~~1500~~ 1822	~~2810~~ 1814				
2	427	420	427	1814	1837	1816				

DO (mg/L) (**40-100% saturation at test temp.**)

0	8.2	8.2	8.2	~~8.0~~ 8.2	~~8.1~~ 8.2	~~8.9~~ 8.2				
2	8.2	8.2	8.2	8.2	8.2	8.2				

19 19

Temperature (°C) (range: **18-22 °C**)

0	18	18	18	~~18~~ 18	~~18~~ 18	~~18~~ 18				
2	18	18	18	18	18	18				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar E1 Jar(s) mortality 7 days prior to test (must be ≤25%) 5

QA (previous month)
Days to first brood (≤12 days) 9
Average number of young produced (≥15 young) 26
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: ~~9.9~~ 10.2 Temperature (°C) of sample prior to aeration: 18
DO % of sample prior to aeration: 124 Is aeration required (<40% or >100%)? **Yes or No**
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20 mins Filtered with 110um screen prior to testing **Yes or No**
Hardness (mg $CaCO_3$/L) of 100% : 969 Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) –
Alkalinity of 100% sample (mg $CaCO_3$/L): 352

Dilution Water
Pail label / preparation date 7:12/27
Hardness of dilution water (mg/L) 216

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Comments/Observations:
0 hr: No ppt
48 hr: Surficial ppt

Reviewed By: CB Date Reviewed: 2022/01/10

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS10 Client TEC164 Reference 2122-1021-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/01/05	1310	JC/CB	3	MF
1	2022/01/06	1002	AW/CC		
2	2022/01/07	1010	JCC	2	AW

Sample Information

Initial pH: 7.5
Initial EC (µS/cm): 1870
Salinity (ppt): 1

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	7.6	7.7	7.7	7.7	7.7	7.7				
2	8.3	8.3	8.3	8.4	8.3	8.4				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (µS/cm)

0	447	450	473	1856	1860	1886				
2	446	445	433	1752	1860	1891				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.8	9.8	9.8				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	10	10	10				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar EJ
Jar(s) mortality 7 days prior to test (must be ≤25%) 0

QA (previous month)
Days to first brood (≤12 days) 9
Average number of young produced (≥15 young) 26
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0 %
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 10.0
DO % of sample prior to aeration: 100
Duration of aeration (37.5 +/- 12.5 mL/min/L): ~~1~~ —
Hardness (mg $CaCO_3$/L) of 100% : 969
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 352

Temperature (°C) of sample prior to aeration: 9
Is aeration required (<40% or >100%)? **Yes or No**
Filtered with 110um screen prior to testing **Yes or No**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Dilution Water
Pail label / preparation date 2:12/27
Hardness of dilution water (mg/L) 210

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

Comments/Observations:
0 hrs: NO PPT
48 hrs: NO PPT

Reviewed By: CB Date Reviewed: 2022/01/10

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DASAS Client TEC164 Reference 2122-~~1029~~ 1021-02 CB

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/01/05	1555	CB/SLC	3	KK
1	2022/01/06	1000	AW/LL	-	KK
2	2022/01/07	1005	JCC	2	CB

Sample Information

Initial pH: 7.5
Initial EC (µS/cm): 1839
Salinity (ppt): 1

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	8.2	8.2	8.2	7.9	7.9	7.9				
2	8.2	8.2	8.2	8.3	8.3	8.5				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	431	478	474	1803	1814	1801				
2	451	459	470	1824	1831	1830				

DO (mg/L) (**40-100% saturation at test temp.**)

0	CB 8.2	CB 8.2	8.2	8.2	8.2	8.1				
2	8.2	8.2	8.2	8.2	8.2	8.1				

Temperature (°C) (range: **18-22 °C**)

0	18	18	18	18	18	18				
2	18	18	18	18	18	18				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar C1 Jar(s) mortality 7 days prior to test (must be ≤25%) 5

QA (previous month)
Days to first brood (≤12 days) 9
Average number of young produced (≥15 young) 26
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0 %

Sample
DO (mg/L) of sample prior to aeration: 10.2 9.9 CB
DO % of sample prior to aeration: ~~111~~ 124
Duration of aeration (37.5 +/- 12.5 mL/min/L): 20 mins
Hardness (mg $CaCO_3$/L) of 100% : 969
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) →
Alkalinity of 100% sample (mg $CaCO_3$/L): 352

Temperature (°C) of sample prior to aeration: ~~18~~ 18 CB
Is aeration required (<40% or >100%)? Yes or No
Filtered with 110um screen prior to testing Yes or No
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or No

Dilution Water
Pail label / preparation date 2:12127
Hardness of dilution water (mg/L) 216

Antiscalant
Final Concentration in Sample: 20 ~~47~~ CB mg/L 158
Volume of sample: 500mL Volume of antiscalant: ~~39.5~~ µL CB

Comments/Observations: On: NO ppt
48hrs: NO ppt

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Reviewed By: CB Date Reviewed: 2022/01/10

APPENDIX C – Chain-of-custody form

Teck

COC ID: F2 NAUTILUS January 04 2022 | **TURNAROUND TIME:** | **RUSH:**

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO			
Facility Name / Job#	F2 SRF			Lab Name	Nautilus Environmental - BC			Report Format / Distribution		Excel	PDF	EDD
Project Manager	BRETT MASON			Lab Contact				Email 1:	Samantha.Usher@teck.com	X	X	X
Email	BRETT.MASON@TECK.COM			Email	jacklyn@nautilusenvironmental.ca			Email 1:	teckcoal@equisonline.com			X
Address	RR1 HWY 3			Address	10823 27th Street SE			Email 2:	DL-EVO-SRF-LAB@teck.com	X	X	X
City	Sparwood	Province	BC	City	Calgary	Province	AB	Email 3:				
Postal Code	V0B 2G0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada	Email 4:				
Phone Number	250-425-6179			Phone Number	403-253-7121			Email 5:				
								Email 6:				
								Email 7:				
								Email 8:				
								Email 10:				
								Email 11:				
								Email 12:				
								Email 13:				
								PO number	00807270			

2022/01/05
10:45
Manitoulin
JC
64x20L carboys, 4x1L bottles
NoS/NoI
Good Condition

SAMPLE DETAILS | **ANALYSIS REQUESTED** | Filtered - F: Field, L: Lab, FL: Field & Lab, N: None

Sample ID	Sample Location (sys loc code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	FIL	ANALYSIS: 48hr Daphnia Magna Single Concentration Acute Toxicity 20C	48hr Daphnia Magna Single Concentration Acute Toxicity 10C	48hr Daphnia Magna Single Concentration Acute Toxicity Anitscalent	96hr Rainbow Trout Single Concentration Acute Toxicity	48hr Daphnia Magna Single Concentration Toxicity 15C		
F2_BPO_WG_2022-01-04_N -01	F2_BPO	WG		2022/01/04	10:20	G	8		2	2		4		1.6°C	
F2_BPO_WG_2022-01-04_N-AS -02	F2_BPO	WG		2022/01/04	10:21	G	1				1			2.0°C	

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME
		January 4, 2022		

SERVICE REQUEST (rush - subject to availability)					
Regular (default)	X	Sampler's Name		Mobile #	
Priority (2-3 business days) - 50% surcharge					
Emergency (1 Business Day) - 100% surcharge		Sampler's Signature		Date/Time	January 4, 2022
For Emergency <1 Day, ASAP or Weekend - Contact ALS					

END OF REPORT

Acute Toxicity Test Results

Samples collected January 3, 2022

Final Report

January 26, 2022

Submitted to: **Teck Coal Ltd.**
Sparwood, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates					
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation	*Daphnia magna* antiscalant test initiation
EV_GT1_WS_2022-01-03_N-SRF/ 2122-1028-01	3-Jan-22 at 0840h	5-Jan-22 at 1045h	7-Jan-22 at 1450h	5-Jan-22 at 1525h	5-Jan-22 at 1520h	-
EV_BC1_WS_2022-01-03_N-SRF / 2122-1028-02	3-Jan-22 at 1020h	5-Jan-22 at 1045h	6-Jan-22 at 1600h	5-Jan-22 at 1530h	5-Jan-22 at 1515h	-
EV_BC1_WS_2022-01-03_N-SRF-AS / 2122-1028-03	3-Jan-22 at 1021h	5-Jan-22 at 1045h	-	-	-	5-Jan-22 at 1530h
EV_GT1_WS_2022-01-03_N-SRF-AS / 2122-1028-04	3-Jan-22 at 0841h	5-Jan-22 at 1045h	-	-	-	5-Jan-22 at 1520h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
EV_GT1_WS_2022-01-03_N-SRF	-0.7°C	1150	258
EV_BC1_WS_2022-01-03_N-SRF	0.8°C	1406	320
EV_BC1_WS_2022-01-03_N-SRF-AS	0.8°C	1406	320
EV_GT1_WS_2022-01-03_N-SRF-AS	-0.6°C	1150	258

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)
- *Daphnia magna* 48-h single concentration screening test (conducted with 5 mg/L antiscalant)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample			
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
EV_GT1_WS_2022-01-03_N-SRF	100	100	100	-
EV_BC1_WS_2022-01-03_N-SRF	100	100	100	-
EV_BC1_WS_2022-01-03_N-SRF-AS	-	-	-	100
EV_GT1_WS_2022-01-03_N-SRF-AS	-	-	-	100

Sample ID	Percent Immobility in 100 (% v/v)		
	Daphnia magna 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
EV_GT1_WS_2022-01-03_N-SRF	0	0	-
EV_BC1_WS_2022-01-03_N-SRF	0	10	-
EV_BC1_WS_2022-01-03_N-SRF-AS	-	-	0
EV_GT1_WS_2022-01-03_N-SRF-AS	-	-	0

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
EV_GT1_WS_2022-01-03_N-SRF	Rainbow trout	None	None
	Daphnia magna	None	None
EV_BC1_WS_2022-01-03_N-SRF	Rainbow trout	Precipitate observed on the bottom of test vessel	None
	Daphnia magna	Surficial precipitate observed in 20 degree test	None
EV_BC1_WS_2022-01-03_N-SRF-AS	*Daphnia magna*	None	None
EV_GT1_WS_2022-01-03_N-SRF-AS	*Daphnia magna*	None	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	3.3 (2.8-3.9) g/L KCl[1]	6.3 (5.9-6.7) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.4 (2.6-4.5) g/L KCl	6.4 (5.5-7.4) g/L NaCl
Reference toxicant CV	9.1%	5.1%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, December 30, 2021; [2] Test Date January 4, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation



Report By:
Shae Cole, BSc
Biologist



Reviewed By:
Courtney Bogstie, P. Biol.
Senior Biologist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Control/dilution water for antiscalant test	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L), Na_2SeO_4 (2 µg Se/L) and 5 mg/L antiscalant
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC164 Reference 2122-1028-01 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2021-01-07	1450 *	MAF/EP/CH	1	MF
1	2021-01-08	0830	CC	-	
2	2021-01-09	0900	JC	-	
3	2021-01-10	1010	CH	-	
4	2021-01-11	1030	CH/mre	1	MF

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 8.2
Initial EC (µS/cm): 1800
Salinity (ppt): 3

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L: **yes/no**

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	10.4	9.5	9.3	8.9	
Temp (°C) of 100%	14				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	7.7	8.0						
Day 4	7.9	8.3						
EC (uS/cm)								
Day 0	447	1719						
Day 4	404	1517						
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	8.9	8.9						
Day 4	7.9	8.8						
Temperature (°C) (range: 14-16°C)								
Day 0	14	14						
Day 4	16	15						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.9	0.6
2	3.8	0.5
3	3.9	0.6
4	2.6	0.2
5	3.0	0.3
6	3.3	0.4
7	3.7	0.5
8	3.2	0.3
9	3.2	0.3
10	3.5	0.4

Loading Density (g/L): 0.2 (must be ≤0.5 g/L)
Mean Length (cm): 3.4
Length Range (cm): 2.6-3.9
Mean Weight (g): 0.4 (Must be ≥0.3g)
Weight Range: (g): 0.2-0.6

Test Organism Information

Batch: 20211214TR2 ~~2021/12/14TR~~ KL
Source: Smoky Trout Farms
Tank #: 3
Days Held at 15± 2°C: 25 (must be ≥14 days)
Percent stock mortality: 0.19 (7 days prior to test, must be ≤2%)
Test Volume (L): 18

Comments : 96hrs: hcppt.

Reviewed By: EV Date Reviewed: 2022/01/14

NAUTILUS

Trout Bench She

Method TRS Client TEC164 Reference 2122-1028 • 02 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022-01-06	1600 *	EP / CH / DW	1	MM²
1	2022-01-07	0930	CH	-	ST
2	2022-01-08	0840	CC	-	MM
3	2022-01-09	0900	SL	-	DC
4	2022-01-10	0930	MF/CH	1	ST

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 8.1
Initial EC (µS/cm): 2210
Salinity (ppt): 4

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L: yes/no

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	12.0	9.5	9.2	8.8	
Temp (°C) of 100%	15				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	8.1	7.9						
Day 4	8.2	8.2						
EC (uS/cm)								
Day 0	407	2070						
Day 4	373	1730						
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	7.8	8.8						
Day 4	8.2	8.3						
Temperature (°C) (range: 14-16°C)								
Day 0	15	15						
Day 4	16 +5CH	16						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	2.8	0.2
2	3.1	0.3
3	3.4	0.4
4	3.3	0.4
5	2.9	0.2
6	3.3	0.4
7	2.9	0.2
8	2.7	0.2
9	3.5	0.4
10	2.8	0.2

Loading Density (g/L): 0.2 (must be ≤0.5 g/L)
Mean Length (cm): 3.0
Length Range (cm): 2.5-3.5
Mean Weight (g): 0.3 (Must be ≥0.3g)
Weight Range: (g): 0.2-0.4

Test Organism Information

Batch 20211214TR
Source Smoky Trout Farm
Tank # 3
Days Held at 15± 2°C 24 (must be ≥14 days)
Percent stock mortality 0.19 (7 days prior to test, must be ≤2%)
Test Volume (L) 18

Comments : 96hr: pot coating bottom of tank

Reviewed By: EV Date Reviewed: 2022/01/14

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS Client TEC164 Reference 2122-1028-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/01/05	1520	MF/KM	3	
1	2022/01/06	1000	AW		
2	2022/01/07	1035	TCC	2	

Sample Information

Initial pH: 8.2
Initial EC (µS/cm): 1800
Salinity (ppt): 3

Lab Code	CTLA	CTLB	CTLC	100A	100B	1000				

pH (units) (range: 6.0-8.5)

day										
0	8.2	8.2	8.2	8.1	8.1	8.1				
2	8.3	8.3	8.3	8.4	8.4	8.4				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	428	422	421	1723	1752	1750				
2	442	420	430	1767	1779	1788				

DO (mg/L) (**40-100% saturation at test temp.**)

0	8.2	8.2	8.2	8.2	8.2	8.2				
2	8.2	8.2	8.2	8.2	8.2	8.2				

Temperature (°C) (range: **18-22 °C**)

0	18	18	18	18	18	18				
2	18	18	18	18	18	18				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar Q3 Jar(s) mortality 7 days prior to test (must be ≤25%) 0

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 29
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0.1

Sample
DO (mg/L) of sample prior to aeration: 10.8
DO % of sample prior to aeration: 130
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20min
Hardness (mg $CaCO_3$/L) of 100% : 1150
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 258

Temperature (°C) of sample prior to aeration: 18
Is aeration required (<40% or >100%)? **Yes or No**
Filtered with 110um screen prior to testing **Yes or No**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Dilution Water
Pail label / preparation date 2:12127
Hardness of dilution water (mg/L) 216

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Comments/Observations:
0h: no ppt
48hrs: no ppt

Reviewed By: EV Date Reviewed: 2022/01/14

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS10 Client TEC164 Reference 2122-1028-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/01/05	1525	MF/KM	3	
1	2022/01/06	1000	AW/CC	-	
2	2022/01/07	1020	JCC	2	

Sample Information

Initial pH: 8.2
Initial EC (µS/cm): 1800
Salinity (ppt): 3

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	8.2	8.2	8.2	8.1	8.1	8.1				
2	8.3	8.3	8.3	8.3	8.3	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	436	426	423	720	737	749				
2	463	447	444	1730	1761	1789				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	10.9	10.9	10.9				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar C3 Jar(s) mortality 7 days prior to test (must be ≤25%) 0

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 29
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0%
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 11.3
DO % of sample prior to aeration: 117
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20min
Hardness (mg $CaCO_3$/L) of 100% : 150
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 258

Temperature (°C) of sample prior to aeration: 11
Is aeration required (<40% or >100%)? **Yes or No**
Filtered with 110um screen prior to testing **Yes or No**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Dilution Water
Pail label / preparation date 2:12127
Hardness of dilution water (mg/L) 216

DO Levels (40-100% saturation) - corrected for altitude -
4.1 to 10.3 mg/L at 8°C
4.0 to 10.0 mg/L at 9°C
3.9 to 9.8 mg/L at 10°C
3.8 to 9.6 mg/L at 11°C
3.7 to 9.4 mg/L at 12°C

Comments/Observations: 0hr: no ppt
48hrs: NO ppt

Reviewed By: AV Date Reviewed: 2022/01/14

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS Client TEC164 Reference 2122-1028-02

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/01/05	1515	MF/KM	3	CB
1	2022/01/06	1000	AW/CC	-	GP
2	2022/01/07	1040	JCC	2	DN

Sample Information

Initial pH: 8.1
Initial EC (µS/cm): 2210
Salinity (ppt): 4

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	8.2	8.2	8.2	7.9	7.9	7.9				
2	8.3	8.3	8.3	8.1	8.2	8.2				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	432	423	429	2110	2030	2150				
2	439	424	436	2130	2130	2150				

DO (mg/L) (**40-100% saturation at test temp.**)

0	8.2	8.2	8.2	9.2	9.2	9.2				
2	8.2	8.2	8.2	8.2	8.2	8.2				

Temperature (°C) (range: **18-22 °C**)

0	18	18	18	19	19	19				
2	18	18	18	18	18	18				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	9	10	10(1I)	10	10(2I)				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar E2 Jar(s) mortality 7 days prior to test (must be ≤25%) 0

QA (previous month)
Days to first brood (≤12 days) 9
Average number of young produced (≥15 young) 26
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 33%
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 10.3
DO % of sample prior to aeration: 128
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20min
Hardness (mg $CaCO_3$/L) of 100% : 1400
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) -
Alkalinity of 100% sample (mg $CaCO_3$/L): 320

Temperature (°C) of sample prior to aeration: 20
Is aeration required (<40% or >100%)? **Yes or No**
Filtered with 110um screen prior to testing **Yes or No**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Dilution Water
Pail label / preparation date 2:21127
Hardness of dilution water (mg/L) 216

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Comments/Observations:
0h: no ppt
48hrs: surficial ppt

Reviewed By: EV Date Reviewed: 2022/01/14

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS10 Client TEC164 Reference 2122-1028-02

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/01/05	1530	MF IKM	3	
1	2022/01/06	1000	AW/CC	-	
2	2022/01/07	1030	JCC	2	DN

Sample Information

Initial pH: 8.1
Initial EC (µS/cm): 2210
Salinity (ppt): 4

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	8.2	8.2	8.2	8.0	8.0	8.0				
2	8.3	8.3	8.3	8.3	8.3	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	449	425	423	2020	2050	2050				
2	441	430	437	2030	2180	2210				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	10.2	10.2	10.2				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar E1 Jar(s) mortality 7 days prior to test (must be ≤25%) 5

QA (previous month)

Days to first brood (≤12 days) 9
Average number of young produced (≥15 young) 26
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - 0.1
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 10.9
DO % of sample prior to aeration: 108
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20min
Hardness (mg $CaCO_3$/L) of 100% : 1400
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) -
Alkalinity of 100% sample (mg $CaCO_3$/L): 320

Temperature (°C) of sample prior to aeration: 10
Is aeration required (<40% or >100%)? (Yes) or No
Filtered with 110um screen prior to testing Yes or (No)
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)

Dilution Water

Pail label / preparation date 2:12127
Hardness of dilution water (mg/L) 216

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

Comments/Observations: 0hr: no ppt

Reviewed By: EV Date Reviewed: 2022/01/14

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DASAS Client TEC164 Reference 2122-1028-03

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/01/05	1530	MFIKM	3	CB
1	2022/01/06	1020	AW/CC	-	CB
2	2022/01/07	1045	JCC	2	CB

Sample Information

Initial pH: 8.1
Initial EC (µS/cm): 2210
Salinity (ppt): 4

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	8.2	8.2	8.2	7.9	8.0	8.0				
2	8.3	8.3	8.3	8.4	8.4	8.5				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	418	423	423	2000	2020	2100				
2	422	440	435	2170	2190	2170				

DO (mg/L) (**40-100% saturation at test temp.**)

0	8.2	8.2	8.2	9.0	9.0	9.0				
2	8.2	8.2	8.2	8.2	8.2	8.2				

Temperature (°C) (range: **18-22 °C**)

0	18	18	18	19	19	19				
2	18	18	18	18	18	18				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar C3 Jar(s) mortality 7 days prior to test (must be ≤25%) 0

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 29
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0.1

Sample
DO (mg/L) of sample prior to aeration: 10.3
DO % of sample prior to aeration: 78
Duration of aeration (37.5 +/- 12.5 mL/min/L): 20min
Hardness (mg $CaCO_3$/L) of 100% : 1400
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 320

Temperature (°C) of sample prior to aeration: 20
Is aeration required (<40% or >100%)? **Yes or No**
Filtered with 110um screen prior to testing **Yes or No**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Dilution Water
Pail label / preparation date 2:2127
Hardness of dilution water (mg/L) 216

Antiscalant
Final Concentration in Sample: 5mg/L
Volume of sample: 500mL Volume of antiscalant: 39.5uL

Comments/Observations: 0hr: no ppt
48 hrs: no ppt

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Reviewed By: EV Date Reviewed: 2022/01/14

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DASAS Client TEC164 Reference 2122-1028-04

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/01/05	1520	MF/KM	3	CB
1	2022/01/06	1002	AW/CC	-	ST
2	2022/01/07	1045	JCC	2	DN

Sample Information

Initial pH: 8.2
Initial EC (µS/cm): 1800
Salinity (ppt): 3

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	8.2	8.2	8.2	8.1	8.1	8.1				
2	8.2	8.2	8.2	8.4	8.4	8.4				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	423	425	424	1721	1740	1745				
2	432	434	435	1782	1797	1801				

DO (mg/L) (**40-100% saturation at test temp.**)

0	8.2	8.2	8.2	8.2	8.2	8.2				
2	8.2	8.2	8.2	8.2	8.2	8.2				

Temperature (°C) (range: **18-22 °C**)

0	18	18	18	18	18	18				
2	18	18	18	18	18	18				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar C3 Jar(s) mortality 7 days prior to test (must be ≤25%) 0

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 29
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0.1

Sample
DO (mg/L) of sample prior to aeration: 10.8
DO % of sample prior to aeration: 130
Duration of aeration (37.5 +/- 12.5 mL/min/L): 20min
Hardness (mg $CaCO_3$/L) of 100%: 1150
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) -
Alkalinity of 100% sample (mg $CaCO_3$/L): 258

Temperature (°C) of sample prior to aeration: 18
Is aeration required (<40% or >100%)? (Yes) or No
Filtered with 110um screen prior to testing Yes or (No)
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)

Dilution Water
Pail label / preparation date 2.12.27
Hardness of dilution water (mg/L) 216

Antiscalant
Final Concentration in Sample: 5mg/L
Volume of sample: 500mL Volume of antiscalant: 39.5µL

Comments/Observations: 0hr: no ppt
48hrs: no ppt

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Reviewed By: EV Date Reviewed: 2022/01/14

APPENDIX C – Chain-of-custody form

Teck

COC ID:	EVO NAUTILUS January 03 2022	TURNAROUND TIME:		RUSH:	

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name / Job#	Elkview Operations			Lab Name	Nautilus Environmental - BC			Report Format / Distribution		Excel	PDF	EDD
Project Manager	Group 1; Brett Mason			Lab Contact				Email 1:				
Email	Brett.Mason@teck.com			Email	jacklyn@nautilusenvironmental.ca			Email 2:				
Address	RR1 HWY 3			Address	10823 27th Street SE			Email 3:				
								Email 4:				
City	Sparwood	Province	BC	City	Calgary	Province	AB	Email 5:				
								Email 6:				
								Email 7:	teckcoal@equisonline.com			X
								Email 8:	DL-EVO-SRF@teck.com	X	X	X
								Email 9:	Samantha.Usher@teck.com	X	X	X
								Email 10:				
								Email 11:				
								Email 12:				
								Email 13:				
Postal Code	V0B 2G0	Country	Canada	Postal Code	T2H 2K1	Country	Canada					
Phone Number	250-425-6179			Phone Number	T2Z 3V9			PO number	00807270			

SAMPLE DETAILS

2022/01/05
10:45
Manitoulin
JC
16x20L carboys, 10x1L bottles
N6S/N6I
~~Good Condition~~
GT1 is missing

ANALYSIS REQUESTED — Filtered - F: Field, L: Lab, FL: Field & Lab, N: None

Sample ID 2122-1028	Sample Location (sys_loc_code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	48hr Daphnia Magna Single Concentration Acute Toxicity 20C	48hr Daphnia Magna Single Concentration Acute Toxicity 10C	48hr Daphnia Magna Single Concentration Acute Toxicity Anitscalent	96hr Rainbow Trout Single Concentration Acute Toxicity (20 L Bladder)	96hr Rainbow Trout Single Concentration Acute Toxicity (20 L Bladder)	48hr Daphnia Magna Single Concentration Toxicity 15C
EV_GT1_WS_2022-01-03_N-SRF -01	EV_GT1	WS		2022/01/03	8:40	G	8	2	2			4 ✓	-0.7°C
EV_BC1_WS_2022-01-03_N-SRF -02	EV_BC1	WS		2022/01/03	10:20	G	8	2	2			4 ✓	0.8°C
EV_BC1_WS_2022-01-03_N-SRF-AS -03	EV_BC1	WS		2022/01/03	10:21	G	1			1			0.8°C
EV_GT1_WS_2022-01-03_N-SRF-AS -04	EV_GT1	WS		2022/01/03	8:41	G	1			1			-0.6°C

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME
Field Temperatures	AU Livingston - Teck	January 3, 2022		
	[signature]	1530.		

SERVICE REQUEST (rush - subject to availability)					
Regular (default)	X	Sampler's Name	Matt Gorlan	Mobile #	
Priority (2-3 business days) - 50% surcharge					
Emergency (1 Business Day) - 100% surcharge		Sampler's Signature	[signature]	Date/Time	January 3, 2022
For Emergency <1 Day, ASAP or Weekend - Contact ALS					

END OF REPORT

Acute Toxicity Test Results

Samples collected January 10, 2022

Final Report

February 16, 2022

Submitted to: **Teck Coal Ltd.**
Sparwood, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates					
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation	*Daphnia magna* antiscalant test initiation
F2_BPO_WG_2022-01-10_N/ 2122-1069-01	10-Jan-22 at 1025h	11-Jan-22 at 0900h	11-Jan-22 at 1400h	11-Jan-22 at 1435h	11-Jan-22 at 1440h	-
F2_BPO_WG_2022-01-10_N-AS/ 2122-1069-02	10-Jan-22 at 1026h	11-Jan-22 at 0900h	-	-	-	11-Jan-22 at 1440h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
F2_BPO_WG_2022-01-10_N	7.3°C	1522	488
F2_BPO_WG_2022-01-10_N-AS	2.6°C	1522	488

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)
- *Daphnia magna* 48-h single concentration screening test (conducted with 20 mg/L antiscalant)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample			
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
F2_BPO_WG_2022-01-10_N	100	100	100	-
F2_BPO_WG_2022-01-10_N-AS	-	-	-	100

Sample ID	Percent Immobility in 100 (% v/v)		
	***Daphnia magna* 10˚C**	***Daphnia magna* 20˚C**	***Daphnia magna* antiscalant**
F2_BPO_WG_2022-01-10_N	0	0	-
F2_BPO_WG_2022-01-10_N-AS	-	-	0

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
F2_BPO_WG_2022-01-10_N	Rainbow trout	Precipitate observed on the bottom of test vessel	None
	Daphnia magna	None	None
F2_BPO_WG_2022-01-10_N-AS	*Daphnia magna*	None	None

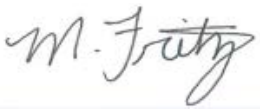
QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	3.3 (2.8-3.9) g/L KCl[1]	7.4 (7.1-7.6) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.4 (2.6-4.5) g/L KCl	6.5 (5.5-7.6) g/L NaCl
Reference toxicant CV	9.1%	5.2%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	See below
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, December 30, 2021; [2] Test Date January 17, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation

The conductivity of the B and C replicates of the 100% concentration of the 10°C *Daphnia magna* test was not taken at initiation for sample F2_BPO_WG_2022-01-10-N.



Report By:
Michelle Fritz, BSc
Biologist



Reviewed By:
Courtney Bogstie, P. Biol.
Senior Biologist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Control/dilution water for antiscalant test	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L), Na_2SeO_4 (2 µg Se/L) and 20 mg/L antiscalant
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS ENVIRONMENTAL

Trout Bench Sheet

Method TRS Client TEC164 Reference 2122-1069-01 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022/01/11	1400*	CC/EP/CH	1	DW
1	2022/01/12	0920	CH/MAF	-	SH
2	2022/01/13	1000	EP/CH	-	CH
3	2022/01/14	1010	DW/CH	-	ST
4	2022/01/15	0900	MAF/CC	1	DW

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 7.8
Initial EC (µS/cm): 1872
Salinity (ppt): 3

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L: **yes/no**

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	8.9	8.9			
Temp (°C) of 100%	15	14			

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

	Conc.	CTL	100						
pH (units) (range: **5.5-8.5**)									
	Day 0	7.7	7.6						
	Day 4	8.0	8.2						
EC (uS/cm)									
	Day 0	403	1633						
	Day 4	483	1877						
DO (mg/L) (**70-100% saturation at test temp.**)									
	Day 0	8.8	8.9						
	Day 4	8.8	8.8						
Temperature (°C) (range: **14-16°C**)									
	Day 0	15	14						
	Day 4	15	15						
Number Alive (In brackets number stressed)									
	Day 0	10	10						
	Day 1	10	10						
	Day 2	10	10						
	Day 3	10	10						
	Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	2.9	0.2
2	3.2	0.2
3	3.2	0.2
4	3.7	0.5
5	3.3	0.4
6	2.9	0.2
7	2.6	0.2
8	2.7	0.2
9	3.0	0.2
10	3.0	0.2

Loading Density (g/L): 0.1 cc 0.2
(must be ≤0.5 g/L)
Mean Length (cm): 3.0
Length Range (cm): 2.6-3.7
Mean Weight (g): 0.3
(Must be ≥0.3g)
Weight Range: (g): 0.2-0.5

Test Organism Information

Batch 20211214TR
Source Smoky Trout Farm
Tank # 3
Days Held at 15± 2°C 29
(must be ≥14 days)
Percent stock mortality 0.64
(7 days prior to test, must be ≤2%)
Test Volume (L) 18

Comments : 96 HRS: pptn btm of tank

Reviewed By: EV Date Reviewed: 2022/01/27

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS20 Client TEC164 Reference 2122-1069-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/01/11	1440	CM/MAF	3	✓
1	2022/01/12	0950	CC/MF	-	✓
2	2022/01/13	0935	MAF	3	✓

Sample Information

Initial pH: 7.8
Initial EC (µS/cm): 1772
Salinity (ppt): 1

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	8.0	8.0	8.0	7.7	7.7	7.7				
2	8.0	8.0	8.0	8.3	8.3	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	441	434	428	1812	1847	1808				
2	455	447	440	1805	1821	1836				

DO (mg/L) (**40-100% saturation at test temp.**)

0	8.1	8.1	8.1	8.1	8.1	8.1				
2	8.1	8.1	8.1	8.1	8.1	8.1				

Temperature (°C) (range: **18-22 °C**)

0	19	19	19	19	19	19				
2	19	19	19	19	19	19				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar D4 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%.

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 26
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 8.4
DO % of sample prior to aeration: 100
Duration of aeration (37.5 +/- 12.5 mL/min/L): 20min
Hardness (mg $CaCO_3$/L) of 100% : 1522
Temperature (°C) of sample prior to aeration: 20
Is aeration required (<40% or >100%)? **Yes or No**
Filtered with 110um screen prior to testing **Yes or No**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 488

Dilution Water
Pail label / preparation date 1:01/03
Hardness of dilution water (mg/L) 200

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Comments/Observations: 0hrs: No ppt
48hrs: ncppt.

Reviewed By: EV Date Reviewed: 2022/01/27

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC164 Reference 2122-1069-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/01/11	1435	CTm/MF	3	ST
1	2022/01/12	1020	MF	-	CB
2	2022/01/13	1000	MAI=	3	CB

Sample Information

Initial pH: 7.8
Initial EC (µS/cm): 1872
Salinity (ppt): 3

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	8.1	8.1	8.0	7.5	7.5	7.5				
2	8.2	8.2	8.2	8.3	8.3	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	443	430	430	1851	—	—				
2	457	448	443	1806	1833	1874				

DO (mg/L) (**40-100% saturation at test temp.**)

0	KTM 9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar D2 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 26
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 9.1
DO % of sample prior to aeration: 95
Duration of aeration (37.5 +/- 12.5 mL/min/L) : —
Hardness (mg $CaCO_3$/L) of 100% : 1522
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 488

Temperature (°C) of sample prior to aeration: 11
Is aeration required (<40% or >100%)? **Yes or No**
Filtered with 110um screen prior to testing **Yes or No**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Dilution Water
Pail label / preparation date 1:01/03
Hardness of dilution water (mg/L) 200

DO Levels (40-100% saturation) - corrected for altitude -
4.1 to 10.3 mg/L at 8°C
4.0 to 10.0 mg/L at 9°C
3.9 to 9.8 mg/L at 10°C
3.8 to 9.6 mg/L at 11°C
3.7 to 9.4 mg/L at 12°C

Comments/Observations: 0hrs: No ppt
48hrs: ncppt.

Reviewed By: EV Date Reviewed: 2022/01/27

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS Client TEC164 Reference 2122-1069-02

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/01/11	1440	MAF/KTM	3	ST
1	2022/01/12	0950	CC/MF	-	
2	2022/01/13	0950	MAF	3	CB

Sample Information

Initial pH: 7.8
Initial EC (µS/cm): 1872
Salinity (ppt): 3

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	8.0	8.0	8.0	7.5	7.6	7.6				
2	8.1	8.1	8.1	8.2	8.4	8.4				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	434	437	439	1846	1873	1913				
2	458	454	450	1827	1865	1891				

DO (mg/L) (**40-100% saturation at test temp.**)

0	8.1	8.1	8.1	8.1	8.1	8.1				
2	8.1	8.1	8.1	8.1	8.1	8.1				

Temperature (°C) (range: **18-22 °C**)

0	19	19	19	19	19	19				
2	19	19	19	19	19	19				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar C4 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 9
Average number of young produced (≥15 young) 23
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0

Sample
DO (mg/L) of sample prior to aeration: 8.8
DO % of sample prior to aeration: 109
Duration of aeration (37.5 +/- 12.5 mL/min/L): 20 min
Hardness (mg $CaCO_3$/L) of 100% : 1522
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L)
Alkalinity of 100% sample (mg $CaCO_3$/L): 488

Temperature (°C) of sample prior to aeration: 19
Is aeration required (<40% or >100%)? Yes or No
Filtered with 110um screen prior to testing Yes or No
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or No

Dilution Water
Pail label / preparation date 1:01/03
Hardness of dilution water (mg/L) 200

Antiscalant
Final Concentration in Sample: 20 mg/L
Volume of sample: 500mL Volume of antiscalant: 158 uL

Comments/Observations: 0hrs: No ppt
48hrs: nappt.

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Reviewed By: EV Date Reviewed: 2022/01/27

APPENDIX C – Chain-of-custody form

Teck

COC ID:	F2 NAUTILUS January 10 2022	TURNAROUND TIME:		RUSH:	

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name / Job#	F2 SRF			Lab Name	Nautilus Environmental - BC			Report Format / Distribution		Excel	PDF	EDD
Project Manager	BRETT MASON			Lab Contact				Email 1:				
Email	BRETT.MASON@TECK.COM			Email	jacklyn@nautilusenvironmental.ca			Email 1:				
Address	RR1 HWY 3			Address	10823 27th Street SE			Email 2:				
								Email 3:				
City	Sparwood	Province	BC	City	Calgary	Province	AB	Email 4:				
								Email 5:				
								Email 6:				
								Email 7:	teckcoal@equisonline.com			X
								Email 8:	DL-EVO-SRF@teck.com	X	X	X
								Email 10:	Samantha.Usher@teck.com	X	X	X
								Email 11:				
								Email 12:				
								Email 13:				
Postal Code	V0B 2G0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada					
Phone Number	250-425-6179			Phone Number	403-253-7121			PO number	00807270			

SAMPLE DETAILS

2022/01/11
09:00
Manitoulin
JC
4x20L carboys, ~~4x~~ JC 5x1L bottles
NoS/NoI
Good Condition

ANALYSIS REQUESTED

Filtered - F: Field, L: Lab, FL: Field & Lab, N: None

Sample ID	Sample Location (sys loc code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	48hr Daphnia Magna Single Concentration Acute Toxicity 20C	48hr Daphnia Magna Single Concentration Acute Toxicity 10C	48hr Daphnia Magna Single Concentration Acute Toxicity Anitscalent	96hr Rainbow Trout Single Concentration Acute Toxicity	48hr Daphnia Magna Single Concentration Toxicity 15C	°C
F2_BPO_WG_2022-01-10_N JC 10/01 2122-~~1070~~ -01	F2_BPO	WG		2022/01/10	10:25	G	8	2	2		4		7.3
F2_BPO_WG_2022-01-10_N-AS -02	F2_BPO	WG		2022/01/10	10:26	G	1			1			2.6

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME
		January 10, 2022		

SERVICE REQUEST (rush - subject to availability)					
Regular (default)	X	Sampler's Name		Mobile #	
Priority (2-3 business days) - 50% surcharge					
Emergency (1 Business Day) - 100% surcharge		Sampler's Signature		Date/Time	January 10, 2022
For Emergency <1 Day, ASAP or Weekend - Contact ALS					

END OF REPORT

Acute Toxicity Test Results

Samples collected January 17, 2022

Final Report

February 10, 2022

Submitted to: **Teck Coal Ltd.**
Sparwood, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates					
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation	*Daphnia magna* antiscalant test initiation
EV_EC1_WS_2022-01-17_N-SRF / 2122-1125-01	17-Jan-22 at 1145h	18-Jan-22 at 0900h	18-Jan-22 at 1500h	18-Jan-22 at 1420h	18-Jan-22 at 1420h	-
EV_EC1_WS_2022-01-17_N-SRF-AS / 2122-1125-02	17-Jan-22 at 1146h	18-Jan-22 at 0900h	-	-	-	18-Jan-22 at 1415h
EV_ECOUT_WS_2022-01-17_N-SRF / 2122-1125-03	17-Jan-22 at 1330h	18-Jan-22 at 0900h	18-Jan-22 at 1500h	18-Jan-22 at 1415h	18-Jan-22 at 1415h	-
EV_ECOUT_WS_2022-01-17_N-SRF-AS / 2122-1125-04	17-Jan-22 at 1331h	18-Jan-22 at 0900h	-	-	-	18-Jan-22 at 1420h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
EV_EC1_WS_2022-01-17_N-SRF	8.9°C	1085	347
EV_EC1_WS_2022-01-17_N-SRF-AS	10.6°C	1085	347
EV_ECOUT_WS_2022-01-17_N-SRF	8.9°C	1241	451
EV_ECOUT_WS_2022-01-17_N-SRF-AS	12.8°C	1241	451

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)
- *Daphnia magna* 48-h single concentration screening test (conducted with 5 mg/L antiscalant)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample			
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
EV_EC1_WS_2022-01-17_N-SRF	100	100	100	-
EV_EC1_WS_2022-01-17_N-SRF-AS	-	-	-	100
EV_ECOUT_WS_2022-01-17_N-SRF	100	100	100	-
EV_ECOUT_WS_2022-01-17_N-SRF-AS	-	-	-	100

Sample ID	Percent Immobility in 100 (% v/v)		
	Daphnia magna 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
EV_EC1_WS_2022-01-17_N-SRF	0	3	-
EV_EC1_WS_2022-01-17_N-SRF-AS	-	-	0
EV_ECOUT_WS_2022-01-17_N-SRF	0	7	-
EV_ECOUT_WS_2022-01-17_N-SRF-AS	-	-	0

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
EV_EC1_WS_2022-01-17_N-SRF	Rainbow trout	Precipitate observed on the bottom of test vessel	None
	Daphnia magna	Surficial precipitate observed in both 20˚C and 10˚C tests	None
EV_EC1_WS_2022-01-17_N-SRF-AS	Rainbow trout	Precipitate observed on the bottom of test vessel	None
	Daphnia magna	Surficial precipitate observed in both 20˚C and 10˚C tests	Precipitate observed on carapace
EV_ECOUT_WS_2022-01-17_N-SRF	*Daphnia magna*	None	None
EV_ECOUT_WS_2022-01-17_N-SRF-AS	*Daphnia magna*	None	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	3.3 (2.8-3.9) g/L KCl[1]	7.4 (7.1 - 7.6) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.4 (2.6-4.5) g/L KCl	6.5 (5.5 - 7.6) g/L NaCl
Reference toxicant CV	9.1%	5.2%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, December 30, 2021; [2] Test Date January 17, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation



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This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ± 1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Control/dilution water for antiscalant test	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L), Na_2SeO_4 (2 µg Se/L) and 5 mg/L antiscalant
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS ENVIRONMENTAL

Trout Bench Sheet

Method TRS Client TEC164 Reference 2122-1125-01 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022/01/18	1500 *	CC/CH	7	JCC
1	2022/01/19	0930	CW	-	SP.
2	2022/01/20	1010	CH/CC	-	TP
3	2022/01/21	0930	SP	-	TP
4	2022/01/22	0935	CC/MAF	1	CW

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 8.1
Initial EC (µS/cm): 1845
Salinity (ppt): 3

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L : **yes/no**

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	10.4	8.6			
Temp (°C) of 100%	16				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: **5.5-8.5**)								
Day 0	8.0	8.2						
Day 4	8.0	8.1						
EC (uS/cm)								
Day 0	491	1922						
Day 4	480	1758						
DO (mg/L) (**70-100% saturation at test temp.**)								
Day 0	8.8	8.6						
Day 4	8.6	8.6						
Temperature (°C) (range: **14-16°C**)								
Day 0	15	16						
Day 4	16	16						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.5	0.4
2	3.6	0.6
3	3.4	0.4
4	3.8	0.6
5	3.2	0.3
6	3.6	0.6
7	3.2	0.3
8	3.8	0.6
9	3.6	0.5
10	3.4	0.3

Loading Density (g/L): 0.3 (must be ≤0.5 g/L)
Mean Length (cm): 3.5
Length Range (cm): 3.2-3.8
Mean Weight (g): 0.5 (Must be ≥0.3g)
Weight Range: (g): 0.3-0.6

Test Organism Information

Batch 20211214TR
Source Smoky Trout Farm
Tank # 4
Days Held at 15± 2°C 36 (must be ≥14 days)
Percent stock mortality 0.3 (7 days prior to test, must be ≤2%)
Test Volume (L) 16 ~~18~~

Comments : 96 Hrs: PPT on bottom

Reviewed By: TP Date Reviewed: 2022/01/26

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS20 Client TEC164 Reference 2122-1125-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/01/18	1420	AW/KM	3	JCC
1	2022/01/19	1010	MF/EP	-	TP
2	2022/01/20	0830	MAF	1	AW

Sample Information

Initial pH: 8.1
Initial EC (µS/cm): 1845
Salinity (ppt): 3

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	8.2	8.2	7.9	7.9	7.9	7.9				
2	8.2	8.2	8.2	8.1	8.2	8.2				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	476	486	493	1891	1914	1966				
2	498	493	487	1752	1817	1806				

DO (mg/L) (**40-100% saturation at test temp.**)

0	8.2	8.2	8.2	8.2	8.2	8.2				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	18	18	18	18	18	18				
2	20	20	20	18	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10(IT)				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar C3 Jar(s) mortality 7 days prior to test (must be ≤25%) 5%

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 27
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 8.2 Temperature (°C) of sample prior to aeration: 18
DO % of sample prior to aeration: 100% Is aeration required (<40% or >100%)? **Yes or (No)**
Duration of aeration (37.5 +/- 12.5 mL/min/L) : — Filtered with 110um screen prior to testing **Yes or (No)**
Hardness (mg $CaCO_3$/L) of 100% : 108 Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or (No)**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 347

Dilution Water
Pail label / preparation date 1:01/13
Hardness of dilution water (mg/L) 206

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Comments/Observations:
0 hr: NPPR
48 hr: surficial ppt.

Reviewed By: TP Date Reviewed: 2022/01/26

Daphnia 10°C Bench Sheet

NAUTILUS ENVIRONMENTAL

Method DAS10 Client TEC164 Reference 2122- 1125 - AW 05 -01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/01/18	1420	AW/KTM	3	JCC
1	2022/01/19	1030	EP/MF	-	TP
2	2022/01/20	0950	KTM	3	TP

Sample Information

Initial pH: 8.1
Initial EC (µS/cm): 1045
Salinity (ppt): 3

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	8.0	8.0	7.9	8.0	8.0	8.0				
2	8.3	8.2	8.1	8.3	8.3	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	484	485	489	1915	1937	1969				
2	492	496	499	1604	1558	1584				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar Wed D1 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 9
Average number of young produced (≥15 young) 23
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 10.4
DO % of sample prior to aeration: 107.2
Duration of aeration (37.5 +/- 12.5 mL/min/L): 20mins
Hardness (mg $CaCO_3$/L) of 100% : 1085
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 347
Temperature (°C) of sample prior to aeration: 11
Is aeration required (<40% or >100%)? **Yes or No**
Filtered with 110um screen prior to testing **Yes or No**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Dilution Water
Pail label / preparation date 1:01/13
Hardness of dilution water (mg/L) 3

DO Levels (40-100% saturation) - corrected for altitude -
4.1 to 10.3 mg/L at 8°C
4.0 to 10.0 mg/L at 9°C
3.9 to 9.8 mg/L at 10°C
3.8 to 9.6 mg/L at 11°C
3.7 to 9.4 mg/L at 12°C

Comments/Observations:
0 hr: no ppt
48 hr: ppt on surface

Reviewed By: TP Date Reviewed: 2022/01/26

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DASAS Client TEC164 Reference 2122-1125-02

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/01/18	1415	AW/KTM	3	JCC
1	2022/01/19	1020	MF/EP	-	TP
2	2022/01/20	0835	MAF	3	AW

Sample Information

Initial pH: 8.1
Initial EC (µS/cm): 1845
Salinity (ppt): 1

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	7.9	7.9	7.9	7.9	7.9	7.9				
2	8.2	8.2	8.2	8.4	8.4	8.4				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	481	487	494	1957	1969	1975				
2	484	488	487	1865	1840	1840				

DO (mg/L) (**40-100% saturation at test temp.**)

0	8.2	8.2	8.2	8.2	8.2	8.2				
2	8.1	8.1	8.1	8.1	8.1	8.1				

Temperature (°C) (range: **18-22 °C**)

0	18	18	18	18	18	18				
2	19	19	19	19	19	19				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar C3 Jar(s) mortality 7 days prior to test (must be ≤25%) 5%

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 27
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0

Sample
DO (mg/L) of sample prior to aeration: 8.2 Temperature (°C) of sample prior to aeration: 18
DO % of sample prior to aeration: 100.1 Is aeration required (<40% or >100%)? Yes or No
Duration of aeration (37.5 +/- 12.5 mL/min/L) : — Filtered with 110um screen prior to testing Yes or No
Hardness (mg $CaCO_3$/L) of 100% : 1065 Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or No
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 347

Dilution Water
Pail label / preparation date 1:01/13
Hardness of dilution water (mg/L) 206

Antiscalant
Final Concentration in Sample: 5mg/L
Volume of sample: 500mL Volume of antiscalant: 39.5mL

Comments/Observations:
0 hr: No ppt
48 hr: ncppt.

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Reviewed By: TP Date Reviewed: 2022/01/26

NAUTILUS ENVIRONMENTAL

Trout Bench Sheet

Method TRS Client TEC164 Reference 2122-1125-03 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022/01/18	1500 *	CC/CH	7	JCC
1	2022/01/19	0910	AH	-	
2	2022/01/20	1100	CH/CC	-	TP
3	2022/01/21	0930	FP	-	TP
4	2022/01/22	0930	CC/MAP	1	DW

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 8.1 JCC 7.8
Initial EC (µS/cm): 1819 JCC 2060
Salinity (ppt): 3 JCC 2

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L : yes/no

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	10.3	8.6			
Temp (°C) of 100%	16				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: **5.5-8.5**)								
Day 0	8.0	7.9						
Day 4	8.1	8.1						
EC (uS/cm)								
Day 0	488	2060						
Day 4	474	1730						
DO (mg/L) (**70-100% saturation at test temp.**)								
Day 0	8.8	8.6						
Day 4	8.6	8.6						
Temperature (°C) (range: **14-16°C**)								
Day 0	15	16						
Day 4	16	16						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.2	0.3
2	3.5	0.4
3	3.2	0.3
4	2.9	0.2
5	2.8	0.2
6	3.5	0.4
7	3.4	0.3
8	3.0	0.2
9	3.1	0.2
10	3.0	0.3

Loading Density (g/L): 0.2 (must be ≤0.5 g/L)
Mean Length (cm): 3.2
Length Range (cm): 2.8-3.5
Mean Weight (g): 0.3 (Must be ≥0.3g)
Weight Range: (g): 0.2-0.4

Test Organism Information

Batch 20211214TR
Source Smoky Trout Farm
Tank # 4
Days Held at 15± 2°C 36 (must be ≥14 days)
Percent stock mortality 0.3 (7 days prior to test, must be ≤2%)
Test Volume (L) 18

Comments : 96 Hrs: PPT on bottom

Reviewed By: DW Date Reviewed: 2022/01/26

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS20 Client TEC164 Reference 2122- 1125-03

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/01/18	1415	AW/KTM	3	—
1	2022/01/19	1020	MF/EP	-	JD
2	2022/01/20	0945	KTM	3	KC

Sample Information

Initial pH:	~~8.1~~ JCC	7.8
Initial EC (µS/cm):	~~1814~~ JCC	2060
Salinity (ppt):	~~3~~ JCC	2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	7.9	7.9	7.9	7.9	7.9	7.9				
2	8.2	8.2	8.2	8.2	8.2	8.1				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	478	484	489	1975	2090	2120				
2	471	489	486	1811	1870	1869				

DO (mg/L) (**40-100% saturation at test temp.**)

0	8.1	8.2	8.2	8.2	8.2	8.2				
2	8.2	8.2	8.2	8.1	8.1	8.1				

Temperature (°C) (range: **18-22 °C**)

0	19	18	18	18	18	18				
2	18	18	18	19	19	19				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10(I)				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar wed C1 Jar(s) mortality 7 days prior to test (must be ≤25%) 5%

QA (previous month)

Days to first brood (≤12 days) 8

Average number of young produced (≥15 young) 35

Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - 0 (must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 8.9

DO % of sample prior to aeration: 113%

Duration of aeration (37.5 +/- 12.5 mL/min/L): 20 mins

Hardness (mg $CaCO_3$/L) of 100% : ~~1045~~ JCC 1241

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —

Alkalinity of 100% sample (mg $CaCO_3$/L): ~~368~~ JCC 451

Temperature (°C) of sample prior to aeration: 18

Is aeration required (<40% or >100%)? Yes or No

Filtered with 110um screen prior to testing Yes or No

Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or No

Dilution Water

Pail label / preparation date 1:01/13

Hardness of dilution water (mg/L) 206

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Comments/Observations:

0 hr: No ppt

48 hr: ppt on surface and carapace

Reviewed By: DP Date Reviewed: 2022/01/26

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS10 Client TEC164 Reference 2122- 1125 ~~-04~~ AW -03

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/01/18	1415	AW/KTM	3	JCC
1	2022/01/19	1030	MF/EP	-	JP.
2	2022/01/20	0945	KTM	3	PLC

Sample Information

Initial pH: ~~8.1~~ JCC 7.8
Initial EC (µS/cm): ~~1019~~ JCC 2060
Salinity (ppt): ~~3~~ JCC 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	7.8	7.8	7.8	7.5	7.5	7.5				
2	8.2	8.2	8.2	8.4	8.4	8.4				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	484	486	490	2100	2120	2130				
2	<91	513	508	1890	1939	1976				

DO (mg/L) (**40-100% saturation at test temp.**)

0	~~9.4~~ 0.2	~~9.4~~ 0.2	~~9.4~~ 0.2	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	~~12~~ 18	~~12~~ 18	~~12~~ 18	12	12	12				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar: Wed (1) Jar(s) mortality 7 days prior to test (must be ≤25%): 5%

QA (previous month)
Days to first brood (≤12 days): 8
Average number of young produced (≥15 young): 35
Were test treatments randomized on test tray? Yes / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%): 0

Sample
DO (mg/L) of sample prior to aeration: 9.4
Temperature (°C) of sample prior to aeration: 12
DO % of sample prior to aeration: 100%
Is aeration required (<40% or >100%)? **Yes or No**
Duration of aeration (37.5 +/- 12.5 mL/min/L) : —
Filtered with 110um screen prior to testing **Yes or No**
Hardness (mg $CaCO_3$/L) of 100% : ~~1045~~ JCC 1241
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): ~~368~~ JCC 451

Dilution Water
Pail label / preparation date: 1:01/13
Hardness of dilution water (mg/L): 206

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

Comments/Observations:
0 hr: no ppt
48 hr: ppt on surface

Reviewed By: Date Reviewed: 2022/01/26

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DASAS Client TEC164 Reference 2122-1125-04

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/01/18	1420	KL/KTA	3	JCC
1	2022/01/19	1020	EP/MF	-	JP
2	2022/01/20	0946	MMn	3	JCC

Sample Information JCC

Initial pH: ~~8.1~~ JCC 7.8
Initial EC (µS/cm): ~~1819~~ JCC 2060
Salinity (ppt): ~~3~~ 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	7.9	7.9	7.9	7.8	7.8	7.8				
2	8.2	8.2	8.2	8.4	8.5	8.5				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	477	483	492	1994	2060	2120				
2	479	489	496	1835	1911	1921				

DO (mg/L) (**40-100% saturation at test temp.**)

0	8.2	8.2	8.2	8.2	8.2	8.2				
2	8.1	8.1	8.1	8.1	8.1	8.1				

Temperature (°C) (range: **18-22 °C**)

0	18	18	18	18	18	18				
2	19	19	19	19	19	19				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar Wed C1 Jar(s) mortality 7 days prior to test (must be ≤25%) 5%

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 35
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0

Sample
DO (mg/L) of sample prior to aeration: 8.6
Temperature (°C) of sample prior to aeration: 18
DO % of sample prior to aeration: 106.1
Is aeration required (<40% or >100%)? **Yes or No**
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20mins
Filtered with 110um screen prior to testing **Yes or No**
Hardness (mg $CaCO_3$/L) of 100% : ~~1241~~ JCC 1241
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): ~~368~~ JCC 451

Dilution Water
Pail label / preparation date 1:01/13
Hardness of dilution water (mg/L) 206

Antiscalant
Final Concentration in Sample: 5mg/L
Volume of sample: 500 mL Volume of antiscalant: 39.5 µL

Comments/Observations:
0 hr: No ppt
48 hr: no ppt

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Reviewed By: JP Date Reviewed: 2022/01/26

APPENDIX C – Chain-of-custody form

Teck

COC ID: EVO NAUTILUS January 17 2022 | TURNAROUND TIME: | RUSH:

PROJECT/CLIENT INFO

Facility Name / Job#	Elkview Operations
Project Manager	Group 1; Brett Mason
Email	Brett.Mason@teck.com
Address	RR1 HWY 3
City	Sparwood
Province	BC
Postal Code	V0B 2G0
Country	Canada
Phone Number	250-425-6179

LABORATORY

Lab Name	Nautilus Environmental - BC
Lab Contact	
Email	jacklyn@nautilusenvironmental.ca
Address	10823 27th Street SE
City	Calgary
Province	AB
Postal Code	T2Z 3V9
Country	Canada
Phone Number	403-253-7121

OTHER INFO

Report Format / Distribution		Excel	PDF	EDD
Email 1:	Cole.Maignon@teck.com	X	X	X
Email 2:	teckcoal@equisonline.com			X
Email 3:	DL-EVO-SRF-LAB@teck.com	X	X	X
Email 4:				
Email 5:				
Email 6:				
Email 7:				
Email 8:				
Email 9:				
Email 10:				
Email 11:				
Email 12:				
Email 13:				

PO number: 807270

SAMPLE DETAILS

2022/01/18
09:00
Manitoulin
JC
8x10L carboys, 4x20L Jugs, 5x 10x1L bottles
NOS/NAT
Good Condition

ANALYSIS REQUESTED

Filtered - F: Field, L: Lab, FL: Field & Lab, N: None

Sample ID	Sample Location (sys_loc_code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	FIL.	PRESERV.	ANALYSIS: 48hr Daphnia Magna Single Concentration Acute Toxicity 20C	48hr Daphnia Magna Single Concentration Acute Toxicity 10C	48hr Daphnia Magna Single Concentration Acute Toxicity Anitscalent	96hr Rainbow Trout Single Concentration Acute Toxicity (20 L Bladder)	96hr Rainbow Trout Single Concentration Acute Toxicity (10 L Bladder)	48hr Daphnia Magna Single Concentration Toxicity 15C	
EV_EC1_WS_2022-01-17_N-SRF -01	EV_EC1	WS		2022/01/17	11:45	G	12			2	2			8	6.9°C	
EV_EC1_WS_2022-01-17_N-SRF-AS -02	EV_EC1	WS		2022/01/17	11:46	G	1					1			10.6°C	
EV_ECOUT_WS_2022-01-17_N-SRF -03	EV_ECOUT	WS		2022/01/17	13:30	G	18			2	2		4	8	8.9°C	
EV_ECOUT_WS_2022-01-17_N-SRF-AS -04	EV_ECOUT	WS		2022/01/17	13:31	G	1					1			12.8°C	

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS

Field Temperatures

ECOUT:

RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME
James Winter-Teck	January 17, 2022 16:30		

SERVICE REQUEST (rush - subject to availability)

Regular (default)	X
Priority (2-3 business days) - 50% surcharge	
Emergency (1 Business Day) - 100% surcharge	
For Emergency <1 Day, ASAP or Weekend - Contact ALS	

Sampler's Name	Dan Nicol	Mobile #	
Sampler's Signature	Dan Nicol	Date/Time	January 17, 2022

END OF REPORT

Acute Toxicity Test Results

Samples collected January 17, 2022

Final Report

February 17, 2022

Submitted to: **Teck Coal Ltd.**
Sparwood, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates					
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation	*Daphnia magna* antiscalant test initiation
F2_BPO_WG_2022-01-17_N/ 2122-1126-01	17-Jan-22 at 0840h	18-Jan-22 at 0900h	18-Jan-22 at 1500h	18-Jan-22 at 1510h	18-Jan-22 at 1520h	-
F2_BPO_WG_2022-01-17_N-AS/ 2122-1126-02	17-Jan-22 at 0841h	18-Jan-22 at 0900h	-	-	-	18-Jan-22 at 1515h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
F2_BPO_WG_2022-01-17_N	6.1°C	1194	483
F2_BPO_WG_2022-01-17_N-AS	6.1°C	1194	483

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)
- *Daphnia magna* 48-h single concentration screening test (conducted with 20 mg/L antiscalant)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample			
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
F2_BPO_WG_2022-01-17_N	100	100	97	-
F2_BPO_WG_2022-01-17_N-AS	-	-	-	100

Sample ID	Percent Immobility in 100 (% v/v)		
	Daphnia magna 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
F2_BPO_WG_2022-01-17_N	0	3	-
F2_BPO_WG_2022-01-17_N-AS	-	-	0

Precipitate observations

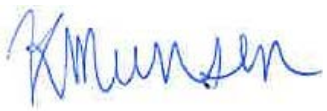
Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
F2_BPO_WG_2022-01-17_N	Rainbow trout	Precipitate observed on the bottom of test vessel	None
	Daphnia magna	None	None
F2_BPO_WG_2022-01-17_N-AS	*Daphnia magna*	None	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	3.3 (2.8-3.9) g/L KCl[1]	7.4 (7.1-7.6) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.4 (2.6-4.5) g/L KCl	6.5 (5.5-7.6) g/L NaCl
Reference toxicant CV	9.1%	5.2%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, December 30, 2021; [2] Test Date January 17, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation



Report By:
Katheryn Munson, BSc
Biologist



Reviewed By:
Courtney Bogstie, P. Biol.
Senior Biologist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Control/dilution water for antiscalant test	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L), Na_2SeO_4 (2 µg Se/L) and 20 mg/L antiscalant
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS ENVIRONMENTAL

Trout Bench Sheet

Method TRS Client TEC164 Reference 2122-1126-01 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022/01/18	1500 *	CC/CH	7	JCS
1	2022/01/19	0930	AW	-	VS
2	2022/01/20	1010	CH	-	TP
3	2022/01/21	0930	EP	-	TP
4	2022/01/22	0935	CC/MAE	1	EV

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 7.6
Initial EC (µS/cm): 1393
Salinity (ppt): 3

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L (yes/no)

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	9.6	8.6			
Temp (°C) of 100%	16				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: **5.5-8.5**)								
Day 0	7.9	7.9						
Day 4	8.0	8.1						
EC (uS/cm)								
Day 0	502	2090						
Day 4	477	1807 cc 1811						
DO (mg/L) (**70-100% saturation at test temp.**)								
Day 0	8.8	8.6						
Day 4	8.6	8.6						
Temperature (°C) (range: **14-16°C**)								
Day 0	15	16						
Day 4	16	16						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	9	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	2.9	0.2
2	3.4	0.4
3	3.2	0.3
4	3.6	0.4
5	3.5	0.4
6	2.9	0.2
7	3.3	0.3
8	3.5	0.4
9	* 2.7	0.2
10	3.5	0.4

Loading Density (g/L): 0.2 (must be ≤0.5 g/L)
Mean Length (cm): 3.3
Length Range (cm): 2.7-3.6
Mean Weight (g): 0.3 (Must be ≥0.3g)
Weight Range: (g): 0.2-0.4

Test Organism Information

Batch 20211214TR
Source Smoky Trout Farm
Tank # 4
Days Held at 15± 2°C 36 (must be ≥14 days)
Percent stock mortality 0.3 (7 days prior to test, must be ≤2%)
Test Volume (L) 18

Comments : 96 Hrs: PPT on bottom of tank

* dead ctl fish.

Reviewed By: EV Date Reviewed: 2022/01/26

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS20 Client TEC164 Reference 2122-1126-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/01/18	1520	MAF/DW	3	JCC
1	2022/01/19	1010	EP/MF	-	EP
2	2022/01/20	0940	KM	3	KM

Sample Information

Initial pH: 7.6
Initial EC (µS/cm): 1893
Salinity (ppt): 3

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day											
0	7.7	7.7	7.7	7.7	7.7	7.7					
2	8.2	8.2	8.2	8.4	8.4	8.2					

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	486	493	496	2070	2110	2120					
2	476	485	486	1870	1883	1904					

DO (mg/L) (**40-100% saturation at test temp.**)

0	8.2	8.2	8.2	8.2	8.2	8.2					
2	8.1	8.1	8.1	8.1	8.1	8.1					

Temperature (°C) (range: **18-22 °C**)

0	18	18	18	18	18	18					
2	19	19	19	19	19	19					

Number Alive (I, immobile)

0	10	10	10	10	10	10					
1	10	10	10	10	10	10					
2	10	10	10	10	9	10					

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar E4 Jar(s) mortality 7 days prior to test (must be ≤25%) 5%

QA (previous month)
Days to first brood (≤12 days) 9
Average number of young produced (≥15 young) 26
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 8.7
DO % of sample prior to aeration: 106%
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20m
Hardness (mg $CaCO_3$/L) of 100% : 1194
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 483

Temperature (°C) of sample prior to aeration: 18
Is aeration required (<40% or >100%)? (Yes) or No
Filtered with 110um screen prior to testing Yes or (No)
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)

Dilution Water
Pail label / preparation date 1:01/13
Hardness of dilution water (mg/L) 206

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Comments/Observations:
0 hr: no ppt
48 hr: no ppt

Reviewed By: EV Date Reviewed: 2022/01/26

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS10 Client TEC164 Reference 2122- 1126-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/01/18	1510	MTF/DW	3	JCC
1	2022/01/19	1030	EP/MF	-	JP
2	2022/01/20	0955	KAM	3	KK

Sample Information

Initial pH: 7.6
Initial EC (µS/cm): 1893
Salinity (ppt): 3

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				
day	pH (units) (range: 6.0-8.5)									
0	7.7	7.7	7.7	7.4	7.4	7.4				
2	8.3	8.3	8.3	8.3	8.3	8.3				
	The pH of the sample was not adjusted prior to test setting, unless noted in the comments below									
	EC (uS/cm)									
0	492	494	495	2120	2140	2140				
2	476	485	492	1884	1936	1952				
	DO (mg/L) (**40-100% saturation at test temp.**)									
0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				
	Temperature (°C) (range: **8-12 °C**)									
0	12	12	12	12	12	12				
2	12	12	12	12	12	12				
	Number Alive (I, immobile)									
0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar D3 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 9
Average number of young produced (≥15 young) 24.
Were test treatments randomized on test tray? Yes / No

Control Validity Criteria
Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 9.6.
DO % of sample prior to aeration: 100%
Duration of aeration (37.5 +/- 12.5 mL/min/L) : —
Hardness (mg $CaCO_3$/L) of 100% : 1194
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 483

Temperature (°C) of sample prior to aeration: 11
Is aeration required (<40% or >100%)? **Yes or No**
Filtered with 110um screen prior to testing **Yes or No**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Dilution Water
Pail label / preparation date 1:01/13
Hardness of dilution water (mg/L) 206

DO Levels (40-100% saturation) - corrected for altitude -
4.1 to 10.3 mg/L at 8°C
4.0 to 10.0 mg/L at 9°C
3.9 to 9.8 mg/L at 10°C
3.8 to 9.6 mg/L at 11°C
3.7 to 9.4 mg/L at 12°C

Comments/Observations:
0 hr: no ppt
48 hr: no ppt

Reviewed By: EV Date Reviewed: 2022/01/26

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DASAS Client TEC164 Reference 2122- 1126 - 02

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/01/18	615	MF/EP	3	JCC
1	2022/01/19	1005	MF/EP	-	JP
2	2022/01/20	0935	KAM	3	KC

Sample Information

Initial pH: 7.6
Initial EC (µS/cm): 1843
Salinity (ppt): 3

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	7.7	7.7	7.7	7.5	7.5	7.5				
2	8.2	8.2	8.2	8.4	8.4	8.4				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	494	495	498	2080	2110	2130				
2	479	491	498	1841	1888	1902				

DO (mg/L) (**40-100% saturation at test temp.**)

0	8.2	8.2	8.2	8.2	8.2	8.2				
2	8.1	8.1	8.1	8.1	8.1	8.1				

Temperature (°C) (range: **18-22 °C**)

0	18	18	18	18	18	18				
2	19	19	19	19	19	19				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar C4 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%.

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 27
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0

Sample
DO (mg/L) of sample prior to aeration: 8.2
DO % of sample prior to aeration: 100%
Duration of aeration (37.5 +/- 12.5 mL/min/L): 20 mins MF
Hardness (mg $CaCO_3$/L) of 100%: 1194
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L)
Alkalinity of 100% sample (mg $CaCO_3$/L): 453

Temperature (°C) of sample prior to aeration: 18
Is aeration required (<40% or >100%)? **Yes or No**
Filtered with 110um screen prior to testing **Yes or No**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Dilution Water
Pail label / preparation date 1:01/13
Hardness of dilution water (mg/L) 206

Antiscalant
Final Concentration in Sample: 20mg/L
Volume of sample: 500mL Volume of antiscalant: 158µL

Comments/Observations:
0 hr: nopot.
48 hr: No ppt

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Reviewed By: EV Date Reviewed: 2022/01/26

APPENDIX C – Chain-of-custody form

Teck

COC ID: F2 NAUTILUS January 17 2022 | TURNAROUND TIME: | RUSH:

PROJECT/CLIENT INFO

Facility Name / Job#	F2 SRF
Project Manager	BRETT MASON
Email	BRETT.MASON@TECK.COM
Address	RR1 HWY 3
City	Sparwood
Province	BC
Postal Code	V0B 2G0
Country	Canada
Phone Number	250-425-6179

LABORATORY

Lab Name	Nautilus Environmental - BC
Lab Contact	
Email	jacklyn@nautilusenvironmental.ca
Address	10823 27th Street SE
City	Calgary
Province	AB
Postal Code	T2Z 3V9
Country	Canada
Phone Number	403-253-7121

OTHER INFO

Report Format / Distribution		Excel	PDF	EDD
Email 1:	Cole.Macgregor@teck.com	X	X	X
Email 1:	teckcoal@equisonline.com			X
Email 2:	DL-EVO-SRF-LAB@teck.com	X	X	X
Email 3:				
Email 4:				
Email 5:				
Email 6:				
Email 7:				
Email 8:				
Email 10:				
Email 11:				
Email 12:				
Email 13:				

PO number: 807270

SAMPLE DETAILS

2022/01/18
09:00
Manitoulin
JC
4x20L Jugs, 5x1L bottles
No61/No2
Good Condition

Filtered - F: Field, L: Lab, FL: Field & Lab, N: None

Sample ID	Sample Location (sys_loc_code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	Filt.	ANALYSIS: 48hr Daphnia Magna Single Concentration Acute Toxicity 20C	48hr Daphnia Magna Single Concentration Acute Toxicity 10C	48hr Daphnia Magna Single Concentration Acute Toxicity Anitscalent	96hr Rainbow Trout Single Concentration Acute Toxicity	48hr Daphnia Magna Single Concentration Toxicity 15C
F2_BPO_WG_2022-01-17_N -01	F2_BPO	WG		2022/01/17	8:40	G	8		2	2		4	6.1°C
F2_BPO_WG_2022-01-17_N-AS -02	F2_BPO	WG		2022/01/17	8:41	G	1				1		6.1°C

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME
	James Winter-Teck	January 17, 2022 16:30		

SERVICE REQUEST (rush - subject to availability)

Regular (default)	X
Priority (2-3 business days) - 50% surcharge	
Emergency (1 Business Day) - 100% surcharge	
For Emergency <1 Day, ASAP or Weekend - Contact ALS	

Sampler's Name		Mobile #	
Sampler's Signature		Date/Time	January 17, 2022

END OF REPORT

Acute Toxicity Test Results

Samples collected January 18, 2022

Final Report

February 7, 2022

Submitted to: **Teck Coal Ltd.**
Sparwood, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates					
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation	*Daphnia magna* antiscalant test initiation
EV_GT1_WS_2022-01-18_N-SRF / 2122-1132-01	18-Jan-22 at 1040h	19-Jan-22 at 0900h	21-Jan-22 at 1500h	19-Jan-22 at 1435h	19-Jan-22 at 1405h	-
EV_BC1_WS_2022-01-18_N-SRF / 2122-1132-02	18-Jan-22 at 1200h	19-Jan-22 at 0900h	21-Jan-22 at 1500h	19-Jan-22 at 1430h	19-Jan-22 at 1405h	-
EV_BC1_WS_2022-01-18_N-SRF-AS / 2122-1132-03	18-Jan-22 at 1201h	19-Jan-22 at 0900h	-	-	-	19-Jan-22 at 1410h
EV_GT1_WS_2022-01-18_N-SRF-AS / 2122-1132-04	18-Jan-22 at 1041h	19-Jan-22 at 0900h	-	-	-	19-Jan-22 at 1415h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
EV_GT1_WS_2022-01-18_N-SRF	2.0°C	226	215
EV_BC1_WS_2022-01-18_N-SRF	3.0°C	754	250
EV_BC1_WS_2022-01-18_N-SRF-AS	2.8°C	754	250
EV_GT1_WS_2022-01-18_N-SRF-AS	4.1°C	226	215

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)
- *Daphnia magna* 48-h single concentration screening test (conducted with 5 mg/L antiscalant)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample			
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
EV_GT1_WS_2022-01-18_N-SRF	100	100	100	-
EV_BC1_WS_2022-01-18_N-SRF	90	100	100	-
EV_BC1_WS_2022-01-18_N-SRF-AS	-	-	-	100
EV_GT1_WS_2022-01-18_N-SRF-AS	-	-	-	100

Sample ID	Percent Immobility in 100 (% v/v)		
	Daphnia magna 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
EV_GT1_WS_2022-01-18_N-SRF	0	0	-
EV_BC1_WS_2022-01-18_N-SRF	0	0	-
EV_BC1_WS_2022-01-18_N-SRF-AS	-	-	0
EV_GT1_WS_2022-01-18_N-SRF-AS	-	-	0

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
EV_GT1_WS_2022-01-18_N-SRF	Rainbow trout	Precipitate observed on bottom of test vessel	None
	Daphnia magna	None	None
EV_BC1_WS_2022-01-18_N-SRF	Rainbow trout	Precipitate observed on test vessel	None
	Daphnia magna	None	None
EV_BC1_WS_2022-01-18_N-SRF-AS	*Daphnia magna*	None	None
EV_GT1_WS_2022-01-18_N-SRF-AS	*Daphnia magna*	None	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	3.3 (2.8-3.9) g/L KCl[1]	7.4 (7.1 - 7.6) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.4 (2.6-4.5) g/L KCl	6.5 (5.5 - 7.6) g/L NaCl
Reference toxicant CV	9.1%	5.2%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	**See below**	Acceptable
Test performance	Valid	Valid

[1] Test date, December 30, 2021; [2] Test Date January 17, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation

Control validity of the EV_BC1_WS_2022-01-18_N-SRF Rainbow trout test was not met as mortality and/or stressed behaviour exceeded 10%, resulting in an invalid test.



Report By:
Mia Fearey, BIT
Biologist



Reviewed By:
Sara Thiessen, BSc
Senior Biologist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Control/dilution water for antiscalant test	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L), Na_2SeO_4 (2 µg Se/L) and 5 mg/L antiscalant
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC164 Reference 2122-1132-01 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022-01-21	1500 *	EP / MF/	1/7	MAF
1	2022-01-22	0830	CE	-	AM
2	2022-01-23	0810	KTM	-	PMC
3	2022-01-24	0810	KTM	-	TP
4	2022-01-25	1020	CH/DW	1	AW

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 8.0
Initial EC (µS/cm): 1888
Salinity (ppt): 4

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L (yes/no)

	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
Preaeration time					
DO(mg/L) of 100%	10.5	10.8	10.0	9.7	9.6
Temp (°C) of 100%	15				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	7.9	8.1						
Day 4	8.3	8.4						
EC (uS/cm)								
Day 0	486	2020						
Day 4	480	1859						
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	8.8	9.6						
Day 4	8.6	8.8						
Temperature (°C) (range: 14-16°C)								
Day 0	15	15						
Day 4	16	15						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.7	0.5
2	3.8	0.5
3	2.8	0.2
4	3.7	0.6
5	2.7	0.2
6	2.8	0.2
7	3.3	0.3
8	3.0	0.2
9	3.1	0.2
10	3.3	0.3

Loading Density (g/L): 0.2 (must be ≤0.5 g/L)
Mean Length (cm): 3.2
Length Range (cm): 2.7-3.7
Mean Weight (g): 0.3 (Must be ≥0.3g)
Weight Range: (g): 0.2-0.6

Test Organism Information

Batch 20211214TR
Source Smoky Trout Farm
Tank # 4
Days Held at 15± 2°C (must be ≥14 days) 39
Percent stock mortality (7 days prior to test, must be ≤2%) 0.58
Test Volume (L) 18

Comments : ppt on bottom of tank

Reviewed By: SP Date Reviewed: 2022/01/28

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC164 Reference 2122-1132-02 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022-01-21	1500 *	EP /MF/	1 4 7	MAF
1	2022-01-22	0830	EC	-	AU
2	2022-01-23	0816	KTM	-	KL
3	2022-01-24	1010	KTM	-	TP
4	2022-01-25	1020	CH/DW	1	AW

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 7.9
Initial EC (µS/cm): 2260
Salinity (ppt): 4

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L: yes/no

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	10.4	10.3	9.8	9.9	9.3
Temp (°C) of 100%	15				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: **5.5-8.5**)								
Day 0	8.2	7.9						
Day 4	8.3	8.2						
EC (uS/cm)								
Day 0	491	2440						
Day 4	520	2250						
DO (mg/L) (**70-100% saturation at test temp.**)								
Day 0	8.8	9.3						
Day 4	8.8	8.6						
Temperature (°C) (range: **14-16°C**)								
Day 0	15	15						
Day 4	15	16						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4 *	8	9						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Dead controls

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1 *	2.9	0.3
2 *	2.6	0.2
3	4.0	0.7
4	3.5	0.3
5	3.4	0.4
6	3.1	0.3
7	3.7	0.5
8	3.5	0.4
9	3.4	0.3
10	3.1	0.3

Loading Density (g/L): 0.2
(must be ≤0.5 g/L)
Mean Length (cm): 3.3
Length Range (cm): 2.6-4.0
Mean Weight (g): 0.4
(Must be ≥0.3g)
Weight Range: (g): 0.2-0.7

Test Organism Information

Batch 20211214 TR
Source Smoky Trout Farm
Tank # 4
Days Held at 15± 2°C 39
(must be ≥14 days)
Percent stock mortality 0.58
(7 days prior to test, must be ≤2%)
Test Volume (L) 18

Comments : ppt on bottom & sides of tank

Reviewed By: OP Date Reviewed: 2022/01/28

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS Client TEC164 Reference 2122-1132-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/01/19	1405	KTM/MAF	3	MF
1	2022/01/20	0900	AW	-	TP
2	2022/01/21	1030	AW	2	MAF

Sample Information

Initial pH: 8.0
Initial EC (µS/cm): 1888
Salinity (ppt): 4

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	8.0	8.0	8.0	8.1	8.1	8.1				
2	8.0	8.0	8.0	8.1	8.1	8.1				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	487	478	474	1803	1844	1849				
2	471	475	482	1900	1903	1904				

DO (mg/L) (**40-100% saturation at test temp.**)

0	8.2	8.2	8.2	9.1	9.1	9.1				
2	8.1	8.1	8.1	8.2	8.2	8.2				

Temperature (°C) (range: **18-22 °C**)

0	18	18	18	18	18	18				
2	19	19	19	18	18	18				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar Weed Jar(s) mortality 7 days prior to test (must be ≤25%) 5%.

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 33
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 9.8
DO % of sample prior to aeration: 117%
Duration of aeration (37.5 +/- 12.5 mL/min/L): 20m
Hardness (mg $CaCO_3$/L) of 100% : 226
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 215

Temperature (°C) of sample prior to aeration: 18
Is aeration required (<40% or >100%)? (Yes) or No
Filtered with 110um screen prior to testing Yes or (No)
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)

Dilution Water
Pail label / preparation date 1:01/13
Hardness of dilution water (mg/L) 206

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Comments/Observations:
0h: ncppt.
48h: No ppt

Reviewed By: JP Date Reviewed: 2022/01/28

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC164 Reference 2122-1132-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/01/19	1435	MAF/KTM	3	MF
1	2022/01/20	0810	AW	-	TP
2	2022/01/21	1030	AW	2	MAF

Sample Information

Initial pH: 8.0
Initial EC (µS/cm): 1888
Salinity (ppt): 4

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	8.1	8.0	8.0	8.1	8.1	8.1				
2	8.3	8.2	8.2	8.3	8.3	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	484	478	475	1848	1869	1870				
2	510	497	493	1860	1887	1926				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	10.3	10.3	10.3				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar C3 Jar(s) mortality 7 days prior to test (must be ≤25%) 5/.

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 29
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0

Sample
DO (mg/L) of sample prior to aeration: 10.8
DO % of sample prior to aeration: 109
Duration of aeration (37.5 +/- 12.5 mL/min/L): 20m
Hardness (mg $CaCO_3$/L) of 100% : 226
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 215

Temperature (°C) of sample prior to aeration: 12.0 MAF
Is aeration required (<40% or >100%)? Yes or No
Filtered with 110um screen prior to testing Yes or No
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or No

Dilution Water
Pail label / preparation date 1:01/13
Hardness of dilution water (mg/L) 206

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

Comments/Observations:
0h: nappt.
48h: No ppt

Reviewed By: [illegible] Date Reviewed: 2022/01/28

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS Client TEC164 Reference 2122-1132-02

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/01/19	1305	MAF/KTM	3	MF
1	2022/01/20	0900	AW	-	TP
2	2022/01/21	1030	AW	2	MAF

Sample Information

Initial pH: 7.9
Initial EC (µS/cm): 2260
Salinity (ppt): 4

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	8.1	8.0	8.0	7.9	7.9	7.9				
2	8.1	8.0	8.0	7.9	7.9	8.0				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	496	474	473	2280	2210	2360				
2	493	487	482	2310	2340	2370				

DO (mg/L) (**40-100% saturation at test temp.**)

0	8.2	8.2	8.2	9.6	9.6	9.6				
2	8.1	8.1	8.1	8.1	8.1	8.1				

Temperature (°C) (range: **18-22 °C**)

0	18	18	18	18	18	18				
2	19	19	19	19	19	19				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar WedD Jar(s) mortality 7 days prior to test (must be ≤25%) 5/1.

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 33
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0

Sample
DO (mg/L) of sample prior to aeration: 9.9
DO % of sample prior to aeration: 120%
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20m
Hardness (mg $CaCO_3$/L) of 100% : 754
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 250

Temperature (°C) of sample prior to aeration: 19
Is aeration required (<40% or >100%)? **Yes or No**
Filtered with 110um screen prior to testing **Yes or No**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Dilution Water
Pail label / preparation date 1:01/13
Hardness of dilution water (mg/L) 206

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Comments/Observations:
0h: ncppt.
48h: No ppt

Reviewed By: TP Date Reviewed: 2022/01/29.

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC164 Reference 2122-1132-02

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/01/19	1430	MF/KTM	3	MF
1	2022/01/20	0800	AW	-	TP
2	2022/01/21	1040	AW	2	MF

Sample Information

Initial pH: 7.9
Initial EC (µS/cm): 2260
Salinity (ppt): 4

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	8.1	8.1	8.1	8.0	8.0	8.0				
2	8.1	8.1	8.1	8.1	8.1	8.1				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	489	483	476	2210	2380	2260				
2	490	496	515	2320	2340	2360				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (l, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar D2 Jar(s) mortality 7 days prior to test (must be ≤25%) 5/.

QA (previous month)
Days to first brood (≤12 days) 9
Average number of young produced (≥15 young) 22
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 10.7 Temperature (°C) of sample prior to aeration: 10°C
DO % of sample prior to aeration: 107% Is aeration required (<40% or >100%)? Yes or No
Duration of aeration (37.5 +/- 12.5 mL/min/L): 20m Filtered with 110um screen prior to testing Yes or No
Hardness (mg $CaCO_3$/L) of 100% : 754 Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or No
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 252

Dilution Water

Pail label / preparation date 1:01/13
Hardness of dilution water (mg/L) 206

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

Comments/Observations:
0h: ncppt.
48h: No ppt

Reviewed By: [illegible] Date Reviewed: 2022/01/25.

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method: DAS AS Client: TEC164 Reference: 2122-1132-03

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/01/19	1410	MF/LTM	3	MF
1	2022/01/20	0800	AW	-	TP
2	2022/01/21	1030	AW	2	MAF

Sample Information

Initial pH: 7.9
Initial EC (µS/cm): 2260
Salinity (ppt): 4

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	8.0	8.0	8.0	8.0	8.0	8.0				
2	8.0	8.0	8.0	8.1	8.1	8.2				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	481	480	480	2310	2210	2340				
2	473	483	491	2340	2360	2380				

DO (mg/L) (**40-100% saturation at test temp.**)

0	8.2	8.2	8.2	8.1	8.1	8.1				
2	8.1	8.1	8.1	8.1	8.1	8.1				

Temperature (°C) (range: **18-22 °C**)

0	18	18	18	19	19	19				
2	19	19	19	19	19	19				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar: Wed D Jar(s) mortality 7 days prior to test (must be ≤25%): 5/.

QA (previous month)
Days to first brood (≤12 days): 8
Average number of young produced (≥15 young): 33
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%): 0

Sample
DO (mg/L) of sample prior to aeration: 9.8
DO % of sample prior to aeration: 119%
Duration of aeration (37.5 +/- 12.5 mL/min/L): 20m
Hardness (mg $CaCO_3$/L) of 100% : 754
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L): —
Alkalinity of 100% sample (mg $CaCO_3$/L): 250

Temperature (°C) of sample prior to aeration: 19
Is aeration required (<40% or >100%)? **Yes or No**
Filtered with 110um screen prior to testing **Yes or No**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Dilution Water
Pail label / preparation date: 1:01/13
Hardness of dilution water (mg/L): 206

Antiscalant
Final Concentration in Sample: 5 mg/L
Volume of sample: 500 ml Volume of antiscalant: 39.5 uL

Comments/Observations:
0h: nappt.
48h: Nappt

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Reviewed By: OP Date Reviewed: 2022/01/28

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS Client TEC164 Reference 2122-1132-04

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/01/19	1415	MAF/KM	3	MF
1	2022/01/20	0800	AW	-	TP
2	2022/01/21	1030	AW	2	MAF

Sample Information

Initial pH: 8.0
Initial EC (µS/cm): 1888
Salinity (ppt): 4

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	8.0	8.0	8.0	8.1	8.1	8.1				
2	7.9	7.9	7.9	8.1	8.1	8.1				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	489	484	484	1838	1827	1825				
2	472	482	493	1854	1863	1877				

DO (mg/L) (**40-100% saturation at test temp.**)

0	8.1	8.1	8.1	9.9	9.9	9.9				
2	8.1	8.1	8.1	8.1	8.1	8.1				

Temperature (°C) (range: **18-22 °C**)

0	19	19	19	18	18	18				
2	19	19	19	19	19	19				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar D1 Jar(s) mortality 7 days prior to test (must be ≤25%) 0/1

QA (previous month)
Days to first brood (≤12 days) 9
Average number of young produced (≥15 young) 22
Were test treatments randomized on test tray? (Yes) No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0

Sample
DO (mg/L) of sample prior to aeration: 10.6
DO % of sample prior to aeration: 128%
Duration of aeration (37.5 +/- 12.5 mL/min/L): 20m
Hardness (mg $CaCO_3$/L) of 100%: 226
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 215

Temperature (°C) of sample prior to aeration: 18
Is aeration required (<40% or >100%)? (Yes) or No
Filtered with 110um screen prior to testing Yes or (No)
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)

Dilution Water
Pail label / preparation date 1:01/13
Hardness of dilution water (mg/L) 206

Antiscalant
Final Concentration in Sample: 5 mg/L
Volume of sample: 500 ml Volume of antiscalant: 39.5 uL

Comments/Observations:
0h: neopt.
48h: no ppt

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Reviewed By: ST Date Reviewed: 2022/01/28

APPENDIX C – Chain-of-custody form

Teck

COC ID: EVO NAUTILUS January 18 2022 | TURNAROUND TIME: | RUSH:

PROJECT/CLIENT INFO

Facility Name / Job#	Elkview Operations
Project Manager	Group 1; Brett Mason
Email	Brett.Mason@teck.com
Address	RR1 HWY 3
City	Sparwood
Province	BC
Postal Code	V0B 2G0
Country	Canada
Phone Number	250-425-6179

LABORATORY

Lab Name	Nautilus Environmental - BC
Lab Contact	
Email	jacklyn@nautilusenvironmental.ca
Address	10823 27th Street SE
City	Calgary
Province	AB
Postal Code	T2H 2K1
Country	Canada
Phone Number	T2Z 3V9

OTHER INFO

Report Format / Distribution		Excel	PDF	EDD
Email 1:				
Email 2:				
Email 3:				
Email 4:				
Email 5:				
Email 6:				
Email 7:	teckcoal@equisonline.com			X
Email 8:	DL-EVO-SRF@teck.com	X	X	X
Email 9:	Cole.Macgregor@teck.com	X	X	X
Email 10:				
Email 11:				
Email 12:				
Email 13:				

PO number: 807270

SAMPLE DETAILS

2022/01/19
09:00
Manitoulin
JC
8x20LJugs, 10x1Lbottles
N6S/NaI
Good Condition

ANALYSIS REQUESTED

Filtered - F: Field, L: Lab, FL: Field & Lab, N: None

Sample ID	Sample Location (sys_loc_code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	48hr Daphnia Magna Single Concentration Acute Toxicity 20C	48hr Daphnia Magna Single Concentration Acute Toxicity 10C	48hr Daphnia Magna Single Concentration Acute Toxicity Anitscalent	96hr Rainbow Trout Single Concentration Acute Toxicity (20 L Bladder)	96hr Rainbow Trout Single Concentration Acute Toxicity (20 L Bladder)	48hr Daphnia Magna Single Concentration Toxicity 15C	
EV_GT1_WS_2022-01-18_N-SRF -01	EV_GT1	WS		2022/01/18	10:40	G	8	2	2			4	2.0°C	
EV_BC1_WS_2022-01-18_N-SRF -02	EV_BC1	WS		2022/01/18	12:00	G	8	2	2			4	3.0°C	
EV_BC1_WS_2022-01-18_N-SRF-AS -03	EV_BC1	WS		2022/01/18	12:01	G	1			1			2.8°C	
EV_GT1_WS_2022-01-18_N-SRF-AS -04	EV_GT1	WS		2022/01/18	10:41	G	1			1			4.1°C	

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME
Field Temperatures	Ann Livingstone - Teck	January 18, 2022		
		1600.		

SERVICE REQUEST (rush - subject to availability)

Regular (default)	X
Priority (2-3 business days) - 50% surcharge	
Emergency (1 Business Day) - 100% surcharge	
For Emergency <1 Day, ASAP or Weekend - Contact ALS	

Sampler's Name	Mandi Cochrane	Mobile #	
Sampler's Signature		Date/Time	January 18, 2022

END OF REPORT

Acute Toxicity Test Results

Sample collected January 24, 2022

Final Report

February 15, 2022

Submitted to: **Teck Coal Ltd.**
Sparwood, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates					
	Collected	Received	Rainbow trout test initiation[1]	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation	*Daphnia magna* antiscalant test initiation
F2_BPO_WG_2022-01-24_N / 2122-1190-01	24-Jan-22 at 0920h	24-Jan-22 at 0950h	27-Jan-22 at 1136h	26-Jan-22 at 1535h	26-Jan-22 at 1530h	-
F2_BPO_WG_2022-01-24_N-AS / 2122-1190-02	24-Jan-22 at 0921h	24-Jan-22 at 0950h	-	-	-	26-Jan-22 at 1520h

[1]According to information provided by Nautilus Environmental (Burnaby, BC)

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
F2_BPO_WG_2022-01-24_N	8.4°C	1012	375
F2_BPO_WG_2022-01-24_N-AS	8.9°C	1012	375

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)
- *Daphnia magna* 48-h single concentration screening test (conducted with 20 mg/L antiscalant)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample			
	Rainbow trout[1]	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
F2_BPO_WG_2022-01-24_N	100	100	100	-
F2_BPO_WG_2022-01-24_N-AS	-	-	-	100

[1]According to information provided by Nautilus Environmental (Burnaby, BC)

Sample ID	Percent Immobility in 100 (% v/v)		
	***Daphnia magna* 10˚C**	***Daphnia magna* 20˚C**	***Daphnia magna* antiscalant**
F2_BPO_WG_2022-01-24_N	0	0	-
F2_BPO_WG_2022-01-24_N-AS	-	-	0

Precipitate observations

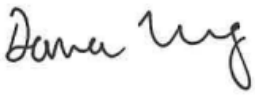
Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
F2_BPO_WG_2022-01-24_N	Rainbow trout[1]	Precipitate observed in test vessel	None
	Daphnia magna	None	None
F2_BPO_WG_2022-01-24_N-AS	*Daphnia magna*	None	None

[1]According to information provided by Nautilus Environmental (Burnaby, BC)

QA/QC

QA/QC summary	Rainbow trout[3]	*Daphnia magna*
Reference toxicant LC50 (95% CL)	1.9 (1.3-2.4) g/L KCl[1]	7.1 (6.8-7.4) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	1.5 (1.0-2.4) g/L KCl	6.5 (5.6-7.6) g/L NaCl
Reference toxicant CV	22%	5.0%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, January 26, 2022; [2] Test Date February 2, 2022;
[3]According to information provided by Nautilus Environmental (Burnaby, BC)
LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation



Report By:
Dana Wong, BSc
Biologist



Reviewed By:
Kayla Knol, P. Biol.
Senior Biologist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.[1]

Test species	*Oncorhynchus mykiss*
Organism source	Fish hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 - 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ± 1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

[1]According to information provided by Nautilus Environmental (Burnaby, BC)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Control/dilution water for antiscalant test	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L), Na_2SeO_4 (2 µg Se/L) and 20 mg/L antiscalant
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

Rainbow Trout Summary Sheet

Client: Nautilus

Start Date/Time: Jan 27/22 @ 1136h

Work Order No.: 220140

Test Species: *Oncorhynchus mykiss*

Sample Information:

Sample ID: 2122-1190-01
Sample Date: January 24, 2022
Date Received: January 26, 2022
Sample Volume: 1 x 20L
Other: —

Test Validity Criteria:
≥ 90% Control Survival
WQ Ranges:
T (°C) = 15 ± 1; DO (mg/L) = 7.0 to 10.3; pH = 5.5 to 8.5

Dilution Water:

Type: Dechlorinated Municipal Tap Water
Hardness (mg/L $CaCO_3$): 22
Alkalinity (mg/L $CaCO_3$): 11

Test Organism Information:

Batch No.: 010622
Source: Lyndon Fish Hatcheries
No. Fish/Volume (L): 10/12L
Loading Density (g/L): 0.27
Mean Length ± SD (mm): 35 ± 2 Range: 30 - 38
Mean Weight ± SD (g): 0.33 ± 0.08 Range: 0.20 - 0.47

KCl Reference Toxicant Results:

Reference Toxicant ID: RBTK06
Stock Solution ID: N/A
Date Initiated: January 26, 2022
96-h LC50 (95% CL) [g/L KCl]: 1.9 (1.3 - 2.4)

Reference Toxicant Mean and Historical Range [g/L KCl]: 1.5 (1.0 - 2.4)
Reference Toxicant CV (%): ~~25~~ 22

Test Results: 0% mortality at 96h in the 100% (v/v) undiluted sample.

Reviewed by: [signature]

Date reviewed: Feb. 7, 2022

96-Hour Rainbow Trout Toxicity Test Data Sheet

Client/Project#: Nautilus
Sample I.D. 2122-1190-01
W.O. # 220140
RBT Batch #: 010522
Date Collected/Time: Jan 24/22 @ 0920h
Date Setup/Time: Jan 27/22 @ 11:36h
CER #: 7
Sample Setup By: HEC

Thermometer: CER7
D.O. meter/probe: DOS 15
Cond./Salinity meter/probe: C2/2
pH meter/probe: P2/2

Number Fish/Volume: 10/12L
7-d % Mortality: 0.49
Total Pre-aeration Time (mins): 30
Aeration rate adjusted to 6.5 ± 1 mL/min/L? (Y/N): Y

Undiluted Sample WQ			
Parameters	Initial WQ	Adjustment	30 min WQ
Temp °C	14.0		14.0
D.O. (mg/L)	10.3		10.2
pH	7.3		7.6
Cond. (µS/cm)	1971		1983
Salinity (ppt)	1.0		1.0

Concentration	# Survivors							Temperature (°C)					Dissolved Oxygen (mg/L)					pH					Conductivity (µS/cm)	
(% v/v)	1	2	4	24	48	72	96	0	24	48	72	96	0	24	48	72	96	0	24	48	72	96	0	96
Ctrl				10	10	10	10	14.0	14.0	14.0	14.5	14.5	10.2	10.0	9.9	10.1	9.7	7.0	7.1	7.1	7.1	7.0	50	53
100				10	10	10	10	14.0	14.0	14.0	14.5	14.5	10.2	10.1	9.9	10.3	9.7	7.6	8.4	8.5	8.6	8.5	1983	1925
Initials				KM/BAM	Jim	PYH	PYH	HEC	KM/BAM	Jim	PYH	PYH	HEC	KM/BAM	Jim	HEC	PYH	HEC	BAM	Jim	HEC	PYH	HEC	PYH

Sample Description/Comments: ~~Jim Clear~~ Jim Clear, ~~colourless~~ Jim pale green, odourless liquid w/ no particulates.

Fish Description at 96 h: All fish appear normal

Number of Stressed Fish at 96 h: Ø

Other Observations: Grey precipitate on air line and bottom of tank

Reviewed by: [signature]

Date Reviewed: Feb. 7, 2022

Version 2.5; Issued July 19, 2017

Nautilus Environmental Company Inc.

Rainbow trout (Oncorhynchus mykiss) Length and Weight Sheet

Client: Nautilus
Sample ID: ~~2122-1191~~ 2122-1190-01
W.O. #: 220140 Inc

Balance ID: Bal - 2
Date Initiated: Jan 27/22
Date Measured: Jan 31/22
Batch #: 010622

	Length (mm)	Weight (g)
1	36	0.38
2	34	0.29
3	38	0.47
4	30	0.20
5	32	0.23
6	34	0.34
7	34	0.33
8	37	0.38
9	36	0.33
10	37	0.34
Total	348	3.29
Mean	35	0.33
Std. Dev.	2	0.08
Low	30	0.20
High	38	0.47

Volume Tested (L): 12

Loading Density (g/L): 0.27

Initials: PYM

Reviewed by: _____ Date Reviewed: Feb 7, 2022

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC164 Reference 2122-1190-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/01/26	1530	MF/SC	2	WL
1	2022/01/27	1110	MF	-	TP
2	2022/01/28	0950	SCC	3	MF

Sample Information

Initial pH: 7.5
Initial EC (µS/cm): 2220
Salinity (ppt): 4

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	7.9	7.9	7.9	7.6	7.6	7.6				
2	8.0	8.0	8.0	8.1	8.1	8.1				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	494	478	476	2080	2130	2140				
2	495	480	485	1943	2120	2120				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.7	7.7	7.7				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	21	21	21				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10(2I)				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar EB1 (MF)
Jar(s) mortality 7 days prior to test (must be ≤25%) 8/10 (MF) 20%

QA (previous month)
Days to first brood (≤12 days) 9
Average number of young produced (≥15 young) 33
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0%
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 7.7
DO % of sample prior to aeration: 100
Duration of aeration (37.5 +/- 12.5 mL/min/L): —
Hardness (mg $CaCO_3$/L) of 100%: 1012
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 375

Temperature (°C) of sample prior to aeration: 21
Is aeration required (<40% or >100%)? **Yes or No**
Filtered with 110um screen prior to testing **Yes or No**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Dilution Water
Pail label / preparation date 2:01/17
Hardness of dilution water (mg/L) 1810

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Comments/Observations:
0hr: no ppt
48hr: no ppt

Reviewed By: VO Date Reviewed: 2022/02/04

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS10 Client TEC164 Reference 2122-1190-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/01/26	1535	MF/SC	2	VL
1	2022/01/27	1120	ED/MF	-	TP
2	2022/01/28	0940	JLC	3	MF

Sample Information

Initial pH: 7.5
Initial EC (µS/cm): 2220
Salinity (ppt): 4

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	7.9	7.9	7.9	7.6	7.5	7.5				
2	8.1	8.1	8.1	8.3	8.3	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	495	497	495	2130	2150	2150				
2	490	490	491	1980	1990	1990				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar 03 Jar(s) mortality 7 days prior to test (must be ≤25%) 5%

QA (previous month)

Days to first brood (≤12 days) 8

Average number of young produced (≥15 young) 41

Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - 0 (must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 9.4

DO % of sample prior to aeration: 100

Duration of aeration (37.5 +/- 12.5 mL/min/L) : —

Hardness (mg $CaCO_3$/L) of 100% : 1012

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —

Alkalinity of 100% sample (mg $CaCO_3$/L): 375

Temperature (°C) of sample prior to aeration: 12

Is aeration required (<40% or >100%)? **Yes or No**

Filtered with 110um screen prior to testing **Yes or No**

Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Dilution Water

Pail label / preparation date 2:01117

Hardness of dilution water (mg/L) 1810

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

Comments/Observations: 0hr: no ppt

48hr: no ppt

Reviewed By: VL Date Reviewed: 2022/02/14

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS Client TEC164 Reference 2122-1190-02

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/01/26	1520	MFRC	2	LH
1	2022/01/27	1110	EP/MF	-	TP
2	2022/01/28	1010	JCC	3	MF

Sample Information

Initial pH:	7.5
Initial EC (µS/cm):	2220
Salinity (ppt):	4

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	8.0	8.0	8.0	7.7	7.7	7.7				
2	8.0	8.0	8.0	8.2	8.1	8.1				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	483	475	477	2100	2140	2140				
2	485	478	475	1944	2090	2110				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.7	7.7	7.7				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	21	21	21				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar EZ Jar(s) mortality 7 days prior to test (must be ≤25%) 5%

QA (previous month)

Days to first brood (≤12 days) 9

Average number of young produced (≥15 young) 33

Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - (must be ≤10%) 0

Sample

DO (mg/L) of sample prior to aeration: 7.7 Temperature (°C) of sample prior to aeration: 21

DO % of sample prior to aeration: 100 Is aeration required (<40% or >100%)? **Yes or No**

Duration of aeration (37.5 +/- 12.5 mL/min/L) : — Filtered with 110um screen prior to testing **Yes or No**

Hardness (mg $CaCO_3$/L) of 100% : 1012 Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —

Alkalinity of 100% sample (mg $CaCO_3$/L): 375

Dilution Water

Pail label / preparation date 2:01/17

Hardness of dilution water (mg/L) 1810

Antiscalant

Final Concentration in Sample: ~~10~~ 20 mg/L

Volume of sample: 500mL Volume of antiscalant: 15µL

Comments/Observations:

0hr: no ppt

48hr: no ppt

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Reviewed By: VO Date Reviewed: 2022/02/14

APPENDIX C – Chain-of-custody form

Teck

COC ID: F2 NAUTILUS January 24 2022 | **TURNAROUND TIME:** | **RUSH:**

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO			
Facility Name / Job#	F2 SRF			Lab Name	Nautilus Environmental - BC			Report Format / Distribution		Excel	PDF	EDD
Project Manager	BRETT MASON			Lab Contact				Email 1:	Cole.MacGregor@teck.com	X	X	
Email	BRETT.MASON@TECK.COM			Email	jacklyn@nautilusenvironmental.ca			Email 2:	teckcoal@equisonline.com			X
Address	RR1 HWY 3			Address	10823 27th Street SE			Email 3:	DL-EVO-SRF@teck.com	X	X	
								Email 4:				
City	Sparwood	Province	BC	City	Calgary	Province	AB	Email 5:				
Postal Code	V0B 2G0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada	Email 6:				
Phone Number	250-425-6179			Phone Number	403-253-7121			PO number	*00807270*			

SAMPLE DETAILS

2022/01/25
09:50
Manitoulin
BC
4x20L Jugs, 5x1L bottles
Non/Non
Good Condition

ANALYSIS REQUESTED — Filtered - F: Field, L: Lab, FL: Field & Lab, N: None

Sample ID	Sample Location (sys_loc_code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	Filt.	ANALYSIS: 48hr Daphnia Magna Single Concentration Acute Toxicity 20C	48hr Daphnia Magna Single Concentration Acute Toxicity 10C	48hr Daphnia Magna Single Concentration Acute Toxicity Anitscalent	96hr Rainbow Trout Single Concentration Acute Toxicity	48hr Daphnia Magna Single Concentration Toxicity 15C
F2_BPO_WG_2022-01-24_N -01 8.4°C	F2_BPO	WG		2022/01/24	9:20	G	8		2	2		4	
F2_BPO_WG_2022-01-24_N-AS -02 8.0°C	F2_BPO	WG		2022/01/24	9:21	G	1				1		

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME
	Humberto Alvarado	January 24, 2022 12:45		

SERVICE REQUEST (rush - subject to availability)

Regular (default)	X
Priority (2-3 business days) - 50% surcharge	
Emergency (1 Business Day) - 100% surcharge	
For Emergency <1 Day, ASAP or Weekend - Contact ALS	

Sampler's Name	Matt Gerolami	Mobile #	
Sampler's Signature		Date/Time	January 24, 2022

END OF REPORT

Acute Toxicity Test Results

Samples collected January 31, 2022

Final Report

March 2, 2022

Submitted to: **Teck Coal Ltd.**
Sparwood, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates					
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation	*Daphnia magna* 20mg/L antiscalant test initiation
F2_BPO_WG_2022-01-31_N/ 2122-1262-01	31-Jan-22 at 0810h	1-Feb-22 at 0900h	2-Feb-22 at 1450h	2-Feb-22 at 1410h	2-Feb-22 at 1440h	-
F2_BPO_WG_2022-01-31_N-AS/ 2122-1262-02	31-Jan-22 at 0811h	1-Feb-22 at 0900h	-	-	-	2-Feb-22 at 1410h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
F2_BPO_WG_2022-01-31_N	6.5°C	1168	415
F2_BPO_WG_2022-01-31_N-AS	7.1°C	1168	415

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)
- *Daphnia magna* 48-h single concentration screening test (conducted with 20 mg/L antiscalant)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample			
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
F2_BPO_WG_2022-01-31_N	100	100	100	-
F2_BPO_WG_2022-01-31_N-AS	-	-	-	100

Sample ID	Percent Immobility in 100 (% v/v)		
	Daphnia magna 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
F2_BPO_WG_2022-01-31_N	10	7	-
F2_BPO_WG_2022-01-31_N-AS	-	-	0

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
F2_BPO_WG_2022-01-31_N	Rainbow trout	Precipitate observed on bottom of test vessel	None
	Daphnia magna	Surficial precipitate observed in 20˚C and 10˚C tests	None
F2_BPO_WG_2022-01-31_N-AS	*Daphnia magna*	None	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	2.9 (2.2-3.5) g/L KCl[1]	7.1 (6.8 - 7.4) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.4 (2.5-4.6) g/L KCl	6.5 (5.6 - 7.6) g/L NaCl
Reference toxicant CV	10.0%	5.0%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, January 29, 2022; [2] Test Date February 2, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation

Report By:
Christine Chanhao, BSc
Biologist

Reviewed By:
Leila Oosterbroek, P Biol
Environmental Scientist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Control/dilution water for antiscalant test	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L), Na_2SeO_4 (2 µg Se/L) and 20 mg/L antiscalant
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC164 Reference 2122-1262-01 Chamber 2

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022-02-02	1450 *	EP / CL CC	1	MAF
1	2022-02-03	0840	CC	-	SP
2	2022-02-04	0835	CC	-	PD
3	2022-02-05	0750	CC	-	AW
4	2022-02-06	0925	EP / JCL	1	MAF

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 7.6
Initial EC (µS/cm): 1982
Salinity (ppt): 4

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L (yes/no)

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	8.8	8.8			
Temp (°C) of 100%	15				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	8.1	7.7						
Day 4	8.1	8.1						
EC (uS/cm)								
Day 0	EP 497	1978						
Day 4	482	1866						
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	8.8	8.8						
Day 4	8.8	8.8						
Temperature (°C) (range: 14-16°C)								
Day 0	15	15						
Day 4	15	15						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.4	0.5
2	3.0	0.3
3	3.4	0.5
4	3.3	0.4
5	3.0	0.3
6	3.2	0.4
7	3.6	0.6
8	3.0	0.3
9	2.9	0.2
10	3.1	0.4

Loading Density (g/L): 0.2 (must be ≤0.5 g/L)
Mean Length (cm): 3.2
Length Range (cm): 2.9-3.6
Mean Weight (g): 0.4 (Must be ≥0.3g)
Weight Range: (g): 0.2-0.6

Test Organism Information

Batch 20211222TR
Source Troutlodge
Tank # 8
Days Held at 15± 2°C 19 (must be ≥14 days)
Percent stock mortality 0.36 (7 days prior to test, must be ≤2%)
Test Volume (L) 18

Comments : 96hr: PPT on bottom of tank

Reviewed By: [illegible] Date Reviewed: 2022/02/10

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS20 Client TEC164 Reference 2122-1262-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022-02-02	1440	CC/AW	3	SG
1	2022-02-03	0740	KTM	-	ST
2	2022-02-04	0825	KTM	3	Eli

Sample Information

Initial pH: 7.6
Initial EC (µS/cm): 1982
Salinity (ppt): 4

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	8.0	8.1	8.1	8.1	8.1	8.1				
2	8.2	8.1	8.1	8.3	8.3	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm) 2020cc

0	447	456	457	1921	2140	2020				
2	464	456	449	1896	1940	1956				

DO (mg/L) (**40-100% saturation at test temp.**)

0	8.1	8.1	8.1	7.9	7.9	7.9				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	19	19	19	20	20	20				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10(2I)	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar wed D1 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%.

QA (previous month)
Days to first brood (≤12 days) 9
Average number of young produced (≥15 young) 27a 26.9
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0

Sample

DO (mg/L) of sample prior to aeration: 8.6
DO % of sample prior to aeration: 107%
Duration of aeration (37.5 +/- 12.5 mL/min/L): 20
Hardness (mg $CaCO_3$/L) of 100% : 116
Temperature (°C) of sample prior to aeration: 20
Is aeration required (<40% or >100%)? **Yes or No**
Filtered with 110um screen prior to testing **Yes or No**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 415

Dilution Water
Pail label / preparation date 2:01/23
Hardness of dilution water (mg/L) 205

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Comments/Observations:
0 hr: No ppt
48 hr: surficial ppt

Reviewed By: KD Date Reviewed: 2022/02/10

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS10 Client TEC164 Reference 2122-1262-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022-02-02	1810	CC/AW	3	CC
1	2022-02-03	0940	KN	-	AW
2	2022-02-04	0910	KL	3	AW

Sample Information

Initial pH: 7.6
Initial EC (µS/cm): 1982
Salinity (ppt): 4

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	7.6	7.8	7.8	7.6	7.6	7.6				
2	7.9	8.0	8.0	8.3	8.2	8.2				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	448	457	458	2040	2050	2070				
2	463	465	466	2010	2020	2020				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10(I)	10(2I)				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar DI wed — Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 9
Average number of young produced (≥15 young) 27 (26.9)
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0

Sample

DO (mg/L) of sample prior to aeration: 9.2 — Temperature (°C) of sample prior to aeration: cc 14 12
DO % of sample prior to aeration: 96% — Is aeration required (<40% or >100%)? **Yes or (No)**
Duration of aeration (37.5 +/- 12.5 mL/min/L) : — — Filtered with 110um screen prior to testing **Yes or (No)**
Hardness (mg $CaCO_3$/L) of 100% : 116 — Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or (No)**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 415

Dilution Water
Pail label / preparation date 2:01/23
Hardness of dilution water (mg/L) 205

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

Comments/Observations:
0 HR: No ppt
48 HR: no ppt
DA caught/stuck in debris

Reviewed By: W Date Reviewed: 2022/02/10

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DASAS Client TEC164 Reference 2122-1262-02

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022-02-02	1410	CC/AW	3	
1	2022-02-03	0750	ICTM	-	
2	2022-02-04	0900	KK	3	AW

Sample Information

Initial pH: 7.6
Initial EC (µS/cm): 1982
Salinity (ppt): 4

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	8.1	8.1	8.1	8.1	8.1	8.1				
2	8.2	8.2	8.1	8.4	8.4	8.4				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	447	458	460	2020 1950	2130	2020				
2	465	463	468	1980	1981	1992				

DO (mg/L) (**40-100% saturation at test temp.**)

0	8.1	8.1	8.1	7.9	7.9	7.9				
2	8.1	8.1	8.1	8.1	8.1	8.1				

Temperature (°C) (range: **18-22 °C**)

0	19	19	19	20	20	20				
2	19	19	19	19	19	19				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar C1 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 35 or 34.6
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0

Sample
DO (mg/L) of sample prior to aeration: 8.6
DO % of sample prior to aeration: 107%
Duration of aeration (37.5 +/- 12.5 mL/min/L): 20
Hardness (mg $CaCO_3$/L) of 100% : 1168
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 415

Temperature (°C) of sample prior to aeration: 20
Is aeration required (<40% or >100%)? (Yes) or No
Filtered with 110um screen prior to testing Yes or (No)
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)

Dilution Water
Pail label / preparation date 2:01/23
Hardness of dilution water (mg/L) 205

Antiscalant
Final Concentration in Sample: 20mg/L
Volume of sample: 500mL Volume of antiscalant: 158µL

Comments/Observations:
0 HR: No ppt
48HR: No ppt

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C 3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C 3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C

Reviewed By: KK Date Reviewed: 2022/02/10

APPENDIX C – Chain-of-custody form

Teck

COC ID:	F2 NAUTILUS January 31 2022	TURNAROUND TIME:		RUSH:	

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name / Job#	F2 SRF			Lab Name	Nautilus Environmental - BC			Report Format / Distribution		Excel	PDF	EDD
Project Manager	BRETT MASON			Lab Contact				Email 1:	[illegible]	X	X	X
Email	BRETT.MASON@TECK.COM			Email	jacklyn@nautilusenvironmental.ca			Email 1:	teckcoal@equisonline.com			X
Address	RR1 HWY 3			Address	10823 27th Street SE			Email 2:	DL-EVO-SRF-LAB@teck.cor	X	X	X
								Email 3:				
City	Sparwood	Province	BC	City	Calgary	Province	AB	Email 4:				
								Email 5:				
								Email 6:				
								Email 7:				
								Email 8:				
								Email 10:				
								Email 11:				
								Email 12:				
								Email 13:				
Postal Code	V0B 2G0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada					
Phone Number	250-425-6179			Phone Number	403-253-7121			PO number	807270			

SAMPLE DETAILS / **ANALYSIS REQUESTED** — Filtered - F: Field, L: Lab, FL: Field & Lab, N: None

2022/02/01
9:00
manitoulin
AC/AC AC 3x20L Jugs (one missing ~~xx~~) 5x1L bottles
~~4x20L carboys, 5x1L bottles~~
no S / no I
good condition
2122-1262

Sample ID	Sample Location (sys_loc_code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	48hr Daphnia Magna Single Concentration Acute Toxicity 20C	48hr Daphnia Magna Single Concentration Acute Toxicity 10C	48hr Daphnia Magna Single Concentration Acute Toxicity Anitscalent	96hr Rainbow Trout Single Concentration Acute Toxicity (20L Bladders)	48hr Daphnia Magna Single Concentration Toxicity 15C
F2_BPO_WG_2022-01-31_N -01 6.5°C	F2_BPO	WG		2022/01/31	8:10	G	8	2	2		4	
F2_BPO_WG_2022-01-31_N-AS -02 AC ~~7.9°C~~ 7.1°C	F2_BPO	WG		2022/01/31	8:11	G	1			1		

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME
	James Winter-Teck	January 31, 2022		
	[signature]	1500		

SERVICE REQUEST (rush - subject to availability)					
Regular (default)	X	Sampler's Name	Brett Macdonald	Mobile #	
Priority (2-3 business days) - 50% surcharge					
Emergency (1 Business Day) - 100% surcharge		Sampler's Signature	BM	Date/Time	January 31, 2022
For Emergency <1 Day, ASAP or Weekend - Contact ALS					

END OF REPORT

Acute Toxicity Test Results

Samples collected January 31, 2022

Final Report

March 2, 2022

Submitted to: **Teck Coal Ltd.**
Sparwood, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates					
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation	*Daphnia magna* 5mg/L antiscalant test initiation
EV_EC1_WS_2022-01-31_N-SRF/ 2122-1264-01	31-Jan-22 at 0950h	1-Feb-22 at 0900h	1-Feb-22 at 1530h	3-Feb-22 at 1610h	3-Feb-22 at 1600h	-
EV_EC1_WS_2022-01-31_N-SRF-AS/ 2122-1264-02	31-Jan-22 at 0951h	1-Feb-22 at 0900h	-	-	-	3-Feb-22 at 1605h
EV_ECOUT_WS_2022-01-31_N-SRF/ 2122-1264-03	31-Jan-22 at 1210h	1-Feb-22 at 0900h	1-Feb-22 at 1500h	3-Feb-22 at 1605h	3-Feb-22 at 1610h	-
EV_ECOUT_WS_2022-01-31_N-SRF-AS/ 2122-1264-04	31-Jan-22 at 1211h	1-Feb-22 at 0900h	-	-	-	3-Feb-22 at 1600h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
EV_EC1_WS_2022-01-31_N-SRF	10.3°C	1087	411
EV_EC1_WS_2022-01-31_N-SRF-AS	4.1°C	1087	411
EV_ECOUT_WS_2022-01-31_N-SRF	9.1°C	1203	413
EV_ECOUT_WS_2022-01-31_N-SRF-AS	4.9°C	1203	413

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)
- *Daphnia magna* 48-h single concentration screening test (conducted with 5 mg/L antiscalant)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample			
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
EV_EC1_WS_2022-01-31_N-SRF	100	100	100	-
EV_EC1_WS_2022-01-31_N-SRF-AS	-	-	-	100
EV_ECOUT_WS_2022-01-31_N-SRF	100	100	100	-
EV_ECOUT_WS_2022-01-31_N-SRF-AS	-	-	-	100

Sample ID	Percent Immobility in 100 (% v/v)		
	Daphnia magna 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
EV_EC1_WS_2022-01-31_N-SRF	0	3	-
EV_EC1_WS_2022-01-31_N-SRF-AS	-	-	0
EV_ECOUT_WS_2022-01-31_N-SRF	7	0	-
EV_ECOUT_WS_2022-01-31_N-SRF-AS	-	-	0

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
EV_EC1_WS_2022-01-31_N-SRF	Rainbow trout	Precipitate observed on bottom of test vessel	None
	Daphnia magna	Surficial precipitate observed	None
EV_EC1_WS_2022-01-31_N-SRF-AS	*Daphnia magna*	Surficial precipitate observed	None
EV_ECOUT_WS_2022-01-31_N-SRF	Rainbow trout	Precipitate observed on bottom of test vessel	None
	Daphnia magna	Surficial precipitate observed	Precipitate observed on carapace in 10 degree test
EV_ECOUT_WS_2022-01-31_N-SRF-AS	*Daphnia magna*	None	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	2.9 (2.2-3.5) g/L KCl[1]	7.1 (6.8-7.4) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.4 (2.5-4.6) g/L KCl	6.5 (5.6-7.6) g/L NaCl
Reference toxicant CV	10.0%	5.0%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, January 29, 2022; [2] Test Date February 2, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation

Report By:
Christine Chanhao, BSc
Biologist

Reviewed By:
Courtney Bogstie, P. Biol.
Senior Biologist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Control/dilution water for antiscalant test	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L), Na_2SeO_4 (2 µg Se/L) and 5 mg/L antiscalant
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC164 Reference 2122-1264-01 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022-02-01	1530 *	CC/CH	1	JCC
1	2022-02-02	0845	KM	-	TP
2	2022-02-03	0835	CC	-	DO
3	2022-02-04	0820	CC	-	DO
4	2022-02-05	0930	CC/AW	1	TCL

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 7.8
Initial EC (µS/cm): 1986
Salinity (ppt): 4

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L : yes/no

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	10.6	9.4	8.6		
Temp (°C) of 100%	16				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	8.2	8.1						
Day 4	8.0	8.0						
EC (uS/cm)								
Day 0	1771	1894						
Day 4	1777	1747						
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	8.8	8.6						
Day 4	8.6	8.8						
Temperature (°C) (range: 14-16°C)								
Day 0	15	16						
Day 4	16	15						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.2	0.3
2	3.3	0.3
3	3.2	0.3
4	3.4	0.4
5	3.6	0.5
6	3.5	0.5
7	3.2	0.3
8	3.5	0.5
9	3.3	0.3
10	3.5	0.5

Loading Density (g/L): 0.2 (must be ≤0.5 g/L)
Mean Length (cm): 3.4
Length Range (cm): 3.2-3.6
Mean Weight (g): 0.4 (Must be ≥0.3g)
Weight Range: (g): 0.3-0.5

Test Organism Information

Batch 20211222TR
Source Troutlodge
Tank # 8
Days Held at 15± 2°C 18 (must be ≥14 days)
Percent stock mortality 0.3 (7 days prior to test, must be ≤2%)
Test Volume (L) 18

Comments : 96 Hrs: Ppt on bottom of tank

Reviewed By: ST Date Reviewed: 7022102108

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC164 Reference 2122-1264-03 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022-02-01	1500 *	CC/CH	1	JCC
1	2022-02-02	0845	KTM	-	JP
2	2022-02-03	0840	CC	-	JP
3	2022-02-04	0815	CC	-	JP
4	2022-02-05	0930	CC/AW	1	JCC

Note: * ; time when the test was loaded with fish

Sample Information ST

Initial pH:	7.8	7.7
Initial EC (µS/cm):	1986	1815
Salinity (ppt):	4	3

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L : yes/no

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	9.9	8.6			
Temp (°C) of 100%	16				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	7.8	7.9						
Day 4	7.7	7.9						
EC (uS/cm)								
Day 0	512	1974						
Day 4	504	1821						
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	8.9	8.6						
Day 4	8.6	8.6						
Temperature (°C) (range: 14-16°C)								
Day 0	14	16						
Day 4	16	16						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.3	0.4
2	3.4	0.5
3	3.3	0.4
4	3.3	0.4
5	3.2	0.3
6	3.4	0.5
7	3.5	0.4
8	3.4	0.4
9	3.1	0.3
10	3.1	0.3

Loading Density (g/L): 0.2 (must be ≤0.5 g/L)
Mean Length (cm): 3.3
Length Range (cm): 3.1-3.5
Mean Weight (g): 0.4 (Must be ≥0.3g)
Weight Range: (g): 0.3-0.5

Test Organism Information

Batch 20211222TR
Source Troutlodge
Tank # 8
Days Held at 15± 2°C 18 (must be ≥14 days)
Percent stock mortality 0.3 (7 days prior to test, must be ≤2%)
Test Volume (L) 18

Comments : 96 Hrs: ppt on bottom

Reviewed By: ST Date Reviewed: 7022102108

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC164 Reference 2122-1264-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/02/03	1629	MAF/DW	3	
1	2022/02/04	0825	KTM		
2	2022/02/05	0905	KTM	2	

Sample Information

Initial pH: 7.8
Initial EC (µS/cm): 1986
Salinity (ppt): 4

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day											
0	8.2	8.2	8.2	8.3	8.3	8.3					
2	8.1	8.1	8.1	8.1	8.1	8.1					

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	455	457	455	1926	1939	1946					
2	445	447	447	1822	1892	1864					

DO (mg/L) (**40-100% saturation at test temp.**)

0	8.1	8.1	8.1	7.9	7.9	7.9					
2	7.9	7.9	7.9	7.9	7.9	7.9					

Temperature (°C) (range: **18-22 °C**)

0	19	19	19	20	20	20					
2	20	20	20	20	20	20					

Number Alive (I, immobile)

0	10	10	10	10	10	10					
1	10	10	10	10	10	10					
2	10	10	10	10	10	10(1)					

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar E3 Jar(s) mortality 7 days prior to test (must be ≤25%) 5

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 27
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 8.4 Temperature (°C) of sample prior to aeration: 20
DO % of sample prior to aeration: 105% Is aeration required (<40% or >100%)? **Yes or No**
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20m Filtered with 110um screen prior to testing **Yes or No**
Hardness (mg $CaCO_3$/L) of 100% : 1097 Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 411

Dilution Water
Pail label / preparation date 2:01/22 MAF
Hardness of dilution water (mg/L) 205

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Comments/Observations:
0hrs: No ppt
48hrs: surface ppt

Reviewed By: AS ST Date Reviewed: 2022/02/08

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC164 Reference 1264w 2122-~~1064-03~~ 04 C1

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/02/03	1640	MAF/DW	3	
1	2022/02/04	1820	KTM	-	
2	2022/02/05	0925	KTM	2	

Sample Information

Initial pH: 7.8
Initial EC (µS/cm): 1486
Salinity (ppt): 4

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	8.2	8.2	8.2	8.2	8.2	8.2				
2	8.2	8.2	8.2	8.3	8.3	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	460	456	458	1954	1962	1967				
2	449	449	449	1889	1933	1031				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar C4 Jar(s) mortality 7 days prior to test (must be ≤25%) 0

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 35
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 9.4 Temperature (°C) of sample prior to aeration: 12
DO % of sample prior to aeration: 100.1 Is aeration required (<40% or >100%)? **Yes or (No)**
Duration of aeration (37.5 +/- 12.5 mL/min/L) : — Filtered with 110um screen prior to testing **Yes or (No)**
Hardness (mg $CaCO_3$/L) of 100% : 1087 Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or (No)**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 411

Dilution Water
Pail label / preparation date 2:01/22 MMF
Hardness of dilution water (mg/L) 205

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

Comments/Observations:
0hrs: reppt
48hrs: surfaced ppt

Reviewed By: ST Date Reviewed: 2022/02/08

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS 5 AS Client TEC164 Reference 2122-1264-02

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/02/03	1605	MAF/DW	3	
1	2022/02/04	0836	VTM	-	
2	2022/02/05	0905	VTM	3	

Sample Information

Initial pH: 7.5
Initial EC (µS/cm): 1986
Salinity (ppt): 4

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	8.2	8.2	8.2	8.2	8.2	8.2				
2	8.1	8.0	8.0	8.3	8.3	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	457	459	457	1924	1936	1951				
2	458	460	459	1923	1931	1917				

DO (mg/L) (**40-100% saturation at test temp.**)

0	8.1	8.1	8.1	8.1	8.1	8.1				
2	8.0	8.0	8.1	8.1	8.0	8.0				

Temperature (°C) (range: **18-22 °C**)

0	19	19	19	19	19	19				
2	19	19	19	19	19	19				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar CS Jar(s) mortality 7 days prior to test (must be ≤25%) 0

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 35
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0

Sample
DO (mg/L) of sample prior to aeration: 8.8 Temperature (°C) of sample prior to aeration: 20
DO % of sample prior to aeration: 111% Is aeration required (<40% or >100%)? Yes or No
Duration of aeration (37.5 +/- 12.5 mL/min/L): 20m Filtered with 110um screen prior to testing Yes or No
Hardness (mg $CaCO_3$/L) of 100% : 1087 Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or No
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 411

Dilution Water
Pail label / preparation date 2: 01/23 MAF
Hardness of dilution water (mg/L) 205

Antiscalant
Final Concentration in Sample: 5mg/L
Volume of sample: 500mL Volume of antiscalant: 39.5uL

Comments/Observations:
0hrs: ncppt.
48hrs: surface ppt

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Reviewed By: ST Date Reviewed: 7022/02/08

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC164 Reference 2122-1264-03

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/02/03	1616	MAF/DW	3	
1	2022/02/04	1450	KTM	-	
2	2022/02/05	0855	KL	3	AW

Sample Information

Initial pH:	7.8	7.8	7.7
Initial EC (µS/cm):	1986		1895
Salinity (ppt):	4		3

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	8.2	8.2	8.1	8.1	8.1	8.1				
2	8.2	8.2	8.1	8.3	8.2	8.2				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	461	459	458	2010	2080	1950				
2	460	460	460	1954	2100	1955				

DO (mg/L) (**40-100% saturation at test temp.**)

0	8.1	8.1	8.1	7.9	7.9	7.9				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	19	19	19	20	20	20				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar CM — Jar(s) mortality 7 days prior to test (must be ≤25%) 0

QA (previous month)

Days to first brood (≤12 days) 8

Average number of young produced (≥15 young) 35

Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - 0 (must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 9.1 — Temperature (°C) of sample prior to aeration: 20

DO % of sample prior to aeration: ~~mmf~~ 20m 114% — Is aeration required (<40% or >100%)? **Yes or No**

Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20m — Filtered with 110um screen prior to testing **Yes or No**

Hardness (mg $CaCO_3$/L) of 100% : ~~1089~~ 1703 ST — Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —

Alkalinity of 100% sample (mg $CaCO_3$/L): ~~411~~ 413 ST

Dilution Water

Pail label / preparation date 2:01/23 ~~mmf~~

Hardness of dilution water (mg/L) 205

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Comments/Observations: 0hrs: No ppt

48hrs: Surficial PPT

Reviewed By: ST Date Reviewed: 2022/07/08

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC164 Reference 2122-~~1064-01~~ 03 (DAW) 1264

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/02/03	1005	MAF/DW	3	
1	2022/02/04	0846	KM	-	
2	2022/02/05	0910	KM	3	

Sample Information

Initial pH:	7.8	7.7
Initial EC (µS/cm):	1986	1815
Salinity (ppt):	4	3

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	8.2	8.2	8.2	7.8	7.8	7.8				
2	8.1	8.1	8.0	8.2	8.2	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	958	956	959	1040	1050	1060				
2	960	960	971	1040	1060	1040				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10(I)	10	10	10	10	10				
2	10	10	10	10(I)	10	10(I)				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar E3 Jar(s) mortality 7 days prior to test (must be ≤25%) 5

QA (previous month)

Days to first brood (≤12 days) 8

Average number of young produced (≥15 young) 27

Were test treatments randomized on test tray? (Yes) No

Control Validity Criteria

Mean % mortality at 48 hours - 0 (must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 9.4 Temperature (°C) of sample prior to aeration: 12

DO % of sample prior to aeration: 100% Is aeration required (<40% or >100%)? **Yes or (No)**

Duration of aeration (37.5 +/- 12.5 mL/min/L) : — Filtered with 110um screen prior to testing **Yes or (No)**

Hardness (mg $CaCO_3$/L) of 100% : ~~158~~ 170 ST Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or (No)**

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —

Alkalinity of 100% sample (mg $CaCO_3$/L): ~~411~~ 413 ST

Dilution Water

Pail label / preparation date 2:01/23/7 MAF

Hardness of dilution water (mg/L) 205

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

Comments/Observations:

0hrs: neopt.

48hrs: surficial ppt, Dat lightly coated in ppt

Reviewed By: ST Date Reviewed: 2022/02/08

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method: DAS 5 AS Client: TEC164 Reference: 2122-1264-04

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/02/03	1640	MAF/DW	3	SL
1	2022/02/04	0825	KTM	-	ST
2	2022/02/05	0955	KTM	2	SL

Sample Information

Initial pH:	7.8 ST (7.7)
Initial EC (µS/cm):	1986 (1845)
Salinity (ppt):	4 (3)

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	8.2	8.2	8.2	7.8	7.8	7.8				
2	7.9	7.9	7.9	8.3	8.2	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	454	455	457	1960	1990	1990				
2	437	443	446	1950	1970	1987				

DO (mg/L) (**40-100% saturation at test temp.**)

0	8.1	8.1	8.1	8.6	8.6	8.6				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	19	19	19	20	20	20				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar: C3 Jar(s) mortality 7 days prior to test (must be ≤25%): 0

QA (previous month)

Days to first brood (≤12 days): 8

Average number of young produced (≥15 young): 35

Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - (must be ≤10%): 0

Sample

DO (mg/L) of sample prior to aeration: 7.9 Temperature (°C) of sample prior to aeration: 20

DO % of sample prior to aeration: 100% Is aeration required (<40% or >100%)? Yes or (No)

Duration of aeration (37.5 +/- 12.5 mL/min/L): — Filtered with 110um screen prior to testing Yes or (No)

Hardness (mg $CaCO_3$/L) of 100%: 1687 (1703 ST) Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L): —

Alkalinity of 100% sample (mg $CaCO_3$/L): 411 (413 ST)

Dilution Water

Pail label / preparation date: 2: 01/23 MAF

Hardness of dilution water (mg/L): 205

Antiscalant

Final Concentration in Sample: 5mg/L

Volume of sample: 500mL Volume of antiscalant: 39.5uL

Comments/Observations:

0hrs: nappt.

48hrs: nappt

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Reviewed By: ST Date Reviewed: 2022/02/08

APPENDIX C – Chain-of-custody form

Teck

Page 1 of 1

COC ID: EVO NAUTILUS Jan 31 2022

TURNAROUND TIME: RUSH:

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO			
Facility Name / Job#	Elkview Operations			Lab Name	Nautilus Environmental - BC			Report Format / Distribution		Excel	PDF	EDD
Project Manager	Group 1; Brett Mason			Lab Contact				Email 1:	[redacted]	X	X	X
Email	Brett.Mason@teck.com			Email	jacklyn@nautilusenvironmental.ca			Email 2:	teckcoal@equisonline.com			X
Address	RR1 HWY 3			Address	10823 27th Street SE			Email 3:	DL-EVO-SRF-LAB@teck.com	X	X	X
City	Sparwood	Province	BC	City	Calgary	Province	AB	Email 4:				
								Email 5:				
								Email 6:				
								Email 7:				
								Email 8:				
								Email 9:				
								Email 10:				
								Email 11:				
								Email 12:				
								Email 13:				
Postal Code	V0B 2G0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada					
Phone Number	250-425-6179			Phone Number	403-253-7121			PO number	807270			

SAMPLE DETAILS

2022/02/01
9:00
Manitoulin
AC/AE
4 x 20L carboys, 8 x 10L carboys
9 x 1L bottles (one missing ***)
no SinoI
good condition

2122 - 1264

ANALYSIS REQUESTED

Filtered - F: Field, L: Lab, FL: Field & Lab, N: None

Sample ID	Sample Location (sys_loc_code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	FIL	PRESERV	ANALYSIS: 48hr Daphnia Magna Single Concentration Acute Toxicity 20C	48hr Daphnia Magna Single Concentration Acute Toxicity 10C	48hr Daphnia Magna Single Concentration Acute Toxicity Anitscalent	96hr Rainbow Trout Single Concentration Acute Toxicity (20 L Bladder)	96hr Rainbow Trout Single Concentration Acute Toxicity (10 L Bladder)	48hr Daphnia Magna Single Concentration Toxicity 15C
EV_EC1_WS_2022-01-31_N-SRF -01 10.3°C	EV_EC1	WS		2022/01/31	9:50	G	12			2	2			8	
EV_EC1_WS_2022-01-31_N-SRF-AS -02 4.1°C	EV_EC1	WS		2022/01/31	9:51	G	1					1			
EV_ECOUT_WS_2022-01-31_N-SRF -03 7.1°C	EV_ECOUT	WS		2022/01/31	12:10	G	8			2	2		4		
EV_ECOUT_WS_2022-01-31_N-SRF-AS -04 4.9°C	EV_ECOUT	WS		2022/01/31	12:11	G	1					1			

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS

Field Temperatures
ECOUT:

SERVICE REQUEST (rush - subject to availability)

Regular (default)	X
Priority (2-3 business days) - 50% surcharge	
Emergency (1 Business Day) - 100% surcharge	
For Emergency <1 Day, ASAP or Weekend - Contact ALS	

RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME
James Winter - Tech	January 31, 2022 1500		

Sampler's Name	Brett Macdonald	Mobile #	
Sampler's Signature	BM	Date/Time	January 31, 2022

END OF REPORT

Acute Toxicity Test Results

Samples collected February 1, 2022

Final Report

March 2, 2022

Submitted to: **Teck Coal Ltd.**
Sparwood, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates					
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation	*Daphnia magna* antiscalant test initiation
EV_GT1_WS_2022-02-01_N-SRF/ 2122-1272-01	1-Feb-22 at 0850h	2-Feb-22 at 0850h	3-Feb-22 at 1550h	4-Feb-22 at 1415h	4-Feb-22 at 1405h	-
EV_BC1_WS_2022-02-01_N-SRF/ 2122-1272-02	1-Feb-22 at 1000h	2-Feb-22 at 0850h	3-Feb-22 at 1550h	4-Feb-22 at 1415h	4-Feb-22 at 1400h	-
EV_BC1_WS_2022-02-01_N-SRF-AS/ 2122-1272-03	1-Feb-22 at 1001h	2-Feb-22 at 0850h	-	-	-	4-Feb-22 at 1410h
EV_GT1_WS_2022-02-01_N-SRF-AS/ 2122-1272-04	1-Feb-22 at 0851h	2-Feb-22 at 0850h	-	-	-	4-Feb-22 at 1410h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
EV_GT1_WS_2022-02-01_N-SRF	-0.2°C	1056	206
EV_BC1_WS_2022-02-01_N-SRF	1.4°C	1282	283
EV_BC1_WS_2022-02-01_N-SRF-AS	-0.5°C	1282	283
EV_GT1_WS_2022-02-01_N-SRF-AS	0.6°C	1056	206

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)
- *Daphnia magna* 48-h single concentration screening test (conducted with 5 mg/L antiscalant)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample			
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
EV_GT1_WS_2022-02-01_N-SRF	100	100	100	-
EV_BC1_WS_2022-02-01_N-SRF	100	100	100	-
EV_BC1_WS_2022-02-01_N-SRF-AS	-	-	-	100
EV_GT1_WS_2022-02-01_N-SRF-AS	-	-	-	100

Sample ID	Percent Immobility in 100 (% v/v)		
	Daphnia magna 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
EV_GT1_WS_2022-02-01_N-SRF	0	0	-
EV_BC1_WS_2022-02-01_N-SRF	0	3	-
EV_BC1_WS_2022-02-01_N-SRF-AS	-	-	0
EV_GT1_WS_2022-02-01_N-SRF-AS	-	-	0

Precipitate observations

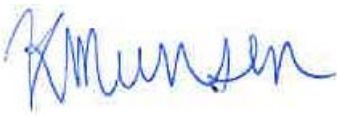
Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
EV_GT1_WS_2022-02-01_N-SRF	Rainbow trout	None	None
	Daphnia magna	None	None
EV_BC1_WS_2022-02-01_N-SRF	Rainbow trout	Precipitate observed on test vessel	None
	Daphnia magna	Surficial precipitate observed	None
EV_BC1_WS_2022-02-01_N-SRF-AS	*Daphnia magna*	None	None
EV_GT1_WS_2022-02-01_N-SRF-AS	*Daphnia magna*	None	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	2.9 (2.2-3.5) g/L KCl[1]	6.4 (6.2-6.6) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.4 (2.5-4.6) g/L KCl	6.5 (5.6-7.6) g/L NaCl
Reference toxicant CV	10.0%	5.0%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, January 29, 2022; [2] Test Date February 14, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation





Report By:
Katheryn Munson, BSc
Biologist

Reviewed By:
Leila Oosterbroek, P Biol
Environmental Scientist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Control/dilution water for antiscalant test	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L), Na_2SeO_4 (2 µg Se/L) and 5 mg/L antiscalant
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	CETIS version 2.1.0.7
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS ENVIRONMENTAL

Trout Bench Sheet

Method TRS Client TEC164 Reference 2122-1272-01 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022/02/03	1550 *	MF /CHILLED	1	
1	2022/02/04	0810	CC	-	
2	2022/02/05	0740	CC	-	AW
3	2022/02/06	0800	EP	-	ST
4	2022/02/07	0950	MF/CH	1	DJ

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 8.3
Initial EC (µS/cm): 1819
Salinity (ppt): 3

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L: **yes/no**

	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
Preaeration time					
DO(mg/L) of 100%	10.60	10.3	9.9	9.8	9.6
Temp (°C) of 100%	15				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	7.7	8.2						
Day 4	8.2	8.3						
EC (uS/cm)								
Day 0	503	1936						
Day 4	507	1892						
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	8.9	CH 9.6						
Day 4	8.6	8.6						
Temperature (°C) (range: 14-16°C)								
Day 0	14	15						
Day 4	16	16						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.2	0.3
2	3.5	0.5
3	2.9	0.2
4	3.2	0.3
5	3.3	0.3
6	3.1	0.3
7	3.0	0.3
8	3.2	0.3
9	3.0	0.3
10	3.1	0.3

Loading Density (g/L): 0.2 (must be ≤0.5 g/L)
Mean Length (cm): 3.2
Length Range (cm): 2.9-3.5
Mean Weight (g): 0.3 (Must be ≥0.3g)
Weight Range: (g): 0.2-0.5

Test Organism Information

Batch 20211222TR
Source Troutlodge
Tank # 8
Days Held at 15± 2°C (must be ≥14 days): MF 2220
Percent stock mortality (7 days prior to test, must be ≤2%): 0.2%
Test Volume (L): 18

Comments: 96 hr: nappt.

Reviewed By: ST Date Reviewed: 20220211O

NAUTILUS ENVIRONMENTAL

Trout Bench Sheet

Method TRS Client TEC164 Reference 2122-1272-02 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022/02/03	1550 *	MF/CH/EP/CC	1	SC
1	2022/02/04	0800	CC	-	CP
2	2022/02/05	0740	CC	-	AW
3	2022/02/06	0800	EP	-	ST
4	2022/02/07	0950	MF/CH	1	AW

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: ~~8.0~~ 8.0
Initial EC (µS/cm): 2370
Salinity (ppt): 4

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L : **yes/no**

	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
Preaeration time					
DO(mg/L) of 100%	10.1	9.5	9.4	9.3	8.8
Temp (°C) of 100%	15				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	7.8	8.0						
Day 4	8.2	8.1						
EC (uS/cm)								
Day 0	504	2500						
Day 4	479	2250						
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	8.9	8.8						
Day 4	8.6	8.6						
Temperature (°C) (range: 14-16°C)								
Day 0	14	15						
Day 4	16	16						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.3	0.4
2	3.4	0.3
3	3.4	0.4
4	3.5	0.4
5	3.4	0.4
6	3.2	0.3
7	2.9	0.3
8	3.5	0.4
9	3.1	0.3 CH
10	3.4	0.4

Loading Density (g/L): 0.2 (must be ≤0.5 g/L)
Mean Length (cm): 3.3
Length Range (cm): 2.9-3.5
Mean Weight (g): 0.4 (Must be ≥0.3g)
Weight Range (g): 0.3-0.4

Test Organism Information

Batch 20211222TR
Source Troutlodge
Tank # 8
Days Held at 15± 2°C 22 MP 20 (must be ≥14 days)
Percent stock mortality 0.29 (7 days prior to test, must be ≤2%)
Test Volume (L) 18

Comments : 96 hr: ppt on test lesse 1

Reviewed By: ST Date Reviewed: 20220210

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC164 Reference 2122-1272-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/02/04	1405	KK/KM	3	MAF
1	2022/02/05	0750	KM	-	AW
2	2022/02/06	0950	MF	2	ST

Sample Information

Initial pH: 8.3
Initial EC (µS/cm): 1819
Salinity (ppt): 3

Lab Code	CTL A	CTL B	CTL C	100 A	100 B	100 C

pH (units) (range: 6.0-8.5)

day										
0	7.9	7.9	7.9	8.2	8.2	8.2				
2	8.1	8.1	8.1	8.3	8.3	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	437	452	453	1914	1988	1997				
2	442	440	439	1904	1958	1958				

DO (mg/L) (**40-100% saturation at test temp.**)

0	8.1	8.1	8.1	7.9	7.9	7.9				
2	8.1	8.1	8.1	8.1	8.1	8.1				

Temperature (°C) (range: **18-22 °C**)

0	19	19	19	20	20	20				
2	19	19	19	19	19	19				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar C3 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 36
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 10.0 Temperature (°C) of sample prior to aeration: 20
DO % of sample prior to aeration: 129% Is aeration required (<40% or >100%)? **Yes or No**
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20min Filtered with 110um screen prior to testing **Yes or No**
Hardness (mg $CaCO_3$/L) of 100% : 1056 Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) -
Alkalinity of 100% sample (mg $CaCO_3$/L): 206

Dilution Water
Pail label / preparation date 22/01/27
Hardness of dilution water (mg/L) 205

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Comments/Observations:
0hr: no ppt
48hr: no ppt

Reviewed By: ST Date Reviewed: 2022/02/10

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC164 Reference 2122-1272-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/02/04	1415	KL/LC/RM	3	MAF
1	2022/02/05	0810	KTM	3	AW
2	2022/02/06	1000	MF	2	ST

Sample Information

Initial pH: 8.3
Initial EC (µS/cm): 1619
Salinity (ppt): 3

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	7.7	7.8	7.8	8.1	8.1	8.1				
2	8.1	8.1	8.2	8.3	8.3	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	439	452	454	1904	2020	2020				
2	463	445	450	1970	2090	2110				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar C3 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 36
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 10.4 Temperature (°C) of sample prior to aeration: 17
DO % of sample prior to aeration: 111 Is aeration required (<40% or >100%)? **Yes or No**
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20min Filtered with 110um screen prior to testing **Yes or No**
Hardness (mg $CaCO_3$/L) of 100% : 1056 Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 706

Dilution Water
Pail label / preparation date 2:0127
Hardness of dilution water (mg/L) 205

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

Comments/Observations: 0hr: no ppt
48hr: no ppt

Reviewed By: ST Date Reviewed: 2022.02.10

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC164 Reference 2122-1272-02

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/02/04	1400	KK/KTH	3	MAE
1	2022/02/05	0900	KTH	-	AW
2	2022/02/06	1015	ST	2	JCC

Sample Information

Initial pH: 8.0
Initial EC (µS/cm): 2370
Salinity (ppt): 4

Lab Code	CTL A	CTL B	CTL C	100 A	100 B	100 C				

pH (units) (range: 6.0-8.5)

day										
0	7.9	7.9	7.8	8.0	8.0	8.0				
2	8.1	8.1	8.1	8.0	8.0	8.1				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	437	452	454	2540	2620	2630				
2	432	441	446	2430	2510	2500				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	8.3	8.3	8.3				
2	8.1	8.1	8.1	8.1	8.1	8.1				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	20	20	20				
2	19	19	19	19	19	19				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10(I2)				
2	10	10	10	10	10(I2)	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar C3 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 36
Were test treatments randomized on test tray? Yes / No

Control Validity Criteria
Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 9.9 Temperature (°C) of sample prior to aeration: 20
DO % of sample prior to aeration: 126 Is aeration required (<40% or >100%)? **Yes or No**
Duration of aeration (37.5 +/- 12.5 mL/min/L): 20min Filtered with 110um screen prior to testing **Yes or No**
Hardness (mg $CaCO_3$/L) of 100% : 1252 Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 283

Dilution Water
Pail label / preparation date 2:d127
Hardness of dilution water (mg/L) 705

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C 3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C 3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C

Comments/Observations:
0hr: no ppt
48hr: Surficial ppt

Reviewed By: ST Date Reviewed: 20220210

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC164 Reference 2122-1272-02

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/02/04	1415	KK/KM	3	MAE
1	2022/02/05	0810	KM	-	AW
2	2022/02/06	1015	ST	2	JCC

Sample Information

Initial pH: 8.0
Initial EC (µS/cm): 2370
Salinity (ppt): 4

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	7.9	7.9	7.9	7.9 KM 8.0	8.0	8.0				
2	7.8	7.9	7.9	8.1	8.1	8.2				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	4436 KM 440	452	453	2460	2650	2490				
2	440	441	448	2520	2540	2646				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar C4 Jar(s) mortality 7 days prior to test (must be ≤25%) 0/.

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 36
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 10.2
DO % of sample prior to aeration: 108
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20min
Hardness (mg $CaCO_3$/L) of 100% : 1282
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 283

Temperature (°C) of sample prior to aeration: 12
Is aeration required (<40% or >100%)? Yes or No
Filtered with 110um screen prior to testing Yes or (No)
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)

Dilution Water
Pail label / preparation date 2:01/27
Hardness of dilution water (mg/L) 205

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

Comments/Observations: 0hr: neppt
48hr: Surficial ppt

Reviewed By: ST Date Reviewed: 20221021110

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS 10 45 Client TEC164 Reference 2122-1272-03

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/02/04	1410	KK/KTH	3	MAE
1	2022/02/05	0750	KTH	-	AV
2	2022/02/06	1030	ST	2	JCS

Sample Information

Initial pH: 8.0
Initial EC (µS/cm): 2370
Salinity (ppt): 4

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	7.7	7.8	7.8	7.9	7.9	7.9				
2	8.2	8.1	8.1	8.2	8.3	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	442	453	454	2540	2620	2630				
2	436	441	441	2520	2510	2520				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	8.3	8.3	8.3				
2	8.1 ~~7.9~~ ST	8.1	8.1	8.1	8.1	8.1				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	20	20	20				
2	19	19	19	19	19	19				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar C3 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 36
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0

Sample
DO (mg/L) of sample prior to aeration: 10.2
DO % of sample prior to aeration: 131
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20min
Hardness (mg $CaCO_3$/L) of 100% : 1282
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 283

Temperature (°C) of sample prior to aeration: 20
Is aeration required (<40% or >100%)? (Yes or No)
Filtered with 110um screen prior to testing (Yes or No)
Is hardness adjustment required (<25 mg $CaCO_3$/L)? (Yes or No)

Dilution Water
Pail label / preparation date 2:01127
Hardness of dilution water (mg/L) 205

Antiscalant
Final Concentration in Sample: 5mg/L
Volume of sample: 500mL Volume of antiscalant: 39.5µL

Comments/Observations: 0hr: neppt
48hr: No ppt

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Reviewed By: ST Date Reviewed: 2022/02/10

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS ~~10~~ AS Client TEC164 Reference 2122-1272-04

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/02/04	1410	KK/KTH	3	MAF
1	2022/02/05	0900	KTH	-	AW
2	2022/02/06	1020	ST	2	JCC

Sample Information

Initial pH: 8.3
Initial EC (µS/cm): 1919
Salinity (ppt): 3

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	7.60	7.67 KTH	7.7	8.1	8.1	8.1				
2	8.1	8.1	8.1	8.3	8.3	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	446	454	455	1914	2110	1998				
2	436	442	443	1945	1969	1981				

DO (mg/L) (**40-100% saturation at test temp.**)

0	8.1	8.1	8.1	7.9	7.9	7.9				
2	8.1	8.1	8.1	8.1	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	19	19	19	20	20	20				
2	19	19	19	19	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar C3 Jar(s) mortality 7 days prior to test (must be ≤25%) 0/.

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 36
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0

Sample
DO (mg/L) of sample prior to aeration: 10.5 Temperature (°C) of sample prior to aeration: 20
DO % of sample prior to aeration: ~~110~~ 134 Is aeration required (<40% or >100%)? **Yes or No**
Duration of aeration (37.5 +/- 12.5 mL/min/L): 20min Filtered with 110um screen prior to testing **Yes or No**
Hardness (mg $CaCO_3$/L) of 100% : 1056 Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 206

Dilution Water
Pail label / preparation date 2:01/27
Hardness of dilution water (mg/L) 205

Antiscalant
Final Concentration in Sample: 5mg/L
Volume of sample: 100mL Volume of antiscalant: 39.5µL

Comments/Observations: 0hr: 0ppt
48hr: 0 ppt

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Reviewed By: ST Date Reviewed: 2022/02/10

APPENDIX C – Chain-of-custody form

Teck

Page 1 of 1

COC ID: EVO NAUTILUS February 1 2022 | TURNAROUND TIME: | RUSH:

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO			
Facility Name / Job#	Elkview Operations			Lab Name	Nautilus Environmental - BC			Report Format / Distribution	Excel	PDF	EDD
Project Manager	Group 1; Brett Mason			Lab Contact				Email 1:			
Email	Brett.Mason@teck.com			Email	jacklyn@nautilusenvironmental.ca			Email 2:			
Address	RR1 HWY 3			Address	10823 27th Street SE			Email 3:			
								Email 4:			
City	Sparwood	Province	BC	City	Calgary	Province	AB	Email 5:			
								Email 6:			
								Email 7:	teckcoal@equisonline.com		X
								Email 8:	DL-EVO-SRF@teck.com	X	X	X
								Email 9:	[redacted]	X	X	X
								Email 10:				
								Email 11:				
								Email 12:				
								Email 13:				
Postal Code	V0B 2G0	Country	Canada	Postal Code	T2H 2K1	Country	Canada				
Phone Number	250-425-6179			Phone Number	T2Z 3V9			PO number	807270		

SAMPLE DETAILS

2022/02/02
08:50
Manitoulin
JC
8x20LJugs, 10x1L bottles
NoS/NoE
Good Condition

ANALYSIS REQUESTED

Filtered - F: Field, L: Lab, FL: Field & Lab, N: None

Sample ID 2022-1272	Sample Location (sys_loc_code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	Fil.	Preserv.	ANALYSIS: 48hr Daphnia Magna Single Concentration Acute Toxicity 20C	48hr Daphnia Magna Single Concentration Acute Toxicity 10C	48hr Daphnia Magna Single Concentration Acute Toxicity Anitscalent	96hr Rainbow Trout Single Concentration Acute Toxicity (20 L Bladder)	96hr Rainbow Trout Single Concentration Acute Toxicity (20 L Bladder)	48hr Daphnia Magna Single Concentration Toxicity 15C
EV_GT1_WS_2022-02-01_N-SRF -01	EV_GT1	WS		2022/01/18	8:50	G	8			2	2			4	-0.2°C
EV_BC1_WS_2022-02-01_N-SRF -02	EV_BC1	WS		2022/01/18	10:00	G	8			2	2			4	1.4°C
EV_BC1_WS_2022-02-01_N-SRF-AS -03	EV_BC1	WS		2022/01/18	10:01	G	1					1			-0.5°C
EV_GT1_WS_2022-02-01_N-SRF-AS -04	EV_GT1	WS		2022/01/18	8:51	G	1					1			0.6°C
				2022/02/01 as per client 40°											

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME
Field Temperatures		February 1, 2022		

SERVICE REQUEST (rush - subject to availability)

Regular (default)	X
Priority (2-3 business days) - 50% surcharge	
Emergency (1 Business Day) - 100% surcharge	
For Emergency <1 Day, ASAP or Weekend - Contact ALS	

Sampler's Name		Mobile #	
Sampler's Signature		Date/Time	February 1, 2022

END OF REPORT

Acute Toxicity Test Results

Samples collected February 7, 2022

Final Report

March 3, 2022

Submitted to: **Teck Coal Ltd.**
Sparwood, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates					
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation	*Daphnia magna* antiscalant test initiation
F2_BPO_WG_2022-02-07_N/ 2122-1317-01	7-Feb-22 at 0900h	8-Feb-22 at 1000h	9-Feb-22 at 1510h	8-Feb-22 at 1600h	8-Feb-22 at 1535h	-
F2_BPO_WG_2022-02-07_N-AS/ 2122-1317-02	7-Feb-22 at 0901h	8-Feb-22 at 1000h	-	-	-	8-Feb-22 at 1545

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
F2_BPO_WG_2022-02-07_N	9.8°C	1082	407
F2_BPO_WG_2022-02-07_N-AS	9.9°C	1082	407

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)
- *Daphnia magna* 48-h single concentration screening test (conducted with 20 mg/L antiscalant)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample			
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
F2_BPO_WG_2022-02-07_N	100	100	100	-
F2_BPO_WG_2022-02-07_N-AS	-	-	-	100

Sample ID	Percent Immobility in 100 (% v/v)		
	Daphnia magna 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
F2_BPO_WG_2022-02-07_N	0	0	-
F2_BPO_WG_2022-02-07_N-AS	-	-	0

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
F2_BPO_WG_2022-02-07_N	Rainbow trout	Precipitate observed on bottom of test vessel	None
	Daphnia magna	Surficial precipitate observed in the 20-degree test	None
F2_BPO_WG_2022-02-07_N-AS	*Daphnia magna*	None	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	2.9 (2.2-3.5) g/L KCl[1]	6.4 (6.2-6.6) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.4 (2.5-4.6) g/L KCl	6.5 (5.6-7.6) g/L NaCl
Reference toxicant CV	10.0%	5.0%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, January 29, 2022; [2] Test Date February 14, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation



Report By:
Katheryn Munson, BSc
Biologist



Reviewed By:
Leila Oosterbroek, P Biol
Environmental Scientist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Control/dilution water for antiscalant test	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L), Na_2SeO_4 (2 µg Se/L) and 20 mg/L antiscalant
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC164 Reference 2122-1317-01 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022-02-09	810	* DW/CH	1	
1	2022-02-10	0915	CH	-	
2	2022-02-11	0730	JCC	-	
3	2022-02-12	0750		-	
4	2022-02-13	0903	JCC	1	

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 7.8
Initial EC (µS/cm): 1912
Salinity (ppt): 4

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L : yes/no

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	8.6	8.6			
Temp (°C) of 100%	16				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100					
pH (units) (range: 5.5-8.5)							
Day 0	8.0	7.6					
Day 4	8.0	8.0					
EC (uS/cm)							
Day 0	472	1939					
Day 4	468	1812					
DO (mg/L) (70-100% saturation at test temp.)							
Day 0	8.8	8.6					
Day 4	8.8	8.8					
Temperature (°C) (range: 14-16°C)							
Day 0	15	16					
Day 4	15	15					
Number Alive (In brackets number stressed)							
Day 0	10	10					
Day 1	10	10					
Day 2	10	10					
Day 3	10	10					
Day 4	10	10					

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	33	0.3
2	34	0.4
3	36	0.6
4	30	0.3
5	30	0.3
6	30	0.3
7	30	0.3
8	32	0.4
9	35	0.5
10	36	0.6

Loading Density (g/L): 0.2 (must be ≤0.5 g/L)
Mean Length (cm): 3.3
Length Range (cm): 3.0-3.6
Mean Weight (g): 0.4 (Must be ≥0.3g)
Weight Range: (g): 0.3-0.6

Test Organism Information

Batch 20221222TR
Source Troutlodge
Tank # 2
Days Held at 15± 2°C 26 (must be ≥14 days)
Percent stock mortality 0.23 (7 days prior to test, must be ≤2%)
Test Volume (L) 18

Comments : 96h: ppt on bottom of tank

Reviewed By: [illegible] Date Reviewed: 2022/02/28

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS Client TECK Reference 2122-1317-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/02/08	1535	MMF/DW	3	JCC
1	2022/02/09	0830	EP	-	
2	2022/02/10	0845	KTM/EP	2	DW

Sample Information

Initial pH: 7.8
Initial EC (µS/cm): 1912
Salinity (ppt): 4.

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	8.0	8.0	8.0	7.7	7.7	7.7				
2	8.2	8.1	8.1	8.2	8.3	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	481	483	484	2110	2140	2150				
2	510	492	490	1950	2100	2090				

DO (mg/L) (**40-100% saturation at test temp.**)

0	8.1	8.1	8.1	8.9	8.9	8.9				
2	8.1	8.1	8.1	8.1	8.1	8.1				

Temperature (°C) (range: **18-22 °C**)

0	19	19	19	18	18	18				
2	19	19	19	19	19	19				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar C1 Jar(s) mortality 7 days prior to test (must be ≤25%) 0 %

QA (previous month)
Days to first brood (≤12 days) 9
Average number of young produced (≥15 young) 35
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0 %
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 10.2 Temperature (°C) of sample prior to aeration: 18
DO % of sample prior to aeration: 124 Is aeration required (<40% or >100%)? Yes or (No) mmf
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 2cm/m Filtered with 110um screen prior to testing Yes or (No)
Hardness (mg $CaCO_3$/L) of 100% : 1082 Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 407

Dilution Water
Pail label / preparation date 1:02/01
Hardness of dilution water (mg/L) 226.

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Comments/Observations:
0hr: nopppt
48hr: surficial ppt

Reviewed By: W Date Reviewed: 2022/02/28

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS10 Client TEC164. Reference 2122-1317.01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/02/08	1600	MAF/DW	3	JCC
1 EP	~~2022~~ 2022/02/09	0900	EP	-	JT
2	2022/02/10	1030	KL	2	CB

Sample Information

Initial pH: 7.8
Initial EC (µS/cm): ~~1082~~ 1912
Salinity (ppt): 4.

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				
day				pH (units) (range: 6.0-8.5)						
0	8.0	8.0	8.0	7.8	7.8	7.8				
2	8.2	8.2	8.2	8.3	8.4	8.4				
				The pH of the sample was not adjusted prior to test setting, unless noted in the comments below						
				EC (uS/cm)						
0	488	478	478	2110	2180	2190				
2	487	479	483	2130	2140	2140				
				DO (mg/L) (**40-100% saturation at test temp.**)						
0	9.4	9.4	9.4	9.9	9.9	9.9				
2	9.4	9.4	9.4	9.4	9.4	9.4				
				Temperature (°C) (range: **8-12 °C**)						
0	12	12	12	12	12	12				
2	12	12	12	12	12	12				
				Number Alive (I, immobile)						
0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar C Wed. Jar(s) mortality 7 days prior to test (must be ≤25%) 5%

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 35
Were test treatments randomized on test tray? Yes / No

Control Validity Criteria
Mean % mortality at 48 hours - 0%
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 10.4
Temperature (°C) of sample prior to aeration: 12
DO % of sample prior to aeration: 111%
Is aeration required (<40% or >100%)? **Yes or No**
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20min
Filtered with 110um screen prior to testing **Yes or No**
Hardness (mg $CaCO_3$/L) of 100% : 1082
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 407.

Dilution Water
Pail label / preparation date 1:02/01
Hardness of dilution water (mg/L) 226

DO Levels (40-100% saturation) - corrected for altitude -
4.1 to 10.3 mg/L at 8°C
4.0 to 10.0 mg/L at 9°C
3.9 to 9.8 mg/L at 10°C
3.8 to 9.6 mg/L at 11°C
3.7 to 9.4 mg/L at 12°C

Comments/Observations:
48hr: no ppt

Reviewed By: [illegible] Date Reviewed: 2022/02/28

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS Client TEC164 Reference 2122-1317-02

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/02/08	1545	MAF/DW	3	JCC
1	2022/02/09	0855	EP	-	ST
2	2022/02/10	1115	KKCH	2	CB

Sample Information

Initial pH: 7.8
Initial EC (µS/cm): 1912
Salinity (ppt): 4

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				
day										
pH (units) (range: 6.0-8.5)										
0	8.0	8.0	8.0	7.8	7.8	7.8				
2	8.0	7.9	7.9	8.3	8.3	8.3				
The pH of the sample was not adjusted prior to test setting, unless noted in the comments below										
EC (uS/cm)										
0	480	479	471	2100	2120	2110				
2	482	478	479	1979	1975	1980				
DO (mg/L) (**40-100% saturation at test temp.**)										
0	8.1	8.1	8.1	8.9	8.9	8.9				
2	7.9	7.9	7.9	7.9	7.9	7.9				
Temperature (°C) (range: **18-22 °C**)										
0	19	19	19	18	18	18				
2	20	20	20	20	20	20				
Number Alive (I, immobile)										
0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar D1 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 33
Were test treatments randomized on test tray? Yes / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0%

Sample
DO (mg/L) of sample prior to aeration: 9.6 MAF
DO % of sample prior to aeration: 117 / MAF
Duration of aeration (37.5 +/- 12.5 mL/min/L): 20min
Hardness (mg $CaCO_3$/L) of 100% : 1086
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 457

Temperature (°C) of sample prior to aeration: 18 MAF 18 MAF 17
Is aeration required (<40% or >100%)? Yes or No
Filtered with 110um screen prior to testing Yes or No
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or No

Dilution Water
Pail label / preparation date 1.02/01
Hardness of dilution water (mg/L) 226

Antiscalant
Final Concentration in Sample: 20mg/L
Volume of sample: 500mL Volume of antiscalant: 158mL

Comments/Observations:
0hr: no ppt
48hr: no ppt

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Reviewed By: LO Date Reviewed: 2022/02/28

APPENDIX C – Chain-of-custody form

Teck

COC ID: F2 NAUTILUS February 07 2022 | **TURNAROUND TIME:** | **RUSH:**

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO			
Facility Name / Job#	F2 SRF			Lab Name	Nautilus Environmental - BC			Report Format / Distribution		Excel	PDF	EDD
Project Manager	BRETT MASON			Lab Contact				Email 1:	Cole.MacGregor@teck.com	X	X	
Email	BRETT.MASON@TECK.COM			Email	jacklyn@nautilusenvironmental.ca			Email 2:	teckcoal@equisonline.com			X
Address	RR1 HWY 3			Address	10823 27th Street SE			Email 3:	DL-EVO-SRF@teck.com	X	X	
								Email 4:				
City	Sparwood	Province	BC	City	Calgary	Province	AB	Email 5:				
Postal Code	V0B 2G0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada	Email 6:				
Phone Number	250-425-6179			Phone Number	403-253-7121			PO number	*00807270*			

SAMPLE DETAILS

2022/02/08
10:00
Manitonlin
JC
4x20L Jugs, 6x1L bottles
No6/No6
Good Condition

ANALYSIS REQUESTED — Filtered - F: Field, L: Lab, FL: Field & Lab, N: None

Sample ID	Sample Location (sys_loc_code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	Filt.	ANALYSIS: 48hr Daphnia Magna Single Concentration Acute Toxicity 20C	48hr Daphnia Magna Single Concentration Acute Toxicity 10C	48hr Daphnia Magna Single Concentration Acute Toxicity Anitscalent	96hr Rainbow Trout Single Concentration Acute Toxicity	48hr Daphnia Magna Single Concentration Toxicity 15C
F2_BPO_WG_2022-02-07_N -01	9.8°C F2_BPO	WG		2022/02/07	9:00	G	8		2	2		4	
F2_BPO_WG_2022-02-07_N-AS -02	9.9°C F2_BPO	WG		2022/02/07	9:01	G	1				1		

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME
	Humberto Discrado	February 7, 2022 12:55		

SERVICE REQUEST (rush - subject to availability)

Regular (default)	X
Priority (2-3 business days) - 50% surcharge	
Emergency (1 Business Day) - 100% surcharge	
For Emergency <1 Day, ASAP or Weekend - Contact ALS	

Sampler's Name	Matt Gerolami	Mobile #	
Sampler's Signature		Date/Time	February 7, 2022

END OF REPORT

Acute Toxicity Test Results

Samples collected February 14, 2022

Final Report

March 12, 2022

Submitted to: **Teck Coal Ltd.**
Sparwood, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates					
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation	*Daphnia magna* antiscalant test initiation
EV_EC1_WS_2022-02-14_N-SRF/ 2122-1391-01	14-Feb-22 at 1040h	15-Feb-22 at 1100h	16-Feb-22 at 1510h	16-Feb-22 at 1425h	16-Feb-22 at 1415h	-
EV_EC1_WS_2022-02-14_N-SRF-AS/ 2122-1391-02	14-Feb-22 at 1041h	15-Feb-22 at 1100h	-	-	-	16-Feb-22 at 1420h
EV_ECOUT_WS_2022-02-14_N-SRF/ 2122-1391-03	14-Feb-22 at 1320h	15-Feb-22 at 1100h	16-Feb-22 at 1510h	16-Feb-22 at 1430h	16-Feb-22 at 1420h	-
EV_ECOUT_WS_2022-02-14_N-SRF-AS/ 2122-1391-04	14-Feb-22 at 1321h	15-Feb-22 at 1100h	-	-	-	16-Feb-22 at 1425h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
EV_EC1_WS_2022-02-14_N-SRF	9.9°C	1151	423
EV_EC1_WS_2022-02-14_N-SRF-AS	9.9°C	1151	423
EV_ECOUT_WS_2022-02-14_N-SRF	10.8°C	1326	413
EV_ECOUT_WS_2022-02-14_N-SRF-AS	10.8°C	1326	413

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)
- *Daphnia magna* 48-h single concentration screening test (conducted with 5 mg/L antiscalant)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample			
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
EV_EC1_WS_2022-02-14_N-SRF	100	100	100	-
EV_EC1_WS_2022-02-14_N-SRF-AS	-	-	-	97
EV_ECOUT_WS_2022-02-14_N-SRF	100	100	100	-
EV_ECOUT_WS_2022-02-14_N-SRF-AS	-	-	-	100

Sample ID	Percent Immobility in 100 (% v/v)		
	Daphnia magna 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
EV_EC1_WS_2022-02-14_N-SRF	0	0	-
EV_EC1_WS_2022-02-14_N-SRF-AS	-	-	13
EV_ECOUT_WS_2022-02-14_N-SRF	0	0	-
EV_ECOUT_WS_2022-02-14_N-SRF-AS	-	-	0

Precipitate observations

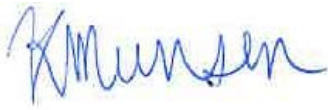
Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
EV_EC1_WS_2022-02-14_N-SRF	Rainbow trout	Precipitate observed on the bottom of test vessel	None
	Daphnia magna	Surficial precipitate observed in 20 degree test vessels	None
EV_EC1_WS_2022-02-14_N-SRF-AS	*Daphnia magna*	None	None
EV_ECOUT_WS_2022-02-14_N-SRF	Rainbow trout	Precipitate observed on the bottom of test vessel	None
	Daphnia magna	Surficial precipitate observed in 20 and 10 degree test vessels	None
EV_ECOUT_WS_2022-02-14_N-SRF-AS	*Daphnia magna*	None	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	2.9 (2.2-3.5) g/L KCl[1]	6.4 (6.2-6.6) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.4 (2.5-4.6) g/L KCl	6.5 (5.6-7.6) g/L NaCl
Reference toxicant CV	10.0%	5.0%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, January 29, 2022; [2] Test Date February 14, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation



Report By:
Katheryn Munson, BSc
Biologist



Reviewed By:
Sara Thiessen, BSc
Senior Biologist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Control/dilution water for antiscalant test	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L), Na_2SeO_4 (2 µg Se/L) and 5 mg/L antiscalant
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS ENVIRONMENTAL

Trout Bench Sheet

Method TRS Client TEC164 Reference 2122-1391-01 Chamber 23 CH

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022/02/16	1510 *	EP / CH	1	MAF
1	2022/02/17	0805	CC	-	ST
2	2022/02/18	0745	V+M	-	MAF
3	2022/02/19	0845	CC	-	ST
4	2022/02/20	0915	EP/ST	1	MAF

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 8.1
Initial EC (µS/cm): 1824
Salinity (ppt): 3

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L: **yes/no**

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	9.9	8.8			
Temp (°C) of 100%	15				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

	Conc.	CTL	100						
pH (units) (range: **5.5-8.5**)	Day 0	7.7	8.01 CH						
	Day 4	7.9	7.9						
EC (uS/cm)	Day 0	504	1901						
	Day 4	486	1710						
DO (mg/L) (**70-100% saturation at test temp.**)	Day 0	8.6	8.8						
	Day 4	8.6	8.6						
Temperature (°C) (range: **14-16°C**)	Day 0	16	15						
	Day 4	16	16						
Number Alive (In brackets number stressed)	Day 0	10	10						
	Day 1	10	10						
	Day 2	10	10						
	Day 3	10	10						
	Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.1	0.4
2	3.3	0.4
3	3.1 ST	0.3
4	2.8	0.2
5	3.0	0.3
6	3.5	0.5
7	3.9	0.6
8	3.2	0.3
9	3.5	0.5
10	3.8	0.6

Loading Density (g/L): 0.2 (must be ≤0.5 g/L)
Mean Length (cm): 3.3
Length Range (cm): 2.8-3.9
Mean Weight (g): 0.4 (Must be ≥0.3g)
Weight Range: (g): 0.2-0.6

Test Organism Information

Batch 20211222TR
Source Troutlodge
Tank # 1
Days Held at 15± 2°C (must be ≥14 days): 33
Percent stock mortality (7 days prior to test, must be ≤2%): 0.13
Test Volume (L): 18

Comments : 96hr: ppt on bottom of tank

Reviewed By: MF Date Reviewed: 2022/02/24

NAUTILUS ENVIRONMENTAL

Trout Bench Sheet

Method TRS Client TEC164 Reference 2122-1391-03 Chamber 13CH

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022/02/16	1510 *	EP / CH	1	MAF
1	2022/02/17	0805	CC	-	ST
2	2022/02/18	0745	KTM	-	MAF
3	2022/02/19	0745	CC	-	ST
4	2022/02/20	0720	EP/ST	1	MF

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 7.8
Initial EC (µS/cm): 2000
Salinity (ppt): 4

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L yes/no

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	9.8	8.8			
Temp (°C) of 100%	15				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: **5.5-8.5**)								
Day 0	7.8	7.8						
Day 4	8.1	8.1						
EC (uS/cm)								
Day 0	509	1995						
Day 4	495	1728						
DO (mg/L) (**70-100% saturation at test temp.**)								
Day 0	8.8	8.8						
Day 4	8.6	8.6						
Temperature (°C) (range: **14-16°C**)								
Day 0	15	15						
Day 4	16	16						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.3	0.4
2	3.4	0.4
3 ST	3.7	0.6
4	3.2	0.4
5	3.1	0.3
6	3.6	0.5
7	3.2	0.4
8	3.7	0.7
9	3.2	0.5
10	3.0	0.3

Loading Density (g/L): 0.3 (must be ≤0.5 g/L)
Mean Length (cm): 3.3
Length Range (cm): 3.0-3.7
Mean Weight (g): 0.5 (Must be ≥0.3g)
Weight Range: (g): 0.3-0.7

Test Organism Information

Batch 20211222TR
Source Troutlodge
Tank # 1
Days Held at 15± 2°C 33 (must be ≥14 days)
Percent stock mortality 0.13 (7 days prior to test, must be ≤2%)
Test Volume (L) 18

Comments : 96hr: ppt on bottom of tank

Reviewed By: CP Date Reviewed: 2022/02/24.

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS ~~10~~ 20 Client TEC164 Reference 2122-1391-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/02/16	1415	KTM/CC	2	MAF
1	2022/02/17	0830	EP	-	ST
2	2022/02/18	0950	JCC	3	KTM

Sample Information

Initial pH: 8.1
Initial EC (µS/cm): 1824
Salinity (ppt): 3

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				
day				pH (units) (range: 6.0-8.5)						
0	8.81	8.1	8.1	8.1	8.1	8.1				
2	8.1	8.1	8.1	8.1	8.1	8.1				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

				EC (uS/cm)						
0	525	524	524	1903	1893	1900				
2	521	533	525	1846	1858	1861				
				DO (mg/L) (**40-100% saturation at test temp.**)						
0	7.9	7.9	7.9	8.6	8.6	8.6				
2	7.9	7.9	7.9	7.9	7.9	7.9				
				Temperature (°C) (range: **18-22 °C**)						
0	20	20	20	20	20	20				
2	20	20	20	20	20	20				
				Number Alive (I, immobile)						
0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar E3 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 32
Were test treatments randomized on test tray? Yes / No

Control Validity Criteria
Mean % mortality at 48 hours - 0%
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 10.2
DO % of sample prior to aeration: 127%
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20m
Hardness (mg $CaCO_3$/L) of 100% : 1151
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 423

Temperature (°C) of sample prior to aeration: 20
Is aeration required (<40% or >100%)? Yes or No
Filtered with 110um screen prior to testing Yes or No
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or No

Dilution Water
Pail label / preparation date 1.02/14
Hardness of dilution water (mg/L) 211

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Comments/Observations:
0hr: nappt.
48hr: surficial ppt

Reviewed By: [signature] Date Reviewed: 2022/02/24

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC164 Reference 2122-1391-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/02/16	1425	CC/KTM	2	MAF
1	2022/02/17	0855	KTM	-	ST
2	2022/02/18	1015	JCC	3	KTM

Sample Information

Initial pH:	8.1
Initial EC (µS/cm):	1824
Salinity (ppt):	3

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				
day				pH (units) (range: 6.0-8.5)						
0	8.~~2~~1 CC	8.1	8.1	8.2	8.2	8.2				
2	8.1	8.1	8.1	8.2	8.2	8.2				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

				EC (µS/cm)						
0	534	525	524	1912	~~18~~ 1910	1918				
2	537	529	526	1910	1920	1920				

				DO (mg/L) (**40-100% saturation at test temp.**)						
0	9.4	9.4	9.4	10.1	10.1	10.1				
2	9.4	9.4	9.4	9.4	9.4	9.4				

				Temperature (°C) (range: **8-12 °C**)						
0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

				Number Alive (I, immobile)						
0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar C4 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)

Days to first brood (≤12 days) 8

Average number of young produced (≥15 young) 36

Were test treatments randomized on test tray? Yes / No

Control Validity Criteria

Mean % mortality at 48 hours - (must be ≤10%) 0%

Sample

DO (mg/L) of sample prior to aeration: 10.3

DO % of sample prior to aeration: 109%

Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20m

Hardness (mg $CaCO_3$/L) of 100% : 1151

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —

Alkalinity of 100% sample (mg $CaCO_3$/L): 423

Temperature (°C) of sample prior to aeration: 12

Is aeration required (<40% or >100%)? Yes or No

Filtered with 110um screen prior to testing Yes or No

Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or No

Dilution Water

Pail label / preparation date 1.02/14

Hardness of dilution water (mg/L) 211

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C
4.0 to 10.0 mg/L at 9°C
3.9 to 9.8 mg/L at 10°C
3.8 to 9.6 mg/L at 11°C
3.7 to 9.4 mg/L at 12°C

Comments/Observations:

0hr: no ppt
4hr: no ppt

Reviewed By: [signature] Date Reviewed: 2022/02/24.

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS Client TEC164 Reference 2122-1391-02

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/02/16	1120	KJM/CC	3	KJ
1	2022/02/17	0845	EP	-	ST
2	2022/02/18	0930	JCC	2	KJM

Sample Information

Initial pH: 8.1
Initial EC (µS/cm): 1824
Salinity (ppt): 3

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	7.9	7.9	7.9	8.0	8.0	8.0				
2	8.0	8.0	8.0	8.2	8.2	8.2				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	513	527	529	1857	1997	1935				
2	521	523	530	1917	1886	1899				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.9	7.9	7.9				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	20	20	20				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10(1)	10(1)	10(1)				
2	10	10	10	10	10	9(3I)				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar E1 Jar(s) mortality 7 days prior to test (must be ≤25%) 5%

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 32
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0%

Sample
DO (mg/L) of sample prior to aeration: 9.8
DO % of sample prior to aeration: 122 %
Duration of aeration (37.5 +/- 12.5 mL/min/L): 20m
Hardness (mg $CaCO_3$/L) of 100%: 1151
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 423

Temperature (°C) of sample prior to aeration: 20
Is aeration required (<40% or >100%)? (Yes) or No
Filtered with 110um screen prior to testing (Yes) or No
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)

Dilution Water
Pail label / preparation date 1:02/14
Hardness of dilution water (mg/L) 211

Antiscalant
Final Concentration in Sample: 5mg/L
Volume of sample: 500mL Volume of antiscalant: 39.5mL

Comments/Observations:
0hr: no ppt
48hr: no ppt

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Reviewed By: EP Date Reviewed: 2022/02/24

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS ~~10~~ 20 Client TEC164 Reference 2122-1391-03

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/02/16	1420	KTM/CC	2	MAF
1	2022/02/17	0830	EP	-	ST
2	2022/02/18	1000	JCC	3	KTM

Sample Information

Initial pH: 7.5
Initial EC (µS/cm): 2000
Salinity (ppt): 4

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	8.1	8.1	8.1	8.0	8.0	8.0				
2	8.1	8.1	8.1	8.0	8.0	8.0				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	515	515	520	1975	1965	1977				
2	529	519	526	1903	1906	1900				

DO (mg/L) (**40-100% saturation at test temp.**)

0	8.1	8.1	8.1	8.6	8.6	8.6				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	19	19	19	20	20	20				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar C4 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 36
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0%

Sample
DO (mg/L) of sample prior to aeration: 9.8
DO % of sample prior to aeration: 123%
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20m
Hardness (mg $CaCO_3$/L) of 100% : 1326
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 413

Temperature (°C) of sample prior to aeration: 20
Is aeration required (<40% or >100%)? (Yes or No)
Filtered with 110um screen prior to testing (Yes or No)
Is hardness adjustment required (<25 mg $CaCO_3$/L)? (Yes or No)

Dilution Water
Pail label / preparation date 1:02/14
Hardness of dilution water (mg/L) 211

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Comments/Observations: 0hr: no ppt
48hr: surficial ppt

Reviewed By: EP Date Reviewed: 2022/02/24.

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC164 Reference 2122-1391-03

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/02/16	1436	CC/LTM	2	MAF
1	2022/02/17	0845	LTM	-	ST
2	2022/02/18	1020	TCC	3	LTM

Sample Information

Initial pH: 7.8
Initial EC (µS/cm): 2000
Salinity (ppt): 4

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	8.1 cc	8.1 cc	cc	7.8	7.8	7.8				
2	8.1	8.1	8.1	8.1	8.1	8.1				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (µS/cm)

0	523 cc	519	521	2090	*~~1447~~ 2080	2090				
2	521	534	530	1920	1975	1980				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (l, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar cc E4 E3 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 32
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0%
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 10.6 Temperature (°C) of sample prior to aeration: 12
DO % of sample prior to aeration: 111% Is aeration required (<40% or >100%)? **Yes or No**
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20m Filtered with 110um screen prior to testing **Yes or No**
Hardness (mg $CaCO_3$/L) of 100% : 1326 Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 413

Dilution Water
Pail label / preparation date 1602/14
Hardness of dilution water (mg/L) 211

DO Levels (40-100% saturation) - corrected for altitude -
4.1 to 10.3 mg/L at 8°C
4.0 to 10.0 mg/L at 9°C
3.9 to 9.8 mg/L at 10°C
3.8 to 9.6 mg/L at 11°C
3.7 to 9.4 mg/L at 12°C

Comments/Observations:
0hr: hopper
48hr: slight surficial ppt

Reviewed By: [illegible] Date Reviewed: 2022/02/24

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS Client TEC164 Reference 2122-1391-04

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/02/16	1425	KTM/CC	23	SJ
1	2022/02/17	2910	EP	-	SJ
2	2022/02/18	1010	JCC	8	KTM

Sample Information

Initial pH: 7.5
Initial EC (µS/cm): 2000
Salinity (ppt): 4

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	8.0	8.0	8.0	8.0	8.0	8.0				
2	8.1	8.1	8.1	8.2	8.2	8.2				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	511	526	529	1984	1998	2080				
2	520	534	626	1875 DO	1970	2010				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.9	7.9	7.9				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	20	20	20				
2	20	20	20	20	20	20				

Number Alive (l, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar E1 Jar(s) mortality 7 days prior to test (must be ≤25%) 5

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 32
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0%

Sample
DO (mg/L) of sample prior to aeration: 10.2 Temperature (°C) of sample prior to aeration: 20
DO % of sample prior to aeration: 127% Is aeration required (<40% or >100%)? (Yes) or No
Duration of aeration (37.5 +/- 12.5 mL/min/L): 20M Filtered with 110um screen prior to testing (Yes) or No
Hardness (mg $CaCO_3$/L) of 100%: 1326 Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): ~~413~~ 413

Dilution Water
Pail label / preparation date 1:02/14
Hardness of dilution water (mg/L) 21

Antiscalant
Final Concentration in Sample: 5mg/L
Volume of sample: 500mL Volume of antiscalant: 39.5mL

Comments/Observations:
0hr: no ppt
48hr: no ppt

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Reviewed By: ST Date Reviewed: 2022/02/24

APPENDIX C – Chain-of-custody form

Teck

COC ID: EVO NAUTILUS Feb 14 2022 | TURNAROUND TIME: | RUSH:

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO			
Facility Name / Job#	Elkview Operations			Lab Name	Nautilus Environmental - BC			Report Format / Distribution		Excel	PDF	EDD
Project Manager	Group 1; Brett Mason			Lab Contact				Email 1:	[redacted]	X	X	X
Email	Brett.Mason@teck.com			Email	jacklyn@nautilusenvironmental.ca			Email 2:	teckcoal@equisonline.com			X
Address	RR1 HWY 3			Address	10823 27th Street SE			Email 3:	DL-EVO-SRF-LAB@teck.com	X	X	X
								Email 4:				
City	Sparwood	Province	BC	City	Calgary	Province	AB	Email 5:				
								Email 6:				
								Email 7:				
								Email 8:				
								Email 9:				
								Email 10:				
								Email 11:				
								Email 12:				
								Email 13:				
Postal Code	V0B 2G0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada					
Phone Number	250-425-6179			Phone Number	403-253-7121			PO number	807270			

2022/02/15
11:00
Manitoulin
DC 8x10L carboys, 4x20L carboys
~~12x10L carboys~~, 10x1L bottles
NOS/NOI
Good Condition

SAMPLE DETAILS / ANALYSIS REQUESTED

Filtered - F: Field, L: Lab, FL: Field & Lab, N: None

Sample ID	Sample Location (sys_loc_code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	FIELD FILT.	PRESERV.	ANALYSIS: 48hr Daphnia Magna Single Concentration Acute Toxicity 20C	48hr Daphnia Magna Single Concentration Acute Toxicity 10C	48hr Daphnia Magna Single Concentration Acute Toxicity Anitscalent	96hr Rainbow Trout Single Concentration Acute Toxicity (20 L Bladder)	96hr Rainbow Trout Single Concentration Acute Toxicity (10 L Bladder)	48hr Daphnia Magna Single Concentration Toxicity 15C	
EV_EC1_WS_2022-02-14_N-SRF -01	EV_EC1	WS		2022/02/14	10:40	G	12			2	2			8	9.9°C	
EV_EC1_WS_2022-02-14_N-SRF-AS -02	EV_EC1	WS		2022/02/14	10:41	G	1					1			↓	
EV_ECOUT_WS_2022-02-14_N-SRF -03	EV_ECOUT	WS		2022/02/14	13:20	G	8			2	2		4		10.8°C	
EV_ECOUT_WS_2022-02-14_N-SRF-AS -04	EV_ECOUT	WS		2022/02/14	13:21	G	1					1			↓	

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME
Field Temperatures ECOUT:		February 14, 2022		

SERVICE REQUEST (rush - subject to availability)					
Regular (default)	X	Sampler's Name	Matt Gerolami	Mobile #	
Priority (2-3 business days) - 50% surcharge					
Emergency (1 Business Day) - 100% surcharge		Sampler's Signature		Date/Time	February 14, 2022
For Emergency <1 Day, ASAP or Weekend - Contact ALS					

END OF REPORT

Acute Toxicity Test Results

Samples collected February 14, 2022

Final Report

March 12, 2022

Submitted to: **Teck Coal Ltd.**
Sparwood, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates					
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation	*Daphnia magna* antiscalant test initiation
F2_BPO_WG_2022-02-14_N/ 2122-1392-01	14-Feb-22 at 0820h	15-Feb-22 at 1100h	16-Feb-22 at 1445h	16-Feb-22 at 1555h	16-Feb-22 at 1555h	-
F2_BPO_WG_2022-02-14_N-AS/ 2122-1392-02	14-Feb-22 at 0821h	15-Feb-22 at 1100h	-	-	-	16-Feb-22 at 1600

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
F2_BPO_WG_2022-02-14_N	9.4°C	1220	382
F2_BPO_WG_2022-02-14_N-AS	9.4°C	1220	382

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)
- *Daphnia magna* 48-h single concentration screening test (conducted with 20 mg/L antiscalant)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample			
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
F2_BPO_WG_2022-02-14_N	100	100	97	-
F2_BPO_WG_2022-02-14_N-AS	-	-	-	100

Sample ID	Percent Immobility in 100 (% v/v)		
	Daphnia magna 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
F2_BPO_WG_2022-02-14_N	0	3	-
F2_BPO_WG_2022-02-14_N-AS	-	-	0

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
F2_BPO_WG_2022-02-14_N	Rainbow trout	Precipitate observed on test vessel	None
	Daphnia magna	Surficial precipitate observed in the 20˚C test vessels	None
F2_BPO_WG_2022-02-14_N-AS	*Daphnia magna*	None	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	2.9 (2.2-3.5) g/L KCl[1]	6.4 (6.2-6.6) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.4 (2.5-4.6) g/L KCl	6.5 (5.6-7.6) g/L NaCl
Reference toxicant CV	10.0%	5.0%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, January 29, 2022; [2] Test Date February 14, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation



Report By:
Mia Fearey, BIT
Biologist



Reviewed By:
Courtney Bogstie, P. Biol.
Senior Biologist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Control/dilution water for antiscalant test	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L), Na_2SeO_4 (2 µg Se/L) and 20 mg/L antiscalant
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC164 Reference 2122-1392-01 Chamber 2

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022-02-16	1445 *	EP / CH	1	ST
1	2022-02-17	0805	CC	-	ST
2	2022-02-18	0755	KTM	-	MAC
3	2022-02-19	0805	CC	-	ST
4	2022-02-20	0945	EP / JC	1	ST

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 7.6
Initial EC (µS/cm): 2000
Salinity (ppt): 2

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L: **yes/no**

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	8.8	8.8			
Temp (°C) of 100%	15				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	7.6	7.6						
Day 4	8.2	8.1						
EC (uS/cm)								
Day 0	512	2000						
Day 4	503	1746						
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	8.8	8.8						
Day 4	8.8	8.8						
Temperature (°C) (range: 14-16°C)								
Day 0	15	15						
Day 4	15	15						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.0	0.3
2	3.1	0.3
3	3.0	0.3
4	3.7	0.6
5	3.5	0.5
6	3.0	0.3
7	3.7	0.6
8	2.7	0.2
9	2.9	0.3
10	2.6	0.2

Loading Density (g/L): 0.2 (must be ≤0.5 g/L)
Mean Length (cm): 3.1 ~~3.2~~
Length Range (cm): 2.6-3.7
Mean Weight (g): 0.4 (Must be ≥0.3g)
Weight Range: (g): 0.2-0.6

Test Organism Information

Batch 20211222TR
Source Troutlodge
Tank # 1
Days Held at 15± 2°C 33 (must be ≥14 days)
Percent stock mortality 0.23 (7 days prior to test, must be ≤2%)
Test Volume (L) 18

Comments :
96hr: ppt on bottom & sides of tank

Reviewed By: ST Date Reviewed: 2022/02/24

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC164 Reference 2122-1392-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/02/16	1555	MAF/NW	2	CC
1	2022/02/17	0845	EP	-	ST
2	2022/02/18	1035	KTM	3	JCC

Sample Information

Initial pH: 7.6
Initial EC (µS/cm): 2000
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	8.1	8.1	8.1	8.3	8.3	8.4				
2	8.1	8.1	8.1	8.3	8.3	8.4				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	545	541	546	1954	1956	1964				
2	545	542	549	1971	1955	1950				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.1	7.1	7.1	7.2	7.2	7.2				
2	7.4	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	19	19	19	19	19	19				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	9	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar WedE. Jar(s) mortality 7 days prior to test (must be ≤25%) 5

QA (previous month)

Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 17
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 8.6
DO % of sample prior to aeration: 108
Duration of aeration (37.5 +/- 12.5 mL/min/L): 20m
Hardness (mg $CaCO_3$/L) of 100% : 1220
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 382.

Temperature (°C) of sample prior to aeration: 19 20mf
Is aeration required (<40% or >100%)? Yes or No
Filtered with 110um screen prior to testing Yes or (No)
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)

Dilution Water

Pail label / preparation date 1:02/14
Hardness of dilution water (mg/L) 211

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Comments/Observations:

0hr: noppt.
48hr: surficial ppt

Reviewed By: DP Date Reviewed: 2022/2/24.

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC164 Reference 2122-1392-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/02/16	1555	MAF/DW	2	
1	2022/02/17	0855	KTM	-	
2	2022/02/18	1055	KTM	3	

Sample Information

Initial pH: 7.6
Initial EC (µS/cm): 2000
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	8.1	8.1	8.1	7.5	7.5	7.5				
2	8.2	8.2	8.2	8.3	8.3	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	525	524	526	2090	2080	1940				
2	509	525	530	1982	1996	2000				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar WRbE

Jar(s) mortality 7 days prior to test (must be ≤25%) 5

QA (previous month)

Days to first brood (≤12 days) 8

Average number of young produced (≥15 young) 27

Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 8.4

DO % of sample prior to aeration: 92%

Duration of aeration (37.5 +/- 12.5 mL/min/L) : —

Hardness (mg $CaCO_3$/L) of 100% : 1220

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —

Alkalinity of 100% sample (mg $CaCO_3$/L): 382

Temperature (°C) of sample prior to aeration: 12

Is aeration required (<40% or >100%)? Yes or (No)

Filtered with 110um screen prior to testing Yes or (No)

Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)

Dilution Water

Pail label / preparation date 1:02/14

Hardness of dilution water (mg/L) 211

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

Comments/Observations:

0hr: no ppt.

48hr: no ppt

Reviewed By: [signature] Date Reviewed: 2022/02/24

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS Client TEC164 Reference 2122-1392-02

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/02/16	1500	MAF/DW	2	JC
1	2022/02/17	0910	EP	-	ST
2	2022/02/18	1040	6th	3	JC

Sample Information

Initial pH: 7.6
Initial EC (µS/cm): 2000
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				
day				pH (units) (range: 6.0-8.5)						
0	8.1	8.1	8.1	7.6	7.6	7.6				
2	8.1	8.1	8.1	8.3	8.3	8.3				
				The pH of the sample was not adjusted prior to test setting, unless noted in the comments below						
				EC (uS/cm)						
0	526	525	528	2090	2080	2100				
2	535	536	533	2010	1980	1972				
				DO (mg/L) (**40-100% saturation at test temp.**)						
0	8.1	8.1	8.1	8.0	8.0	8.1				
2	8.1	8.1	8.1	8.1	8.1	8.1				
				Temperature (°C) (range: **18-22 °C**)						
0	19	19	19	20	20	20				
2	19	19	19	19	19	19				
				Number Alive (I, immobile)						
0	10	10	10	10	10	10				
1	10	10	10	10(1)	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar E1 Jar(s) mortality 7 days prior to test (must be ≤25%) 5

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 32
Were test treatments randomized on test tray? Yes / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0

Sample
DO (mg/L) of sample prior to aeration: 8.6
DO % of sample prior to aeration: 108
Duration of aeration (37.5 +/- 12.5 mL/min/L): 20m
Hardness (mg $CaCO_3$/L) of 100%: 1220
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 382

Temperature (°C) of sample prior to aeration: 20
Is aeration required (<40% or >100%)? Yes or No
Filtered with 110um screen prior to testing Yes or No
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or No

Dilution Water
Pail label / preparation date 1:02/14
Hardness of dilution water (mg/L) 211

Antiscalant
Final Concentration in Sample: 20mg/L
Volume of sample: 500mL Volume of antiscalant: 155 µL

Comments/Observations:
0hr: no ppt.
48hr: no ppt

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Reviewed By: [signature] Date Reviewed: 2022/02/24

APPENDIX C – Chain-of-custody form

Teck

COC ID: F2 NAUTILUS February 14 2022 | **TURNAROUND TIME:** | **RUSH:**

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO			
Facility Name / Job#	F2 SRF			Lab Name	Nautilus Environmental - BC			Report Format / Distribution	Excel	PDF	EDD
Project Manager	BRETT MASON			Lab Contact				Email 1: [redacted]	X	X	X
Email	BRETT.MASON@TECK.COM			Email	jacklyn@nautilusenvironmental.ca			Email 1: teckcoal@equisonline.com			X
Address	RR1 HWY 3			Address	10823 27th Street SE			Email 2: DL-EVO-SRF-LAB@teck.com	X	X	X
								Email 3:			
City	Sparwood	Province	BC	City	Calgary	Province	AB	Email 4:			
								Email 5:			
								Email 6:			
								Email 7:			
								Email 8:			
								Email 10:			
								Email 11:			
								Email 12:			
								Email 13:			
Postal Code	V0B 2G0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada				
Phone Number	250-425-6179			Phone Number	403-253-7121			PO number	807270		

SAMPLE DETAILS | **ANALYSIS REQUESTED** (Filtered - F: Field, L: Lab, FL: Field & Lab, N: None)

2022/02/12
11:00
Manitoulin
OC
4x 20L carboys, 6x 1L bottles
NoS/NoI
Good Condition

Sample ID 2122-1392	Sample Location (sys_loc_code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	FIL	ANALYSIS	48hr Daphnia Magna Single Concentration Acute Toxicity 20C	48hr Daphnia Magna Single Concentration Acute Toxicity 10C	48hr Daphnia Magna Single Concentration Acute Toxicity Anitscalent	96hr Rainbow Trout Single Concentration Acute Toxicity (20L Bladders)	48hr Daphnia Magna Single Concentration Toxicity 15C
F2_BPO_WG_2022-02-14_N -01	F2_BPO	WG		2022/02/14	8:20	G	8			2	2		4	9.4°C
F2_BPO_WG_2022-02-14_N-AS -02	F2_BPO	WG		2022/02/14	8:21	G	1					1		↓

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME
		February 14, 2022		

SERVICE REQUEST (rush - subject to availability)

Regular (default)	X
Priority (2-3 business days) - 50% surcharge	
Emergency (1 Business Day) - 100% surcharge	
For Emergency <1 Day, ASAP or Weekend - Contact ALS	

Sampler's Name	Matt Gerolami	Mobile #	
Sampler's Signature		Date/Time	February 14, 2022

END OF REPORT

Acute Toxicity Test Results

Samples collected February 15, 2022

Final Report

March 12, 2022

Submitted to: **Teck Coal Ltd.**
Sparwood, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates					
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation	*Daphnia magna* antiscalant test initiation
EV_GT1_WS_2022-02-15_N-SRF/ 2122-1405-01	15-Feb-22 at 1000h	16-Feb-22 at 1000h	17-Feb-22 at 1230h	17-Feb-22 at 1555h	17-Feb-22 at 1430h	-
EV_BC1_WS_2022-02-15_N-SRF/ 2122-1405-02	15-Feb-22 at 0930h	16-Feb-22 at 1000h	17-Feb-22 at 1250h	17-Feb-22 at 1450h	17-Feb-22 at 1430h	-
EV_BC1_WS_2022-02-15_N-SRF-AS/ 2122-1405-03	15-Feb-22 at 0931h	16-Feb-22 at 1000h	-	-	-	17-Feb-22 at 1430h
EV_GT1_WS_2022-02-15_N-SRF-AS/ 2122-1405-04	15-Feb-22 at 1001h	16-Feb-22 at 1000h	-	-	-	17-Feb-22 at 1435h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
EV_GT1_WS_2022-02-15_N-SRF	8.3°C	1000	306
EV_BC1_WS_2022-02-15_N-SRF	6.2°C	1124	284
EV_BC1_WS_2022-02-15_N-SRF-AS	6.7°C	1124	284
EV_GT1_WS_2022-02-15_N-SRF-AS	7.6°C	1000	306

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)
- *Daphnia magna* 48-h single concentration screening test (conducted with 5 mg/L antiscalant)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample			
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
EV_GT1_WS_2022-02-15_N-SRF	100	100	100	-
EV_BC1_WS_2022-02-15_N-SRF	100	100	100	-
EV_BC1_WS_2022-02-15_N-SRF-AS	-	-	-	100
EV_GT1_WS_2022-02-15_N-SRF-AS	-	-	-	100

Sample ID	Percent Immobility in 100 (% v/v)		
	Daphnia magna 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
EV_GT1_WS_2022-02-15_N-SRF	0	0	-
EV_BC1_WS_2022-02-15_N-SRF	0	0	-
EV_BC1_WS_2022-02-15_N-SRF-AS	-	-	0
EV_GT1_WS_2022-02-15_N-SRF-AS	-	-	0

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
EV_GT1_WS_2022-02-15_N-SRF	Rainbow trout	Precipitate observed on the bottom of test vessel	None
	Daphnia magna	Surficial precipitate observed in 20 degree test vessel	None
EV_BC1_WS_2022-02-15_N-SRF	Rainbow trout	Precipitate observed on the bottom of test vessel	None
	Daphnia magna	Surficial precipitate observed in test vessel	None
EV_BC1_WS_2022-02-15_N-SRF-AS	*Daphnia magna*	None	None
EV_GT1_WS_2022-02-15_N-SRF-AS	*Daphnia magna*	None	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	2.9 (2.2-3.5) g/L KCl[1]	6.4 (6.2-6.6) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.4 (2.5-4.6) g/L KCl	6.5 (5.6-7.6) g/L NaCl
Reference toxicant CV	10.0%	5.0%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, January 29, 2022; [2] Test Date February 14, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation

Report By:
Christine Chanhao, BSc
Biologist

Reviewed By:
Courtney Bogstie, P. Biol.
Senior Biologist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Control/dilution water for antiscalant test	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L), Na_2SeO_4 (2 µg Se/L) and 5 mg/L antiscalant
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC164 Reference 2122-1405-01 Chamber 2 DW 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022-02-17	1230 *	DW/SC	1	MF
1	2022-02-18	0900	4th	-	MF
2	2022-02-19	0815	CC	-	MW
3	2022-02-20	0750	EP	-	SG
4	2022-02-21	0720	EP	1	MF

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 8.1
Initial EC (µS/cm): 1422
Salinity (ppt): 3

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L ? **yes/no**

	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
Preaeration time					
DO(mg/L) of 100%	9.8	9.6	9.4	F.F	
Temp (°C) of 100%	15				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	7.6	8.1						
Day 4	8.2	8.1						
EC (uS/cm)								
Day 0	512	1774						
Day 4	484	1826						
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	8.1	8.8						
Day 4	8.8	8.8						
Temperature (°C) (range: 14-16°C)								
Day 0	15	15						
Day 4	15	15						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	4.2	0.8
2	3.7	0.5
3	3.4	0.4
4	3.1	0.3
5	3.1	0.3
6	3.2	0.3
7	3.1	0.3
8	3.0	0.3
9	3.3	0.4
10	3.6	0.5

Loading Density (g/L): 0.2 (must be ≤0.5 g/L)
Mean Length (cm): 3.4
Length Range (cm): 3.0 - 4.2
Mean Weight (g): 0.4 (Must be ≥0.3g)
Weight Range: (g): 0.3-0.8

Test Organism Information

Batch 20211222TR
Source Trout Lodge
Tank # 1
Days Held at 15± 2°C 34 (must be ≥14 days)
Percent stock mortality 0.26 (7 days prior to test, must be ≤2%)
Test Volume (L) 18

Comments : 96h: ppt on bottom of tank

Reviewed By: SS Date Reviewed: 2022103101

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC164 Reference 2122-1405-02 Chamber 2 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022-02-17	1230 *	DW/SC	1	MAF
1	2022-02-18	0900	KTM	-	MAF
2	2022-02-19	0815	CC	-	AW
3	2022-02-20	2750	EP	-	G
4	2022-02-21	0920	EP	1	MF

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 7.9
Initial EC (µS/cm): 1975
Salinity (ppt): 3

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L (yes/no)

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	9.9	9.6	9.4	9.5	9.8
Temp (°C) of 100%	15				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100					
pH (units) (range: 5.5-8.5)							
Day 0	7.7	7.9					
Day 4	8.3	8.1					
EC (uS/cm)							
Day 0	589	1995					
Day 4	489	1818					
DO (mg/L) (70-100% saturation at test temp.)							
Day 0	8.8	8.8					
Day 4	8.8	8.8					
Temperature (°C) (range: 14-16°C)							
Day 0	15	15					
Day 4	15	15					
Number Alive (In brackets number stressed)							
Day 0	10	10					
Day 1	10	10					
Day 2	10	10					
Day 3	10	10					
Day 4	10	10					

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	4.2	0.9
2	3.2	0.3
3	2.5	0.5
4	2.8	0.2
5	3.5	0.5
6	3.8	0.5
7	3.7	0.6
8	3.1	0.3
9	3.5	0.5
10	3.2	0.3

Loading Density (g/L): 0.3 (must be ≤0.5 g/L)
Mean Length (cm): 3.5
Length Range (cm): 2.8-4.2
Mean Weight (g): 0.5 (Must be ≥0.3g)
Weight Range: (g): 0.2-0.9

Test Organism Information

Batch 20211222TR
Source Trout Lodge
Tank # 1
Days Held at 15± 2°C 34 (must be ≥14 days)
Percent stock mortality 0.26 (7 days prior to test, must be ≤2%)
Test Volume (L) 18

Comments : 96h: ppt on bottom of tank

Reviewed By: SS Date Reviewed: 2022103101

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC164 Reference 2122-1405-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/02/17	1430	MF/GB	2	SC
1	2022/02/18	0946	KTM	-	MAF
2	2022/02/19	0915	KTM	2	JLC

Sample Information

Initial pH: 8.1
Initial EC (µS/cm): 1922
Salinity (ppt): 3

Lab Code	CTL A	CTL B	CTL C	100 A	100 B	100 C

pH (units) (range: 6.0-8.5)

day										
0	8.1	8.2	8.2	8.2	8.2	8.2				
2	8.1	8.1	8.1	8.0	8.0	8.0				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	519	520	523	1891	1933	1934				
2	504	520	516	1804	1867	1870				

DO (mg/L) (**40-100% saturation at test temp.**)

0	8.1	8.1	8.1	7.9	7.9	7.9				
2	8.1	8.1	8.1	8.1	8.1	8.1				

Temperature (°C) (range: **18-22 °C**)

0	19	19	19	20	20	20				
2	19	19	19	19	19	19				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10(I)	10	10	10(I)				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar C3 Jar(s) mortality 7 days prior to test (must be ≤25%) 0

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 34
Were test treatments randomized on test tray? (Yes) No

Control Validity Criteria
Mean % mortality at 48 hours - 3
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 8.8 Temperature (°C) of sample prior to aeration: 20
DO % of sample prior to aeration: 111 Is aeration required (<40% or >100%)? **Yes or No**
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20mins Filtered with 110um screen prior to testing **Yes or No**
Hardness (mg $CaCO_3$/L) of 100% : 1000 Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) -
Alkalinity of 100% sample (mg $CaCO_3$/L): 306

Dilution Water
Pail label / preparation date 1:02114
Hardness of dilution water (mg/L) 211

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Comments/Observations:
0hr: no ppt
48hr: artifact

Reviewed By: SS Date Reviewed: 2022103101

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC164 Reference 2122-1405-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/02/17	1555	MF/GB	2	SC
1	2022/02/18	0830	KTM	-	mat
2	2022/02/19	0945	JCC	2	AW

Sample Information

Initial pH: 8.1
Initial EC (µS/cm): 1922
Salinity (ppt): 3

Lab Code	CTL A	CTL B	CTL C	100 A	100 B	100 C

pH (units) (range: 6.0-8.5)

day	CTL A	CTL B	CTL C	100 A	100 B	100 C
0	8.3	8.2	8.2	8.2	8.3	8.3
2	8.0	8.1	8.1	8.1	8.1	8.1

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	528	525	525	1947	1905	1900
2	520	521	525	1910	1945	1936

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4
2	9.4	9.4	9.4	9.4	9.4	9.4

Temperature (°C) (range: **8-12 °C**)

0	~~19~~ 12	~~19~~ 12	~~19~~ 12	12	12	12
2	12	12	12	12	12	12

Number Alive (l, immobile)

0	10	10	10	10	10	10
1	10	10	10	10	10	10
2	10	10	10	10	10	10

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar D3 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 9
Average number of young produced (≥15 young) 37
Were test treatments randomized on test tray? (Yes) No

Control Validity Criteria
Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 10.3 Temperature (°C) of sample prior to aeration: 12
DO % of sample prior to aeration: 110 Is aeration required (<40% or >100%)? **Yes or No**
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20mins Filtered with 110um screen prior to testing **Yes or No**
Hardness (mg $CaCO_3$/L) of 100% : 1000 Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) -
Alkalinity of 100% sample (mg $CaCO_3$/L): 306

Dilution Water
Pail label / preparation date 1:02114
Hardness of dilution water (mg/L) 211

DO Levels (40-100% saturation) - corrected for altitude -
4.1 to 10.3 mg/L at 8°C
4.0 to 10.0 mg/L at 9°C
3.9 to 9.8 mg/L at 10°C
3.8 to 9.6 mg/L at 11°C
3.7 to 9.4 mg/L at 12°C

Comments/Observations: 0hrs: no ppt
48hrs: no ppt

Reviewed By: SS Date Reviewed: 2022103101

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC164 Reference 2122-1405-02

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/02/17	1430	MFB	2	JC
1	2022/02/18	0840	KTM	-	MAF
2	2022/02/19	0830	KTM	2	JCC

Sample Information

Initial pH:	7.9
Initial EC (µS/cm):	1475
Salinity (ppt):	3

Lab Code	CTL A	CTL B	CTL C	100 A	100 B	100 C

pH (units) (range: 6.0-8.5)

day										
0	8.3	8.2	8.2	8.1	8.1	8.1				
2	8.1	8.1	8.1	8.0	8.0	8.0				

KTM The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	523	522	530	1967	1994	1980				
2	~~498~~ 506	~~529~~ 518	~~551~~ 516	~~564~~ 1821	1913	1905				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.9	7.9	7.9				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	20	20	20				
2	19	19	19	19	19	19				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar P3 Jar(s) mortality 7 days prior to test (must be ≤25%) 0

QA (previous month)
Days to first brood (≤12 days) 9
Average number of young produced (≥15 young) 37
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 9.4 Temperature (°C) of sample prior to aeration: 20
DO % of sample prior to aeration: 120 Is aeration required (<40% or >100%)? **Yes or No**
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20mins Filtered with 110um screen prior to testing **Yes or No**
Hardness (mg $CaCO_3$/L) of 100% : 1124 Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 284

Dilution Water
Pail label / preparation date 1:02114
Hardness of dilution water (mg/L) 211

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C 3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C 3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C

Comments/Observations: 0 hr: no ppt
4 hr: ~~AG~~ KTM surface ppt and ppt on bottom of vessel

Reviewed By: SS Date Reviewed: 2022103101

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC164 Reference 2122-1405-02

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/02/17	1450	MFICB	2	JC
1	2022/02/18	0830	letm	-	mgB
2	2022/02/19	0950	JCC	2	AW

Sample Information

Initial pH: 7.9
Initial EC (µS/cm): 1975
Salinity (ppt): 3

Lab Code	CTL A	CTL B	CTL C	100 A	100 B	100 C				
day				pH (units) (range: 6.0-8.5)						
0	8.3	8.2	8.2	8.1	8.1	8.1				
2	8.3	8.3	8.3	8.1	8.1	8.1				
				The pH of the sample was not adjusted prior to test setting, unless noted in the comments below						
				EC (uS/cm)						
0	530	526	524	1990	2090	2080				
2	538	529	526	1905	1971	1980				
				DO (mg/L) (**40-100% saturation at test temp.**)						
0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				
				Temperature (°C) (range: **8-12 °C**)						
0	12	12	12	12	12	12				
2	12	12	12	12	12	12				
				Number Alive (I, immobile)						
0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar D5 Jar(s) mortality 7 days prior to test (must be ≤25%) 0

QA (previous month)
Days to first brood (≤12 days) 9
Average number of young produced (≥15 young) 37
Were test treatments randomized on test tray? Yes No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0

Sample
DO (mg/L) of sample prior to aeration: 10.3
Temperature (°C) of sample prior to aeration: 12
DO % of sample prior to aeration: 109
Is aeration required (<40% or >100%)? Yes or No
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20mins
Filtered with 110um screen prior to testing Yes or No
Hardness (mg $CaCO_3$/L) of 100% : 1124
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or No
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 284

Dilution Water
Pail label / preparation date 1:02114
Hardness of dilution water (mg/L) 211

DO Levels (40-100% saturation) - corrected for altitude -
4.1 to 10.3 mg/L at 8°C
4.0 to 10.0 mg/L at 9°C
3.9 to 9.8 mg/L at 10°C
3.8 to 9.6 mg/L at 11°C
3.7 to 9.4 mg/L at 12°C

Comments/Observations: 0hrs: no ppt
48hrs: slight surficial ppt

Reviewed By: SS Date Reviewed: 2022/03/01

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS Client TEC164 Reference 2122-1405-03

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/02/17	1430	MAB	2	
1	2022/02/18	0846	VTM	-	MAB
2	2022/02/19	0816	VTM	2	JCC

Sample Information

Initial pH: 7.9
Initial EC (µS/cm): 1975
Salinity (ppt): 3

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	8.2	8.2	8.2	8.2	8.2	8.2				
2	8.2	8.1	8.1	8.2	8.3	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	528	524	522	2050	2050	2070				
2	496	517	518	1941	1956	1961				

DO (mg/L) (**40-100% saturation at test temp.**)

0	8.1	8.1	8.1	7.9	7.9	7.9				
2	8.1	8.1	8.1	8.1	8.1	8.1				

Temperature (°C) (range: **18-22 °C**)

0	19	19	19	20	20	20				
2	19	19	19	19	19	19				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar 9 MF D3 Jar(s) mortality 7 days prior to test (must be ≤25%) 5

QA (previous month)
Days to first brood (≤12 days) 9
Average number of young produced (≥15 young) 37
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0

Sample
DO (mg/L) of sample prior to aeration: 9.4
Temperature (°C) of sample prior to aeration: 20
DO % of sample prior to aeration: 120
Is aeration required (<40% or >100%)? **Yes or No**
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20min 7s
Filtered with 110um screen prior to testing **Yes or No**
Hardness (mg $CaCO_3$/L) of 100% : 1124
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 284

Dilution Water
Pail label / preparation date 1:02114
Hardness of dilution water (mg/L) 211

Antiscalant
Final Concentration in Sample: 5mg/L
Volume of sample: 500mL Volume of antiscalant: 39.5µL

Comments/Observations: 0hrs: no ppt
48hrs: no ppt

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C 3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C 3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C

Reviewed By: SS Date Reviewed: 2022103101

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS Client TEC164 Reference 2122-1405-04

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/02/17	1435	MEICB	2	JC
1	2022/02/18	0840	VTM	-	MAF
2	2022/02/19	0825	VTM	2	JCC

Sample Information

Initial pH: 8.1
Initial EC (µS/cm): 1422
Salinity (ppt): 3

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	8.3	8.2	8.2	8.2	8.2	8.2				
2	8.2	8.1	8.1	8.3	8.3	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	532	526	523	1918	1932	1931				
2	478	513	516	1760	1881	1895				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.9	7.9	7.9				
2	8.1	8.1	8.1	8.1	8.1	8.1				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	20	20	20				
2	19	19	19	19	19	19				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar DB Jar(s) mortality 7 days prior to test (must be ≤25%) 5

QA (previous month)

Days to first brood (≤12 days) 9
Average number of young produced (≥15 young) 37
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - (must be ≤10%) 0

Sample

DO (mg/L) of sample prior to aeration: 8.8
DO % of sample prior to aeration: 111
Duration of aeration (37.5 +/- 12.5 mL/min/L): 20mins
Hardness (mg $CaCO_3$/L) of 100% : 1000
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 306

Temperature (°C) of sample prior to aeration: 20
Is aeration required (<40% or >100%)? **Yes or No**
Filtered with 110um screen prior to testing **Yes or No**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Dilution Water

Pail label / preparation date 1:02/14
Hardness of dilution water (mg/L) 211

Antiscalant

Final Concentration in Sample: 5mg/L
Volume of sample: 500mL Volume of antiscalant: 39.5µL

Comments/Observations: 0hrs: no ppt
48hr: no ppt

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Reviewed By: SS Date Reviewed: 20221031O1

APPENDIX C – Chain-of-custody form

Teck

COC ID: EVO NAUTILUS February 15 2022 | **TURNAROUND TIME:** | **RUSH:**

PROJECT/CLIENT INFO

Facility Name / Job#	Elkview Operations
Project Manager	Group 1; Brett Mason
Email	Brett.Mason@teck.com
Address	RR1 HWY 3
City	Sparwood
Province	BC
Postal Code	V0B 2G0
Country	Canada
Phone Number	250-425-6179

LABORATORY

Lab Name	Nautilus Environmental - BC
Lab Contact	
Email	jacklyn@nautilusenvironmental.ca
Address	10823 27th Street SE
City	Calgary
Province	AB
Postal Code	T2H 2K1
Country	Canada
Phone Number	T2Z 3V9

OTHER INFO

Report Format / Distribution		Excel	PDF	EDD
Email 1:				
Email 2:				
Email 3:				
Email 4:				
Email 5:				
Email 6:				
Email 7:	teckcoal@equisonline.com			X
Email 8:	DL-EVO-SRF@teck.com	X	X	X
Email 9:	Cole.Meigreger@teck.com	X	X	X
Email 10:				
Email 11:				
Email 12:				
Email 13:				
PO number	807270			

SAMPLE DETAILS

2022/02/16
10:00
Monitoulin
JC/SRS
8x20L carboys, 10x1L bottles
No SI/No I
Good Condition

ANALYSIS REQUESTED

Filtered - F: Field, L: Lab, FL: Field & Lab, N: None

Sample ID	Sample Location (sys_loc_code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	FIL.	PRESERV.	ANALYSIS: 48hr Daphnia Magna Single Concentration Acute Toxicity 20C	48hr Daphnia Magna Single Concentration Acute Toxicity 10C	48hr Daphnia Magna Single Concentration Acute Toxicity Anitscalent	96hr Rainbow Trout Single Concentration Acute Toxicity (20 L Bladder)	96hr Rainbow Trout Single Concentration Acute Toxicity (20 L Bladder)	48hr Daphnia Magna Single Concentration Toxicity 15C
EV_GT1_WS_2022-02-15_N-SRF -01	8.3 EV_GT1	WS		2022/02/15	10:00	G	8			2	2			4	
EV_BC1_WS_2022-02-15_N-SRF -02	6.7 EV_BC1	WS		2022/02/15	9:30	G	8			2	2			4	
EV_BC1_WS_2022-02-15_N-SRF-AS -03	6.7 EV_BC1	WS		2022/02/15	9:31	G	1					1			
EV_GT1_WS_2022-02-15_N-SRF-AS -04	7.6 EV_GT1	WS		2022/02/15	10:01	G	1					1			

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS

Field Temperatures

RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME
James Winter - Teck	February 15, 2022		
	1400		

SERVICE REQUEST (rush - subject to availability)

Regular (default)	X
Priority (2-3 business days) - 50% surcharge	
Emergency (1 Business Day) - 100% surcharge	
For Emergency <1 Day, ASAP or Weekend - Contact ALS	

Sampler's Name	Matt Gerolami	Mobile #	
Sampler's Signature		Date/Time	February 15, 2022

END OF REPORT

Acute Toxicity Test Results

Samples collected February 21, 2022

Final Report

March 16, 2022

Submitted to: **Teck Coal Ltd.**
Sparwood, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates					
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation	*Daphnia magna* antiscalant test initiation
F2_BPO_WG_2022-02-21_N/ 2122-1442-01	21-Feb-22 at 0930h	22-Feb-22 at 1400h	23-Feb-22 at 1520h	23-Feb-22 at 1430h	23-Feb-22 at 1340h	-
F2_BPO_WG_2022-02-21_N-AS/ 2122-1442-02	21-Feb-22 at 0931h	22-Feb-22 at 1400h	-	-	-	23-Feb-22 at 1415

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
F2_BPO_WG_2022-02-21_N	-1.5°C	930	364
F2_BPO_WG_2022-02-21_N-AS	-1.5°C	930	364

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)
- *Daphnia magna* 48-h single concentration screening test (conducted with 20 mg/L antiscalant)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample			
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
F2_BPO_WG_2022-02-21_N	100	100	100	-
F2_BPO_WG_2022-02-21_N-AS	-	-	-	100

Sample ID	Percent Immobility in 100 (% v/v)		
	Daphnia magna 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
F2_BPO_WG_2022-02-21_N	0	0	-
F2_BPO_WG_2022-02-21_N-AS	-	-	0

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
F2_BPO_WG_2022-02-21_N	Rainbow trout	Precipitate observed on test vessel	None
	Daphnia magna	Surficial precipitate observed in the 20˚C test vessels	None
F2_BPO_WG_2022-02-21_N-AS	*Daphnia magna*	None	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	3.8 (3.4-4.2) g/L KCl[1]	6.4 (6.2-6.6) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.4 (2.5-4.6) g/L KCl	6.5 (5.6-7.6) g/L NaCl
Reference toxicant CV	10.1%	4.9%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, March 3, 2022; [2] Test Date February 28, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation



Report By:
Jamie Craig
Biologist



Reviewed By:
Courtney Bogstie, P. Biol.
Senior Biologist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Control/dilution water for antiscalant test	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L), Na_2SeO_4 (2 µg Se/L) and 20 mg/L antiscalant
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC164 Reference 2122-1442-01 Chamber 2

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022-02-23	1520*	CH /CC/KTN	1	MAE
1	2022-02-24	0940	KTN	-	MAE
2	2022-02-25	0750	JCC	-	MAE
3	2022-02-26	0900	AE	-	AW
4	2022-02-27	1035	CH/DW	1	MAE

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 7.6
Initial EC (µS/cm): 1798
Salinity (ppt): 5

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L (yes/no)

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	9.5	9.5	8.9		
Temp (°C) of 100%	14				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

	Conc.	CTL	100						
pH (units) (range: **5.5-8.5**)	Day 0	8.2	7.7						
	Day 4	8.1	8.4						
EC (uS/cm)	Day 0	493	2010						
	Day 4	496	1970						
DO (mg/L) (**70-100% saturation at test temp.**)	Day 0	8.8	8.9						
	Day 4	8.6	8.6						
Temperature (°C) (range: **14-16°C**)	Day 0	15	14						
	Day 4	16	16						
Number Alive (In brackets number stressed)	Day 0	10	10						
	Day 1	10	10						
	Day 2	10	10						
	Day 3	10	10						
	Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.4	0.5
2	3.0	0.4
3	3.0	0.3
4	4.3	1.0
5	3.4	0.4
6	3.6	0.6
7	3.7	0.6
8	3.5	0.5
9	3.9	0.7
10	3.6	0.6

Loading Density (g/L): 6.3 (must be ≤0.5 g/L)
Mean Length (cm): 3.5
Length Range (cm): 3.0-4.3
Mean Weight (g): 0.6 (Must be ≥0.3g)
Weight Range: (g): 0.3-1.0

Test Organism Information

Batch 20211222TR
Source Troutlodge
Tank # 7
Days Held at 15± 2°C (must be ≥14 days): 10
Percent stock mortality (7 days prior to test, must be ≤2%): 0.05
Test Volume (L): 18

Comments : 96hr: ppt on bottom of tank

Reviewed By: MO Date Reviewed: 2022/03/02

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS20 Client TEC164 Reference 2122-1442-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/02/22	1340	MF/AW	2	MAF
1	2022/02/23	0915	MAF	-	AW
2	2022/02/24	0940	AW	3	AW

Sample Information MAF

Initial pH: 930 7.6
Initial EC (µS/cm): 364 1798
Salinity (ppt): 5

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	8.2	8.2	8.2	8.1	8.1	8.1				
2	8.2	8.2	8.2	8.4	8.4	8.4				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	510	492	492	2150	2180	2190				
2	464	472	470	1871	1970	1914				

DO (mg/L) (**40-100% saturation at test temp.**)

0	8.1	8.1	8.1	7.7	7.7	7.7				
2	8.1	8.1	8.1	8.0	8.0	8.0				

Temperature (°C) (range: **18-22 °C**)

0	19	19	19	21	21	21				
2	19	19	19	21	21	21				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar C1 Jar(s) mortality 7 days prior to test (must be ≤25%) 0 %

QA (previous month)
Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 37
Were test treatments randomized on test tray? (Yes) No

Control Validity Criteria
Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 9.8
DO % of sample prior to aeration: 121
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20min
Hardness (mg $CaCO_3$/L) of 100% : 930
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 364

Temperature (°C) of sample prior to aeration: 20
Is aeration required (<40% or >100%)? Yes or No MF
Filtered with 110um screen prior to testing Yes or No
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or No

Dilution Water
Pail label / preparation date 2:02117
Hardness of dilution water (mg/L) 239

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Comments/Observations:
0hr: no ppt
48hr: Suff. Food MF

Reviewed By: W Date Reviewed: 2022/03/02

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS10 Client TEC164 Reference 2122-1442-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/02/22	1430	AW/MF	2	MAF
1	2022/02/23	0915	CM		MAF
2	2022/02/24	1400	AW	3	AW

Sample Information

Initial pH: 7.6
Initial EC (µS/cm): 1798
Salinity (ppt): 5

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	8.1	8.1	8.1	8.0	8.0	8.0				
2	8.0	8.0	8.0	8.3	8.3	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	489	487	491	1998	2180	2090				
2	477	478	474	1946	1964	1941				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar DY Jar(s) mortality 7 days prior to test (must be ≤25%) 5%

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 38
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 11.0
DO % of sample prior to aeration: 115%
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20 mins
Hardness (mg $CaCO_3$/L) of 100% : 930
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 364

Temperature (°C) of sample prior to aeration: 12
Is aeration required (<40% or >100%)? Yes or No
Filtered with 110um screen prior to testing Yes or No
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or No

Dilution Water
Pail label / preparation date 2:02/17
Hardness of dilution water (mg/L) 239

DO Levels (40-100% saturation) - corrected for altitude -
4.1 to 10.3 mg/L at 8°C
4.0 to 10.0 mg/L at 9°C
3.9 to 9.8 mg/L at 10°C
3.8 to 9.6 mg/L at 11°C
3.7 to 9.4 mg/L at 12°C

Comments/Observations:
0hr: No ppt
48hr: No ppt

Reviewed By: AW Date Reviewed: 2022/03/02

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DASAS Client TEC164 Reference 2122-1442-02

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/02/22	1415	AW/MF	2	MAF
1	2022/02/23	0915	MAF	-	
2	2022/02/24	0910	AW	3	AW

Sample Information

Initial pH: 7.6
Initial EC (µS/cm): 1798
Salinity (ppt): 5

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	8.1	8.1	8.1	7.9	7.9	7.9				
2	8.1	8.1	8.1	8.4	8.4	8.4				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	479	482	488	2090	2110	2170				
2	462	465	464	1912	1944	1980				

DO (mg/L) (**40-100% saturation at test temp.**)

0	8.2	8.2	8.2	7.9	7.9	7.9				
2	8.1	8.1	8.1	7.4	7.4	7.4				

Temperature (°C) (range: **18-22 °C**)

0	18	18	18	20	20	20				
2	19	19	19	19	19	19				

Number Alive (I, immobile)

0	10	10	10	10	10	10					
1	10	10	10	10	10	10					
2	10	10	10	10	10	10					

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar D1 Jar(s) mortality 7 days prior to test (must be ≤25%) 0 %.

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 38
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0

Sample
DO (mg/L) of sample prior to aeration: 9.8
DO % of sample prior to aeration: 120%
Duration of aeration (37.5 +/- 12.5 mL/min/L): 2mins
Hardness (mg $CaCO_3$/L) of 100%: 930
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 364

Temperature (°C) of sample prior to aeration: 20
Is aeration required (<40% or >100%)? **Yes or No**
Filtered with 110um screen prior to testing **Yes or No**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Dilution Water
Pail label / preparation date 2.02/17
Hardness of dilution water (mg/L) 239

Antiscalant
Final Concentration in Sample: AW 5mg/L 20mg/L
Volume of sample: 500mL Volume of antiscalant: 39.5mL AW 150µL

Comments/Observations:
0hr: No ppt
48hr: No ppt, debris stuck to cartridge

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Reviewed By: ST Date Reviewed: 2022/03/07

APPENDIX C – Chain-of-custody form

Teck

COC ID: F2 NAUTILUS February 21 2022 | **TURNAROUND TIME:** | **RUSH:**

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO			
Facility Name / Job#	F2 SRF			Lab Name	Nautilus Environmental - BC			Report Format / Distribution		Excel	PDF	EDD
Project Manager	BRETT MASON			Lab Contact				Email 1:	Cole.MacGregor@teck.com	X	X	
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								Email 4:				
City	Sparwood	Province	BC	City	Calgary	Province	AB	Email 5:				
Postal Code	V0B 2G0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada	Email 6:				
Phone Number	250-425-6179			Phone Number	403-253-7121			PO number	807270			

SAMPLE DETAILS

2022/02/22
14:00
Hotshot
OC
4x20L Jugs, 5x1L bottles
NoS/NgI
Good Condition

ANALYSIS REQUESTED — Filtered - F: Field, L: Lab, FL: Field & Lab, N: None

Sample ID 2122-1442	Sample Location (sys loc code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	Fil.	48hr Daphnia Magna Single Concentration Acute Toxicity 20C	48hr Daphnia Magna Single Concentration Acute Toxicity 10C	48hr Daphnia Magna Single Concentration Acute Toxicity Anitscalent	96hr Rainbow Trout Single Concentration Acute Toxicity	48hr Daphnia Magna Single Concentration Toxicity 15C		
F2_BPO_WG_2022-02-21_N -01	F2_BPO	WG		2022/02/21	9:30	G	8		2	2		4		-1.5°C	
F2_BPO_WG_2022-02-21_N-AS -02	F2_BPO	WG		2022/02/21	9:31	G	1				1			-1.5°C	

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME
		February 21, 2022 1330		

SERVICE REQUEST (rush - subject to availability)					
Regular (default)	X	Sampler's Name	Carter Phillips	Mobile #	
Priority (2-3 business days) - 50% surcharge		Sampler's Signature	Carter Phillips	Date/Time	February 21, 2022
Emergency (1 Business Day) - 100% surcharge					
For Emergency <1 Day, ASAP or Weekend - Contact ALS					

END OF REPORT

Acute Toxicity Test Results

Samples collected February 28, 2022

Final Report

March 16, 2022

Submitted to: **Teck Coal Ltd.**
Sparwood, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates					
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation	*Daphnia magna* antiscalant test initiation
EV_EC1_WS_2022-02-28_N-SRF/ 2122-1497-01	28-Feb-22 at 1110h	1-Mar-22 at 0930h	2-Mar-22 at 1400h	2-Mar-22 at 1420h	2-Mar-22 at 1415h	-
EV_EC1_WS_2022-02-28_N-SRF-AS/ 2122-1497-02	28-Feb-22 at 1111h	1-Mar-22 at 0930h	-	-	-	2-Mar-22 at 1415h
EV_ECOUT_WS_2022-02-28_N-SRF/ 2122-1497-03	28-Feb-22 at 1530h	1-Mar-22 at 0930h	2-Mar-22 at 1400h	2-Mar-22 at 1410h	2-Mar-22 at 1405h	-
EV_ECOUT_WS_2022-02-28_N-SRF-AS/ 2122-1497-04	28-Feb-22 at 1536h	1-Mar-22 at 0930h	-	-	-	2-Mar-22 at 1410h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
EV_EC1_WS_2022-02-28_N-SRF	5.0°C	1289	491
EV_EC1_WS_2022-02-28_N-SRF-AS	6.4°C	1289	491
EV_ECOUT_WS_2022-02-28_N-SRF	6.8°C	1276	477
EV_ECOUT_WS_2022-02-28_N-SRF-AS	8.9°C	1276	477

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)
- *Daphnia magna* 48-h single concentration screening test (conducted with 5 mg/L antiscalant)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample			
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
EV_EC1_WS_2022-02-28_N-SRF	100	100	100	
EV_EC1_WS_2022-02-28_N-SRF-AS	-	-	-	100
EV_ECOUT_WS_2022-02-28_N-SRF	100	3	100	-
EV_ECOUT_WS_2022-02-28_N-SRF-AS	-	-	-	100

Sample ID	Percent Immobility in 100 (% v/v)		
	Daphnia magna 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
EV_EC1_WS_2022-02-28_N-SRF	0	7	-
EV_EC1_WS_2022-02-28_N-SRF-AS	-	-	0
EV_ECOUT_WS_2022-02-28_N-SRF	3	0	-
EV_ECOUT_WS_2022-02-28_N-SRF-AS	-	-	0

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
EV_EC1_WS_2022-02-28_N-SRF	Rainbow trout	Precipitate observed on the test vessel	None
	Daphnia magna	Surficial precipitate observed in 10- and 20-degree test vessels	None
EV_EC1_WS_2022-02-28_N-SRF-AS	*Daphnia magna*	Surficial precipitate observed	None
EV_ECOUT_WS_2022-02-28_N-SRF	Rainbow trout	Precipitate observed on the test vessel	None
	Daphnia magna	Surficial precipitate observed in 10- and 20-degree test vessel	None
EV_ECOUT_WS_2022-02-28_N-SRF-AS	*Daphnia magna*	Surficial precipitate observed	None

QA/QC

QA/QC summary	Rainbow trout	***Daphnia magna***
Reference toxicant LC50 (95% CL)	3.8 (3.4-4.2) g/L KCl[1]	6.4 (6.2-6.6) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.4 (2.5-4.6) g/L KCl	6.5 (5.6-7.6) g/L NaCl
Reference toxicant CV	10.1%	4.9%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	See below
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, March 1, 2022; [2] Test Date February 28, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation

The control C and 100% B test vessels were loaded with 11 organisms at test initiation in sample EV_EC1-WS_2022-02-28_N-SRF-AS.

Report By:
Christine Chanhao, BSc
Biologist

Reviewed By:
Leila Oosterbroek, P Biol
Environmental Scientist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Control/dilution water for antiscalant test	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L), Na_2SeO_4 (2 µg Se/L) and 5 mg/L antiscalant
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	96-hour LC50
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC164 Reference 2122-1497-01 Chamber 2

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022-03-02	1400 *	MF/EP	117	ST
1	2022-03-03	0830	EP	-	ST
2	2022-03-04	0905	JCC	-	MF
3	2022-03-05	0850	JCC	-	MF
4	2022-03-06	0845	EC/JCC	1	MAP

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 8.2
Initial EC (µS/cm): 1875
Salinity (ppt): 2

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L? **yes/no**

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	10.2	8.8			
Temp (°C) of 100%	16				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	8.1	8.1						
Day 4	8.1	8.1						
EC (uS/cm)								
Day 0	506	1878						
Day 4	496	1756						
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	8.8	8.8						
Day 4	8.8	8.8						
Temperature (°C) (range: 14-16°C)								
Day 0	15	15						
Day 4	15	16						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.8	0.7
2	3.4	0.5
3	4.1	0.9
4	4.2	0.9
5	4.3	1.0
6	4.0	0.8
7	3.6	0.6
8	3.3	0.6
9	3.7	0.7
10	3.8	0.7

Loading Density (g/L): 0.4 (must be ≤0.5 g/L)
Mean Length (cm): 3.9
Length Range (cm): 3.4-4.3
Mean Weight (g): 0.7 (Must be ≥0.3g)
Weight Range: (g): 0.5-1.0

Test Organism Information

Batch 20211222TR
Source Trout Lodge
Tank # 4
Days Held at 15± 2°C 47 (must be ≥14 days)
Percent stock mortality 0.09 (7 days prior to test, must be ≤2%)
Test Volume (L) 18

Comments : 96 hrs: ppt on bottom + sides of tank

Reviewed By: EV Date Reviewed: 2022/03/08

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC164 Reference 2122-1497-03 Chamber 2

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022-03-02	1400 *	MF/EP	117	
1	2022-03-03	0820	EP	-	ST
2	2022-03-04	0845	JCC	-	MF
3	2022-03-05	0848	JCC	-	MF
4	2022-03-06	0840	JCC/CC	1	MAF

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 7.8
Initial EC (µS/cm): 1970
Salinity (ppt): 2

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L: **yes/no**

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	9.8	8.8			
Temp (°C) of 100%	15.16				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology MF

	Conc.	CTL	100						
pH (units) (range: **5.5-8.5**)	Day 0	8.0	7.7						
	Day 4	8.0	7.9						
EC (uS/cm)	Day 0	523 ~~523~~ EP	1957						
	Day 4	502	1956						
DO (mg/L) (**70-100% saturation at test temp.**)	Day 0	8.8	8.8						
	Day 4	8.8	8.8						
Temperature (°C) (range: **14-16°C**)	Day 0	15	15						
	Day 4	15	15						
Number Alive (In brackets number stressed)	Day 0	10	10						
	Day 1	10	10						
	Day 2	10	10						
	Day 3	10	10						
	Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.3	0.4
2	3.8	0.7
3	3.8	0.7
4	3.6	0.5
5	3.0	0.3
6	3.3	0.5
7	4.4	1.0
8	3.4	0.5
9	4.2	0.9
10	3.7	0.6

Loading Density (g/L): 0.3 (must be ≤0.5 g/L)
Mean Length (cm): 3.7
Length Range (cm): 3.0-4.4
Mean Weight (g): 0.6 (Must be ≥0.3g)
Weight Range: (g): 0.3-1.0

Test Organism Information

Batch 20211222TR
Source Troutlodge
Tank # 4
Days Held at 15± 2°C: 47 (must be ≥14 days)
Percent stock mortality: 0.09 (7 days prior to test, must be ≤2%)
Test Volume (L): 18

Comments : 96 hrs: ppt on bottom + sides of tank

Reviewed By: EV Date Reviewed: 2022/03/08

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS20 Client TEC164 Reference 2122-1497-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/03/02	1415	MAP/SC	2	ST
1	2022/03/03	0850	CC	-	ST
2	2022/03/04	1000	CC	2	ST

Sample Information

Initial pH: 8.2
Initial EC (µS/cm): 1875
Salinity (ppt): 2

Lab Code	CTL A	CTL B	CTL C	100 A	100 B	100 C

pH (units) (range: 6.0-8.5)

day										
0	8.1	8.1	8.1	8.0	8.0	8.1				
2	8.1	8.1	8.1	8.1	8.2	8.1				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	455	460	460	1946	2090	2090				
2	446	462	465	1909	1921	1933				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	9.5	9.3	9.3				
2	7.9	7.9	7.9	7.7	7.7	7.7				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	18	18	18				
2	20	20	20	21	21	21				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10(I)	10(I)				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar D5 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 48
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0%
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 9.9
DO % of sample prior to aeration: 115%
Duration of aeration (37.5 +/- 12.5 mL/min/L): 20m
Hardness (mg $CaCO_3$/L) of 100% : 1289
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 491

Temperature (°C) of sample prior to aeration: 18
Is aeration required (<40% or >100%)? **Yes or No**
Filtered with 110um screen prior to testing **Yes or (No)**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or (No)**

Dilution Water
Pail label / preparation date 2-02124
Hardness of dilution water (mg/L) 237

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Comments/Observations:
0Hrs: neopt.
48Hrs: surficial ppt

Reviewed By: EV Date Reviewed: 2022/03/08

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS10 Client TEC164 Reference 2122-1497-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/03/02	1420	MAFISC	2	ST
1	2022/03/03	0910	CC	-	ST
2	2022/03/04	1000	CC	2	YTM

Sample Information

Initial pH: 8.2
Initial EC (µS/cm): 187
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	8.1	8.1	8.1	8.0	8.1	8.1				
2	8.1	8.1	8.1	8.3	8.3	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	460	461	459	1969	2090	2090				
2	495	474	471	2060	1994	2090				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.7	9.7	9.7				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (l, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar WedC Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 25
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0%
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 10.7
DO % of sample prior to aeration: 114
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20m
Hardness (mg $CaCO_3$/L) of 100% : 1289
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 491

Temperature (°C) of sample prior to aeration: 12
Is aeration required (<40% or >100%)? **Yes or No**
Filtered with 110um screen prior to testing **Yes or No**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Dilution Water
Pail label / preparation date 2:02/24
Hardness of dilution water (mg/L) 117

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

Comments/Observations:
0Hrs: ncppt.
48Hrs: surficial ppt

Reviewed By: EV Date Reviewed: 2022/03/08

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS5 Client TEC164 Reference 2122-1497-02

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/03/02	1415	MAF/SC	2	ST
1	2022/03/03	0900	CC	-	ST
2	2022/03/04	1015	CC	2	KTM

Sample Information

Initial pH: 8.2
Initial EC (µS/cm): 1875
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				
day				pH (units) (range: 6.0-8.5)						
0	8.1	8.1	8.1	8.0	8.0	8.1				
2	8.1	8.1	8.1	8.4	8.4	8.4				
				The pH of the sample was not adjusted prior to test setting, unless noted in the comments below						
				EC (uS/cm)						
0	462	457	457	1934	1991	1090				
2	469	467	476	1978	1956	1965				
				DO (mg/L) (**40-100% saturation at test temp.**)						
0	7.9	7.9	7.9	9.3	9.3	9.3				
2	7.7	7.7	7.7	7.7	7.7	7.7				
				Temperature (°C) (range: **18-22 °C**)						
0	20	20	20	19	19	19				
2	21	21	21	21	21	21				
				Number Alive (I, immobile)						
0	10	10	*~~10~~ 11 CC	10	*~~10~~ 11 CC	10				
1	10	10	11	10	11	10				
2	10	10	11	10	11	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar WedE Jar(s) mortality 7 days prior to test (must be ≤25%) 5%

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 26
Were test treatments randomized on test tray? Yes / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0%

Sample
DO (mg/L) of sample prior to aeration: 10.2
DO % of sample prior to aeration: 117%
Duration of aeration (37.5 +/- 12.5 mL/min/L): 20m
Hardness (mg $CaCO_3$/L) of 100%: 1289
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 491

Temperature (°C) of sample prior to aeration: 18
Is aeration required (<40% or >100%)? Yes or No
Filtered with 110um screen prior to testing Yes or No
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or No

Dilution Water
Pail label / preparation date 2:02/24
Hardness of dilution water (mg/L) 237

Antiscalant
Final Concentration in Sample: 5 mg/L
Volume of sample: 500mL Volume of antiscalant: 39.5µL

Comments/Observations:
*Day 1 loaded with 11 in 100B & CTLC ..cc/DW
0Hrs: ncppt.
48Hrs: Surficial ppt

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Reviewed By: EV Date Reviewed: 2022/03/08

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS20 Client TEC164 Reference 2122-1497-03

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/03/02	1405	mmelsc	2	ST
1	2022/03/03	0845	cc	-	ST
2	2022/03/04	1015	cc	2	WTM

Sample Information

Initial pH: 7.8
Initial EC (µS/cm): 1970
Salinity (ppt): 2

Lab Code	CTL A	CTL B	CTL C	100 A	100 B	100 C

pH (units) (range: 6.0-8.5)

day										
0	8.0	8.1	8.1	7.9	7.9	8.0				
2	8.1	8.1	8.1	8.0	8.0	8.0				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	450	458	459	2110	2170	2170				
2	460	469	468	1975	1986	1992				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	8.3	8.3	8.3				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	20	20	20				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar E1 Jar(s) mortality 7 days prior to test (must be ≤25%) 5/1

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 45
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0%
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 9.6 Temperature (°C) of sample prior to aeration: 20
DO % of sample prior to aeration: 120. Is aeration required (<40% or >100%)? **Yes or No**
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20m Filtered with 110um screen prior to testing **Yes or No**
Hardness (mg $CaCO_3$/L) of 100% : 1276 Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 477

Dilution Water
Pail label / preparation date 2:02/24
Hardness of dilution water (mg/L) 237

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Comments/Observations:
0Hrs: nappl.
48Hrs: surf.c.01 ppt

Reviewed By: EV Date Reviewed: 2022/03/08

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS10 Client TEC164 Reference 2122-1497-03

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/03/02	1410	MAFISC	2	ST
1	2022/03/03	0905	CC	-	ST
2	2022/03/04	1020	CC	2	KHM

Sample Information

Initial pH: 7.8
Initial EC (µS/cm): 1970
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	8.1	8.1	8.1	7.9	7.9	7.9				
2	8.0	8.0	8.0	8.2	8.2	8.2				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	474	461	460	2170	2170	2170				
2	463	468	478	2160	2190	2190				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.8	9.8	9.8				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (l, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	9				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar 21 Jar(s) mortality 7 days prior to test (must be ≤25%) 5%

QA (previous month)

Days to first brood (≤12 days) 8

Average number of young produced (≥15 young) 45

Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - 0%
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 16.5 Temperature (°C) of sample prior to aeration: 12

DO % of sample prior to aeration: 110% Is aeration required (<40% or >100%)? **Yes or No**

Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20m Filtered with 110um screen prior to testing **Yes or No**

Hardness (mg $CaCO_3$/L) of 100% : 1276 Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —

Alkalinity of 100% sample (mg $CaCO_3$/L): 477

Dilution Water

Pail label / preparation date 2:07124

Hardness of dilution water (mg/L) 237

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

Comments/Observations:

0Hrs: ncppt.

48Hrs: surficial ppt

Reviewed By: EV Date Reviewed: 2022/03/08

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS5 Client TEC164 Reference 2122-1497-04

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/03/02	1410	MAF/SC	2	ST
1	2022/03/03	~~BC~~ 0850	CC	-	ST
2	2022/03/04	1020	CC	2	KM

Sample Information

Initial pH: 7.8
Initial EC (µS/cm): 1970
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				
day				pH (units) (range: 6.0-8.5)						
0	8.1	8.1	8.1	7.8	7.8	7.8				
2	8.1	8.1	8.1	8.4	8.4	8.4				
				The pH of the sample was not adjusted prior to test setting, unless noted in the comments below						
				EC (uS/cm)						
0	464	463	461	2080	2160	2180				
2	488	473	469	2110	2110	2120				
				DO (mg/L) (**40-100% saturation at test temp.**)						
0	8.1	8.1	8.1	8.6	8.6	8.6				
2	7.9	7.9	7.9	7.9	7.9	7.9				
				Temperature (°C) (range: **18-22 °C**)						
0	19	19	19	21	21	21				
2	20	20	20	20	20	20				
				Number Alive (I, immobile)						
0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar E1 Jar(s) mortality 7 days prior to test (must be ≤25%) 5%

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 26
Were test treatments randomized on test tray? Yes / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0%

Sample
DO (mg/L) of sample prior to aeration: 9.9
Temperature (°C) of sample prior to aeration: 21
DO % of sample prior to aeration: 124
Is aeration required (<40% or >100%)? Yes or No
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20m
Filtered with 110um screen prior to testing Yes or No
Hardness (mg $CaCO_3$/L) of 100% : 1276
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or No
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 477

Dilution Water
Pail label / preparation date 2.02/24.
Hardness of dilution water (mg/L) 237

Antiscalant
Final Concentration in Sample: 5 mg/L
Volume of sample: 500mL Volume of antiscalant: 39.5µL

Comments/Observations:
0Hrs: hcppt.
48Hrs: EV ~~Slight~~ ppt surficial

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Reviewed By: EV Date Reviewed: 2022/03/08

APPENDIX C – Chain-of-custody form

Teck

COC ID: EVO NAUTILUS Feb 28 2022 | **TURNAROUND TIME:** | **RUSH:**

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO			
Facility Name / Job#	Elkview Operations			Lab Name	Nautilus Environmental - BC			Report Format / Distribution	Excel	PDF	EDD
Project Manager	Group 1; Brett Mason			Lab Contact				Email 1: [redacted]	X	X	X
Email	Brett.Mason@teck.com			Email	jacklyn@nautilusenvironmental.ca			Email 2: teckcoal@equisonline.com			X
Address	RR1 HWY 3			Address	10823 27th Street SE			Email 3: DL-EVO-SRF-LAB@teck.com	X	X	X
City	Sparwood	Province	BC	City	Calgary	Province	AB	Email 4:			
								Email 5:			
								Email 6:			
								Email 7:			
								Email 8:			
								Email 9:			
								Email 10:			
								Email 11:			
								Email 12:			
								Email 13:			
Postal Code	V0B 2G0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada				
Phone Number	250-425-6179			Phone Number	403-253-7121			PO number	807270		

SAMPLE DETAILS

2022/02/01
09:30
Manitoulin
JC/SRS
6x 20L carboys, 4x 20L carboys, 10x1L bottles
NOS/NOT
~~6x~~ 2x10L carboys missing from shipment, 1x 20L carboy broke apart in transit

ANALYSIS REQUESTED — Filtered - F: Field, L: Lab, FL: Field & Lab, N: None

Sample ID	Sample Location (sys_loc_code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	Filt.	Preserv.	ANALYSIS: 48hr Daphnia Magna Single Concentration Acute Toxicity 20C	48hr Daphnia Magna Single Concentration Acute Toxicity 10C	48hr Daphnia Magna Single Concentration Acute Toxicity Anitscalent	96hr Rainbow Trout Single Concentration Acute Toxicity (20 L Bladder)	96hr Rainbow Trout Single Concentration Acute Toxicity (10 L Bladder)	48hr Daphnia Magna Single Concentration Toxicity 15C
EV_EC1_WS_2022-02-28_N-SRF -01	EV_EC1	WS		2022/02/28	11:10	G	12			2	2			8	5.0°C
EV_EC1_WS_2022-02-28_N-SRF-AS -02	EV_EC1	WS		2022/02/28	11:10	G	1					1			6.4°C
EV_ECOUT_WS_2022-02-28_N-SRF -03	EV_ECOUT	WS		2022/02/28	15:30	G	8			2	2		4		6.8°C
EV_ECOUT_WS_2022-02-28_N-SRF-AS -04	EV_ECOUT	WS		2022/02/28	15:30	G	1					1			8.9°C

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS

Field Temperatures

ECOUT:

RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME
James Winfry - Teck	February 28, 2022 16 45		

SERVICE REQUEST (rush - subject to availability)

Regular (default)	X
Priority (2-3 business days) - 50% surcharge	
Emergency (1 Business Day) - 100% surcharge	
For Emergency <1 Day, ASAP or Weekend - Contact ALS	

Sampler's Name	Ariana Lewis	Mobile #	
Sampler's Signature		Date/Time	February 28, 2022

END OF REPORT

Acute Toxicity Test Results

Samples collected February 28, 2022

Final Report

March 17, 2022

Submitted to: **Teck Coal Ltd.**
Sparwood, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates					
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation	*Daphnia magna* antiscalant test initiation
F2_BPO_WG_2022-02-28_N/ 2122-1498-01	28-Feb-22 at 0855h	1-Mar-22 at 0930h	2-Mar-22 at 1355h	1-Mar-22 at 1540h	1-Mar-22 at 1535h	-
F2_BPO_WG_2022-02-28_N-AS/ 2122-1498-02	28-Feb-22 at 0855h	1-Mar-22 at 0930h	-	-	-	1-Mar-22 at 1540h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
F2_BPO_WG_2022-02-28_N	3.8°C	1427	489
F2_BPO_WG_2022-02-28_N-AS	4.9°C	1427	489

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)
- *Daphnia magna* 48-h single concentration screening test (conducted with 20 mg/L antiscalant)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample			
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
F2_BPO_WG_2022-02-28_N	100	100	100	-
F2_BPO_WG_2022-02-28_N-AS	-	-	-	100

Sample ID	Percent Immobility in 100 (% v/v)		
	***Daphnia magna* 10˚C**	***Daphnia magna* 20˚C**	***Daphnia magna* antiscalant**
F2_BPO_WG_2022-02-28_N	0	0	-
F2_BPO_WG_2022-02-28_N-AS	-	-	0

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
F2_BPO_WG_2022-02-28_N	Rainbow trout	Precipitate observed on the bottom and sides of test vessel	None
	Daphnia magna	Surficial precipitate observed in 20˚C test vessel	None
F2_BPO_WG_2022-02-28_N-AS	*Daphnia magna*	None	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	3.8 (3.4-4.2) g/L KCl[1]	6.4 (6.2-6.6) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.4 (2.5-4.6) g/L KCl	6.5 (5.6-7.6) g/L NaCl
Reference toxicant CV	10.1%	4.9%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, March 1, 2022; [2] Test Date February 28, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation

Report By:
Courtney Hewitt, BSc
Biologist

Reviewed By:
Courtney Bogstie, P. Biol.
Senior Biologist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Control/dilution water for antiscalant test	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L), Na_2SeO_4 (2 µg Se/L) and 20 mg/L antiscalant
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC164 Reference 2122-1498-01 Chamber 2

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022-03-02	1355 *	MF / EP	117	
1	2022-03-03	0820	EP	-	
2	2022-03-04	0805	JCC	-	MF
3	2022-03-05	0845	JCC	-	MF
4	2022-03-06	0845	JCC	1	MF

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 7.6
Initial EC (µS/cm): 1955
Salinity (ppt): 2

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L: **yes/no**

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	8.6	8.6			
Temp (°C) of 100%	16				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	7.8	7.5						
Day 4	7.9	8.1						
EC (uS/cm)								
Day 0	501	1949						
Day 4	495	1927						
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	8.8	8.6						
Day 4	8.6	8.8						
Temperature (°C) (range: 14-16°C)								
Day 0	15	16						
Day 4	15	15						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	4.6	1.3
2	3.5	0.5
3	3.8	0.6
4	3.9	0.7
5	4.1	0.8
6	4.3	1.0
7	3.5	0.5
8	3.7	0.6
9	4.6	0.8
10	3.8	0.7

Loading Density (g/L): 0.4 (must be ≤0.5 g/L)
Mean Length (cm): 3.9
Length Range (cm): 3.5-4.6
Mean Weight (g): 0.8 (Must be ≥0.3g)
Weight Range: (g): 0.5-1.3

Test Organism Information

Batch 20211222TR
Source TroutHodge
Tank # 4
Days Held at 15± 2°C 47 (must be ≥14 days)
Percent stock mortality 0.09 (7 days prior to test, must be ≤2%)
Test Volume (L) 18

Comments : 96 hrs: pp on bottom + sides of tank

Reviewed By: CB Date Reviewed: 2022/03/09

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS10 Client TEC164 Reference 2122-1498-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/03/01	1540	CC/KTM	2	AW
1	2022/03/02	0910	MAF	-	ST
2	2022/03/03	1005	CC	3	MAF

Sample Information

Initial pH: 7.6
Initial EC (µS/cm): 1455
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	8.2	8.2	8.2	7.6	7.6	7.6				
2	8.1	8.1	8.1	8.3	8.3	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	477	472	470	2130	2180	2200				
2	446	449	450	1938 cc	1952 2120 cc	1945 2148 cc				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10					
1	10	10	10	10	10	10					
2	10	10	10	10	10	10					

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar E2 Jar(s) mortality 7 days prior to test (must be ≤25%) 10%

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 42
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0 %
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 8.9 cc
DO % of sample prior to aeration: 90.9% cc
Duration of aeration (37.5 +/- 12.5 mL/min/L) : -
Hardness (mg $CaCO_3$/L) of 100% : 1427
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) -
Alkalinity of 100% sample (mg $CaCO_3$/L): 489

Temperature (°C) of sample prior to aeration: 18.1 cc
Is aeration required (<40% or >100%)? Yes or (No)
Filtered with 110um screen prior to testing Yes or (No)
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)

Dilution Water
Pail label / preparation date 1:02/22
Hardness of dilution water (mg/L) 217

DO Levels (40-100% saturation) - corrected for altitude -
4.1 to 10.3 mg/L at 8°C
4.0 to 10.0 mg/L at 9°C
3.9 to 9.8 mg/L at 10°C
3.8 to 9.6 mg/L at 11°C
3.7 to 9.4 mg/L at 12°C

Comments/Observations:
0hr: No ppt
48hr: No ppt

Reviewed By: CB Date Reviewed: 2022/03/09

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS20 Client TEC164 Reference 2122-1498-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/03/01	1535	CC/KTM	2	AW
1	2022/03/02	0855	MAF	-	ST
2	2022/03/03	1105	EP	2	MAF

Sample Information

Initial pH: 7.6
Initial EC (µS/cm): 1955
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				
day				pH (units) (range: 6.0-8.5)						
0	8.2	8.2	8.2	7.9	7.9	7.9				
2	8.0	8.0	8.0	8.3	8.3	8.3				
				The pH of the sample was not adjusted prior to test setting, unless noted in the comments below						
				2170cc EC (uS/cm)						
0	503	468	461	~~1993~~	2160	2170				
2	453	461	464	1938	2090	2100				
				DO (mg/L) (**40-100% saturation at test temp.**)						
0	8.1	8.1	8.1	8.1	8.1	8.1				
2	7.9	7.9	7.9	7.9	7.9	7.9				
				Temperature (°C) (range: **18-22 °C**)						
0	19	19	19	19	19	19				
2	20	20	20	20	20	20				
				Number Alive (I, immobile)						
0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar 04 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 48
Were test treatments randomized on test tray? Yes / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0

Sample
DO (mg/L) of sample prior to aeration: ~~8~~ 9.0 cc
DO % of sample prior to aeration: ~~105%~~ ~~100%~~ 110
Duration of aeration (37.5 +/- 12.5 mL/min/L): 20m
Hardness (mg $CaCO_3$/L) of 100%: 1427
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 489

Temperature (°C) of sample prior to aeration: 18
Is aeration required (<40% or >100%)? Yes or No
Filtered with 110um screen prior to testing Yes or No
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or No

Dilution Water
Pail label / preparation date 1:02/22
Hardness of dilution water (mg/L) 217

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Comments/Observations:
0hr: Noppt
48hr: Surficial ppt

Reviewed By: CB Date Reviewed: 2022/03/09

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DASAS 20AS Client TEC164 Reference 2122-1498-02

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/03/01	1540	CC/KM	2	AW
1	2022/03/02	0905	MAF	-	ST
2	2022/03/03	1110	EP	2	MAF

Sample Information

Initial pH: 7.6
Initial EC (µS/cm): 1955
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	8.1	8.1	8.1	7.8	7.8	7.8				
2	8.1	8.1	8.0	8.4	8.4	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	441	469	469	2150	2180	2190				
2	480	476	477	1971	2100	2120				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	8.2	8.2	8.2				
2	7.7	7.7	7.7	7.7	7.7	7.7				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	18	18	18				
2	21	21	21	21	21	21				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar D4 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%.

QA (previous month)
Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 48
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0

Sample
DO (mg/L) of sample prior to aeration: 8.7 Temperature (°C) of sample prior to aeration: 18
DO % of sample prior to aeration: 106% Is aeration required (<40% or >100%)? (Yes) or No
Duration of aeration (37.5 +/- 12.5 mL/min/L): 20m Filtered with 110um screen prior to testing (Yes) or No
Hardness (mg $CaCO_3$/L) of 100%: 1427 Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) –
Alkalinity of 100% sample (mg $CaCO_3$/L): 489

Dilution Water
Pail label / preparation date 1:02/22
Hardness of dilution water (mg/L) 217

Antiscalant
Final Concentration in Sample: 20mg/L
Volume of sample: 500mL Volume of antiscalant: 158uL

Comments/Observations:
0hr: No ppt
48hr: no ppt

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Reviewed By: CB Date Reviewed: 2022/03/09

APPENDIX C – Chain-of-custody form

Teck

COC ID: F2 NAUTILUS February 28 2022 | **TURNAROUND TIME:** | **RUSH:**

PROJECT/CLIENT INFO

Facility Name / Job#	F2 SRF
Project Manager	BRETT MASON
Email	BRETT.MASON@TECK.COM
Address	RR1 HWY 3
City	Sparwood
Province	BC
Postal Code	V0B 2G0
Country	Canada
Phone Number	250-425-6179

LABORATORY

Lab Name	Nautilus Environmental - BC
Lab Contact	
Email	jacklyn@nautilusenvironmental.ca
Address	10823 27th Street SE
City	Calgary
Province	AB
Postal Code	T2Z 3V9
Country	Canada
Phone Number	403-253-7121

OTHER INFO

Report Format / Distribution		Excel	PDF	EDD
Email 1:	Cole.Macgregor@teck.com	X	X	X
Email 1:	teckcoal@equisonline.com			X
Email 2:	DL-EVO-SRF-LAB@teck.cor	X	X	X
Email 3:				
Email 4:				
Email 5:				
Email 6:				
Email 7:				
Email 8:				
Email 10:				
Email 11:				
Email 12:				
Email 13:				
PO number	807270			

SAMPLE DETAILS

2022/03/01
09:30
Manitoulin
JC/SRS
4x20L carboys, 5x1L bottles
NoS/NoI
Good Condition

ANALYSIS REQUESTED

Filtered - F: Field, L: Lab, FL: Field & Lab, N: None

Sample ID 2122-1498	Sample Location (sys loc code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	ANALYSIS Filt. 1: 48hr Daphnia Magna Single Concentration Acute Toxicity 20C	48hr Daphnia Magna Single Concentration Acute Toxicity 10C	48hr Daphnia Magna Single Concentration Acute Toxicity Anitscalent	96hr Rainbow Trout Single Concentration Acute Toxicity (20L Bladders)	48hr Daphnia Magna Single Concentration Toxicity 15C
F2_BPO_WG_2022-02-28_N -01	F2_BPO	WG		2022/02/28	8:55	G	8	2	2		4	3.8°C
F2_BPO_WG_2022-02-28_N-AS -02	F2_BPO	WG		2022/02/28	8:55	G	1			1		4.9°C

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME
	[illegible] - TECK	February 28, 2022		
	[signature]	1830		

SERVICE REQUEST (rush - subject to availability)

Regular (default)	X
Priority (2-3 business days) - 50% surcharge	
Emergency (1 Business Day) - 100% surcharge	
For Emergency <1 Day, ASAP or Weekend - Contact ALS	

Sampler's Name	Ariana Lewis	Mobile #	
Sampler's Signature	[signature]	Date/Time	February 28, 2022

END OF REPORT

Acute Toxicity Test Results

Samples collected March 1, 2022

Final Report

March 17, 2022

Submitted to: **Teck Coal Ltd.**
Sparwood, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates					
	Collected	**Received**	**Rainbow trout test initiation**	***Daphnia magna* 10˚C test initiation**	***Daphnia magna* 20˚C test initiation**	***Daphnia magna* 5mg/L antiscalant test initiation**
EV_GT1_WS_2022-03-01_N-SRF/ 2122-1509-01	1-Mar-22 at 1320h	2-Mar-22 at 1000h	2-Mar-22 at 1530h	2-Mar-22 at 1500h	2-Mar-22 at 1520h	-
EV_BC1_WS_2022-03-01_N-SRF/ 2122-1509-02	1-Mar-22 at 1310h	2-Mar-22 at 1000h	2-Mar-22 at 1455h	2-Mar-22 at 1500h	2-Mar-22 at 1515h	-
EV_BC1_WS_2022-03-01_N-SRF-AS/ 2122-1509-03	1-Mar-22 at 1311h	2-Mar-22 at 1000h	-	-	-	2-Mar-22 at 1530h
EV_GT1_WS_2022-03-01_N-SRF-AS/ 2122-1509-04	1-Mar-22 at 1321h	2-Mar-22 at 1000h	-	-	-	2-Mar-22 at 1525h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
EV_GT1_WS_2022-03-01_N-SRF	3.6°C	1142	248
EV_BC1_WS_2022-03-01_N-SRF	4.3°C	1254	276
EV_BC1_WS_2022-03-01_N-SRF-AS	2.4°C	1254	276
EV_GT1_WS_2022-03-01_N-SRF-AS	3.4°C	1142	248

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)
- *Daphnia magna* 48-h single concentration screening test (conducted with 5 mg/L antiscalant)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample			
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* 5mg/L antiscalant
EV_GT1_WS_2022-03-01_N-SRF	100	100	100	-
EV_BC1_WS_2022-03-01_N-SRF	100	100	100	-
EV_BC1_WS_2022-03-01_N-SRF-AS	-	-	-	100
EV_GT1_WS_2022-03-01_N-SRF-AS	-	-	-	100

Sample ID	Percent Immobility in 100 (% v/v)		
	Daphnia magna 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* 5mg/L antiscalant
EV_GT1_WS_2022-03-01_N-SRF	0	0	-
EV_BC1_WS_2022-03-01_N-SRF	0	0	-
EV_BC1_WS_2022-03-01_N-SRF-AS	-	-	0
EV_GT1_WS_2022-03-01_N-SRF-AS	-	-	0

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
EV_GT1_WS_2022-03-01_N-SRF	Rainbow trout	None	None
	Daphnia magna	Surficial precipitate observed in 20 Degree test vessel	None
EV_BC1_WS_2022-03-01_N-SRF	Rainbow trout	Precipitate observed on the bottom of test vessel	None
	Daphnia magna	Surficial precipitate observed in 20 Degree test vessel	None
EV_BC1_WS_2022-03-01_N-SRF-AS	*Daphnia magna*	None	None
EV_GT1_WS_2022-03-01_N-SRF-AS	*Daphnia magna*	None	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	3.4 (2.9-3.9) g/L KCl[1]	6.4 (6.2-6.6) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.4 (2.5-4.6) g/L KCl	6.5 (5.6-7.6) g/L NaCl
Reference toxicant CV	10.1%	4.9%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, March 3, 2022; [2] Test Date February 28, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation



Report By:
Emma Pedersen, BSc
Biologist



Reviewed By:
Courtney Bogstie, P. Biol.
Senior Biologist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Control/dilution water for antiscalant test	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L), Na_2SeO_4 (2 µg Se/L) and 5 mg/L antiscalant
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC164 Reference 2122-1509-01 Chamber 2

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022-03-02	1530	*MF/EP	117	ST
1	2022-03-03	0830	EP	-	ST
2	2022-03-04	0910	JCC	-	MF
3	2022-03-05	0930	JCC	-	MF
4	2022-03-06	0835	JCC/CC	1	MAF

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 8.1
Initial EC (µS/cm): ~~1411~~ 2080
Salinity (ppt): 2

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L: **yes/no**

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	10.9	10.7	9.6	9.5	9.4
Temp (°C) of 100%	16				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	7.5	MF 8.1						
Day 4	7.8	8.2						
EC (uS/cm)								
Day 0	542	1905						
Day 4	996	1811						
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	8.9	9.4						
Day 4	8.3	8.8						
Temperature (°C) (range: 14-16°C)								
Day 0	14	14						
Day 4	15	15						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10(1)						
Day 4	10	10(1)						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.6	0.5
2	3.8	0.8
3	3.8	0.8
4	3.7	0.7
5	3.8	0.8
6	3.5	0.6
7	3.5	0.6
8	3.6	0.6
9	3.6	0.6
10	3.6	0.6

Loading Density (g/L): 0.4 (must be ≤0.5 g/L)
Mean Length (cm): 3.6
Length Range (cm): 3538
Mean Weight (g): 0.7 (Must be ≥0.3g)
Weight Range (g): 0.5-0.8

Test Organism Information

Batch 20220209TR
Source Lyndon
Tank # 7
Days Held at 15± 2°C 21 (must be ≥14 days)
Percent stock mortality 1.44 (7 days prior to test, must be ≤2%)
Test Volume (L) 18

Comments : 96 hrs: no ppt

Reviewed By: CB Date Reviewed: 20221031/09

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC164 Reference 2122-1509-02 Chamber 2

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022-03-02	1455 *	MF/EP	1/7	ST
1	2022-03-03	0830	EP	-	ST
2	2022-03-04	0810	JCC	-	MF
3	2022-03-05	0850	JCC	-	MF
4	2022-03-06	0810	JCC/CC	1	MAF

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 8.0
Initial EC (µS/cm): 7260
Salinity (ppt): 3

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L: **yes/no**

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	10.9	10.4	9.5	8.8	
Temp (°C) of 100%	15				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	7.5	8.0						
Day 4	7.8	8.1						
EC (uS/cm)								
Day 0	535	2320						
Day 4	499	1959						
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	8.9	8.8						
Day 4	8.8	8.8						
Temperature (°C) (range: 14-16°C)								
Day 0	14	15						
Day 4	15	15						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	4.0	0.8
2	3.3	0.5
3	3.7	0.6
4	3.4	0.5
5	4.0	0.8
6	3.4	0.5
7	3.5	0.6
8	3.2	0.4
9	3.4	0.5
10	3.0	0.3

Loading Density (g/L): 0.3 (must be ≤0.5 g/L)
Mean Length (cm): 3.5
Length Range (cm): 3.0-4.0
Mean Weight (g): 0.6 (Must be ≥0.3g)
Weight Range (g): 0.3-0.8

Test Organism Information

Batch 20220209TR
Source Lyndon
Tank # 7
Days Held at 15± 2°C 21 (must be ≥14 days)
Percent stock mortality 1.44 (7 days prior to test, must be ≤2%)
Test Volume (L) 18

Comments : 96 hrs: ppt on bottom of tank

Reviewed By: CB Date Reviewed: 2022/03/09

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS20 Client TEC164 Reference 2122-1509-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/03/02	1520	KTM/CC	2	ST
1	2022/03/03	0900	CC	-	ST
2	2022/03/04	0945	JCC	3 2nd	CC

Sample Information

Initial pH: 8.1
Initial EC (µS/cm): 2680
Salinity (ppt): 2

Lab Code	CTL A	CTL B	CTL C	100 A	100 B	100 C

pH (units) (range: 6.0-8.5)

day										
0	8.2	8.2	8.2	8.2	8.2	8.2				
2	8.2	8.2	8.2	8.3	8.3	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	458	459	460	1946	1974	1980				
2	464	468	471	1905	1936	1921				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.7	7.7	7.7	7.6	7.6	7.6				
2	8.1	8.1	8.1	8.1	8.1					

Temperature (°C) (range: **18-22 °C**)

0	21	21	21	22	22	22				
2	19	19	19	19	19	19				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar wedC Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 25
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0%
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 11.0 Temperature (°C) of sample prior to aeration: 22
DO % of sample prior to aeration: ~~142.1~~ CB 145 Is aeration required (<40% or >100%)? (Yes) or No
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20min Filtered with 110um screen prior to testing Yes or (No)
Hardness (mg $CaCO_3$/L) of 100% : 1142 Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 248

Dilution Water
Pail label / preparation date 2:2/24
Hardness of dilution water (mg/L) 237

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Comments/Observations:
0Hrs: nopprt
48Hrs: surficial ppt

Reviewed By: CB Date Reviewed: 2022/03/09

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS10 Client TEC164 Reference 2122-1509-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/03/02	1500	KM/CC	2	SC
1	2022/03/03	0915	CC	-	JC
2	2022/03/04	0940	JCC	2	CC

Sample Information

Initial pH: 8.1
Initial EC (µS/cm): 2080
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	7.8	7.8	7.8	8.1	8.1	8.1				
2	8.0	8.0	8.0	8.3	8.3	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	441	458	459	1964	2090	2090				
2	451	466	462	1954	1998	1996				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	10.0	~~9.7~~ 10.0 cc	10.0				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	cc 8 ~~0~~ 12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (l, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar: Wed C — Jar(s) mortality 7 days prior to test (must be ≤25%): 0%

QA (previous month)

Days to first brood (≤12 days): 8
Average number of young produced (≥15 young): 25
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - 0%
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 10.8 cc / 11.0
Temperature (°C) of sample prior to aeration: cc 12 11
DO % of sample prior to aeration: 112%
Is aeration required (<40% or >100%)? Yes or No
Duration of aeration (37.5 +/- 12.5 mL/min/L): 2 cm
Filtered with 110um screen prior to testing Yes or No
Hardness (mg $CaCO_3$/L) of 100% : 1142
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or No
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L): —
Alkalinity of 100% sample (mg $CaCO_3$/L): 240

Dilution Water

Pail label / preparation date: KM 2:12 2124
Hardness of dilution water (mg/L): 237

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

Comments/Observations:

0Hrs: No ppt
48Hrs: no ppt

Reviewed By: CB Date Reviewed: 2022/03/15

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS20 Client TEC164 Reference 2122-1509-02

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/03/02	1515	CC/KTM	2	ST
1	2022/03/03	0909	CC	-	ST
2	2022/03/04	0955	JCC	2	CC

Sample Information

Initial pH: 8.0
Initial EC (µS/cm): 2260
Salinity (ppt): 3

Lab Code	CTL A	CTL B	CTL C	100 A	100 B	100 C				

pH (units) (range: 6.0-8.5)

day										
0	8.2	8.2	8.2	8.1	8.1	8.1				
2	8.1	8.1	8.1	8.0	8.0	8.0				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	456	459	459	2230	2260	2280				
2	465	465	461	2190	2170	2190				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	8.2	8.2	8.2				
2	8.1	8.1	8.1	8.1	8.1	8.1				

Temperature (°C) (range: **18-22 °C**)

0	19	19	19	22	22	22				
2	19	19	19	19	19	19				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar WedC Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)

Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 25
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - 0%
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 10.3
Temperature (°C) of sample prior to aeration: 22
DO % of sample prior to aeration: 136%
Is aeration required (<40% or >100%)? **(Yes) or No**
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20min
Filtered with 110um screen prior to testing **Yes or (No)**
Hardness (mg $CaCO_3$/L) of 100% : 1754
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or (No)**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 276

Dilution Water

Pail label / preparation date 2:2124
Hardness of dilution water (mg/L) 237

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Comments/Observations:

0Hrs: noppt
48Hrs: surficial ppt

Reviewed By: CB Date Reviewed: 2022/03/09

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS10 Client TEC164 Reference 2122-1509-02

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/03/02	1500	KM/CC	2	
1	2022/03/03	0915	CC	-	
2	2022/03/04	0950	JCC	2	CC

Sample Information

Initial pH: 8.0
Initial EC (µS/cm): 2260
Salinity (ppt): 3

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	8.1	8.1	8.1	8.0	8.0	8.0				
2	8.2	8.2	8.2	8.1	8.1	8.1				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	443	458	458	2190	2280	2300				
2	459	464	469	2160	2250	2290				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	10.3	10.3	10.3				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (l, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar CC Bwed C Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 25
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0%
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: CC 11.80 Temperature (°C) of sample prior to aeration: 11
DO % of sample prior to aeration: 115% Is aeration required (<40% or >100%)? **Yes or No**
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20m Filtered with 110um screen prior to testing **Yes or No**
Hardness (mg $CaCO_3$/L) of 100% : 1254 Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 276

Dilution Water
Pail label / preparation date 2:2/24
Hardness of dilution water (mg/L) 237

DO Levels (40-100% saturation) - corrected for altitude -
4.1 to 10.3 mg/L at 8°C
4.0 to 10.0 mg/L at 9°C
3.9 to 9.8 mg/L at 10°C
3.8 to 9.6 mg/L at 11°C
3.7 to 9.4 mg/L at 12°C

Comments/Observations:
0Hrs: NO ppt
48Hrs: NO ppt

Reviewed By: CB Date Reviewed: 2022/03/09

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS 5 Client TEC164 Reference 2122-1509-03

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	20221031102	1530	CC/KTM	2	
1	20221103103	0855	CC	-	
2	20221103104	1000	JCC	1	CC

Sample Information

Initial pH: 8.0
Initial EC (µS/cm): 3260
Salinity (ppt): 3

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	8.2	8.1	8.1	8.0	8.0	8.0				
2	8.2	8.2	8.2	8.3	8.3	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	446	439	461	2220	2240	2280				
2	461	468	470	2210	2240	2210				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.7	7.7	7.7	8.4	8.4	8.4				
2	8.1	8.1	8.1	8.1	8.1	8.1				

Temperature (°C) (range: **18-22 °C**)

0	21	21	21	22	22	22				
2	19	19	19	19	19	19				

Number Alive (l, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar D3/D5 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 48
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0%

Sample
DO (mg/L) of sample prior to aeration: 10.4 Temperature (°C) of sample prior to aeration: 22
DO % of sample prior to aeration: 138% Is aeration required (<40% or >100%)? (Yes) or No
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20mn Filtered with 110um screen prior to testing Yes or (No)
Hardness (mg $CaCO_3$/L) of 100% : 1254 Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 276

Dilution Water
Pail label / preparation date 2:2124
Hardness of dilution water (mg/L) 237

Antiscalant
Final Concentration in Sample: 5mg/L
Volume of sample: 500mL Volume of antiscalant: 39.5mL

Comments/Observations:
0Hrs: noppt
48Hrs: noppt

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Reviewed By: CB Date Reviewed: 2022/03/09

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS 5 Client TEC164 Reference 2122-1509-04

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/03/02	1525	KM ICC	2	ST
1	2022/03/03	0855	CC	-	ST
2	2022/03/04	1005	ICC	2	CC

Sample Information

Initial pH: 8.1
Initial EC (µS/cm): 2060
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	8.1	8.1	8.1	8.1	8.2	8.2				
2	8.1	8.1	8.1	8.3	8.3	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	440	459	461	1931	1969	1960				
2	451	471	475	1921	1940	1960				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	8.4	8.4	8.4				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	22	22	22				
2	20	20	20	20	20	20				

Number Alive (l, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar C3/C4 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%.

QA (previous month)
Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 36
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0%.

Sample
DO (mg/L) of sample prior to aeration: 11.0 Temperature (°C) of sample prior to aeration: 22
DO % of sample prior to aeration: 146% Is aeration required (<40% or >100%)? (Yes) or No
Duration of aeration (37.5 +/- 12.5 mL/min/L): 20min Filtered with 110um screen prior to testing Yes or (No)
Hardness (mg $CaCO_3$/L) of 100% : 1147 Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 248

Dilution Water
Pail label / preparation date 2:2/24
Hardness of dilution water (mg/L) 237

Antiscalant
Final Concentration in Sample: 5mg/L
Volume of sample: 500mL Volume of antiscalant: 39.5mL

Comments/Observations:
0Hrs: nopp
48Hrs: NO PPT

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Reviewed By: CB Date Reviewed: 2022/03/09

APPENDIX C – Chain-of-custody form

Teck

Page 1 of 1

COC ID: EVO NAUTILUS March 1 2022 | TURNAROUND TIME: | RUSH:

PROJECT/CLIENT INFO

Facility Name / Job#	Elkview Operations
Project Manager	Group 1; Brett Mason
Email	Brett.Mason@teck.com
Address	RR1 HWY 3
City	Sparwood
Province	BC
Postal Code	V0B 2G0
Country	Canada
Phone Number	250-425-6179

LABORATORY

Lab Name	Nautilus Environmental - BC
Lab Contact	
Email	jacklyn@nautilusenvironmental.ca
Address	10823 27th Street SE
City	Calgary
Province	AB
Postal Code	T2H 2K1
Country	Canada
Phone Number	T2Z 3V9

OTHER INFO

Report Format / Distribution		Excel	PDF	EDD
Email 1:				
Email 2:				
Email 3:				
Email 4:				
Email 5:				
Email 6:				
Email 7:	teckcoal@equisonline.com			X
Email 8:	DL-EVO-SRF@teck.com	X	X	X
Email 9:	Cole.Macgregor@teck.com	X	X	X
Email 10:				
Email 11:				
Email 12:				
Email 13:				

PO number: 807270

SAMPLE DETAILS

2022/03/02
10:00
Manitoulin
JC/SRS
~~18x20L carboys~~ 8x20L carboys, 10x1L bottles
NoS NoI
Good Condition
2122-1509

ANALYSIS REQUESTED

Filtered - F: Field, L: Lab, FL: Field & Lab, N: None

Sample ID	Sample Location (sys_loc_code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	FIL	PRESERV.	ANALYSIS: 48hr Daphnia Magna Single Concentration Acute Toxicity 20C	48hr Daphnia Magna Single Concentration Acute Toxicity 10C	48hr Daphnia Magna Single Concentration Acute Toxicity Anitscalent	96hr Rainbow Trout Single Concentration Acute Toxicity (20 L Bladder)	96hr Rainbow Trout Single Concentration Acute Toxicity (20 L Bladder)	48hr Daphnia Magna Single Concentration Toxicity 15C
-01 EV_GT1_WS_2022-03-01_N-SRF	EV_GT1	WS		2022/03/01	13:20	G	8			2	2			4	
-02 EV_BC1_WS_2022-03-01_N-SRF	EV_BC1	WS		2022/03/01	13:10	G	8			2	2			4	
-03 EV_BC1_WS_2022-03-01_N-SRF-AS	EV_BC1	WS		2022/03/01	13:11	G	1					1			
-04 EV_GT1_WS_2022-03-01_N-SRF-AS	EV_GT1	WS		2022/03/01	13:21	G	1					1			

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS

Field Temperatures

RELINQUISHED BY/AFFILIATION: Ali Livingston - Teck

DATE/TIME: March 1, 2022 1600

ACCEPTED BY/AFFILIATION:

DATE/TIME:

SERVICE REQUEST (rush - subject to availability)

Regular (default)	X
Priority (2-3 business days) - 50% surcharge	
Emergency (1 Business Day) - 100% surcharge	
For Emergency <1 Day, ASAP or Weekend - Contact ALS	

Sampler's Name	Ariana Lewis	Mobile #	
Sampler's Signature		Date/Time	March 1, 2022

END OF REPORT

Acute Toxicity Test Results

Samples collected March 7, 2022

Final Report

April 4, 2022

Submitted to: **Teck Coal Ltd.**
Sparwood, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates					
	Collected	Received	Rainbow trout test initiation[1]	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation	*Daphnia magna* antiscalant test initiation
F2_BPO_WG_2022-03-07_N/ 2122-1552-01	7-Mar-22 at 0925h	8-Mar-22 at 1215h	11-Mar-22 at 1455h	9-Mar-22 at 1500h	9-Mar-22 at 1520h	-
F2_BPO_WG_2022-03-07_N-AS/ 2122-1552-02	7-Mar-22 at 0926h	8-Mar-22 at 1215h	-	-	-	9-Mar-22 at 1515h

[1]According to information provided by Nautilus Environmental (Burnaby, BC)

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
F2_BPO_WG_2022-03-07_N	4.6°C	966	391
F2_BPO_WG_2022-03-07_N-AS	4.4°C	966	391

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)
- *Daphnia magna* 48-h single concentration screening test (conducted with 20 mg/L antiscalant)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample			
	Rainbow trout[1]	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
F2_BPO_WG_2022-03-07_N	100	100	100	-
F2_BPO_WG_2022-03-07_N-AS	100	-	-	100

[1]According to information provided by Nautilus Environmental (Burnaby, BC)

Sample ID	Percent Immobility in 100 (% v/v)		
	***Daphnia magna* 10˚C**	***Daphnia magna* 20˚C**	***Daphnia magna* antiscalant**
F2_BPO_WG_2022-03-07_N	0	0	-
F2_BPO_WG_2022-03-07_N-AS	-	-	0

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
F2_BPO_WG_2022-03-07_N	Rainbow trout[1]	Precipitate observed on airline and bottom of test vessel	None
	Daphnia magna	Surficial precipitate and precipitate on bottom of 20-degree test vessel observed	None
F2_BPO_WG_2022-03-07_N-AS	*Daphnia magna*	None	None

[1]According to information provided by Nautilus Environmental (Burnaby, BC)

QA/QC

QA/QC summary	Rainbow trout[3]	*Daphnia magna*
Reference toxicant LC50 (95% CL)	1.0 (0.6-1.4) g/L KCl[1]	6.4 (6.2-6.6) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	1.7 (1.1-2.6) g/L KCl	6.5 (5.6-7.6) g/L NaCl
Reference toxicant CV	22%	4.9%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, May 11, 2022; [2] Test Date February 28, 2022; [3]According to information provided by Nautilus Environmental (Burnaby, BC)

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation

Report By:
Christine Chanhao, BSc
Biologist

Reviewed By:
Courtney Bogstie, P. Biol.
Senior Biologist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.[1]

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

[1]According to information provided by Nautilus Environmental (Burnaby, BC)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Control/dilution water for antiscalant test	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L), Na_2SeO_4 (2 µg Se/L) and 20 mg/L antiscalant
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

Rainbow Trout Summary Sheet

Client: Nautilus Environmental Calgary Start Date/Time: Mar 11/22 @ 1455 h

Work Order No.: 220383 Test Species: *Oncorhynchus mykiss*

Sample Information:

Sample ID: 2122-1552-01
Sample Date: Mar 7/22
Date Received: Mar 9/22
Sample Volume: 1 x 20 L
Other: ~

Test Validity Criteria:
≥ 90% Control Survival
WQ Ranges:
T (°C) = 15 ± 1; DO (mg/L) = 7.0 to 10.3; pH = 5.5 to 8.5

Dilution Water:

Type: Dechlorinated Municipal Tap Water
Hardness (mg/L $CaCO_3$): 22
Alkalinity (mg/L $CaCO_3$): 22

Test Organism Information:

Batch No.: 022522
Source: Aqua Farms
No. Fish/Volume (L): 10/12 L
Loading Density (g/L): 0.24
Mean Length ± SD (mm): 34 ± 4 Range: 31 - 41
Mean Weight ± SD (g): 0.29 ± 0.10 Range: 0.20 - 0.49

KCl Reference Toxicant Results:

Reference Toxicant ID: RBTK16
Stock Solution ID: N/A
Date Initiated: Mar 11/22
96-h LC50 (95% CL) [g/L KCl]: 1.0 (0.6 - 1.4) g/l KCl

Reference toxicant LC50 value is slightly outside 2SD, but within 3SD of the historical range.

Reference Toxicant Mean and Historical Range [g/L KCl]: 1.7 (1.1 - 2.6) g/l KCl
Reference Toxicant CV (%): 22%

Test Results: 0 mortality ~~100% survival~~ at 96 h in the 100% (v/v) undiluted sample.

Reviewed by: ~ Date reviewed: Mar 17/22

96-Hour Rainbow Trout Toxicity Test Data Sheet

Client/Project#: Nautilus Environmental Calgary
Sample I.D. 2122 - 1552 - 01
W.O. # 220383
RBT Batch #: 022522
Date Collected/Time: ~~03~~ - 07 - Mar - 22 @ 0925 h
Date Setup/Time: 11 - Mar - 22 @ 1455 h
CER #: 2
Sample Setup By: SMH/~~DR~~

Thermometer: CER # 2
D.O. meter/probe: DO-2 / 2
Cond./Salinity meter/probe: C-5 / 5
pH meter/probe: pH-5 / 5

Number Fish/Volume: 10 / 12L
7-d % Mortality: 0·93
Total Pre-aeration Time (mins): ~~90~~ 30
Aeration rate adjusted to 6.5 ± 1 mL/min/L? (Y/N): Y

Undiluted Sample WQ			
Parameters	Initial WQ	Adjustment	30 min WQ
Temp °C	14.0		14.0
D.O. (mg/L)	10.1		10.1
pH	7.6		7.6
Cond. (µS/cm)	2026		2020
Salinity (ppt)	~~2~~ 1.0 SMH		1.0

Concentration	# Survivors							Temperature (°C)					Dissolved Oxygen (mg/L)					pH					Conductivity (µS/cm)	
(% v/v)	1	2	4	24	48	72	96	0	24	48	72	96	0	24	48	72	96	0	24	48	72	96	0	96
Control				10	10	10	10	14.0	14.5	14.0	14.0	14.5	9.9	9.7	9.8	9.9	9.9	7.1	7.3	7.0	7.1	7.0	52	56
100				10	10	10	10	14.0	14.5	14.5	14.0	14.5	10.1	9.6	9.8	9.9	9.9	7.6	8.3	8.3	8.3	8.1	2020	1785
Initials				KML	HEC	SMH	JM	JM	KML	HEC	SMH	JM	JM	KML	HEC	SMH	JM	JM	KML	HEC	SMH	JM	JM	JM

Sample Description/Comments: Clear, colourless, odourless liquid w/ no particulates.

Fish Description at 96 h: All fish appear normal
Number of Stressed Fish at 96 h: Ø

Other Observations: Precipitate on airline & bottom of tank @ 96h

Reviewed by: [signature]
Date Reviewed: Mar 17/22

Rainbow trout (Oncorhynchus mykiss) Length and Weight Sheet

Client: Nautilus Environmental Calgary
Sample ID: 2122-1552-01
W.O. #: 220383

Balance ID: Bal - 2
Date Initiated: Mar 11 /22
Date Measured: Mar 15 /22
Batch #: 022522

	Length (mm)	Weight (g)
1	32	0.23
2	41	0.43
3	32	0.22
4	32	0.25
5	35	0.37
6	31	0.22
7	41	0.49
8	31	0.20
9	33	0.27
10	36	0.25
Total	344	2.93
Mean	34	0.29
Std. Dev.	4	0.10
Low	31	0.20
High	41	0.49

Volume Tested (L): 12

Loading Density (g/L): 0.24

Initials: SMH

Reviewed by: _____ Date Reviewed: Mar 17/22

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS20 Client TEC164 Reference 2122-1552-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/03/09	1520	MAF/CC	2	AJ
1	2022/03/10	0845	MAF	-	ST
2	2022/03/11	0910	EP	2	KTM

Sample Information

Initial pH: 7.6
Initial EC (µS/cm): 1981
Salinity (ppt): 3

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	8.1	8.1	8.1	8.0	8.0	8.0				
2	8.1	8.1	8.01	8.2	8.2	8.2				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below EP

EC (uS/cm)

0	454	443	441	1951	1986	1990				
2	434	443	446	1911	1907	1927				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.7	7.7	7.7				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	21	21	21				
2	20	20	20	20	20	20				

Number Alive (l, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar C2 Jar(s) mortality 7 days prior to test (must be ≤25%) 0/.

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 33
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 8.7
DO % of sample prior to aeration: 110 %
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20
Hardness (mg $CaCO_3$/L) of 100% : 966
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) -
Alkalinity of 100% sample (mg $CaCO_3$/L): 391

Temperature (°C) of sample prior to aeration: 21
Is aeration required (<40% or >100%)? **Yes or No**
Filtered with 110um screen prior to testing **Yes or No**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Dilution Water
Pail label / preparation date 1:03/03
Hardness of dilution water (mg/L) 217

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Comments/Observations:
0hr: nopt.
48hr: Surficial ppt, ppt on bottom of jar

Reviewed By: MG Date Reviewed: 2022/03/15

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS10 Client TEC164 Reference 2122-1552-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022-03-09	1500	MAF/CC	2	AN
1	2022-03-10	0850	MAF	-	ST
2	2022-03-11	1040	CC	2	ST

Sample Information

Initial pH: 7.6
Initial EC (µS/cm): 1981
Salinity (ppt): 3

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	7.8	7.8	7.8	7.5	7.4	7.5				
2	7.89 7.9	7.9	7.9	8.3	8.3	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	429	439	441	2090	2080	2090				
2	448	449	449	1982	1990	2070				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (l, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar E3 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 22
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0%
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 9.3
DO % of sample prior to aeration: 96%
Duration of aeration (37.5 +/- 12.5 mL/min/L) : —
Hardness (mg $CaCO_3$/L) of 100% : 966
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 391

Temperature (°C) of sample prior to aeration: 12 ~~11~~ cc
Is aeration required (<40% or >100%)? Yes or (No)
Filtered with 110um screen prior to testing Yes or (No)
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)

Dilution Water
Pail label / preparation date 1:03/03
Hardness of dilution water (mg/L) 217

DO Levels (40-100% saturation) - corrected for altitude -
4.1 to 10.3 mg/L at 8°C
4.0 to 10.0 mg/L at 9°C
3.9 to 9.8 mg/L at 10°C
3.8 to 9.6 mg/L at 11°C
3.7 to 9.4 mg/L at 12°C

Comments/Observations:
0hr: nopt.
48hr: no ppt

Reviewed By: MG Date Reviewed: 2022/03/15

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS 20 Client TEC164 Reference 2122-1552-02

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022-03-09	1515	MAF/CC	2	BW
1	2022-03-10	0850	MAF	-	ST
2	2022-03-11	0855	VTM	3	JCC

Sample Information

Initial pH: 7.6
Initial EC (µS/cm): 1981
Salinity (ppt): 3

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	8.0	8.0	8.0	7.8	7.8	7.8				
2	8.0	8.0	8.6	8.4	8.4	8.4				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	445	445	445	1968	2010	2010				
2	442	447	459	1896	1982	2056				

DO (mg/L) (**40-100% saturation at test temp.**)

0	8.1	8.1	8.1	7.9	7.9	7.9				
2	7.9	7.9	7.9	7.7	7.7	7.9				

Temperature (°C) (range: **18-22 °C**)

0	19	19	19	20	20	20				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar C1 Jar(s) mortality 7 days prior to test (must be ≤25%) 0

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 33
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0

Sample
DO (mg/L) of sample prior to aeration: 8.7
DO % of sample prior to aeration: 110%
Duration of aeration (37.5 +/- 12.5 mL/min/L): 20
Hardness (mg $CaCO_3$/L) of 100% : 966
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 391

Temperature (°C) of sample prior to aeration: 21
Is aeration required (<40% or >100%)? (Yes) or No
Filtered with 110um screen prior to testing Yes or (No)
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)

Dilution Water
Pail label / preparation date 1:03/03
Hardness of dilution water (mg/L) 217

Antiscalant
Final Concentration in Sample: 20mg/L
Volume of sample: 500mL Volume of antiscalant: 10µL 158 MAF

Comments/Observations:
0hr: ncppt
48hr: ncppt

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Reviewed By: MG Date Reviewed: 2022/03/15

APPENDIX C – Chain-of-custody form

Teck

Page 1 of 1

COC ID: F2 NAUTILUS March 07 2022 | **TURNAROUND TIME:** | **RUSH:**

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name / Job#	F2 SRF			Lab Name	Nautilus Environmental - BC			Report Format / Distribution		Excel	PDF	EDD
Project Manager	BRETT MASON			Lab Contact				Email 1:	Cole.MacGregor@teck.com	X	X	
Email	BRETT.MASON@TECK.COM			Email	jacklyn@nautilusenvironmental.ca			Email 2:	teckcoal@equisonline.com			X
Address	RR1 HWY 3			Address	10823 27th Street SE			Email 3:	DL-EVO-SRF@teck.com	X	X	
								Email 4:				
City	Sparwood	Province	BC	City	Calgary	Province	AB	Email 5:				
Postal Code	V0B 2G0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada	Email 6:				
Phone Number	250-425-6179			Phone Number	403-253-7121			PO number	807270			

SAMPLE DETAILS | **ANALYSIS REQUESTED** | Filtered - F: Field, L: Lab, FL: Field & Lab, N: None

2022/03/08
12:15
Manitoulin
OCORS
4x20L carboys, 5x1L bottles
N65/NoI
Good Condition
JC

Sample ID 2122-1555&2	Sample Location (sys_loc_code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	Fil.	48hr Daphnia Magna Single Concentration Acute Toxicity 20C	48hr Daphnia Magna Single Concentration Acute Toxicity 10C	48hr Daphnia Magna Single Concentration Acute Toxicity Antiscalent	96hr Rainbow Trout Single Concentration Acute Toxicity	48hr Daphnia Magna Single Concentration Toxicity 15C
								ANALYSIS					
F2_BPO_WG_2022-03-07_N -01	F2_BPO	WG		2022/03/07	9:25	G	8		2	2		4	4.6°C
F2_BPO_WG_2022-03-07_N-AS -02	F2_BPO	WG		2022/03/07	9:26	G	1				1		4.4°C

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME
	Cole MacGregor	March 7, 2022 1530		

SERVICE REQUEST (rush - subject to availability)					
Regular (default)	X	Sampler's Name	Ariana Lewis	Mobile #	
Priority (2-3 business days) - 50% surcharge		Sampler's Signature		Date/Time	March 7, 2022
Emergency (1 Business Day) - 100% surcharge					
For Emergency <1 Day, ASAP or Weekend - Contact ALS					

END OF REPORT

Acute Toxicity Test Results

Samples collected March 21, 2022

Final Report

April 26, 2022

Submitted to: **Teck Coal Ltd.**
Sparwood, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates					
	Collected	Received	Rainbow trout test initiation[1]	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation	*Daphnia magna* antiscalant test initiation
F2_BPO_WG_2022-03-21_N/ 2122-1647-01	21-Mar-22 at 0830h	22-Mar-22 at 0920h	26-Mar-22 at 1345h	25-Mar-22 at 1630h	25-Mar-22 at 1630h	-
F2_BPO_WG_2022-03-21_N-AS/ 2122-1647-02	21-Mar-22 at 0831h	22-Mar-22 at 0920h	-	-	-	25-Mar-22 at 1635h

[1]Rainbow trout testing for the sample was performed by Nautilus Environmental (Point Edward, ON); results for this testing are provided in Appendix B

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
F2_BPO_WG_2022-03-21_N	10.4°C	1339	501
F2_BPO_WG_2022-03-21_N-AS	10.6°C	1339	501

TEST TYPES

- Rainbow trout 96-h single concentration screening test, performed by Nautilus Environmental (Point Edward, ON)
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)
- *Daphnia magna* 48-h single concentration screening test (conducted with 20 mg/L antiscalant)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample			
	Rainbow trout[1]	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
F2_BPO_WG_2022-03-21_N	100	97	100	-
F2_BPO_WG_2022-03-21_N-AS	-	-	-	100

[1]According to information provided by Nautilus Environmental (Point Edward, ON)

Sample ID	Percent Immobility in 100 (% v/v)		
	Daphnia magna 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
F2_BPO_WG_2022-03-21_N	10	0	-
F2_BPO_WG_2022-03-21_N-AS	-	-	0

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
F2_BPO_WG_2022-03-21_N	Rainbow trout	Not completed	Not completed
	Daphnia magna	Surficial precipitate observed in 20-degree test	None
F2_BPO_WG_2022-03-21_N-AS	*Daphnia magna*	None	None

QA/QC

QA/QC summary	*Daphnia magna*
Reference toxicant LC50 (95% CL)	6.6 (6.0-7.2) g/L NaCl[1]
Reference toxicant historical mean (2 SD Range)	6.5 (5.5-7.7) g/L NaCl
Reference toxicant CV	5.7%
Organism health history	Acceptable
Protocol deviations	None
Water quality range deviations	None
Control performance	Acceptable
Test performance	Valid

[1] Test Date March 29, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation

Nautilus Environmental (Point Edward, ON) QA/QC information provided in Appendix B.

Report By:
Christine Chanhao, BSc
Biologist

Reviewed By:
Leila Oosterbroek, P Biol
Environmental Scientist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Control/dilution water for antiscalant test	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L), Na_2SeO_4 (2 µg Se/L) and 20 mg/L antiscalant
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

Certificate of Analysis

ACUTE LETHALITY BIOASSAY REPORT
(Single-Concentration Test)

CLIENT:
Nautilus Environmental, 10823 27 Street SE, Calgary, AB, T2Z 3V9

TEST RESULTS:

Sample Name[1]	Sample Number	Date Collected	Date Received	Date Tested	Test Species[2]	Percent Mortality[3]	Method Deviations
2122-1647	1510-0012218	21-Mar-22	24-Mar-22	26-Mar-22	RBT	0%	No

1 - Results relate only to the sample tested. Tested as received from client.
2 - Test Type and Species RBT = Rainbow Trout 96-hour 100% Effluent Concentration Acute Lethality Test
3 - Most regulations regard ≤50% mortality to be a "pass". Check your applicable regulatory requirements.

TEST PROTOCOLS:

Environment Canada, "Biological Test Method: Reference Method for Determining Acute Lethality of Effluents to Rainbow Trout", Environmental Technology Centre, Ottawa, Ontario, Report EPS 1/RM/13 Second Edition - December 2000, including May 2007 and February 2016 Amendments. (Nautilus Test Method RT-SC-R1.7)

REFERENCE/HEALTH DATA:

Trout

Date Reference Test Initiated: 31-Mar-22 **Reference Chemical:** Phenol **Fish Lot #:** LF040322
96-Hour LC50: 9.33 mg/L **95% Confidence Limits:** 7.53 mg/L; 11.57 mg/L
Historic Geometric Mean LC50: 8.93 mg/L **Historic Warning Limits (± 2 SD):** 6.39 mg/L; 12.48 mg/L

TEST RESULTS APPROVED BY:

Date: April 7, 2022

C D'Andrea

Carol D'Andrea
Laboratory Supervisor

Y:\bioassays\2022\1000\1500-001\1510-0012218 T

704 Mara Street Point Edward, ON N7V 1X4
519-339-8787

NAUTILUS ENVIRONMENTAL RAINBOW TROUT TOXICITY TEST BENCH SHEET

Sample Information		Test Information			
Account 1510-001	Sample Method: Composite (Grab) Other	Test Type: (Single Concentration) LC50 TIE Screen			
Client Nautilus AIB	Sample Number 1510-001 22/8	Date/Time Started 26-03-22 / 1345			Analyst Starting Test JM
Person Collecting Sample	Sample Name 2122 1647	Date/Time Ended 30-03-22 / 1345			Fish Lot # LF 040322
Date/Time Collected 21-03-22 / NA	Temperature Upon Receipt 15.0 °C	Test Volume 20 L Per Vessel	Number of Fish Per Vessel 10		Number of Vessels Per Conc. (1) 2
Date/Time Received in Lab 24-03-22 / 1115	Pre-Aeration No (Yes)	Pre-Aeration Duration 30 min			Pre-Aeration Rate 6.5 ±0.26 ml/min·L⁻¹
Sample Description clear light green	Sample Type Description NA	Rate of Aeration During Test 6.5 ±0.26 ml/min·L⁻¹	Dilution Water Dechlor		Sample pH Adjustment (No) Yes
		Sample Point Description: MISA (Other:)			Storage Temperature 4 ± 2 °C

Initial Sample Measurements Before Aeration - Cond.: 1470 µmhos D.O: 9.8 mg/L 97 % Temp: 15.2 °C pH: 7.7 Air Flow Meter Reading: 150 L/min.
Instrument Identification- M/P #: 6/7 M/P #: 5/5 M/P #: 13/32 Meter #: 7

TOXICANT	CONC %	TOTAL NUMBER DEAD # OF HOURS FROM START OF TEST					Initial Measurements After Pre-Aeration						Meter/Probe			Initials	Final Measurements					Meter/Probe		Initials
		___	24	48	72	96	Time	Cond (umhos)	D.O. (mg/L)/%		°C	pH (units)	Cond	D.O./ Temp	pH		Date	Time	°C	D.O. (mg/L)/%		pH (units)	D.O./ Temp	pH	
Control			0	0	0	0	1337	207	9.5	94	15.1	8.0	6/7	5/5	12/32	JM	30-03-22	1345	14.4	9.6	94	8.0	5/5	12/32	JM
(3)	100%		0	0	0	0	1	1443	9.7	97	15.2	7.7	1	1	1	1	1	1	14.3	9.8	95	8.2	1	1	1
Time Initials			0915 CJ	1032 JM	0824 JM	1345 JM	Number of Control Fish Showing Atypical Behaviour: <24h: 0 24h: 0 48h: 0 72h: 0 96h: 0																		

Percent Mortality	0 %	LENGTH (mm)	WEIGHT (g)	Initials: JM	Holding Mortalities 7-days Preceding Test	Number of Fish in Batch at Day (-)7 7000
LC50 (Lower; Upper Limit)	–	Mean (SD) 34.6 (3.8)	Mean (SD) 0.40 (0.15)		Number Dead (recorded daily for 7 days)	Total Number Dead for 7 days Preceding Test
Method	–	Min/Max 30 / 41	Min/Max 0.23 / 0.67		0+1+3+4+3+9+13	= 33
Verified By (initials)	JM	Sample Size 10	Loading Density 0.20 g/L		7-Day Holding Mortality ([total number dead/number of fish in batch] x 100)	1.65%

Observations and notes:

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS20 Client TEC164 Reference 2122-1647-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/03/25	1630	KTM/CC	2	
1	2022/03/26	0750	EP	-	
2	2022/03/27	0915	EC	2	

Sample Information

Initial pH: 7.7
Initial EC (µS/cm): 1684
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	8.0	8.0	8.0	7.7	7.7	7.7				
2	8.2	8.2	8.2	8.2	8.2	8.2				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	397	410	409	1811	1829	1825				
2	432	424	418	1751	1741	1758				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.7	7.7	7.7	7.7	7.7	7.7				
2	7.7	7.7	7.7	7.7	7.7	7.7				

Temperature (°C) (range: **18-22 °C**)

0	21	21	21	21	21	21				
2	21	21	21	21	21	21				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar D3 Jar(s) mortality 7 days prior to test (must be ≤25%) 5/.

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 23
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0% (must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 7.7
DO % of sample prior to aeration: 100%
Duration of aeration (37.5 +/- 12.5 mL/min/L) : —
Hardness (mg $CaCO_3$/L) of 100% : 1339
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 501

Temperature (°C) of sample prior to aeration: 21
Is aeration required (<40% or >100%)? Yes or (No)
Filtered with 110um screen prior to testing Yes or (No)
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)

Dilution Water
Pail label / preparation date 22.03.19
Hardness of dilution water (mg/L) 211

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Comments/Observations:
0Hrs: no ppt
48Hrs: Surficial ppt

Reviewed By: EV Date Reviewed: 2022/03/31

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS10 Client TEC164 Reference 2122-1647-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/03/25	1630	KTM/CC	2	
1	2022/03/26	0800	EP	-	
2	2022/03/27	0955	CC	2	

Sample Information

Initial pH: 7.7
Initial EC (µS/cm): 1808
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	ec	8.0	8.0	7.7	7.7	7.7				
2	8.0	8.0	8.0	8.3	8.3	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	399	411	412	1833	1846	1858				
2	412	416	418	1820	1798	~~1800~~ 1821				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	~~9~~ 10	~~9~~ 10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar D21C2/C3 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 27
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0%
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 9.4
DO % of sample prior to aeration: 100%
Duration of aeration (37.5 +/- 12.5 mL/min/L) : -
Hardness (mg $CaCO_3$/L) of 100% : 1339
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 501

Temperature (°C) of sample prior to aeration: 12
Is aeration required (<40% or >100%)? Yes or (No)
Filtered with 110um screen prior to testing Yes or (No)
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)

Dilution Water

Pail label / preparation date 2:03/19
Hardness of dilution water (mg/L) 211

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

Comments/Observations:
0Hrs: nappt
48Hrs: no ppb

Reviewed By: EV Date Reviewed: 2022/03/31

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS(20) Client TEC164 Reference 2122-~~1650~~ CC 1647-02

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/03/25	1035	KTM/CC	2	
1	2022/03/26	0955	EP	-	
2	2022/03/27	0915	CC	2	

Sample Information

Initial pH: 7.7
Initial EC (µS/cm): 1688
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	8.0	8.0	8.0	7.7	7.7	7.7				
2	8.1	8.1	8.1	8.4	8.4	8.4				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	401	414	414	1810	1801	1835				
2	418	419	420	1768	1755	1781				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.7	7.7	7.7	7.7	7.7	7.7				
2	7.7	7.7	7.7	7.7	7.7	7.7				

Temperature (°C) (range: **18-22 °C**)

0	21	21	21	21	21	21				
2	21	21	21	21	21	21				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar D1 Jar(s) mortality 7 days prior to test (must be ≤25%) 5%

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 23
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0%

Sample
DO (mg/L) of sample prior to aeration: 7.7 Temperature (°C) of sample prior to aeration: 21
DO % of sample prior to aeration: 100% Is aeration required (<40% or >100%)? **Yes or (No)**
Duration of aeration (37.5 +/- 12.5 mL/min/L) : — Filtered with 110um screen prior to testing **Yes or (No)**
Hardness (mg $CaCO_3$/L) of 100% : 1339 Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or (No)**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 501

Dilution Water
Pail label / preparation date 2:03/19
Hardness of dilution water (mg/L) 211

Antiscalant
Final Concentration in Sample: 20 mg/L
Volume of sample: 500mL Volume of antiscalant: 158uL

Comments/Observations:
0Hrs: no ppt
48Hrs: NO ppt

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C 3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C 3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C

Reviewed By: EV Date Reviewed: 2022/03/31

APPENDIX C – Chain-of-custody form

Teck

COC ID: F2 NAUTILUS March 21 2022 | TURNAROUND TIME: | RUSH:

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO			
Facility Name / Job#	F2 SRF			Lab Name	Nautilus Environmental - BC			Report Format / Distribution	Excel	PDF	EDD
Project Manager	BRETT MASON			Lab Contact				Email 1: [redacted]	X	X	X
Email	BRETT.MASON@TECK.COM			Email	jacklyn@nautilusenvironmental.ca			Email 1: teckcoal@equisonline.com			X
Address	RR1 HWY 3			Address	10823 27th Street SE			Email 2: DL-EVO-SRF-LAB@teck.com	X	X	X
								Email 3:			
City	Sparwood	Province	BC	City	Calgary	Province	AB	Email 4:			
								Email 5:			
								Email 6:			
								Email 7:			
								Email 8:			
								Email 10:			
								Email 11:			
								Email 12:			
								Email 13:			
Postal Code	V0B 2G0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada				
Phone Number	250-425-6179			Phone Number	403-253-7121			PO number	807270		

SAMPLE DETAILS | **ANALYSIS REQUESTED** | Filtered - F: Field, L: Lab, FL: Field & Lab, N: None

2022/03/22
09:20
Manitoulin
2C/SRS
4x 20L carboys, 4x 1L bottles
NOS/NOS
Good Condition

Sample ID	Sample Location (sys loc code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	Filt.	48hr Daphnia Magna Single Concentration Acute Toxicity 20C	48hr Daphnia Magna Single Concentration Acute Toxicity 10C	48hr Daphnia Magna Single Concentration Acute Toxicity Anitscalent	96hr Rainbow Trout Single Concentration Acute Toxicity (20L Bladders)	48hr Daphnia Magna Single Concentration Toxicity 15C	
F2_BPO_WG_2022-03-21_N -01	F2_BPO	WG		2022/03/21	8:30	G	8		2	2		4		10.4°C
F2_BPO_WG_2022-03-21_N-AS -02	F2_BPO	WG		2022/03/21	8:31	G	1				1			10.6°C

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME
		March 21, 2022		

SERVICE REQUEST (rush - subject to availability)					
Regular (default)	X	Sampler's Name		Mobile #	
Priority (2-3 business days) - 50% surcharge		Sampler's Signature		Date/Time	March 21, 2022
Emergency (1 Business Day) - 100% surcharge					
For Emergency <1 Day, ASAP or Weekend - Contact ALS					

END OF REPORT

Acute Toxicity Test Results

Samples collected March 28, 2022

Final Report

April 28, 2022

Submitted to: **Teck Coal Ltd.**
Sparwood, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates					
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation	*Daphnia magna* antiscalant test initiation
EV_EC1_WS_2022-03-28_N-SRF/ 2122-1711-01	28-Mar-22 at 0910h	29-Mar-22 at 0930h	1-Apr-22 at 1620h	1-Apr-22 at 1500h	1-Apr-22 at 1435h	-
EV_EC1_WS_2022-03-28_N-SRF-AS/ 2122-1711-02	28-Mar-22 at 0911h	29-Mar-22 at 0930h	-	-	-	1-Apr-22 at 1440h
EV_ECOUT_WS_2022-03-28_N-SRF/ 2122-1711-03	28-Mar-22 at 1110h	29-Mar-22 at 0930h	1-Apr-22 at 1620h	1-Apr-22 at 1455h	1-Apr-22 at 1445h	-
EV_ECOUT_WS_2022-03-28_N-SRF-AS/ 2122-1711-04	28-Mar-22 at 1111h	29-Mar-22 at 0930h	-	-	-	1-Apr-22 at 1450h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
EV_EC1_WS_2022-03-28_N-SRF	7.8°C	1157	423
EV_EC1_WS_2022-03-28_N-SRF-AS	7.8°C	1157	423
EV_ECOUT_WS_2022-03-28_N-SRF	7.9°C	1286	425
EV_ECOUT_WS_2022-03-28_N-SRF-AS	7.9°C	1286	425

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)
- *Daphnia magna* 48-h single concentration screening test (conducted with 5 mg/L antiscalant)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample			
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
EV_EC1_WS_2022-03-28_N-SRF	100	100	100	-
EV_EC1_WS_2022-03-28_N-SRF-AS	-	-	-	100
EV_ECOUT_WS_2022-03-28_N-SRF	100	100	100	-
EV_ECOUT_WS_2022-03-28_N-SRF-AS	-	-	-	100

Sample ID	Percent Immobility in 100 (% v/v)		
	Daphnia magna 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
EV_EC1_WS_2022-03-28_N-SRF	0	0	-
EV_EC1_WS_2022-03-28_N-SRF-AS	-	-	0
EV_ECOUT_WS_2022-03-28_N-SRF	7	23	-
EV_ECOUT_WS_2022-03-28_N-SRF-AS	-	-	0

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
EV_EC1_WS_2022-03-28_N-SRF	Rainbow trout	Precipitate observed on the bottom of test vessel	None
	Daphnia magna	Surficial precipitate observed	None
EV_EC1_WS_2022-03-28_N-SRF-AS	*Daphnia magna*	Surficial precipitate observed	None
EV_ECOUT_WS_2022-03-28_N-SRF	Rainbow trout	Precipitate observed on the bottom of test vessel	None
	Daphnia magna	Surficial precipitate observed	None
EV_ECOUT_WS_2022-03-28_N-SRF-AS	*Daphnia magna*	Surficial precipitate observed	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	3.1 (2.6-3.5) g/L KCl[1]	6.3 (5.9-6.6) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.3 (2.5-4.4) g/L KCl	6.5 (5.5-7.7) g/L NaCl
Reference toxicant CV	9.5%	5.7%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, April 4, 2022; [2] Test Date April 11, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation



Report By:
Shae Cole, BSc
Biologist



Reviewed By:
Courtney Bogstie, P. Biol.
Senior Biologist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Control/dilution water for antiscalant test	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L), Na_2SeO_4 (2 µg Se/L) and 5 mg/L antiscalant
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC 164 Reference 2122-1711-01 Chamber 2

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022-04-01	1620 *	LC/EP/MAF	1	MF
1	2022-04-02	0845	MAF	-	SC
2	2022-04-03	1345	kmm	-	MAF
3	2022-04-04	1110	CC	-	SC
4	2022-04-05	1200	MAF/LC/EP 1		JCC

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 7.9
Initial EC (µS/cm): 1902
Salinity (ppt): 2

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L : yes/no

	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
Preaeration time					
DO(mg/L) of 100%	10.2	9.5	9.4	9.3	9.2
Temp (°C) of 100%	15				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

	Conc.	CTL	100						
pH (units) (range: **5.5-8.5**)	Day 0	8.2	8.1						
	Day 4	8.2	8.2						
EC (µS/cm)	Day 0	481	1747						
	Day 4	553	1900						
DO (mg/L) (**70-100% saturation at test temp.**)	Day 0	8.8	9.2						
	Day 4	8.8	8.8						
Temperature (°C) (range: **14-16°C**)	Day 0	15	15						
	Day 4	15	15						
Number Alive (In brackets number stressed)	Day 0	10	10						
	Day 1	10	10						
	Day 2	10	10						
	Day 3	10	10						
	Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.2	0.4
2	3.4	0.4
3	2.9	0.2
4	3.5	0.5
5	3.9	0.6
6	3.1	0.4
7	3.6	0.5
8	3.3	0.4
9	3.4	0.5
10	3.4	0.4

Loading Density (g/L): 0.2 (must be ≤0.5 g/L)
Mean Length (cm): 3.4
Length Range (cm): 2.9-3.9
Mean Weight (g): 0.4 (Must be ≥0.3g)
Weight Range: (g): 0.2-0.6

Test Organism Information

Batch 20220309TR
Source Sam Livingston
Tank # ~~3~~ 9 mmf
Days Held at 15± 2°C 23 (must be ≥14 days)
Percent stock mortality ~~0.5~~ 0.73mmf (7 days prior to test, must be ≤2%)
Test Volume (L) 18

Comments :
96 hrs: ppt on btm of tank

Reviewed By: CB Date Reviewed: 2022/04/07

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC 164 Reference 2122-1711-03 Chamber 2

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022-04-01	1620 *	LC/EP/MAF	1	MF
1	2022-04-02	0840	MAF	-	LC
2	2022-04-03	0745	btm	-	MAF
3	2022-04-04	1110	EC	-	SJ
4	2022-04-05	1200	MAF/LC/EP	1	JCC

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 7.6
Initial EC (µS/cm): 2020
Salinity (ppt): 2

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L: **yes/no**

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	10.1	9.5	9.5	9.4	9.3
Temp (°C) of 100%	15				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	8.3	7.8						
Day 4	8.2	8.1						
EC (uS/cm)								
Day 0	463	1915						
Day 4	544	1934						
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	8.8	9.3						
Day 4	8.8	8.8						
Temperature (°C) (range: 14-16°C)								
Day 0	15	15						
Day 4	15	15						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.6	0.6
2	3.7	0.6
3	3.6	0.5
4	3.5	0.5
5	3.4	0.4
6	3.7	0.5
7	3.3	0.5
8	3.3	0.3
9	3.2	0.3
10	3.0	0.3

Loading Density (g/L): 0.3 (must be ≤0.5 g/L)
Mean Length (cm): 3.4
Length Range (cm): 3.0-3.7
Mean Weight (g): 0.5 (Must be ≥0.3g)
Weight Range: (g): 0.3-0.6

Test Organism Information

Batch 20220309TR
Source Sam Livingston
Tank # ~~3~~ 9 MAF
Days Held at 15± 2°C 23 (must be ≥14 days)
Percent stock mortality ~~0%~~ 7.3 MAF (7 days prior to test, must be ≤2%)
Test Volume (L) 18

Comments :
96 hrs: ppt on btm + sides of tank

Reviewed By: CB Date Reviewed: 2022/04/07

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS20 Client TEC164 Reference 2122-1711-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/04/01	1435	MF/CH	2	SJ
1	2022/04/02	0950	MAF	-	CC
2	2022/04/03	0840	MAF	2	CC

Sample Information

Initial pH: 7.9
Initial EC (µS/cm): 1902
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	8.2	8.2	8.1	8.2	8.2	8.2				
2	8.2	8.2	8.2	8.8	8.8	8.8				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	484	489	490	1900	1955	1959				
2	498	490	489	1764	1827	1828				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.7	7.7	7.7	7.7				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	21	21	21	21				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar DL
Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 24
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0

Sample
DO (mg/L) of sample prior to aeration: 8.5
DO % of sample prior to aeration: 109
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20min
Hardness (mg $CaCO_3$/L) of 100% : 1157
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 423

Temperature (°C) of sample prior to aeration: 21
Is aeration required (<40% or >100%)? (Yes) or No
Filtered with 110um screen prior to testing Yes or (No)
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)

Dilution Water
Pail label / preparation date 2:0327
Hardness of dilution water (mg/L) 221

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Comments/Observations:
0 hrs: no ppt
48 hrs: Surficial ppt

Reviewed By: CB Date Reviewed: 2022/04/07

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS10 Client TEC164 Reference 2122-1711-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/04/01	1500	MFICH	2	
1	2022/04/02	0800	MAF	2	
2	2022/04/03	0840	MAF	2	

Sample Information

Initial pH: 7.9
Initial EC (µS/cm): 1902
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	8.1	8.1	8.1	8.1	8.1	8.1				
2	8.0	8.0	8.0	8.1	8.1	8.1				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (µS/cm)

0	502	497	490	1904	1967	1990				
2	512	497	493	1817	1899	1928				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	10.2	10.2	10.2				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10 mf	10 md	0 mf				
2	10	10	10	10 (I)	10 (2I)	10 (4I)				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar 03 Jar(s) mortality 7 days prior to test (must be ≤25%) 10

QA (previous month)
Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 24
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0

Sample

DO (mg/L) of sample prior to aeration: 10.8
Temperature (°C) of sample prior to aeration: 12
DO % of sample prior to aeration: 115
Is aeration required (<40% or >100%)? **Yes or No**
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20min
Filtered with 110um screen prior to testing **Yes or No**
Hardness (mg $CaCO_3$/L) of 100% : 1157
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 423

Dilution Water
Pail label / preparation date 2:03/27
Hardness of dilution water (mg/L) 227

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

Comments/Observations:
0 hrs: no ppt
48 hrs: surficial ppt.

Reviewed By: CB Date Reviewed: 2022/04/07

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DASAS Client TEC164 Reference 2122-1711-02 MF

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/04/01	1440	MF/CH	2	ST
1	2022/04/02	0740	MAF		JCC
2	2022/04/03	0840	MAF	2	JCC

Sample Information

Initial pH: 7.9
Initial EC (µS/cm): 1902
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	8.2	8.1	8.1	8.2	8.2	8.2				
2	8.2	8.2	8.2	8.4	8.4	8.4				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	491	490	491	1900	1950	1889				
2	506	493	489	1755	1889	1886				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.7	7.7	7.7	7.7	7.7	7.7				
2	7.7	7.7	7.7	7.7	7.7	7.7				

Temperature (°C) (range: **18-22 °C**)

0	21	21	21	21	21	21				
2	21	21	21	21	21	21				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar E1 Jar(s) mortality 7 days prior to test (must be ≤25%) 15%.

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 19
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0

Sample
DO (mg/L) of sample prior to aeration: 8.5
DO % of sample prior to aeration: 109
Duration of aeration (37.5 +/- 12.5 mL/min/L) 20min
Hardness (mg $CaCO_3$/L) of 100% : 1157
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 423

Temperature (°C) of sample prior to aeration: 21
Is aeration required (<40% or >100%)? (Yes) or No
Filtered with 110um screen prior to testing (Yes) or No
Is hardness adjustment required (<25 mg $CaCO_3$/L)? (Yes) or No

Dilution Water
Pail label / preparation date 2:0327
Hardness of dilution water (mg/L) 227

Antiscalant
Final Concentration in Sample: 5mg/L
Volume of sample: 750mL Volume of antiscalant: 39.5mL

Comments/Observations:
0 HRS: hoppt
48 HRS: surfacialppt.

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C 3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C 3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C

Reviewed By: CB Date Reviewed: 2022/04/07

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS10 Client TEC164 Reference 2122-1711-03

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/04/01	1455	MRCH	2	SC
1	2022/04/02	0800	MAF		SC
2	2022/04/03	0850	MAF	2	JCC

Sample Information

Initial pH: 7.6
Initial EC (µS/cm): 2020
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	8.1	8.1	8.1	8.0	8.0	8.0				
2	8.2	8.2	8.2	7.9	8.0	7.9				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	496	487	486	2150	2180	2180				
2	506	492	493	1924	2020	2020				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10(I)	10(I)	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar D1 Jar(s) mortality 7 days prior to test (must be ≤25%) 5

QA (previous month)
Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 24
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0

Sample

DO (mg/L) of sample prior to aeration: 10.5
DO % of sample prior to aeration: 112
Duration of aeration (37.5 +/- 12.5 mL/min/L): 20min
Hardness (mg $CaCO_3$/L) of 100% : 1080
Temperature (°C) of sample prior to aeration: 12
Is aeration required (<40% or >100%)? **Yes or No**
Filtered with 110um screen prior to testing **Yes or No**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 425

Dilution Water
Pail label / preparation date 2:03/22
Hardness of dilution water (mg/L) 221

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

Comments/Observations:
0 hrs: no ppt
48 hrs: Surficial ppt.

Reviewed By: CB Date Reviewed: 2022/04/07

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS20 Client TEC164 Reference 2122-1711-~~02~~ 03 MF

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/04/01	1445	MF/CH	2	SJ
1	2022/04/02	0740	MAF	-	JC
2	2022/04/03	0845	MAF	2	JCC

Sample Information

Initial pH: 7.6
Initial EC (µS/cm): 2020
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				
day				pH (units) (range: 6.0-8.5)						
0	8.2	8.1	8.2	8.1	8.1	8.1				
2	8.2	8.2	8.2	7.8	7.8	7.8				
				The pH of the sample was not adjusted prior to test setting, unless noted in the comments below						
				EC (uS/cm)						
0	478	489	491	2090	2170	2180				
2	501	490	488	1867	2020	1954				
				DO (mg/L) (**40-100% saturation at test temp.**)						
0	7.7	7.7	7.7	7.7	7.7	7.7				
2	7.7	7.7	7.7	7.7	7.7	7.7				
				Temperature (°C) (range: **18-22 °C**)						
0	21	21	21	21	21	21				
2	21	21	21	21	21	21				
				Number Alive (I, immobile)						
0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10(1I)	10(2I)	10(4I)				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar D1 Jar(s) mortality 7 days prior to test (must be ≤25%) 5%

QA (previous month)
Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 24
Were test treatments randomized on test tray? Yes / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0

Sample
DO (mg/L) of sample prior to aeration: 8.8
Temperature (°C) of sample prior to aeration: 21
DO % of sample prior to aeration: 112
Is aeration required (<40% or >100%)? **Yes or No**
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20min
Filtered with 110um screen prior to testing **Yes or No**
Hardness (mg $CaCO_3$/L) of 100% : 1286
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 425

Dilution Water
Pail label / preparation date 2:03/27
Hardness of dilution water (mg/L) 227

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Comments/Observations:
0 hrs: no ppt
48 hrs: surficial ppt.

Reviewed By: CB Date Reviewed: 2022/04/07

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DASAS Client TEC164 Reference 2122-1711-04

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/04/01	1450	MFICH	2	ST
1	2022/04/02	0755	MAF	-	rc
2	2022/04/03	0900	MAF	2	JCC

Sample Information

Initial pH: 7.6
Initial EC (µS/cm): 2020
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				
day	pH (units) (range: 6.0-8.5)									
0	8.1	8.1	8.1	8.1	8.1	8.1				
2	8.2	8.2	8.2	8.4	8.4	8.4				
	The pH of the sample was not adjusted prior to test setting, unless noted in the comments below									
	EC (uS/cm)									
0	489	492	492	2120	2160	2160				
2	501	491	490	1958	2070	1979				
	DO (mg/L) (**40-100% saturation at test temp.**)									
0	7.7	7.7	7.7	7.7	7.7	7.7				
2	7.9	7.9	7.9	7.9	7.9	7.9				
	Temperature (°C) (range: **18-22 °C**)									
0	21	21	21	21	21	21				
2	20	20	20	20	20	20				
	Number Alive (I, immobile)									
0	10	10	10	10	10	10				
1	10	10	10	10	10 MAF	10				
2	10	10	10	10	10 (1 BT)	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar 01 Jar(s) mortality 7 days prior to test (must be ≤25%) 5%

QA (previous month)
Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 24
Were test treatments randomized on test tray? Yes / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0

Sample
DO (mg/L) of sample prior to aeration: 8.8 Temperature (°C) of sample prior to aeration: 21
DO % of sample prior to aeration: MF 121 112 Is aeration required (<40% or >100%)? **Yes or No**
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20min Filtered with 110um screen prior to testing **Yes or No**
Hardness (mg $CaCO_3$/L) of 100% : 1280 Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 425

Dilution Water
Pail label / preparation date 2:03/27
Hardness of dilution water (mg/L) 227

Antiscalant
Final Concentration in Sample: 5mg/L
Volume of sample: 500mL Volume of antiscalant: 39.5µL

Comments/Observations:
0 HRS: no ppt
48 HRS: Surficial ppt.

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Reviewed By: CS Date Reviewed: 2022/04/07

APPENDIX C – Chain-of-custody form

Teck

COC ID: EVO NAUTILUS March 28 2022 | TURNAROUND TIME: | RUSH:

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name / Job#	Elkview Operations			Lab Name	Nautilus Environmental - BC			Report Format / Distribution		Excel	PDF	EDD
Project Manager	Group 1; Brett Mason			Lab Contact				Email 1:	Cole.Macgregor@teck.com	X	X	X
Email	Brett.Mason@teck.com			Email	jacklyn@nautilusenvironmental.ca			Email 2:	teckcoal@equisonline.com			X
Address	RR1 HWY 3			Address	10823 27th Street SE			Email 3:	DL-EVO-SRF-LAB@teck.com	X	X	X
								Email 4:				
City	Sparwood	Province	BC	City	Calgary	Province	AB	Email 5:				
								Email 6:				
								Email 7:				
								Email 8:				
								Email 9:				
								Email 10:				
								Email 11:				
								Email 12:				
								Email 13:				
Postal Code	V0B 2G0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada					
Phone Number	250-425-6179			Phone Number	403-253-7121			PO number	807270			

SAMPLE DETAILS | **ANALYSIS REQUESTED** | Filtered - F: Field, L: Lab, FL: Field & Lab, N: None

2022/03/29
09:30
Manitoulin
SC/SRS
8x10L carboys, 4x20L carboys, 10x ~~20~~ 1L bottles
Nos/No2
Good condition

Sample ID 2122-1711	Sample Location (sys loc code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	FIL	PRESERV.	ANALYSIS: 48hr Daphnia Magna Single Concentration Acute Toxicity 20C	48hr Daphnia Magna Single Concentration Acute Toxicity 10C	48hr Daphnia Magna Single Concentration Acute Toxicity Anitscalent	96hr Rainbow Trout Single Concentration Acute Toxicity (20 L Bladder)	96hr Rainbow Trout Single Concentration Acute Toxicity (10 L Bladder)	48hr Daphnia Magna Single Concentration Toxicity 15C					
EV_EC1_WS_2022-03-28_N-SRF -01	EV_EC1	WS		2022/03/28	9:10	G	12			2	2			8	7.8°C					
EV_EC1_WS_2022-03-28_N-SRF-AS -02	EV_EC1	WS		2022/03/28	9:11	G	1					1			7.8°C					
EV_ECOUT_WS_2022-03-28_N-SRF -03	EV_ECOUT	WS		2022/03/28	11:10	G	8			2	2		4		7.9°C					
EV_ECOUT_WS_2022-03-28_N-SRF-AS -04	EV_ECOUT	WS		2022/03/28	11:11	G	1					1			7.9°C					

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME
Field Temperatures ECOUT: 6.0		March 28, 2022		

SERVICE REQUEST (rush - subject to availability)

Regular (default)	X
Priority (2-3 business days) - 50% surcharge	
Emergency (1 Business Day) - 100% surcharge	
For Emergency <1 Day, ASAP or Weekend - Contact ALS	

Sampler's Name	Ariana Lewis	Mobile #	
Sampler's Signature		Date/Time	March 28, 2022

END OF REPORT

Acute Toxicity Test Results

Samples collected March 28, 2022

Final Report

April 28, 2022

Submitted to: **Teck Coal Ltd.**
Sparwood, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates					
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation	*Daphnia magna* antiscalant test initiation
F2_BPO_WG_2022-03-28_N/ 2122-1712-01	28-Mar-22 at 1120h	29-Mar-22 at 0930h	1-Apr-22 at 1620h	30-Mar-22 at 1610h	30-Mar-22 at 1620h	-
F2_BPO_WG_2022-03-28_N-AS/ 2122-1712-02	28-Mar-22 at 1121h	29-Mar-22 at 0930h	-	-	-	30-Mar-22 at 1615h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
F2_BPO_WG_2022-03-28_N	10.7°C	1274	470
F2_BPO_WG_2022-03-28_N-AS	10.7°C	1274	470

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)
- *Daphnia magna* 48-h single concentration screening test (conducted with 20 mg/L antiscalant)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample			
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
F2_BPO_WG_2022-03-28_N	100	100	100	-
F2_BPO_WG_2022-03-28_N-AS	-	-	-	100

Sample ID	Percent Immobility in 100 (% v/v)		
	***Daphnia magna* 10˚C**	***Daphnia magna* 20˚C**	***Daphnia magna* antiscalant**
F2_BPO_WG_2022-03-28_N	0	0	-
F2_BPO_WG_2022-03-28_N-AS	-	-	0

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
F2_BPO_WG_2022-03-28_N	Rainbow trout	Precipitate observed on bottom and sides of tank	None
	Daphnia magna	Surficial precipitate observed in 20 degree test vessel	None
F2_BPO_WG_2022-03-28_N-AS	*Daphnia magna*	None	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	3.1 (2.6-3.5) g/L KCl[1]	6.6 (6.0-7.2) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.3 (2.5-4.4) g/L KCl	6.5 (5.5-7.7) g/L NaCl
Reference toxicant CV	9.5%	5.7%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, April 4, 2022; [2] Test Date March 29, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation

Report By:
Christine Chanhao, BSc
Biologist

Reviewed By:
Courtney Bogstie, P. Biol.
Senior Biologist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Control/dilution water for antiscalant test	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L), Na_2SeO_4 (2 µg Se/L) and 20 mg/L antiscalant
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC 164 Reference 2122-1712-01 Chamber 2

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022-04-01	1620 *	LC/EP/MAF	1	MF
1	2022-04-02	0845	MAF	-	LC
2	2022-04-03	0745	KM	-	MAF
3	2022-04-04	1110	EC	-	SJ
4	2022-04-05	1130	MAF/EP/LC	1	MAF

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 7.7
Initial EC (µS/cm): 1983
Salinity (ppt): 2

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L : yes/no

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	9.8	9.5	9.4	9.4	9.3
Temp (°C) of 100%	14				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	8.2	7.9						
Day 4	8.2	8.2						
EC (uS/cm)								
Day 0	501	1857						
Day 4	577	1985						
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	8.6	9.3						
Day 4	8.8	8.8						
Temperature (°C) (range: 14-16°C)								
Day 0	14	14						
Day 4	15	15						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	2.8	0.2
2	3.5	0.4
3	3.2	0.4
4	2.8	0.2
5	3.5	0.4
6	3.3	0.4
7	3.5	0.5
8	3.4	0.4
9	3.8	0.5
10	3.1	0.3

Loading Density (g/L): 0.2 (must be ≤0.5 g/L)
Mean Length (cm): 3.3
Length Range (cm): 2.8-3.8
Mean Weight (g): 0.4 (Must be ≥0.3g)
Weight Range: (g): 0.2-0.5

Test Organism Information

Batch 20220309TR
Source Sam Livingston
Tank # ~~3~~ 9 MAF
Days Held at 15± 2°C 23 (must be ≥14 days)
Percent stock mortality ~~0.51~~ MAF 0.73 (7 days prior to test, must be ≤2%)
Test Volume (L) 18

Comments :
96 hrs: ppt on sides + btm of tank

Reviewed By: LC Date Reviewed: 2022/04/07

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS20 Client TEC164 Reference 2122-~~1713~~-1712-01 MF

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/03/30	1620	MF	2	MF
1	2022/03/31	0740	MAP	-	CC
2	2022/~~03/32~~ 04/01	0830	EP	2	MF
		ST			

Sample Information

Initial pH: 7.7
Initial EC (µS/cm): 1983
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	8.1	8.1	8.1	8.0	8.0	8.0				
2	8.1	8.1	8.1	8.4	8.4	8.4				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	439	429	429	1729	1751	1754				
2	484	498	490	1973	2060	1992				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.7	7.7	7.7	7.7	7.7	7.7				
2	7.9	7.9	7.9	7.7	7.7	7.7				

Temperature (°C) (range: **18-22 °C**)

0	21	21	21	21	21	21				
2	20	20	20	21	21	21				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar D4 Jar(s) mortality 7 days prior to test (must be ≤25%) 5%

QA (previous month)
Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 24
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 8.9
DO % of sample prior to aeration: 114
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20min
Hardness (mg $CaCO_3$/L) of 100% : 174
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 470

Temperature (°C) of sample prior to aeration: 21
Is aeration required (<40% or >100%)? **Yes or No**
Filtered with 110um screen prior to testing **Yes or No**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Dilution Water
Pail label / preparation date 1:03/22
Hardness of dilution water (mg/L) 240

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Comments/Observations:
0h: no ppt
48h: Slight surficial ppt

Reviewed By: D Date Reviewed: 2022/04/07

Daphnia 10°C Bench Sheet

NAUTILUS ENVIRONMENTAL

Method DAS10 Client TEC164 Reference 2122-~~1713-02~~ 1712-01 MF

Test Log **Sample Information**

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/03/30	1010	MF	2	MF
1	2022/03/31	0815	CH	-	MF
2	2022/~~03/32~~ 04/01	0810	EP	2	MF

Initial pH: 7.7
Initial EC (µS/cm): 1983
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C
	SR					

pH (units) (range: 6.0-8.5)

day										
0	8.0	8.1	8.1	7.8	7.8	7.8				
2	8.3	8.3	8.3	8.5	8.5	8.5				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	453	432	430	1702	1814	1816				
2	552	514	528	2080	2090	2100				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.5	9.5	9.5				
2	9.4	9.4	9.4	9.8	9.8	9.8				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	10	10	10				
2	12	12	12	10	10	10				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar D5 Jar(s) mortality 7 days prior to test (must be ≤25%) 5 %

QA (previous month)
Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 24
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 9.8 Temperature (°C) of sample prior to aeration: 8
DO % of sample prior to aeration: 91 Is aeration required (<40% or >100%)? **Yes or (No)**
Duration of aeration (37.5 +/- 12.5 mL/min/L) : — Filtered with 110um screen prior to testing **Yes or (No)**
Hardness (mg $CaCO_3$/L) of 100% : 1774 Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or (No)**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 470

Dilution Water
Pail label / preparation date 1:03/22
Hardness of dilution water (mg/L) 240

DO Levels (40-100% saturation) - corrected for altitude -
4.1 to 10.3 mg/L at 8°C
4.0 to 10.0 mg/L at 9°C
3.9 to 9.8 mg/L at 10°C
3.8 to 9.6 mg/L at 11°C
3.7 to 9.4 mg/L at 12°C

Comments/Observations: 0h: no ppt
48h: no ppt

Reviewed By: ID Date Reviewed: 2022/04/07

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS10 MF AS Client TEC164 Reference 2122-~~1713-03~~ MF 1712-02

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/03/30	1615	MF	2	MAF
1	2022/03/31	0940	MAF	-	CC
2	2022/~~03~~/32 04/01 MAF	0950	CH	2	DCC

Sample Information

Initial pH: 7.7
Initial EC (µS/cm): 1983
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day	CTLA	CTLB	CTLC	100A	100B	100C
0	8.0	8.0	8.0	8.0	8.0	8.0
2	8.2	8.2	8.2	8.5	8.5	8.5

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	428	430	431	719	744	747
2	509	504	500	969	986	995

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.7	7.7	7.7
2	7.9	7.9	7.9	7.9	7.9	7.9

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	21	21	21
2	20	20	20	20	20	20

Number Alive (I, immobile)

0	10	10	10	10	10	10
1	10	10	10	10	10	10
2	10	10	10	10	10	10

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar C5 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 8 7 MF
Average number of young produced (≥15 young) 27 24 MF
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0

Sample
DO (mg/L) of sample prior to aeration: 8.9 MF Temperature (°C) of sample prior to aeration: 21
DO % of sample prior to aeration: 114 Is aeration required (<40% or >100%)? **Yes or No**
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20min Filtered with 110um screen prior to testing **Yes or No**
Hardness (mg $CaCO_3$/L) of 100% : 274 Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 470

Dilution Water
Pail label / preparation date 1:03D2
Hardness of dilution water (mg/L) 240

Antiscalant
Final Concentration in Sample: 20 MF 8 mg/L
Volume of sample: 500 mL Volume of antiscalant: 39.5 uL 158 MF

Comments/Observations:
0h: no ppt
48h: no ppt

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Reviewed By: lo Date Reviewed: 2022/04/07

APPENDIX C – Chain-of-custody form

Teck

COC ID: F2 NAUTILUS March 28 2022 | **TURNAROUND TIME:** | **RUSH:**

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name / Job#	F2 SRF			Lab Name	Nautilus Environmental - BC			Report Format / Distribution		Excel	PDF	EDD
Project Manager	BRETT MASON			Lab Contact				Email 1:	Cole.Macgregor@teck.com	X	X	X
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Address	RR1 HWY 3			Address	10823 27th Street SE			Email 2:	DL-EVO-SRF-LAB@teck.com	X	X	X
								Email 3:				
City	Sparwood	Province	BC	City	Calgary	Province	AB	Email 4:				
								Email 5:				
								Email 6:				
								Email 7:				
								Email 8:				
								Email 10:				
								Email 11:				
								Email 12:				
								Email 13:				
Postal Code	V0B 2G0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada	Email 14:				
Phone Number	250-425-6179			Phone Number	403-253-7121			PO number	807270			

SAMPLE DETAILS | **ANALYSIS REQUESTED** | Filtered - F: Field, L: Lab, FL: Field & Lab, N: None

2022/03/29
09:30
Manitoulin
JC
4x20L Jugs, 5x1L bottles
N6S/N6b
Good Condition

Sample ID	Sample Location (sys loc code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	Fil.	48hr Daphnia Magna Single Concentration Acute Toxicity 20C	48hr Daphnia Magna Single Concentration Acute Toxicity 10C	48hr Daphnia Magna Single Concentration Acute Toxicity Anitscalent	96hr Rainbow Trout Single Concentration Acute Toxicity (20L Bladders)	48hr Daphnia Magna Single Concentration Toxicity 15C	
								ANALYSIS						
F2_BPO_WG_2022-03-28_N -01	F2_BPO	WG		2022/03/28	11:20	G	8		2	2		4	10.7°C	
F2_BPO_WG_2022-03-28_N-AS -02	F2_BPO	WG		2022/03/28	11:21	G	1				1		10.7°C	

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME
		March 28, 2022		

SERVICE REQUEST (rush - subject to availability)

Regular (default)	X
Priority (2-3 business days) - 50% surcharge	
Emergency (1 Business Day) - 100% surcharge	
For Emergency <1 Day, ASAP or Weekend - Contact ALS	

Sampler's Name	Ariana Lewis	Mobile #	
Sampler's Signature		Date/Time	March 28, 2022

END OF REPORT

Acute Toxicity Test Results

Samples collected March 29, 2022

Final Report

May 2, 2022

Submitted to: **Teck Coal Ltd.**
Sparwood, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates					
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation	*Daphnia magna* antiscalant test initiation
EV_GT1_WS_2022-03-29_N-SRF/ 2122-1737-01	29-Mar-22 at 1015h	30-Mar-22 at 0930h	2-Apr-22 at 1400h	2-Apr-22 at 1400h	2-Apr-22 at 1400h	-
EV_BC1_WS_2022-03-29_N-SRF/ 2122-1737-02	29-Mar-22 at 0910h	30-Mar-22 at 0930h	2-Apr-22 at 1405h	2-Apr-22 at 1405h	2-Apr-22 at 1405h	-
EV_BC1_WS_2022-03-29_N-SRF-AS/ 2122-1737-03	29-Mar-22 at 0911h	30-Mar-22 at 0930h	-	-	-	2-Apr-22 at 1410h
EV_GT1_WS_2022-03-29_N-SRF-AS/ 2122-1737-04	29-Mar-22 at 1016h	30-Mar-22 at 0930h	-	-	-	2-Apr-22 at 1410h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
EV_GT1_WS_2022-03-29_N-SRF	8.5°C	716	168
EV_BC1_WS_2022-03-29_N-SRF	8.5°C	1034	245
EV_BC1_WS_2022-03-29_N-SRF-AS	8.5°C	1034	245
EV_GT1_WS_2022-03-29_N-SRF-AS	8.5°C	716	168

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)
- *Daphnia magna* 48-h single concentration screening test (conducted with 5 mg/L antiscalant)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample			
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
EV_GT1_WS_2022-03-29_N-SRF	100	100	100	-
EV_BC1_WS_2022-03-29_N-SRF	100	100	100	-
EV_BC1_WS_2022-03-29_N-SRF-AS	-	-	-	100
EV_GT1_WS_2022-03-29_N-SRF-AS	-	-	-	100

Sample ID	Percent Immobility in 100 (% v/v)		
	Daphnia magna 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
EV_GT1_WS_2022-03-29_N-SRF	0	0	-
EV_BC1_WS_2022-03-29_N-SRF	0	0	-
EV_BC1_WS_2022-03-29_N-SRF-AS	-	-	0
EV_GT1_WS_2022-03-29_N-SRF-AS	-	-	0

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
EV_GT1_WS_2022-03-29_N-SRF	Rainbow trout	Precipitate observed on the bottom of test vessel	None
	Daphnia magna	Precipitate observed on the bottom of test vessels	None
EV_BC1_WS_2022-03-29_N-SRF	Rainbow trout	Precipitate observed on the bottom of test vessel	None
	Daphnia magna	Surficial precipitate observed	None
EV_BC1_WS_2022-03-29_N-SRF-AS	*Daphnia magna*	None	None
EV_GT1_WS_2022-03-29_N-SRF-AS	*Daphnia magna*	Precipitate observed on the bottom of test vessel	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	3.1 (2.6-3.5) g/L KCl[1]	6.6 (6.0-7.2) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.3 (2.5-4.4) g/L KCl	6.5 (5.5-7.7) g/L NaCl
Reference toxicant CV	9.5%	5.7%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, April 4, 2022; [2] Test Date March 29, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation

Report By:
Emma Pedersen, BSc
Biologist

Reviewed By:
Courtney Bogstie, P. Biol.
Senior Biologist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Control/dilution water for antiscalant test	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L), Na_2SeO_4 (2 µg Se/L) and 5 mg/L antiscalant
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS ENVIRONMENTAL

Trout Bench Sheet

Method TRS Client TEC164 Reference 2122-1737-01 Chamber 2

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022/04/02	1400 *	CH/NA	1	MAF
1	2022/04/03	0750	KM	-	MAF
2	2022/04/04	1120	CC	-	ST
3	2022/04/05	0830	LC	-	ST
4	2022/04/06	~~1110~~ 0800	~~LC/CP~~ LC/CC/CH	~~1~~ 1	SL

Note: * time when the test was loaded with fish 0945 CH

Sample Information

Initial pH: 8.2
Initial EC (µS/cm): 1365
Salinity (ppt): 1

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L: yes/no

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	9.4	8.8			
Temp (°C) of 100%	15				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	8.1	8.2						
Day 4	~~8.0~~ 7.9	~~8.2~~ 8.1						
EC (uS/cm)								
Day 0	501	1316						
Day 4	~~572~~ 565	~~1485~~ 1504						
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	8.8	8.8						
Day 4	~~8.2~~ 8.2	~~8.8~~ 8.8						
Temperature (°C) (range: 14-16°C)								
Day 0	15	15						
Day 4	~~15~~ 16	~~15~~ 15						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10 ~~10~~	10 ~~10~~						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered [illegible]

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.4	0.4
2	3.9	0.6
3	3.4	0.4
4	3.6	0.5
5	3.8	0.4
6	2.8	0.2
7	3.7	0.5
8	3.5	0.4
9	3.3	0.4
10	3.7	0.6

Loading Density (g/L): 0.2 (must be ≤0.5 g/L)
Mean Length (cm): 3.5
Length Range (cm): 2.8-3.9
Mean Weight (g): 0.4 (Must be ≥0.3g)
Weight Range: (g): 0.2-0.6

Test Organism Information

Batch 20220309TR
Source Sam Livingston
Tank # 9
Days Held at 15± 2°C (must be ≥14 days) 24
Percent stock mortality (7 days prior to test, must be ≤2%) 0.62
Test Volume (L) 18

Comments:
96hr. ppt on bottom.

Reviewed By: W Date Reviewed: 2022/04/13

NAUTILUS ENVIRONMENTAL

Trout Bench Sheet

Method TRS Client TEC164 Reference 2122-1737-02 Chamber 2

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022/04/02	1405 *	CH/NA	1	MAE
1	20220403	0756	VTM	-	MAE
2	2022/04/04	1126	CC	-	
3	2022/04/05	0830	JC	-	
4	2022/04/06	1110	CC/EP	-	

NOTE *: time when the test was loaded with fish

Sample Information

Initial pH: 8.6
Initial EC (µS/cm): 1985
Salinity (ppt): 2

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L : **yes/no**

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	9.3	8.9			
Temp (°C) of 100%	15				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						

pH (units) (range: **5.5-8.5**)

Day 0	8.1	8.0						
Day 4	~~8.1~~ 8.0	~~8.2~~ 8.1						

EC (uS/cm)

Day 0	516	1899						
Day 4	~~596~~ 589	~~2070~~ 2080						

DO (mg/L) (**70-100% saturation at test temp.**)

Day 0	8.9	8.9						
Day 4	~~8.8~~ 8.8	~~8.8~~ 8.8						

Temperature (°C) (range: **14-16°C**)

Day 0	14	14						
Day 4	~~15~~ 15	~~15~~ 15						

Number Alive (In brackets number stressed)

Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10 10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.6	0.5
2	3.6	0.4
3	3.6	0.5
4	3.9	0.6
5	3.8	0.4
6	3.6	0.5
7	3.9	0.3
8	3.7	0.5
9	3.4	0.5
10	3.7	0.5

Loading Density (g/L): 0.3 (must be ≤0.5 g/L)
Mean Length (cm): 3.6
Length Range (cm): 3.2-3.9
Mean Weight (g): 0.5 (Must be ≥0.3g)
Weight Range: (g): 0.3-0.6

Test Organism Information

Batch 20220309TR
Source Sam Livingston
Tank # 9
Days Held at 15± 2°C (must be ≥14 days): 24
Percent stock mortality (7 days prior to test, must be ≤2%): 0.62
Test Volume (L): 18

Comments :
96hr. ppt on bottom.

Reviewed By: LO Date Reviewed: 2022/04/13

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS20 Client TEC164 Reference 2122-1737-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/04/ 02	1400	EP/MAF	2	JC
1	2022/04/ 03	0950	JCC	-	MAF
2	2022/04/ 04	0935	CC	2	SS

Sample Information

Initial pH: 8.2
Initial EC (µS/cm): 1365
Salinity (ppt): 1

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	8.3	8.2	8.2	8.2	8.2	8.2				
2	8.2	8.2	8.2	8.3	8.3	~~8.2~~ 8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	486	478	477	1416	1427	1429				
2	399	386	380	1123	1115	1120				

DO (mg/L) (**40-100% saturation at test temp.**)

0	8.1	8.1	8.1	7.9	7.9	7.9				
2	7.7	7.7	7.7	7.7	7.7	7.7				

Temperature (°C) (range: **18-22 °C**)

0	19	19	19	20	20	20				
2	21	21	21	21	21	21				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar D2 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) EP 8.7
Average number of young produced (≥15 young) 23
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0%
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 8.8
DO % of sample prior to aeration: 109
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20 min
Hardness (mg $CaCO_3$/L) of 100% : 316
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 168

Temperature (°C) of sample prior to aeration: 20
Is aeration required (<40% or >100%)? **Yes or No**
Filtered with 110um screen prior to testing **Yes or No**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Dilution Water
Pail label / preparation date 2:03/22
Hardness of dilution water (mg/L) 227

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Comments/Observations:
0 hr: hoppt.
48 hr: ppt on bottom of jar

Reviewed By: JC Date Reviewed: 2022/04/13

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS10 Client TEC164 Reference 2122-1737-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/04/02	1400	EP/MAF	2	SC
1	2022/04/03	0920	JCC	-	MAF
2	2022/04/04	1000	CC	2	ST

Sample Information

Initial pH:	8.2
Initial EC (µS/cm):	1365
Salinity (ppt):	1

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	8.3	8.2	8.2	8.2	8.2	8.2				
2	8.1	8.1	8.1	8.3	8.4	8.4				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	453	473	477	1473	1487	1488				
2	386	386	389	1176	1188	1185				

DO (mg/L) (**40-100% saturation at test temp.**)

0	8.1	8.1	8.1	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar CY Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)

Days to first brood (≤12 days) 8

Average number of young produced (≥15 young) 25

Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - 0%

(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 9.4 Temperature (°C) of sample prior to aeration: 12

DO % of sample prior to aeration: 100 Is aeration required (<40% or >100%)? **Yes or (No)**

Duration of aeration (37.5 +/- 12.5 mL/min/L) : — Filtered with 110um screen prior to testing **Yes or (No)**

Hardness (mg $CaCO_3$/L) of 100% : 316 Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or (No)**

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —

Alkalinity of 100% sample (mg $CaCO_3$/L): 168

Dilution Water

Pail label / preparation date 2:08/22

Hardness of dilution water (mg/L) 227

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

Comments/Observations:

0hr: nappt.

96hr: ppt on bottom of jar

Reviewed By: LS Date Reviewed: 2022/04/13

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS20 Client TEC164 Reference 2122-1737-02

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/04/02	1405	MMFIEP	2	E
1	2022/04/03	0950	JCC	-	MAF
2	2022/04/04	0930	CC	2	SS

Sample Information

Initial pH: 8.0
Initial EC (µS/cm): 1985
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	8.2	8.2	8.2	7.9	7.9	7.9				
2	8.3	8.2	8.2	8.1	8.1	8.1				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	474	478	478	1979	2150	2160				
2	386	383	381	1597	1605	1617				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.7	7.7	7.7				
2	7.7	7.7	7.7	7.7	7.7	7.7				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	21	21	21				
2	21	21	21	21	21	21				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar ES Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 17
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0%
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 8.6
DO % of sample prior to aeration: 108
Duration of aeration (37.5 +/- 12.5 mL/min/L): 20 min
Hardness (mg $CaCO_3$/L) of 100% : 1034
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 245
Temperature (°C) of sample prior to aeration: 21
Is aeration required (<40% or >100%)? (Yes) or No
Filtered with 110um screen prior to testing Yes or (No)
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)

Dilution Water
Pail label / preparation date 2:03/22
Hardness of dilution water (mg/L) 227

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Comments/Observations:
0 hr: no ppt.
48 hr: surficial ppt

Reviewed By: KO Date Reviewed: 2022/04/13

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS10 Client TEC164 Reference 2122-1737-02

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/04/02	1405	EP/MAF	2	SC
1	2022/04/03	0975	JCC	-	MAF
2	2022/04/04	1000	CC	2	

Sample Information

Initial pH: 8.0
Initial EC (µS/cm): 1985
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	8.2	8.2	8.2	7.9	7.9	7.9				
2	8.3	8.3	8.3	8.2	8.2	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	446	472	476	2160	2180	2190				
2	398	477	451	1644	1647	1662				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	~~20~~ 12 EP	~~20~~ 12 EP	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar C3 Jar(s) mortality 7 days prior to test (must be ≤25%) 0 1.

QA (previous month)

Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 25
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - 0%
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 9.4
DO % of sample prior to aeration: 100
Duration of aeration (37.5 +/- 12.5 mL/min/L) : —
Hardness (mg $CaCO_3$/L) of 100% : 1034
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 245

Temperature (°C) of sample prior to aeration: 12
Is aeration required (<40% or >100%)? **Yes or No**
Filtered with 110um screen prior to testing **Yes or No**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Dilution Water

Pail label / preparation date 2:03127
Hardness of dilution water (mg/L) 227

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

Comments/Observations:

0hr: no ppt
96hr: surficial ppt

Reviewed By: [illegible] Date Reviewed: 2022/04/13

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DASAS Client TEC164 Reference 2122-1737-03

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/04/02	1410	MAP/EP	2	EC
1	2022/04/03	0850	JCC	-	MAP
2	2022/04/04	0930	EC	2	ST

Sample Information

Initial pH:	8.2
Initial EC (µS/cm):	1985
Salinity (ppt):	2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	8.2	8.2	8.1	8.0	8.0	8.0				
2	8.3	8.3	8.3	8.4	8.4	8.4				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	499	482	480	2080	2140	2160				
2	394	383	381	1637	1634	1634				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.7	7.7	7.7				
2	7.7	7.7	7.7	7.7	7.7	7.7				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	21	21	21				
2	21	21	21	21	21	21				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar D1 Jar(s) mortality 7 days prior to test (must be ≤25%) 5%

QA (previous month)

Days to first brood (≤12 days) 7

Average number of young produced (≥15 young) 23

Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - (must be ≤10%) 0%

Sample

DO (mg/L) of sample prior to aeration: 8.6 Temperature (°C) of sample prior to aeration: 21

DO % of sample prior to aeration: 108 Is aeration required (<40% or >100%)? (Yes or No)

Duration of aeration (37.5 +/- 12.5 mL/min/L): 20 min Filtered with 110um screen prior to testing Yes or (No)

Hardness (mg $CaCO_3$/L) of 100% : 1034 Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —

Alkalinity of 100% sample (mg $CaCO_3$/L): 245

Dilution Water

Pail label / preparation date 2:03/27

Hardness of dilution water (mg/L) 227

Antiscalant

Final Concentration in Sample: 5mg/L

Volume of sample: 500mL Volume of antiscalant: 32.5µL

Comments/Observations:

0 hr: heppt.

48hr: no ppts

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Reviewed By: MO Date Reviewed: 20220411 13

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DASAS Client TEC164 Reference 2122-1737-04

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/04/02	1410	EP/MAF	2	EP
1	2022/04/03	0830	JCC	-	MAF
2	2022/04/04	0920	CC	2	SI

Sample Information

Initial pH: 8.2
Initial EC (µS/cm): 1365
Salinity (ppt): 1

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	8.2	8.2	8.2	8.2	8.2	8.2				
2	8.3	8.3	8.3	8.3	8.3	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	482	478	476	1424	1442	1434				
2	393	382	384	1125	1133	1130				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.9	7.9	7.9				
2	7.7	7.7	7.7	7.7	7.7	7.7				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	20	20	20				
2	21	21	21	21	21	21				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar C2 Jar(s) mortality 7 days prior to test (must be ≤25%) 5%

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 25
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0%

Sample
DO (mg/L) of sample prior to aeration: 8.8
DO % of sample prior to aeration: 109
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20min
Hardness (mg $CaCO_3$/L) of 100% : 716
Temperature (°C) of sample prior to aeration: 20
Is aeration required (<40% or >100%)? **Yes or No**
Filtered with 110um screen prior to testing **Yes or No**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 168

Dilution Water
Pail label / preparation date 2:03/27
Hardness of dilution water (mg/L) 227

Antiscalant
Final Concentration in Sample: 5mg/L
Volume of sample: 500mL Volume of antiscalant: 395uL

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Comments/Observations:
0 hr: happb.
48hr: ppt on bottom of jar

Reviewed By: LO Date Reviewed: 2022/04/13

APPENDIX C – Chain-of-custody form

Teck

COC ID: EVO NAUTILUS March 29 2022 | TURNAROUND TIME: | RUSH:

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name / Job#	Elkview Operations			Lab Name	Nautilus Environmental - BC			Report Format / Distribution		Excel	PDF	EDD
Project Manager	Group 1; Brett Mason			Lab Contact				Email 1:	teckcoal@equisonline.com			X
Email	Brett.Mason@teck.com			Email	jacklyn@nautilusenvironmental.ca			Email 2:	DL-EVO-SRF-LAB@teck.co	X	X	X
Address	RR1 HWY 3			Address	10823 27th Street SE			Email 3:	Cole.Macgregor@teck.com	X	X	X
								Email 4:				
City	Sparwood	Province	BC	City	Calgary	Province	AB	Email 5:				
								Email 6:				
								Email 7:				
								Email 8:				
								Email 9:				
Postal Code	V0B 2G0	Country	Canada	Postal Code	T2H 2K1	Country	Canada					
Phone Number	250-425-6179			Phone Number	T2Z 3V9			PO number	807270			

SAMPLE DETAILS

2022/03/30
09:30
Manitoulin
JC
8x20L carboys, 10x1L bottles
NoS/NpS
good condition

ANALYSIS REQUESTED — Filtered - F: Field, L: Lab, FL: Field & Lab, N: None

Sample ID 2122-1757	Sample Location (sys loc code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	FIL	PRESERV	ANALYSIS: 48hr Daphnia Magna Single Concentration Acute Toxicity 20C	48hr Daphnia Magna Single Concentration Acute Toxicity 10C	48hr Daphnia Magna Single Concentration Acute Toxicity Antiscalent	96hr Rainbow Trout Single Concentration Acute Toxicity (20 L Bladder)	96hr Rainbow Trout Single Concentration Acute Toxicity (20 L Bladder)	48hr Daphnia Magna Single Concentration Toxicity 15C						
EV_GT1_WS_2022-03-29_N-SRF -01	EV_GT1	WS		2022/03/29	10:15	G	8			2	2			4	8.9°C						
EV_BC1_WS_2022-03-29_N-SRF -02	EV_BC1	WS		2022/03/29	9:10	G	8			2	2			4	8.3°C						
EV_BC1_WS_2022-03-29_N-SRF-AS -03	EV_BC1	WS		2022/03/29	9:11	G	1					1			8.5°C						
EV_GT1_WS_2022-03-29_N-SRF-AS -04	EV_GT1	WS		2022/03/29	10:16	G	1					1			8.5°C						

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS

Field Temperatures

RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME
James Winter-Teck	March 29, 2022		
	1530		

SERVICE REQUEST (rush - subject to availability)

Regular (default)	X
Priority (2-3 business days) - 50% surcharge	
Emergency (1 Business Day) - 100% surcharge	
For Emergency <1 Day, ASAP or Weekend - Contact ALS	

Sampler's Name		Mobile #	
Sampler's Signature		Date/Time	March 29, 2022

END OF REPORT

Acute Toxicity Test Results

Samples collected April 4, 2022

Final Report

April 28, 2022

Submitted to: **Teck Coal Ltd.**
Sparwood, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates					
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation	*Daphnia magna* antiscalant test initiation
F2_BPO_WG_2022-04-04_N/ 2122-1779-01	4-Apr-22 at 0830h	5-Apr-22 at 1400h	6-Apr-22 at 1450h	5-Apr-22 at 1630h	5-Apr-22 at 1650h	-
F2_BPO_WG_2022-04-04_N-AS/ 2122-1779-02	4-Apr-22 at 0831h	5-Apr-22 at 1400h	-	-	-	6-Apr-22 at 1500h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
F2_BPO_WG_2022-04-04_N	11.0°C	1194	399
F2_BPO_WG_2022-04-04_N-AS	11.0°C	1194	399

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)
- *Daphnia magna* 48-h single concentration screening test (conducted with 20 mg/L antiscalant)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample			
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
F2_BPO_WG_2022-04-04_N	100	100	100	-
F2_BPO_WG_2022-04-04_N-AS	-	-	-	100

Sample ID	Percent Immobility in 100 (% v/v)		
	Daphnia magna 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
F2_BPO_WG_2022-04-04_N	0	0	-
F2_BPO_WG_2022-04-04_N-AS	-	-	0

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
F2_BPO_WG_2022-04-04_N	Rainbow trout	Precipitate observed on bottom and sides of test tank	None
	Daphnia magna	Surficial precipitate observed in the 20 degree test. No precipitate in the 10 degree test	None
F2_BPO_WG_2022-04-04_N-AS	*Daphnia magna*	None	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	3.1 (2.6-3.5) g/L KCl[1]	6.2 (5.9-6.5) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.3 (2.5-4.4) g/L KCl	6.5 (5.5-7.7) g/L NaCl
Reference toxicant CV	9.5%	5.7%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, April 4, 2022; [2] Test Date April 11, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation



Report By:
Courtney Hewitt, BSc
Biologist



Reviewed By:
Courtney Bogstie, P. Biol.
Senior Biologist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Control/dilution water for antiscalant test	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L), Na_2SeO_4 (2 µg Se/L) and 20 mg/L antiscalant
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS ENVIRONMENTAL

Trout Bench Sheet

Method TRS Client TEC164 Reference 2122-1779-01 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022/04/06	1450 *	EP / CH	1	JC
1	2022/04/07	0816	JC	-	
2	2022/04/08	0840	CH	-	mnf
3	2022/04/09	0915	NA	-	mnf
4	2022/04/10	1040	kmm/CC/DM	1	JC

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 8.0
Initial EC (µS/cm): 2100
Salinity (ppt): 2

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L: yes/no

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	8.8	8.8			
Temp (°C) of 100%	15				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	7.5	7.7						
Day 4	8.2	8.3						
EC (uS/cm)								
Day 0	566	2120						
Day 4	551	1987						
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	8.9	8.8						
Day 4	8.8	8.8						
Temperature (°C) (range: 14-16°C)								
Day 0	14	15						
Day 4	15	15						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.6	0.5
2	3.4	0.4
3	3.4	0.4
4	3.5	0.4
5	3.3	0.4
6	3.4	0.4
7	3.2	0.4
8	3.3	0.4
9	3.5	0.4
10	3.4	0.4

Loading Density (g/L): 8.2 (must be ≤0.5 g/L)
Mean Length (cm): 3.4
Length Range (cm): 3.2-3.6
Mean Weight (g): 0.4 (Must be ≥0.3g)
Weight Range: (g): 0.4-0.5

Test Organism Information

Batch 20220307TR
Source Sam Livingston
Tank # 4
Days Held at 15± 2°C 28 (must be ≥14 days)
Percent stock mortality 0.49 (7 days prior to test, must be ≤2%)
Test Volume (L) 18

Comments: 96hr: ppt on both cm and sides of tank

Reviewed By: SS Date Reviewed: 20221104

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS20 Client TEC164 Reference 2122-1779-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/04/05	1650	CC/KM	2	MAF
1	2022/04/06	0820	CM	-	MAF
2	2022/04/07	0950	CC	2	SL

Sample Information

Initial pH: 8.0
Initial EC (µS/cm): 2100
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	8.2	8.2	8.2	7.9	7.9	8.0				
2	8.3	8.3	8.3	8.4	8.4	8.4				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	538	545	547	2250	2230	2250				
2	546	546	543	2160	2170	2190				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.7	7.7	7.7	7.6	7.6	7.6				
2	7.7	7.7	7.7	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	21	21	21	22	22	22				
2	21	21	21	20	20	20				

Number Alive (l, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar C4 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)

Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 32
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - 0%
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 9.2
DO % of sample prior to aeration: 121 %
Duration of aeration (37.5 +/- 12.5 mL/min/L): 20min.
Hardness (mg $CaCO_3$/L) of 100%: 1194
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 399

Temperature (°C) of sample prior to aeration: 22
Is aeration required (<40% or >100%)? **Yes or No**
Filtered with 110um screen prior to testing **Yes or No**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Dilution Water

Pail label / preparation date 1:04/01
Hardness of dilution water (mg/L) 231

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Comments/Observations: 0hrs: No ppt
48hrs: Surficial ppt

Reviewed By: SS Date Reviewed: 2022/04/14

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS10 Client TEC164 Reference 2122-1779-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/04/05	1630	KM/CC	2	maf
1	2022/04/06	0830	CH	-	maf
2	2022/04/07	1035	CC	2	-

Sample Information

Initial pH: 8.0
Initial EC (µS/cm): 2100
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	8.3	8.3	8.3	7.7	7.7	7.7				
2	8.3	8.3	8.3	8.4	8.4	8.4				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	541	547	551	2210	2280	2290				
2	554	553	562	2220	2210	2240				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar C4 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)

Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 32
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - 0%
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 9.4
DO % of sample prior to aeration: 100%
Duration of aeration (37.5 +/- 12.5 mL/min/L) : -
Hardness (mg $CaCO_3$/L) of 100% : 1194
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) -
Alkalinity of 100% sample (mg $CaCO_3$/L): 399

Temperature (°C) of sample prior to aeration: 12
Is aeration required (<40% or >100%)? **Yes or (No)**
Filtered with 110um screen prior to testing **Yes or (No)**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or (No)**

Dilution Water

Pail label / preparation date 1:04/01
Hardness of dilution water (mg/L) 231

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

Comments/Observations: 0hrs: No ppt
48hrs: No ppt

Reviewed By: SS Date Reviewed: 2022/04/14

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS(20) Client TEC164 Reference 2122-1779-02

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/04/06	1500	CC/etm	2	SC
1	2022/04/07	0750	EP	-	
2	2022/04/08	0840	MF	2	mar

Sample Information

Initial pH: 8.0
Initial EC (µS/cm): 2100
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

day

pH (units) (range: 6.0-8.5)

day										
0	8.2	8.2	8.2	8.1	8.1	8.1				
2	8.2	8.2	8.3	8.5	8.5	8.5				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	547	535	539	2240	2240	2260				
2	550	542	545	2150	2190	2190				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.7	7.7	7.7				
2	7.7	7.7	7.7	7.7	7.7	7.7				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	21	21	21				
2	21	21	21	21	21	21				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar D1 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 19
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0

Sample
DO (mg/L) of sample prior to aeration: 7.7
DO % of sample prior to aeration: 100%
Duration of aeration (37.5 +/- 12.5 mL/min/L) : —
Hardness (mg $CaCO_3$/L) of 100% : 1194
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 399

Temperature (°C) of sample prior to aeration: 21
Is aeration required (<40% or >100%)? **Yes or (No)**
Filtered with 110um screen prior to testing **Yes or (No)**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or (No)**

Dilution Water
Pail label / preparation date 1:04/01
Hardness of dilution water (mg/L) 231

Antiscalant
Final Concentration in Sample: 20mg/L
Volume of sample: 500mL Volume of antiscalant: 150 µL

Comments/Observations:
0HRS: Neppt
48HRS: NO Apt

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Reviewed By: SS Date Reviewed: 2022/04/14

APPENDIX C – Chain-of-custody form

Teck

COC ID: F2 NAUTILUS April 4 2022 | **TURNAROUND TIME:** | **RUSH:**

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO			
Facility Name / Job#	F2 SRF			Lab Name	Nautilus Environmental - BC			Report Format / Distribution		Excel	PDF	EDD
Project Manager	BRETT MASON			Lab Contact				Email 1:	Cole.Macgregor@teck.com	X	X	X
Email	BRETT.MASON@TECK.COM			Email	jacklyn@nautilusenvironmental.ca			Email 1:	teckcoal@equisonline.com			X
Address	RR1 HWY 3			Address	10823 27th Street SE			Email 2:	DL-EVO-SRF-LAB@teck.com	X	X	X
								Email 3:				
City	Sparwood	Province	BC	City	Calgary	Province	AB	Email 4:				
								Email 5:				
								Email 6:				
								Email 7:				
								Email 8:				
								Email 10:				
								Email 11:				
								Email 12:				
								Email 13:				
Postal Code	V0B 2G0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada					
Phone Number	250-425-6179			Phone Number	403-253-7121			PO number	822027			

SAMPLE DETAILS | **ANALYSIS REQUESTED** | Filtered - F: Field, L: Lab, FL: Field & Lab, N: None

2022/04/04
14:00
Manitoulin
SC
4x20L carboys, 5x1L bottles
NoS/NoI
~~Good Condition~~
1x20L leaked

Sample ID 2122-1779	Sample Location (sys_loc_code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	Filt.	48hr Daphnia Magna Single Concentration Acute Toxicity 20C	48hr Daphnia Magna Single Concentration Acute Toxicity 10C	48hr Daphnia Magna Single Concentration Acute Toxicity Anitscalent	96hr Rainbow Trout Single Concentration Acute Toxicity (20L Bladders)	48hr Daphnia Magna Single Concentration Toxicity 15C	
								ANALYSIS						
F2_BPO_WG_2022-04-04_N -01	F2_BPO	WG		2022/04/04	8:30	G	8		2	2		4		11.0°C
F2_BPO_WG_2022-04-04_N-AS -02	F2_BPO	WG		2022/04/04	8:31	G	1				1			11.0°C

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME
		April 4, 2022		

SERVICE REQUEST (rush - subject to availability)	
Regular (default)	X
Priority (2-3 business days) - 50% surcharge	
Emergency (1 Business Day) - 100% surcharge	
For Emergency <1 Day, ASAP or Weekend - Contact ALS	

Sampler's Name	Ariana Lewis	Mobile #	
Sampler's Signature		Date/Time	April 4, 2022

END OF REPORT

Acute Toxicity Test Results

Samples collected April 11, 2022

Final Report

May 6, 2022

Submitted to: **Teck Coal Ltd.**
Sparwood, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates					
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation	*Daphnia magna* antiscalant test initiation
EV_EC1_WS_2022-04-11_N-SRF/ 2122-1866-01	11-Apr-22 at 1000h	12-Apr-22 at 1000h	15-Apr-22 at 1430h	14-Apr-22 at 1430h	14-Apr-22 at 1430h	-
EV_EC1_WS_2022-04-11_N-SRF-AS/ 2122-1866-02	11-Apr-22 at 1001h	12-Apr-22 at 1000h	-	-	-	14-Apr-22 at 1440h
EV_ECOUT_WS_2022-04-11_N-SRF/ 2122-1866-03	11-Apr-22 at 1200h	12-Apr-22 at 1000h	15-Apr-22 at 1435h	14-Apr-22 at 1440h	14-Apr-22 at 1435h	-
EV_ECOUT_WS_2022-04-11_N-SRF_AS/ 2122-1866-04	11-Apr-22 at 1201h	12-Apr-22 at 1000h	-	-	-	14-Apr-22 at 1445h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
EV_EC1_WS_2022-04-11_N-SRF	8.1°C	949	307
EV_EC1_WS_2022-04-11_N-SRF-AS	8.1°C	949	307
EV_ECOUT_WS_2022-04-11_N-SRF	11.4°C	1029	353
EV_ECOUT_WS_2022-04-11_N-SRF_AS	11.4°C	1029	353

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)
- *Daphnia magna* 48-h single concentration screening test (conducted with 5 mg/L antiscalant)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample			
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
EV_EC1_WS_2022-04-11_N-SRF	100	100	100	-
EV_EC1_WS_2022-04-11_N-SRF-AS	-	-	-	100
EV_ECOUT_WS_2022-04-11_N-SRF	100	100	93	-
EV_ECOUT_WS_2022-04-11_N-SRF_AS	-	-	-	100

Sample ID	Percent Immobility in 100 (% v/v)		
	Daphnia magna 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
EV_EC1_WS_2022-04-11_N-SRF	0	7	-
EV_EC1_WS_2022-04-11_N-SRF-AS	-	-	0
EV_ECOUT_WS_2022-04-11_N-SRF	0	40	-
EV_ECOUT_WS_2022-04-11_N-SRF_AS	-	-	0

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
EV_EC1_WS_2022-04-11_N-SRF	Rainbow trout	Precipitate observed on the test vessel	None
	Daphnia magna	Surficial precipitate observed in the 10 and 20-degree tests; precipitate observed on the 20-degree test vessel	None
EV_EC1_WS_2022-04-11_N-SRF-AS	*Daphnia magna*	None	None
EV_ECOUT_WS_2022-04-11_N-SRF	Rainbow trout	Precipitate observed on the test vessel	None
	Daphnia magna	Surficial precipitate observed in the 10 and 20-degree tests; precipitate observed on the 20-degree test vessel	Precipitate observed on carapace in the 20-degree test
EV_ECOUT_WS_2022-04-11_N-SRF_AS	*Daphnia magna*	Surficial precipitate observed	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	3.9 (3.5-4.4) g/L KCl[1]	6.2 (5.9-6.5) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.3 (2.5-4.5) g/L KCl	6.5 (5.5-7.7) g/L NaCl
Reference toxicant CV	9.7%	5.7%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	See Below
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, April 11, 2022; [2] Test Date April 11, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation

Replicate B of the 100% sample in the 20-degree *Daphnia magna* test for sample EV_EC1_WS_20022-04-11_N-SRF was misloaded with 9 organisms at test initiation.





Report By:
Emma Pedersen, BSc
Biologist

Reviewed By:
Leila Oosterbroek, P Biol
Environmental Scientist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Control/dilution water for antiscalant test	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L), Na_2SeO_4 (2 µg Se/L) and 5 mg/L antiscalant
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC 164 Reference 2122-1866-01 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022-04-15	1430 *	CH / EP	1	JCC
1	2022-04-16	0900	NA	-	AN
2	2022-04-17	0905	DM	-	JCC
3	2022-04-18	0810	CC	-	AN
4	2022-04-19	1155	JCC/AN/EP	1	AN

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 8.3
Initial EC (µS/cm): 1943
Salinity (ppt): 3

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L : **yes/no**

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	8.6	8.6			
Temp (°C) of 100%	16				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	7.5	8.0						
Day 4	8.2	8.2						
EC (uS/cm)								
Day 0	1931	1893						
Day 4	442	1599						
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	8.6	8.6						
Day 4	8.8	8.8						
Temperature (°C) (range: 14-16°C)								
Day 0	16	16						
Day 4	15	15						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.2	0.3
2	3.2	0.4
3	3.2	0.3
4	3.0	0.3
5	3.4	0.4
6	3.6	0.5
7	3.0	0.3
8	3.3	0.4
9	3.2	0.3
10	3.2	0.3

Loading Density (g/L): 0.2 (must be ≤0.5 g/L)
Mean Length (cm): 3.2
Length Range (cm): 3.0-3.6
Mean Weight (g): 0.4 (Must be ≥0.3g)
Weight Range: (g): 0.3-0.5

Test Organism Information

Batch 20220224TR
Source Troutlodge
Tank # 10
Days Held at 15± 2°C 23 (must be ≥14 days)
Percent stock mortality 0.07 (7 days prior to test, must be ≤2%)
Test Volume (L) 18

Comments : 96 hr: ppt on bottom of tank

Reviewed By: SS Date Reviewed: 2022105102

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC 164 Reference 2122-1866-03 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022-04-15	1435*	CH / EP	1	JCC
1	2022-04-16	0900	NA	-	DW
2	2022-04-17	0905	DM	-	JCC
3	2022-04-18	0810	CL	-	DW
4	2022-04-19	1200	JCC/KOAEP	1	DW

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 8.0
Initial EC (µS/cm): 2060
Salinity (ppt): 3

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L : **yes/no**

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	8.6	8.6			
Temp (°C) of 100%	16				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	7.6	7.8						
Day 4	8.3	8.3						
EC (uS/cm)								
Day 0	493	2030						
Day 4	444	1639						
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	8.6	8.6						
Day 4	8.9	8.9						
Temperature (°C) (range: 14-16°C)								
Day 0	16	16						
Day 4	15	15						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.4	0.4
2	3.0	0.3
3	3.1	0.3
4	3.1	0.3
5	3.2	0.4
6	3.0	0.3
7	3.3	0.4
8	3.2	0.3
9	3.3	0.3
10	3.0	0.3

Loading Density (g/L): 0.2 (must be ≤0.5 g/L)
Mean Length (cm): 3.2
Length Range (cm): 3.0-3.4
Mean Weight (g): 0.3 (Must be ≥0.3g)
Weight Range: (g): 0.3-0.4

Test Organism Information

Batch 20220224TR
Source Troutlodge
Tank # 10
Days Held at 15± 2°C 23 (must be ≥14 days)
Percent stock mortality 0.07 (7 days prior to test, must be ≤2%)
Test Volume (L) 18

Comments : 96 hr:
ppt on bottom of tank

Reviewed By: SS Date Reviewed: 2022105102

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC164 Reference 2122-1866-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/04/14	1430	JICH	2	MAP
1	2022/04/15	0945	MAP	-	JC
2	2022/04/16	0835	EP	3 EP	

Sample Information

Initial pH: 8.3
Initial EC (µS/cm): 1943
Salinity (ppt): 3

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

day										
pH (units) (range: 6.0-8.5)										
0	8.2	8.2	8.2	8.3	8.3	8.3				
2	8.3	8.3	8.3	8.1	8.1	8.1				
EC (uS/cm)										
0	464	472	473	1735	1775	1779				
2	490	508	489	1751	1831	1821				
DO (mg/L) (**40-100% saturation at test temp.**)										
0	7.9	7.9	7.9	7.9	7.9	7.9				
2	7.9	7.9	7.9	7.9	7.9	7.9				
Temperature (°C) (range: **18-22 °C**)										
0	20	20	20	20	20	20				
2	20	20	20	20	20	20				
Number Alive (I, immobile)										
0	10	10	10	10	10	10				
1	10	10	10	10	9	10				
2	10	10	10	10 (I)	9 (I)	10				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar C3 Jar(s) mortality 7 days prior to test (must be ≤25%) 0

QA (previous month)
Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 31
Were test treatments randomized on test tray? (Yes) No

Control Validity Criteria
Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 9.1
DO % of sample prior to aeration: 112
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20min
Hardness (mg $CaCO_3$/L) of 100% : 949
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 307

Temperature (°C) of sample prior to aeration: 20
Is aeration required (<40% or >100%)? **Yes or No**
Filtered with 110um screen prior to testing **Yes or No**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Dilution Water
Pail label / preparation date DI:2022/04/11
Hardness of dilution water (mg/L) 209

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Comments/Observations:
0hr: NO PPT
48hr: Surficial ppt, ppt on bottom of jar

Reviewed By: SS Date Reviewed: 2022/05/02

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC164 Reference 2122-1866-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/04/14	1430	SCH	2	MAF
1	2022/04/15	0745	MAF	-	
2	2022/04/16	0815	EP	3	

Sample Information

Initial pH: 8.1
Initial EC (µS/cm): 1943
Salinity (ppt): 1

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	8.2	8.2	8.2	8.2	8.2	8.2				
2	8.4	8.4	8.4	8.3	8.3	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	479	474	CH 475	1773	1799	1805				
2	518	517	532	1869	1916	1936				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar C21C3 Jar(s) mortality 7 days prior to test (must be ≤25%) 0

QA (previous month)
Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 31
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 10.3
DO % of sample prior to aeration: 108
Duration of aeration (37.5 +/- 12.5 mL/min/L): 20min
Hardness (mg $CaCO_3$/L) of 100% : 949
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 307

Temperature (°C) of sample prior to aeration: 12
Is aeration required (<40% or >100%)? Yes or No
Filtered with 110um screen prior to testing Yes or No
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or No

Dilution Water
Pail label / preparation date DI:2022/04/11
Hardness of dilution water (mg/L) 209

DO Levels (40-100% saturation) - corrected for altitude -
4.1 to 10.3 mg/L at 8°C
4.0 to 10.0 mg/L at 9°C
3.9 to 9.8 mg/L at 10°C
3.8 to 9.6 mg/L at 11°C
3.7 to 9.4 mg/L at 12°C

Comments/Observations:
0hr: NO PPT
48hr: Slight surficial ppt

Reviewed By: SS Date Reviewed: 2022/05/02

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS Client TEC164 Reference 2122-1866-02

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/04/14	1440	SICH		MAP
1	2022/04/15	0745	MAP	-	SC
2	2022/04/16	0850	EP	3	W

Sample Information

Initial pH: 8.3
Initial EC (µS/cm): 1943
Salinity (ppt): 1

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	8.2	8.2	8.2	8.2	8.2	8.2				
2	8.3	8.3	8.2	8.3	8.4	8.4				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	475	475	476	1729	1780	1787				
2	498	512	513	1815	1874	1892				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.9	7.9	7.9				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	20	20	20				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar DA1 Jar(s) mortality 7 days prior to test (must be ≤25%) 0

QA (previous month)
Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 28
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0

Sample
DO (mg/L) of sample prior to aeration: 9.1
DO % of sample prior to aeration: 113
Duration of aeration (37.5 +/- 12.5 mL/min/L): 20min
Hardness (mg $CaCO_3$/L) of 100% : 949
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 207

Temperature (°C) of sample prior to aeration: 20
Is aeration required (<40% or >100%)? Yes or No
Filtered with 110um screen prior to testing Yes or No
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or No

Dilution Water
Pail label / preparation date DI:2022/04/11
Hardness of dilution water (mg/L) 209

Antiscalant
Final Concentration in Sample: 5mg/L
Volume of sample: 500mL Volume of antiscalant: 39.5mL

Comments/Observations:
0hr: NO PPT
48hr: no ppt

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Reviewed By: SS Date Reviewed: 2022/05/02

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC164 Reference 2122-1866-03

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/04/14	1435	SC/CH	2	MAF
1	2022/04/15	0945	MAF		SC
2	2022/04/16	0900	EP	3	SC

Sample Information

Initial pH: 8.0
Initial EC (µS/cm): 2060
Salinity (ppt): 1

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	8.3	8.2	8.2	7.8	7.8	7.8				
2	8.3	8.2	8.2	7.9	7.9	7.9				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	470	474	475	1895	1915	1919				
2	485	532	513	1862	2050	1957				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.9	7.9	7.9				
2	7.7	7.7	7.7	7.7	7.7	7.7				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	20	20	20				
2	21	21	21	21	21	21				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10(1I)	10(3I)	10(1I)				
2	10	10	10	10(2I)	9(5I)	9(3I)				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar CA
Jar(s) mortality 7 days prior to test (must be ≤25%) 0

QA (previous month)
Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 31
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 9.3
DO % of sample prior to aeration: 114
Duration of aeration (37.5 +/- 12.5 mL/min/L): 20min
Hardness (mg $CaCO_3$/L) of 100% : 1029
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 357

Temperature (°C) of sample prior to aeration: 19
Is aeration required (<40% or >100%)? Yes or No
Filtered with 110um screen prior to testing Yes or No
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or No

Dilution Water
Pail label / preparation date DI:2022/04/11
Hardness of dilution water (mg/L) 209

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Comments/Observations:
0hr: NO PPT
48hr: Surficial ppt, ppt on bottom of jar, ppt on carapace

Reviewed By: SS Date Reviewed: 2022105102

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC164 Reference 2122-1866-03

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/04/14	1440	SICH	2	MAF
1	2022/04/15	0745	MAF	-	SC
2	2022/04/16	0812	EP	3	DW

Sample Information

Initial pH: 8.0
Initial EC (µS/cm): 2040
Salinity (ppt): 3

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	8.2	8.2	8.2	7.8	7.9	7.9				
2	8.4	8.4	8.4	8.1	8.1	8.1				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	468	472	475	1889	1931	1940				
2	502	511	515	1913	1987	1992				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar DA — Jar(s) mortality 7 days prior to test (must be ≤25%) 0

QA (previous month)
Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 28
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 9.9 — Temperature (°C) of sample prior to aeration: 10.2
DO % of sample prior to aeration: 103 — Is aeration required (<40% or >100%)? **Yes or No**
Duration of aeration (37.5 +/- 12.5 mL/min/L): 20min — Filtered with 110um screen prior to testing **Yes or No**
Hardness (mg $CaCO_3$/L) of 100% : 1029 — Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 357

Dilution Water
Pail label / preparation date DI: 2022/04/11
Hardness of dilution water (mg/L) 209

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

Comments/Observations:
0hr: NO PPT
48hr: Surficial ppt

Reviewed By: SS Date Reviewed: 2022/05/02

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS Client TEC164 Reference 2122-1866-04

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/04/14	1445	SICH	2	MAF
1	2022/04/15	0745	MAF	-	JC
2	2022/04/16	0830	EP	3	AN

Sample Information

Initial pH: 8.0
Initial EC (µS/cm): 2060
Salinity (ppt): 1

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	8.2	8.2	8.2	8.1	8.1	8.1				
2	8.3	8.3	8.3	8.4	8.4	8.4				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	466	476	479	1844	1897	1907				
2	487	509	511	1917	2030	1990				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.9	7.9	7.9				
2	7.9	7.9	7.9	7.4	7.4	7.4				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	20	20	20				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar D4 Jar(s) mortality 7 days prior to test (must be ≤25%) 0

QA (previous month)
Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 28
Were test treatments randomized on test tray? (Yes) No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0

Sample
DO (mg/L) of sample prior to aeration: 8.8
DO % of sample prior to aeration: 109
Duration of aeration (37.5 +/- 12.5 mL/min/L): 20min
Hardness (mg $CaCO_3$/L) of 100% : 1029
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 357

Temperature (°C) of sample prior to aeration: 19
Is aeration required (<40% or >100%)? Yes or No
Filtered with 110um screen prior to testing Yes or No
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or No

Dilution Water
Pail label / preparation date DL:2022/04/11
Hardness of dilution water (mg/L) 209

Antiscalant
Final Concentration in Sample: 5mg/L
Volume of sample: 800mL Volume of antiscalant: 39.5mL

Comments/Observations:
0hr: NO PPT
48hr: Surficial ppt

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C 3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C 3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C

Reviewed By: SS Date Reviewed: 2022/05/02

APPENDIX C – Chain-of-custody form

Teck

COC ID: EVO NAUTILUS April 11 2022 | TURNAROUND TIME: | RUSH:

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO			
Facility Name / Job#	Elkview Operations			Lab Name	Nautilus Environmental - BC			Report Format / Distribution	Excel	PDF	EDD
Project Manager	Group 1; Brett Mason			Lab Contact				Email 1: [redacted]	X	X	X
Email	Brett.Mason@teck.com			Email	jacklyn@nautilusenvironmental.ca			Email 2: teckcoal@equisonline.com			X
Address	RR1 HWY 3			Address	10823 27th Street SE			Email 3: DL-EVO-SRF-LAB@teck.com	X	X	X
								Email 4:			
City	Sparwood	Province	BC	City	Calgary	Province	AB	Email 5:			
								Email 6:			
								Email 7:			
								Email 8:			
								Email 9:			
								Email 10:			
								Email 11:			
								Email 12:			
								Email 13:			
Postal Code	V0B 2G0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada				
Phone Number	250-425-6179			Phone Number	403-253-7121			PO number	00822027		

SAMPLE DETAILS

2022/04/12
10:09
Manitoulin
SC
8x10L carboys, 4x20L carboys, 10x1L bottles
NOS/NGI
Good Condition

ANALYSIS REQUESTED

Filtered - F: Field, L: Lab, FL: Field & Lab, N: None

Sample ID 2122-1866-01	Sample Location (sys_loc_code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	FIL	PRESERV.	ANALYSIS: 48hr Daphnia Magna Single Concentration Acute Toxicity 20C	48hr Daphnia Magna Single Concentration Acute Toxicity 10C	48hr Daphnia Magna Single Concentration Acute Toxicity Anitscalent	96hr Rainbow Trout Single Concentration Acute Toxicity (20 L Bladder)	96hr Rainbow Trout Single Concentration Acute Toxicity (10 L Bladder)	48hr Daphnia Magna Single Concentration Toxicity 15C
EV_EC1_WS_2022-04-11_N-SRF -01	EV_EC1	WS		2022/04/11	10:00	G	12			2	2			8	8.1°C
EV_EC1_WS_2022-04-11_N-SRF-AS -02	EV_EC1	WS		2022/04/11	10:01	G	1					1			8.1°C
EV_ECOUT_WS_2022-04-11_N-SRF -03	EV_ECOUT	WS		2022/04/11	12:00	G	8			2	2		4		11.4°C
EV_ECOUT_WS_2022-04-11_N-SRF-AS -04	EV_ECOUT	WS		2022/04/11	12:01	G	1					1			11.4°C

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME
Field Temperatures ECOUT:		April 11, 2022		

SERVICE REQUEST (rush - subject to availability)

Regular (default)	X
Priority (2-3 business days) - 50% surcharge	
Emergency (1 Business Day) - 100% surcharge	
For Emergency <1 Day, ASAP or Weekend - Contact ALS	

Sampler's Name	Ariana Lewis	Mobile #	
Sampler's Signature		Date/Time	April 11, 2022

END OF REPORT

Acute Toxicity Test Results

Samples collected April 11, 2022

Final Report

May 6, 2022

Submitted to: **Teck Coal Ltd.**
Sparwood, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates					
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation	*Daphnia magna* antiscalant test initiation
F2_BPO_WG_2022-04-11_N/ 2122-1867-01	11-Apr-22 at 0750h	12-Apr-22 at 1000h	15-Apr-22 at 1415h	14-Apr-22 at 1540h	14-Apr-22 at 1540h	-
F2_BPO_WG_2022-04-11_N-AS/ 2122-1867-02	11-Apr-22 at 0751h	12-Apr-22 at 1000h	-	-	-	14-Apr-22 at 1545h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
F2_BPO_WG_2022-04-11_N	6.6°C	1181	411
F2_BPO_WG_2022-04-11_N-AS	6.6°C	1181	411

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)
- *Daphnia magna* 48-h single concentration screening test (conducted with 20 mg/L antiscalant)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample			
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
F2_BPO_WG_2022-04-11_N	100	100	100	-
F2_BPO_WG_2022-04-11_N-AS	-	-	-	100

Sample ID	Percent Immobility in 100 (% v/v)		
	Daphnia magna 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
F2_BPO_WG_2022-04-11_N	3	0	-
F2_BPO_WG_2022-04-11_N-AS	-	-	0

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
F2_BPO_WG_2022-04-11_N	Rainbow trout	Precipitate observed on test tank	None
	Daphnia magna	Surficial precipitate observed in 20 and 10-degree tests	Precipitate observed on carapace in 20-degree test
F2_BPO_WG_2022-04-11_N-AS	*Daphnia magna*	None	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	3.9 (3.5-4.4) g/L KCl[1]	6.2 (5.9-6.5) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.3 (2.5-4.5) g/L KCl	6.5 (5.5-7.7) g/L NaCl
Reference toxicant CV	9.7%	5.7%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, April 11, 2022; [2] Test Date April 11, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation



Report By:
Courtney Hewitt, BSc
Biologist



Reviewed By:
Leila Oosterbroek, P Biol
Environmental Scientist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Control/dilution water for antiscalant test	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L), Na_2SeO_4 (2 µg Se/L) and 20 mg/L antiscalant
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC 164 Reference 2122-1867-01 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022-04-15	1415 *	CH / EP	1	JCC
1	2022-04-16	0900	NA	-	NA
2	2022-04-17	0905	DM	-	JCC
3	2022-04-18	0800	CC	-	MN
4	2022-04-19	1108	SCC/KO/EP	1	CW

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 8.2
Initial EC (µS/cm): 2030
Salinity (ppt): 13

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L : **yes/no**

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	8.6	8.8			
Temp (°C) of 100%	16				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: **5.5-8.5**)								
Day 0	7.4	7.9						
Day 4	8.3	8.7						
EC (uS/cm)								
Day 0	473	2000						
Day 4	430	1504						
DO (mg/L) (**70-100% saturation at test temp.**)								
Day 0	8.9	8.8						
Day 4	8.6	8.6						
Temperature (°C) (range: **14-16°C**)								
Day 0	14	15						
Day 4	16	16						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.2	0.3
2	3.2	0.3
3	3.2	0.3
4	2.9	0.2
5	3.6	0.4
6	3.5	0.4
7	3.4	0.4
8	3.0	0.2
9	3.3	0.3
10	3.1	0.3

Loading Density (g/L): 0.2 (must be ≤0.5 g/L)
Mean Length (cm): 3.2
Length Range (cm): 2.9-3.6
Mean Weight (g): 0.3 (Must be ≥0.3g)
Weight Range: (g): 0.2-0.4

Test Organism Information

Batch 20220224TR
Source Troutlodge
Tank # 10
Days Held at 15± 2°C 23 (must be ≥14 days)
Percent stock mortality 0.07 (7 days prior to test, must be ≤2%)
Test Volume (L) 18

Comments : 96 hr:
ppt on bottom and sides of tank

Reviewed By: MG Date Reviewed: 2022/04/28

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC164 Reference 2122-1867-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/04/14	1540	TC/MMF	2	EP
1	2022/04/15	0735	MMF	-	SC
2	2022/04/16	0915	EP	3	AW

Sample Information

Initial pH: 8.2
Initial EC (µS/cm): 2030
Salinity (ppt): 3

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	8.2	8.2	8.2	8.1	8.1	8.1				
2	8.3	8.3	8.3	8.3	8.3	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	486	480	476	1849	1884	1890				
2	563	529	515	1833	1942	2010				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.9	7.9	7.9				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	20	20	20				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar E2 Jar(s) mortality 7 days prior to test (must be ≤25%) 0

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 26
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 8.8
DO % of sample prior to aeration: 110
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20min
Hardness (mg $CaCO_3$/L) of 100% : 1181
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) -
Alkalinity of 100% sample (mg $CaCO_3$/L): 411

Temperature (°C) of sample prior to aeration: 20
Is aeration required (<40% or >100%)? **Yes or No**
Filtered with 110um screen prior to testing **Yes or No**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Dilution Water
Pail label / preparation date 1:04/11
Hardness of dilution water (mg/L) 209

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Comments/Observations:
0hr: ncppt.
48hr: ppt on carapace, surficial ppt

Reviewed By: ML Date Reviewed: 2022/04/28

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC164 Reference 2122-1867-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/04/14	1540	mm/JC	2	FP
1	2022/04/15	1540	MAF	-	JC
2	2022/04/16	0810	FP	3	DW

Sample Information

Initial pH: 8.2
Initial EC (µS/cm): 2030
Salinity (ppt): 3

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

day											
	pH (units) (range: 6.0-8.5)										
0	8.2	8.2	8.2	8.0	8.0	8.0					
2	8.4	8.4	8.4	8.5	8.5	8.5					
	The pH of the sample was not adjusted prior to test setting, unless noted in the comments below										
	EC (uS/cm)										
0	475	474	474	1858	1911	1910					
2	517	536	525	1926	2050	2020					
	DO (mg/L) (**40-100% saturation at test temp.**)										
0	9.4	9.4	9.4	9.4	9.4	9.4					
2	9.4	9.4	9.4	9.4	9.4	9.4					
	Temperature (°C) (range: **8-12 °C**)										
0	12	12	12	12	12	12					
2	12	12	12	12	12	12					
	Number Alive (I, immobile)										
0	10	10	10	10	10	10					
1	10	10	10	10	10	10					
2	10	10	10	10 (1I)	10	10					

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar E1 Jar(s) mortality 7 days prior to test (must be ≤25%) 11

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 26
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: ~~8.10.2~~ Temperature (°C) of sample prior to aeration: 12
DO % of sample prior to aeration: 110 Is aeration required (<40% or >100%)? **Yes or No**
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20 min Filtered with 110um screen prior to testing **Yes or No**
Hardness (mg $CaCO_3$/L) of 100% : 1181 Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 411

Dilution Water
Pail label / preparation date 1:04/11
Hardness of dilution water (mg/L) 109

DO Levels (40-100% saturation) - corrected for altitude -
4.1 to 10.3 mg/L at 8°C
4.0 to 10.0 mg/L at 9°C
3.9 to 9.8 mg/L at 10°C
3.8 to 9.6 mg/L at 11°C
3.7 to 9.4 mg/L at 12°C

Comments/Observations:
0hr: nappt
48hr: Slight surficial ppt

Reviewed By: MA Date Reviewed: 2022/04/28

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS Client TEC164 Reference 2122-1867-02

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/04/14	1545	JC/MAC	2	EP
1	2022/04/15	0740	MAC	-	SC
2	2022/04/16	0920	EP	3	AW

Sample Information

Initial pH: 8.2
Initial EC (µS/cm): 2030
Salinity (ppt): 3

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	8.3	8.2	8.2	8.1	8.1	8.1				
2	8.3	8.3	8.3	8.5	8.5	8.5				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	498	480	479	1801	1866	1876				
2	590	535	521	1976	1906	1971				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.7	7.7	7.7				
2	7.7	7.7	7.7	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	21	21	21				
2	21	21	21	20	20	20				

Number Alive (l, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar DS Jar(s) mortality 7 days prior to test (must be ≤25%) 11

QA (previous month)
Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 28
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0

Sample
DO (mg/L) of sample prior to aeration: 8.9
DO % of sample prior to aeration: 110
Duration of aeration (37.5 +/- 12.5 mL/min/L): 10min
Hardness (mg $CaCO_3$/L) of 100% : 1181
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) -
Alkalinity of 100% sample (mg $CaCO_3$/L): 411

Temperature (°C) of sample prior to aeration: 20
Is aeration required (<40% or >100%)? **Yes or No**
Filtered with 110um screen prior to testing **Yes or No**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Dilution Water
Pail label / preparation date 1:04|11
Hardness of dilution water (mg/L) 209

Antiscalant
Final Concentration in Sample: 20mg/L
Volume of sample: 500mL Volume of antiscalant: 15µL

Comments/Observations:
0hr: nappt.
48hr: no ppt

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C 3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C 3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C

Reviewed By: MG Date Reviewed: 2022/04/28

APPENDIX C – Chain-of-custody form

Teck

COC ID: F2 NAUTILUS April 11 2022 | **TURNAROUND TIME:** | **RUSH:**

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO			
Facility Name / Job#	F2 SRF			Lab Name	Nautilus Environmental - BC			Report Format / Distribution		Excel	PDF	EDD
Project Manager	BRETT MASON			Lab Contact				Email 1:	[redacted]	X	X	X
Email	BRETT.MASON@TECK.COM			Email	jacklyn@nautilusenvironmental.ca			Email 1:	teckcoal@equisonline.com			X
Address	RR1 HWY 3			Address	10823 27th Street SE			Email 2:	DL-EVO-SRF-LAB@teck.com	X	X	X
								Email 3:				
City	Sparwood	Province	BC	City	Calgary	Province	AB	Email 4:				
								Email 5:				
								Email 6:				
								Email 7:				
								Email 8:				
								Email 10:				
								Email 11:				
								Email 12:				
								Email 13:				
Postal Code	V0B 2G0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada					
Phone Number	250-425-6179			Phone Number	403-253-7121			PO number	00822027			

SAMPLE DETAILS | **ANALYSIS REQUESTED** | Filtered - F: Field, L: Lab, FL: Field & Lab, N: None

2022/04/12
10:00
Manitoulin
SC
4x20L carboys, 6x1L bottles
NaOS/NaI
Good Condition

Sample ID	Sample Location (sys_loc_code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	Fil.	48hr Daphnia Magna Single Concentration Acute Toxicity 20C	48hr Daphnia Magna Single Concentration Acute Toxicity 10C	48hr Daphnia Magna Single Concentration Acute Toxicity Anitscalent	96hr Rainbow Trout Single Concentration Acute Toxicity (20L Bladders)	48hr Daphnia Magna Single Concentration Toxicity 15C							
								J	ANALYSIS											
F2_BPO_WG_2022-04-11_N -01	F2_BPO	WG		2022/04/11	7:50	G	8		2	2		4	6.6°C							
F2_BPO_WG_2022-04-11_N-AS -02	F2_BPO	WG		2022/04/11	7:51	G	1				1		6.6°C							

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME
		April 11, 2022		

SERVICE REQUEST (rush - subject to availability)

Regular (default)	X
Priority (2-3 business days) - 50% surcharge	
Emergency (1 Business Day) - 100% surcharge	
For Emergency <1 Day, ASAP or Weekend - Contact ALS	

Sampler's Name	Ariana Lewis	Mobile #	
Sampler's Signature		Date/Time	April 11, 2022

END OF REPORT

Acute Toxicity Test Results

Samples collected April 12, 2022

Final Report

May 11, 2022

Submitted to: **Teck Coal Ltd.**
Sparwood, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates					
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation	*Daphnia magna* antiscalant test initiation
EV_GT1_WS_2022-04-12_N-SRF/ 2122-1887-01	12-Apr-22 at 0820h	13-Apr-22 at 0900h	16-Apr-22 at 1345h	15-Apr-22 at 1430h	15-Apr-22 at 1400h	-
EV_BC1_WS_2022-04-12_N-SRF/ 2122-1887-02	12-Apr-17 at 1020h	13-Apr-22 at 0900h	16-Apr-22 at 1350h	15-Apr-22 at 1420h	15-Apr-22 at 1420h	-
EV_BC1_WS_2022-04-12_N-SRF-AS/ 2122-1887-03	12-Apr-17 at 1021h	13-Apr-22 at 0900h	-	-	-	15-Apr-22 at 1405h
EV_GT1_WS_2022-04-12_N-SRF-AS/ 2122-1887-04	12-Apr-22 at 0821h	13-Apr-22 at 0900h	-	-	-	15-Apr-22 at 1410h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
EV_GT1_WS_2022-04-12_N-SRF	6.3°C	1188	316
EV_BC1_WS_2022-04-12_N-SRF	5.1°C	1086	289
EV_BC1_WS_2022-04-12_N-SRF-AS	5.1°C	1086	289
EV_GT1_WS_2022-04-12_N-SRF-AS	6.3°C	1188	316

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)
- *Daphnia magna* 48-h single concentration screening test (conducted with 5 mg/L antiscalant)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample			
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
EV_GT1_WS_2022-04-12_N-SRF	100	100	100	-
EV_BC1_WS_2022-04-12_N-SRF	100	100	100	-
EV_BC1_WS_2022-04-12_N-SRF-AS	-	-	-	100
EV_GT1_WS_2022-04-12_N-SRF-AS	-	-	-	100

Sample ID	Percent Immobility in 100 (% v/v)		
	Daphnia magna 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
EV_GT1_WS_2022-04-12_N-SRF	0	0	-
EV_BC1_WS_2022-04-12_N-SRF	0	0	-
EV_BC1_WS_2022-04-12_N-SRF-AS	-	-	0
EV_GT1_WS_2022-04-12_N-SRF-AS	-	-	0

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
EV_GT1_WS_2022-04-12_N-SRF	Rainbow trout	Precipitate observed on test vessel	None
	Daphnia magna	Surficial precipitate observed in 20-degree test	None
EV_BC1_WS_2022-04-12_N-SRF	Rainbow trout	Precipitate observed on test vessel	None
	Daphnia magna	Surficial precipitate observed in 20-degree test	None
EV_BC1_WS_2022-04-12_N-SRF-AS	*Daphnia magna*	None	None
EV_GT1_WS_2022-04-12_N-SRF-AS	*Daphnia magna*	Surficial precipitate observed	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	3.9 (3.5-4.4) g/L KCl[1]	6.2 (5.9-6.5) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.3 (2.5-4.5) g/L KCl	6.5 (5.5-7.7) g/L NaCl
Reference toxicant CV	9.7%	5.7%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, April 11, 2022; [2] Test Date April 11, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation





Report By:
Emma Pedersen, BSc
Biologist

Reviewed By:
Leila Oosterbroek, P Biol
Environmental Scientist

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APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Control/dilution water for antiscalant test	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L), Na_2SeO_4 (2 µg Se/L) and 5 mg/L antiscalant
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC164 Reference 2122-1887-01 Chamber ~~2~~ 3 NA

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022-04-16	1345 *	DW/NA	1	EP
1	2022-04-16 12	0920	DM	-	JCC
2	2022-04-16 14	0805	CC	-	DW
3	2022-04-16 15	0905	CH	-	KAM
4	2022-04-16 20	0830	SC/KO/MAF	1	CC

Note: *: time when the test was loaded with fish

Sample Information

Initial pH: 8.5
Initial EC (µS/cm): 2380
Salinity (ppt): 1

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L: **yes/no**

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	9.1	8.6			
Temp (°C) of 100%	16				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: **5.5-8.5**)								
Day 0	7.7	8.1						
Day 4	8.2	8.2						
EC (uS/cm)								
Day 0	468	1906						
Day 4	475	1643						
DO (mg/L) (**70-100% saturation at test temp.**)								
Day 0	8.6	8.6						
Day 4	8.6	8.6						
Temperature (°C) (range: **14-16°C**)								
Day 0	16	16						
Day 4	16	16						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.3	0.4
2	3.4	0.5
3	3.3	0.4
4	3.2	0.4
5	3.2	0.4
6	3.2	0.4
7	3.4	0.5
8	3.2	0.4
9	3.0	0.3
10	3.2	0.4

Loading Density (g/L): 0.2
(must be ≤0.5 g/L)

Mean Length (cm): 3.2

Length Range (cm): 3.0-3.~~8~~ 4

Mean Weight (g): 0.4
(Must be ≥0.3g)

Weight Range: (g): 0.3-0.5

Test Organism Information

Batch 20220224TR
Source Troutlodge
Tank # 10
Days Held at 15± 2°C 24
(must be ≥14 days)
Percent stock mortality 0.07
(7 days prior to test, must be ≤2%)
Test Volume (L) 18

Comments : 96h: ppt on bottom + sides of tank.

Reviewed By: CB Date Reviewed: 2022/04/28

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC164 Reference 2122-1887-02 Chamber 13 NA

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022-04-16	1350 *	DW/NA	1	EP
1	2022-04-16 17	0925	DM	-	JCC
2	2022-04-16 18	0805	CC	-	
3	2022-04-16 19	0905	CM	-	
4	2022-04-16 20	1005	BC/KOIMAF1		CC

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 8.4
Initial EC (µS/cm): 2130
Salinity (ppt): 0

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L (yes/no)

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	9.4	8.6			
Temp (°C) of 100%	16				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: **5.5-8.5**)								
Day 0	7.8	8.1						
Day 4	8.2	8.2						
EC (uS/cm)								
Day 0	485	1995						
Day 4	436	1717						
DO (mg/L) (**70-100% saturation at test temp.**)								
Day 0	8.6	8.6						
Day 4	8.2	8.3						
Temperature (°C) (range: **14-16°C**)								
Day 0	16	16						
Day 4	16	16						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	2.9	0.3
2	3.0	0.4
3	3.4	0.4
4	3.0	0.3
5	3.0	0.3
6	3.4	0.4
7	2.9	0.3
8	3.2	0.4
9	3.0	0.4
10	3.4	0.4

Loading Density (g/L): 0.2 (must be ≤0.5 g/L)
Mean Length (cm): 3.2
Length Range (cm): 2.9 - 3.4
Mean Weight (g): 0.4 (Must be ≥0.3g)
Weight Range: (g): 0.3 - 0.4

Test Organism Information

Batch 20220224TR
Source Troutlodge
Tank # 10
Days Held at 15± 2°C 24 (must be ≥14 days)
Percent stock mortality 0.07 (7 days prior to test, must be ≤2%)
Test Volume (L) 18

Comments : 96h: ppt on bottom

Reviewed By: CB Date Reviewed: 2022/04/28

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC164 Reference 2122-1887-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/04/15	1400	JCC/MAF	2	CC
1	2022/04/16	0755	EP	-	AW
2	2022/04/17	0840	VTM	2	JCC

Sample Information

Initial pH: 8.5
Initial EC (µS/cm): 2380
Salinity (ppt): 1

Lab Code	CTL A	CTL B	CTL C	100 A	100 B	100 C

pH (units) (range: 6.0-8.5)

day										
0	8.1	8.1	8.1	8.2	8.2	8.2				
2	8.3	8.2	8.3	8.2	8.2	8.2				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	476	477	475	1800	1796	1807				
2	456	466	471	1725	1743	1746				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.9	7.9	7.9				
2	7.4	7.4	7.4	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	20	20	20				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar C2 Jar(s) mortality 7 days prior to test (must be ≤25%) 5 1.

QA (previous month)

Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 27
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 7.9
Temperature (°C) of sample prior to aeration: 20
DO % of sample prior to aeration: 100
Is aeration required (<40% or >100%)? **Yes or (No)**
Duration of aeration (37.5 +/- 12.5 mL/min/L) : -
Filtered with 110um screen prior to testing **Yes or (No)**
Hardness (mg $CaCO_3$/L) of 100% : 1188
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or (No)**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) -
Alkalinity of 100% sample (mg $CaCO_3$/L): 316

Dilution Water

Pail label / preparation date 1:04|11
Hardness of dilution water (mg/L) 209

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Comments/Observations:

48hrs: surface ppt
ONHS: no ppt.

Reviewed By: CB Date Reviewed: 2022/04/28

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC164 Reference 2122-1887-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/04/15	1430	JCC/MAF	2	JC
1	2022/04/16	0758	EP	-	AN
2	2022/04/17	0850	MM	2	JCC

Sample Information

Initial pH: 8.5
Initial EC (µS/cm): 2380
Salinity (ppt): 1

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	8.3	8.2	8.2	8.2	8.2	8.2				
2	8.5	8.4	8.4	8.3	8.4	8.4				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	mE 480	480	470	1746	1802	1814				
2	480	481	482	1238	1274	1219				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.8	9.8	9.8				
2	9.4	9.4	9.4	9.4	9.2	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	10	10	10				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar D1 Jar(s) mortality 7 days prior to test (must be ≤25%) 10%

QA (previous month)

Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 27
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 9.8
DO % of sample prior to aeration: 100
Duration of aeration (37.5 +/- 12.5 mL/min/L) : —
Hardness (mg $CaCO_3$/L) of 100% : 1158
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 316

Temperature (°C) of sample prior to aeration: 10
Is aeration required (<40% or >100%)? **Yes or (No)**
Filtered with 110um screen prior to testing **Yes or (No)**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or (No)**

Dilution Water

Pail label / preparation date 1:04111
Hardness of dilution water (mg/L) 209

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C
4.0 to 10.0 mg/L at 9°C
3.9 to 9.8 mg/L at 10°C
3.8 to 9.6 mg/L at 11°C
3.7 to 9.4 mg/L at 12°C

Comments/Observations:

48hrs: noppt
Ons: noppt.

Reviewed By: CS Date Reviewed: 20220428

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC164 Reference 2122-1887-02

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/04/15	1420	JCC/MAF	2	JC
1	2022/04/16	0750	EP	-	DN
2	2022/04/17	0840	VTM	2	JCC

Sample Information

Initial pH: 8.4
Initial EC (µS/cm): 2130
Salinity (ppt): 0

Lab Code	CTL A	CTL B	CTL C	100 A	100 B	100 C				
day				pH (units) (range: 6.0-8.5)						
0	8.2	8.2	8.2	8.0	8.1	8.1				
2	8.4	8.3	8.3	8.2	8.2	8.2				
				EC (µS/cm)						
0	487	472	470	1829	1895	1916				
2	480	475	473	1824	1852	1862				
				DO (mg/L) (**40-100% saturation at test temp.**)						
0	7.9	7.9	7.9	7.9	7.9	7.9				
2	7.7	7.7	7.7	7.7	7.7	7.7				
				Temperature (°C) (range: **18-22 °C**)						
0	20	20	20	20	20	20				
2	21	21	21	21	21	21				
				Number Alive (I, immobile)						
0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar C1 Jar(s) mortality 7 days prior to test (must be ≤25%) 5%

QA (previous month)
Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 33
Were test treatments randomized on test tray? Yes / No

Control Validity Criteria
Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 9.1
Temperature (°C) of sample prior to aeration: 20
DO % of sample prior to aeration: 115
Is aeration required (<40% or >100%)? **Yes or No**
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 70 mins
Filtered with 110um screen prior to testing **Yes or No**
Hardness (mg $CaCO_3$/L) of 100% : 1086
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 289

Dilution Water
Pail label / preparation date 1:04/14
Hardness of dilution water (mg/L) 209

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Comments/Observations:
48hrs: surficial ppt
0hrs: nappt.

Reviewed By: CB Date Reviewed: 2022/04/28

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC164 Reference 2122-1887-02

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/04/15	1420	JCC/MAF	2	JC
1	2022/04/16	0800	EP	-	AW
2	2022/04/17	0850	KTM	2	JCC

Sample Information

Initial pH: 8.4
Initial EC (µS/cm): 2130
Salinity (ppt): 0

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				
day	pH (units) (range: 6.0-8.5)									
0	8.2	8.2	8.2	8.1	8.1	8.1				
2	8.4	8.4	8.4	8.4	8.4	8.4				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

	EC (uS/cm)									
0	499	474	483	1809	1907	1919				
2	476	483	475	1885	1909	1918				

	DO (mg/L) (**40-100% saturation at test temp.**)									
0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

	Temperature (°C) (range: **8-12 °C**)									
0	mmF ~~20~~ 12	~~20~~ 12	~~20~~ 12	12	12	12				
2	12	12	12	12	12	12				

	Number Alive (I, immobile)									
0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar D5 Jar(s) mortality 7 days prior to test (must be ≤25%) 10%

QA (previous month)
Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 27
Were test treatments randomized on test tray? Yes / No

Control Validity Criteria
Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 11.27
Temperature (°C) of sample prior to aeration: 10
DO % of sample prior to aeration: 115
Is aeration required (<40% or >100%)? **Yes or No**
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 2Cm
Filtered with 110um screen prior to testing **Yes or No**
Hardness (mg $CaCO_3$/L) of 100% : 1086
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 289

Dilution Water
Pail label / preparation date 1:04/11
Hardness of dilution water (mg/L) 209

DO Levels (40-100% saturation) - corrected for altitude -
4.1 to 10.3 mg/L at 8°C
4.0 to 10.0 mg/L at 9°C
3.9 to 9.8 mg/L at 10°C
3.8 to 9.6 mg/L at 11°C
3.7 to 9.4 mg/L at 12°C

Comments/Observations:
48hrs: no ppt
Chrs: no ppt.

Reviewed By: CB Date Reviewed: 2022/04/25

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS-AS-6 Client TEC164 Reference 2122-1887-03

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/04/15	1405	JCC/MAF	2	SC
1	2022/04/16	0735	EP	-	AW
2	2022/04/17	0840	VM	2	JCC

Sample Information

Initial pH: 8.4
Initial EC (µS/cm): 2130
Salinity (ppt): 0

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	8.2	8.2	8.1	8.2	8.2	8.2				
2	8.3	8.3	8.3	8.5	8.5	8.5				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	474	474	470	1493	1905	1901				
2	454	471	470	1867	1816	1699				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.9	7.9	7.9				
2	7.7	7.7	7.7	7.7	7.7	7.1				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	20	20	20				
2	21	21	21	21	21	21				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar D1 Jar(s) mortality 7 days prior to test (must be ≤25%) 10%

QA (previous month)
Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 27
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0

Sample
DO (mg/L) of sample prior to aeration: 9.1
DO % of sample prior to aeration: 115
Duration of aeration (37.5 +/- 12.5 mL/min/L): 20m
Hardness (mg $CaCO_3$/L) of 100%: 1086
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 289

Temperature (°C) of sample prior to aeration: 20
Is aeration required (<40% or >100%)? **Yes or No**
Filtered with 110um screen prior to testing **Yes or (No)**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or (No)**

Dilution Water
Pail label / preparation date 1:09/11
Hardness of dilution water (mg/L) 209

Antiscalant
Final Concentration in Sample: Small
Volume of sample: 50cm Volume of antiscalant: 39.5µL

Comments/Observations:
48hrs: nopp+
chs: nopp+

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Reviewed By: CB Date Reviewed: 2022/04/28

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS-AS-5 Client TEC164 Reference 2122-1887-04

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/04/15	1410	JCC/MAF	2	JC
1	2022/04/16	0740	EP	-	DW
2	2022/04/17	0840	WTM	2	JCC

Sample Information

Initial pH: 8.5
Initial EC (µS/cm): 2380
Salinity (ppt): 1

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				
day				pH (units) (range: 6.0-8.5)						
0	8.2	8.1	8.1	8.2	8.2	8.2				
2	8.3	8.2	8.3	8.4	8.5	8.4				
				The pH of the sample was not adjusted prior to test setting, unless noted in the comments below						
				EC (uS/cm)						
0	479	474	472	1837	1825	1842				
2	473	469	476	1757	1768	1758				
				DO (mg/L) (**40-100% saturation at test temp.**)						
0	7.9	7.9	7.9	7.9	7.9	7.9				
2	7.7	7.7	7.7	7.7	7.7	7.7				
				Temperature (°C) (range: **18-22 °C**)						
0	20	20	20	20	20	20				
2	21	21	21	21	21	21				
				Number Alive (I, immobile)						
0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar E1 Jar(s) mortality 7 days prior to test (must be ≤25%) 10%

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 27
Were test treatments randomized on test tray? Yes / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0

Sample
DO (mg/L) of sample prior to aeration: 7.9
Temperature (°C) of sample prior to aeration: 20
DO % of sample prior to aeration: 100
Is aeration required (<40% or >100%)? **Yes or No**
Duration of aeration (37.5 +/- 12.5 mL/min/L) : –
Filtered with 110um screen prior to testing **Yes or No**
Hardness (mg $CaCO_3$/L) of 100% : 1148
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) –
Alkalinity of 100% sample (mg $CaCO_3$/L): 316

Dilution Water
Pail label / preparation date 1:04/11
Hardness of dilution water (mg/L) 209

Antiscalant
Final Concentration in Sample: 5mg/L
Volume of sample: 50cmL Volume of antiscalant: 39.5mL

Comments/Observations:
48hrs: surface 21 ppt
Chrs: neppt.

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Reviewed By: CB Date Reviewed: 2022/04/28

APPENDIX C – Chain-of-custody form

Teck

COC ID: EVO NAUTILUS April 12 2022 | TURNAROUND TIME: | RUSH:

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO			
Facility Name / Job#	Elkview Operations			Lab Name	Nautilus Environmental - BC			Report Format / Distribution		Excel	PDF	EDD
Project Manager	Group 1; Brett Mason			Lab Contact				Email 1:				
Email	Brett.Mason@teck.com			Email	jacklyn@nautilusenvironmental.ca			Email 2:				
Address	RR1 HWY 3			Address	10823 27th Street SE			Email 3:				
								Email 4:				
City	Sparwood	Province	BC	City	Calgary	Province	AB	Email 5:				
								Email 6:				
								Email 7:	teckcoal@equisonline.com			X
								Email 8:	DL-EVO-SRF@teck.com	X	X	X
								Email 9:	Cole.Macgregor@teck.com	X	X	X
								Email 10:				
								Email 11:				
								Email 12:				
								Email 13:				
Postal Code	V0B 2G0	Country	Canada	Postal Code	T2H 2K1	Country	Canada					
Phone Number	250-425-6179			Phone Number	T2Z 3V9			PO number	00822027			

SAMPLE DETAILS | **ANALYSIS REQUESTED** (Filtered - F: Field, L: Lab, FL: Field & Lab, N: None)

2022/04/13
09:00
Manitoulin
DC-
8x20L carboys, 10x1L bottles
NoS/NoL
Good Condition

Sample ID 2122-1887	Sample Location (sys_loc_code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	FIL	PRESERV.	ANALYSIS: 48hr Daphnia Magna Single Concentration Acute Toxicity 20C	48hr Daphnia Magna Single Concentration Acute Toxicity 10C	48hr Daphnia Magna Single Concentration Acute Toxicity Anitscalent	96hr Rainbow Trout Single Concentration Acute Toxicity (20 L Bladder)	96hr Rainbow Trout Single Concentration Acute Toxicity (20 L Bladder)	48hr Daphnia Magna Single Concentration Toxicity 15C					
EV_GT1_WS_2022-04-12_N-SRF -01	EV_GT1	WS		2022/04/12	8:20	G	8			2	2			4	4.3°C					
EV_BC1_WS_2022-04-12_N-SRF -02	EV_BC1	WS		2022/04/12	10:20	G	8			2	2			4	5.1°C					
EV_BC1_WS_2022-04-12_N-SRF-AS -03	EV_BC1	WS		2022/04/12	10:21	G	1					1			5.1°C					
EV_GT1_WS_2022-04-12_N-SRF-AS -04	EV_GT1	WS		2022/04/12	8:21	G	1					1			6.3°C					

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME
Field Temperatures	Nick Lagarde - Teck	April 12, 2022		

SERVICE REQUEST (rush - subject to availability)

Regular (default)	X
Priority (2-3 business days) - 50% surcharge	
Emergency (1 Business Day) - 100% surcharge	
For Emergency <1 Day, ASAP or Weekend - Contact ALS	

Sampler's Name	EDownwell	Mobile #	
Sampler's Signature		Date/Time	April 12, 2022

END OF REPORT

Acute Toxicity Test Results

Samples collected April 18, 2022

Final Report

May 19, 2022

Submitted to: **Teck Coal Ltd.**
Sparwood, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates					
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation	*Daphnia magna* antiscalant test initiation
F2_BPO_WG_2022-04-18_N/ 2122-1937-01	18-Apr-22 at 0815h	19-Apr-22 at 0915h	20-Apr-22 at 1455h	19-Apr-22 at 1540h	19-Apr-22 at 1535h	-
F2_BPO_WG_2022-04-18_N-AS/ 2122-1937-02	18-Apr-22 at 0816h	19-Apr-22 at 0915h	-	-	-	19-Apr-22 at 1540h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
F2_BPO_WG_2022-04-18_N	10.1°C	1235	365
F2_BPO_WG_2022-04-18_N-AS	10.1°C	1235	365

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)
- *Daphnia magna* 48-h single concentration screening test (conducted with 20 mg/L antiscalant)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample			
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
F2_BPO_WG_2022-04-18_N	100	100	100	-
F2_BPO_WG_2022-04-18_N-AS	-	-	-	100

Sample ID	Percent Immobility in 100 (% v/v)		
	***Daphnia magna* 10˚C**	***Daphnia magna* 20˚C**	***Daphnia magna* antiscalant**
F2_BPO_WG_2022-04-18_N	0	0	-
F2_BPO_WG_2022-04-18_N-AS	-	-	0

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
F2_BPO_WG_2022-04-18_N	Rainbow trout	Precipitate observed on the bottom of test vessel	None
	Daphnia magna	Surficial precipitate observed in 20-degree test vessel	None
F2_BPO_WG_2022-04-18_N-AS	*Daphnia magna*	None	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	3.9 (3.5-4.4) g/L KCl[1]	6.2 (5.9-6.5) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.3 (2.5-4.5) g/L KCl	6.5 (5.5-7.7) g/L NaCl
Reference toxicant CV	9.7%	5.7%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, April 11, 2022; [2] Test Date April 11, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation

Report By:
Emma Pedersen, BSc
Biologist

Reviewed By:
Courtney Bogstie, P. Biol.
Senior Biologist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Control/dilution water for antiscalant test	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L), Na_2SeO_4 (2 µg Se/L) and 20 mg/L antiscalant
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC164 Reference 2122-1937-01 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022/04/20	1455 *	CC/KO	7	MN
1	2022/04/21	0745	CC	-	MN
2	2022/04/22	0750	CH	-	CC
3	2022/04/23	0740	CH	-	MAF
4	2022/04/24	1000	CC/CC	1	MN

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 8.0
Initial EC (µS/cm): 1742
Salinity (ppt): 2

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L : yes/no

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	9.5	9.3	8.6		
Temp (°C) of 100%	16				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	7.8	8.1						
Day 4	8.3	8.4						
EC (uS/cm)								
Day 0	413	1696						
Day 4	416	1736						
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	8.6	8.6						
Day 4	8.8	8.8						
Temperature (°C) (range: 14-16°C)								
Day 0	16	16						
Day 4	15	15						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.4	0.4
2	3.3	0.4
3	3.2	0.4
4	3.0	0.3
5	3.1	0.3
6	3.3	0.3
7	3.5	0.5
8	3.4	0.5
9	3.2	0.3
10	3.4	0.4

Loading Density (g/L): 0.2 (must be ≤0.5 g/L)
Mean Length (cm): 3.3
Length Range (cm): 3.0 - 3.5
Mean Weight (g): 0.4 (Must be ≥0.3g)
Weight Range: (g): 0.3 - 0.5

Test Organism Information

Batch 20220224TR
Source Troutlodge
Tank # 7
Days Held at 15± 2°C 28 (must be ≥14 days)
Percent stock mortality 0.1 (7 days prior to test, must be ≤2%)
Test Volume (L) 18

Comments : ~~0Hrs: CH~~
96Hrs: ppt present on bottom of tank

Reviewed By: MG Date Reviewed: 2022/04/26

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS Client TEC 164 Reference 2122-1937-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/04/19	1535	CeIJCC	3	MF
1	2022/04/20	0850	LC	3	MF
2	2022/04/21	0800	SC	3	MF

Sample Information

Initial pH: 8.0
Initial EC (µS/cm): 1742
Salinity (ppt): 2

Lab Code	CTL A	CTL B	CTL C	100 A	100 B	100 C

pH (units) (range: 6.0-8.5)

day										
0	8.3	8.3	8.3	8.1	8.1	8.1				
2	8.1	8.1	8.1	8.2	8.2	8.2				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	427	428	422	1720	1728	1729				
2	463	466	465	1824	1830	1849				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.7	7.7	7.7				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	21	21	21				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar DY Jar(s) mortality 7 days prior to test (must be ≤25%) 5%

QA (previous month)
Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 31
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 9.3 Temperature (°C) of sample prior to aeration: 21
DO % of sample prior to aeration: 121% Is aeration required (<40% or >100%)? **(Yes) or No**
Duration of aeration (37.5 +/- 12.5 mL/min/L): 20min. Filtered with 110um screen prior to testing **Yes or (No)**
Hardness (mg $CaCO_3$/L) of 100% : 1235 Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or (No)**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 365

Dilution Water
Pail label / preparation date 2:04/14
Hardness of dilution water (mg/L) 226

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Comments/Observations:
0hr: no ppt
48hr: [illegible] ppt

Reviewed By: ML Date Reviewed: 2022/04/26

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC 164 Reference 2122-1937-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/04/19	1540	CC/CC	3	MF
1	2022/04/20	0840	MAF	-	MF
2	2022/04/21	0800	JC	3	MF

Sample Information

Initial pH: 8.0
Initial EC (µS/cm): 1742
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	8.3	8.3	8.3	8.1	8.1	8.1				
2	8.0	8.0	8.0	8.1	8.1	8.1				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	431	429	430	1729	1743	1740				
2	482	466	429	1850	1850	1859				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar 05 Jar(s) mortality 7 days prior to test (must be ≤25%) 0

QA (previous month)
Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 31
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 10.1
DO % of sample prior to aeration: 107%
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20 min.
Hardness (mg $CaCO_3$/L) of 100% : 1235
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 365

Temperature (°C) of sample prior to aeration: 12
Is aeration required (<40% or >100%)? **Yes or No**
Filtered with 110um screen prior to testing **Yes or No**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Dilution Water
Pail label / preparation date 22/04/14
Hardness of dilution water (mg/L) 226

DO Levels (40-100% saturation) - corrected for altitude -
4.1 to 10.3 mg/L at 8°C
4.0 to 10.0 mg/L at 9°C
3.9 to 9.8 mg/L at 10°C
3.8 to 9.6 mg/L at 11°C
3.7 to 9.4 mg/L at 12°C

Comments/Observations:
0hr: no ppt
48hr: no ppt

Reviewed By: MG Date Reviewed: 2022/04/26

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS Client TEC 164 Reference 2122-1937-02

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/04/19	1540	ee/JCC	3	MF
1	2022/04/20	0845	IC	-	MF
2	2022/04/21	0815	JC	3	MF

Sample Information

Initial pH: 8.0
Initial EC (µS/cm): 1742
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				
day				pH (units) (range: 6.0-8.5)						
0	8.1	8.1	8.1	8.2	8.1	8.2				
2	8.3	8.3	8.3	8.5	8.5	8.5				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

				EC (uS/cm)						
0	466	463	472	1721	1724	1720				
2	488	484	462	1815	1842	1857				
				DO (mg/L) (**40-100% saturation at test temp.**)						
0	7.9	7.9	7.9	7.7	7.7	7.7				
2	7.9	7.9	7.9	7.9	7.9	7.9				
				Temperature (°C) (range: **18-22 °C**)						
0	20	20	20	21	21	21				
2	20	20	20	20	20	20				
				Number Alive (I, immobile)						
0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar ES Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 27
Were test treatments randomized on test tray? Yes / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0

Sample
DO (mg/L) of sample prior to aeration: 9.2 Temperature (°C) of sample prior to aeration: cc ~~18~~ 21
DO % of sample prior to aeration: 121% ~~113%~~ cc Is aeration required (<40% or >100%)? Yes or No
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20 min. Filtered with 110um screen prior to testing Yes or No
Hardness (mg $CaCO_3$/L) of 100% : 1235 Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or No
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) -
Alkalinity of 100% sample (mg $CaCO_3$/L): 365

Dilution Water
Pail label / preparation date 2/04/14
Hardness of dilution water (mg/L) 226

Antiscalant
Final Concentration in Sample: 20 mg/L
Volume of sample: ~~3~~ 500mL Volume of antiscalant: 158 µL

Comments/Observations:
0hr: no ppt
48hr: no ppt

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C 3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C 3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C

Reviewed By: MG Date Reviewed: 2022/04/26

APPENDIX C – Chain-of-custody form

Teck

COC ID:	F2 NAUTILUS April 18 2022	TURNAROUND TIME:		RUSH:	

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name / Job#	F2 SRF			Lab Name	Nautilus Environmental - BC			Report Format / Distribution		Excel	PDF	EDD
Project Manager	BRETT MASON			Lab Contact				Email 1:	Cole.Macgregor@teck.com	X	X	X
Email	BRETT.MASON@TECK.COM			Email	jacklyn@nautilusenvironmental.ca			Email 1:	teckcoal@equisonline.com			X
Address	RR1 HWY 3			Address	10823 27th Street SE			Email 2:	DL-EVO-SRF-LAB@teck.cor	X	X	X
								Email 3:				
City	Sparwood	Province	BC	City	Calgary	Province	AB	Email 4:				
								Email 5:				
								Email 6:				
								Email 7:				
								Email 8:				
								Email 10:				
								Email 11:				
								Email 12:				
								Email 13:				
Postal Code	V0B 2G0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada					
Phone Number	250-425-6179			Phone Number	403-253-7121			PO number	822027			

SAMPLE DETAILS / **ANALYSIS REQUESTED** — Filtered - F: Field, L: Lab, FL: Field & Lab, N: None

2122-1937
2022/04/19
09:15
Manitoulin
SRS
4x20L Carboys, 5x1L bottles
NoS NoI Good Condition

Sample ID 2122-1937	Sample Location (sys_loc_code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	Filt. / ANALYSIS: 48hr Daphnia Magna Single Concentration Acute Toxicity 20C	48hr Daphnia Magna Single Concentration Acute Toxicity 10C	48hr Daphnia Magna Single Concentration Acute Toxicity Anitscalent	96hr Rainbow Trout Single Concentration Acute Toxicity (20L Bladders)	48hr Daphnia Magna Single Concentration Toxicity 15C
F2_BPO_WG_2022-04-18_N -01	F2_BPO	WG		2022/04/18	8:15	G	8	2	2		4	10.1°C
F2_BPO_WG_2022-04-18_N-AS -02	F2_BPO	WG		2022/04/18	8:16	G	1			1		10.1°C

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME
	Humberto Alvarado	April 18, 2022 14:20		

SERVICE REQUEST (rush - subject to availability)					
Regular (default)	X	Sampler's Name	Ariana Lewis	Mobile #	
Priority (2-3 business days) - 50% surcharge					
Emergency (1 Business Day) - 100% surcharge		Sampler's Signature		Date/Time	April 18, 2022
For Emergency <1 Day, ASAP or Weekend - Contact ALS					

END OF REPORT

Acute Toxicity Test Results

Samples collected April 25, 2022

Final Report

May 25, 2022

Submitted to: **Teck Coal Ltd.**
Sparwood, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates					
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation	*Daphnia magna* antiscalant test initiation
EV_EC1_WS_2022-04-25_N-SRF/ 2122-1998-01	25-Apr-22 at 0930h	26-Apr-22 at 1100h	26-Apr-22 at 1530h	26-Apr-22 at 1520h	26-Apr-22 at 1515h	-
EV_EC1_WS_2022-04-25_N-SRF-AS/ 2122-1998-02	25-Apr-22 at 0931h	26-Apr-22 at 1100h	-	-	-	26-Apr-22 at 1525h
EV_ECOUT_WS_2022-04-25_N-SRF/ 2122-1998-03	25-Apr-22 at 1200h	26-Apr-22 at 1100h	26-Apr-22 at 1435h	26-Apr-22 at 1525h	26-Apr-22 at 1520h	-
EV_ECOUT_WS_2022-04-25_N-SRF-AS/ 2122-1998-04	25-Apr-22 at 1201h	26-Apr-22 at 1100h	-	-	-	26-Apr-22 at 1530h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
EV_EC1_WS_2022-04-25_N-SRF	6.9°C	1181	343
EV_EC1_WS_2022-04-25_N-SRF-AS	6.9°C	1181	343
EV_ECOUT_WS_2022-04-25_N-SRF	8.8°C	1348	435
EV_ECOUT_WS_2022-04-25_N-SRF-AS	8.8°C	1348	435

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)
- *Daphnia magna* 48-h single concentration screening test (conducted with 5 mg/L antiscalant)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample			
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
EV_EC1_WS_2022-04-25_N-SRF	100	100	100	-
EV_EC1_WS_2022-04-25_N-SRF-AS	-	-	-	100
EV_ECOUT_WS_2022-04-25_N-SRF	100	100	100	-
EV_ECOUT_WS_2022-04-25_N-SRF-AS	-	-	-	100

Sample ID	Percent Immobility in 100 (% v/v)		
	Daphnia magna 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
EV_EC1_WS_2022-04-25_N-SRF	0	30	-
EV_EC1_WS_2022-04-25_N-SRF-AS	-	-	0
EV_ECOUT_WS_2022-04-25_N-SRF	0	43	-
EV_ECOUT_WS_2022-04-25_N-SRF-AS	-	-	0

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
EV_EC1_WS_2022-04-25_N-SRF	Rainbow trout	Precipitate observed on the bottom of test tank	None
	Daphnia magna	Surficial precipitate observed	None
EV_EC1_WS_2022-04-25_N-SRF-AS	*Daphnia magna*	None	None
EV_ECOUT_WS_2022-04-25_N-SRF	Rainbow trout	Precipitate observed on the bottom of test tank	None
	Daphnia magna	Surficial precipitate observed. Precipitate on bottom of jar in 20 degree test	None
EV_ECOUT_WS_2022-04-25_N-SRF-AS	*Daphnia magna*	Surficial precipitate observed	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	3.9 (3.5-4.4) g/L KCl[1]	6.5 (6.0-7.0) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.3 (2.5-4.5) g/L KCl	6.5 (5.5-7.7) g/L NaCl
Reference toxicant CV	9.7%	5.7%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, April 11, 2022; [2] Test Date April 25, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation



Report By:
Courtney Hewitt, BSc
Biologist



Reviewed By:
Courtney Bogstie, P. Biol.
Senior Biologist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Control/dilution water for antiscalant test	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L), Na_2SeO_4 (2 µg Se/L) and 5 mg/L antiscalant
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC164 Reference 2122-1998-01 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022-04-26	1330 *	LC / KO	1	JC
1	2022-04-27	0850	CH	-	TC
2	2022-04-28	0810	EP	-	ME
3	2022-04-29	0755	EP	-	TC
4	2022-04-30	0935	AC/EP	1	CH

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 8.2
Initial EC (µS/cm): 1851
Salinity (ppt): 2

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L : **yes/no**

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	10.3	10.1	8.9		
Temp (°C) of 100%	14				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	7.6	8.1						
Day 4	8.1	8.2						
EC (uS/cm)								
Day 0	455	1823						
Day 4	464	1755						
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	8.9	8.9						
Day 4	8.6	8.9						
Temperature (°C) (range: 14-16°C)								
Day 0	14	14						
Day 4	15	15						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
		EP
1	4.5	1.2
2	4.0	0.8
3	3.7	0.6
4	3.7	0.6
5	3.4	0.5
6	4.0	0.7
7	4.0	0.8
8	3.7	0.6
9	3.5	0.5
10	3.2	0.4

Loading Density (g/L): 0.4 (must be ≤0.5 g/L)
Mean Length (cm): 3.8
Length Range (cm): 3.2-4.5
Mean Weight (g): 0.7 (Must be ≥0.3g)
Weight Range: (g): 0.4-1.2

Test Organism Information

Batch 20220224TR
Source trout lodge
Tank # 7
Days Held at 15± 2°C 34 (must be ≥14 days)
Percent stock mortality 0.6 (7 days prior to test, must be ≤2%)
Test Volume (L) 18

Comments :
96 hrs: PPT on bottom of vessel

Reviewed By: SS Date Reviewed: 2022105102

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC164 Reference 2122-1998-03 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022-04-26	1435 *	LC / KO	1	JCC
1	2022-04-27	0850	CH	-	SC
2	2022-04-28	0805	EP	-	MF
3	2022-04-29	0955	EP	-	JC
4	2022-04-30	0940	AE / EP	1	CH

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: ~~8.2~~ 7.8
Initial EC (µS/cm): ~~1851~~ 1991 KO
Salinity (ppt): ~~2~~ 2

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L: **yes/no**

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	10.4	8.9			
Temp (°C) of 100%	14				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	7.7	7.8						
Day 4	8.2	8.2						
EC (uS/cm)								
Day 0	456	1979						
Day 4	464	1838						
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	8.9	8.9						
Day 4	8.7	8.7						
Temperature (°C) (range: 14-16°C)								
Day 0	14	14						
Day 4	15	15						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.9	0.9
2	4.1	0.8
3	3.5	0.6
4	3.7	0.7
5	3.3	0.5
6	3.7	0.7
7	3.6	0.6
8	3.2	0.4
9	3.5	0.6
10	3.4	0.4

Loading Density (g/L): 0.3 (must be ≤0.5 g/L)
Mean Length (cm): 3.6
Length Range (cm): 3.2-4.1
Mean Weight (g): 0.6 (Must be ≥0.3g)
Weight Range: (g): 0.4-0.9

Test Organism Information

Batch: 20220224TR
Source: trout lodge
Tank #: 7
Days Held at 15± 2°C: 34 (must be ≥14 days)
Percent stock mortality: 0.6 (7 days prior to test, must be ≤2%)
Test Volume (L): 18

Comments :
96 hrs: PPT on bottom of vessel

Reviewed By: SS Date Reviewed: 2022105102

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS20 Client TEC 164 Reference 2122-1998-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/04/26	1515	KETHICH	2	MF
1	2022/04/27	0930	CH	-	SC
2	2022/04/28	1010	EP	2	CC

Sample Information

Initial pH: 8.2
Initial EC (µS/cm): 1851
Salinity (ppt): 2

Lab Code	CTL A	CTL B	CTL C	100 A	100 B	100 C

pH (units) (range: 6.0-8.5)

day										
0	8.0	8.0	8.0	8.0	8.0	8.0				
2	8.1	8.1	8.0	8.1	8.1	8.2				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	442	444	445	1897	1923	1921				
2	444	454	453	1824	1846	1849				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	8.2	8.2	8.2				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	18	18	18				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10(2I)	10(4I)	10(3I)				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar E1 Jar(s) mortality 7 days prior to test (must be ≤25%) 5%

QA (previous month)

Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 19
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 8.9
DO % of sample prior to aeration: 109%
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20min
Hardness (mg $CaCO_3$/L) of 100% : 181
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 343

Temperature (°C) of sample prior to aeration: 18
Is aeration required (<40% or >100%)? **Yes or No**
Filtered with 110um screen prior to testing **Yes or No**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Dilution Water

Pail label / preparation date 1:04/19
Hardness of dilution water (mg/L) 169

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Comments/Observations:

0hr: hOppt
48hr: Slight surficial ppt

Reviewed By: SS Date Reviewed: 2022105102

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC 164 Reference 2122-1998-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/04/26	1526	MMcH	2	MF
1	2022/04/27	0945	LL	-	SC
2	2022/04/28	1015	EP	2	CC

Sample Information

Initial pH:	8.2
Initial EC (µS/cm):	1851
Salinity (ppt):	2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	8.0	8.0	8.0	8.0	8.1	8.1				
2	7.7	7.7	7.7	8.2	8.2	8.2				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	445	444	444	1898	1931	1932				
2	443	448	458	1881	1933	1929				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.6	9.6	9.6	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	11	11	11	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar E1 Jar(s) mortality 7 days prior to test (must be ≤25%) 5%

QA (previous month)

Days to first brood (≤12 days) 7

Average number of young produced (≥15 young) 19

Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - (must be ≤10%) 0

Sample

DO (mg/L) of sample prior to aeration: 9.9 Temperature (°C) of sample prior to aeration: 12

DO % of sample prior to aeration: 106% Is aeration required (<40% or >100%)? **Yes or No**

Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20min Filtered with 110um screen prior to testing **Yes or No**

Hardness (mg $CaCO_3$/L) of 100% : 111 Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) -

Alkalinity of 100% sample (mg $CaCO_3$/L): 343

Dilution Water

Pail label / preparation date 1:04/19

Hardness of dilution water (mg/L) 199

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

Comments/Observations:

0hr: noppt

48hr: Slight surficial ppt

Reviewed By: SS Date Reviewed: 2022/05/02

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS Client TEC 164 Reference 2122-1998-02

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/04/26	1525	KM/CH	2	MF
1	2022/04/27	0930	CH	-	TL
2	2022/04/28	1010	EP	2	CC

Sample Information

Initial pH: 8.2
Initial EC (µS/cm): 1851
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	8.1	8.1	8.1	8.1	8.1	8.1				
2	8.1	8.1	8.0	8.4	8.4	8.4				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm) (km 1891)

0	446	445	447	~~446~~	1905	1908				
2	463	453	454	1804	1873	1883				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	8.2	8.2	8.2				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	18	18	18				
2	20	20	20	20	20	20				

Number Alive (l, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar C3/C4 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%.

QA (previous month)
Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 17
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0

Sample
DO (mg/L) of sample prior to aeration: 9.6
DO % of sample prior to aeration: 117.1
Duration of aeration (37.5 +/- 12.5 mL/min/L): 20min
Hardness (mg $CaCO_3$/L) of 100% : 1181
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 343

Temperature (°C) of sample prior to aeration: 18
Is aeration required (<40% or >100%)? **Yes or No**
Filtered with 110um screen prior to testing **Yes or No**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Dilution Water
Pail label / preparation date 12/04/19
Hardness of dilution water (mg/L) 149

Antiscalant
Final Concentration in Sample: 5mg/L
Volume of sample: 500mL Volume of antiscalant: 39.5uL

Comments/Observations:
0hr: no ppt
48hr: no ppt

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Reviewed By: SS Date Reviewed: 2022105102

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 2C Client TEC 164 Reference 2122-1998-03

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/04/26	1520	KM/CH	2	MF
1	2022/04/27	0935	CH	-	SC
2	2022/04/28	1010	EP	2	CC

Sample Information

Initial pH: 7.8
Initial EC (µS/cm): 1991
Salinity (ppt): 2

Lab Code	CTL A	CTL B	CTL C	100 A	100 B	100 C				

pH (units) (range: 6.0-8.5)

day										
0	8.1	8.0	8.0	7.9	7.9	7.9				
2	8.0	8.0	8.0	8.0	8.0	8.0				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	444	445	444	2070	2130	2140				
2	421	435	451	1908	1945	1939				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.7	7.7	7.7	8.2	8.2	8.2				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	21	21	21	18	18	18				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10(3I)	10(3I)	10(7I)				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar E1 Jar(s) mortality 7 days prior to test (must be ≤25%) 5%

QA (previous month)
Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 19
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 9.3 Temperature (°C) of sample prior to aeration: 18
DO % of sample prior to aeration: 113% Is aeration required (<40% or >100%)? **(Yes) or No**
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20mm Filtered with 110um screen prior to testing **Yes or (No)**
Hardness (mg $CaCO_3$/L) of 100% : 1348 Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or (No)**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 435

Dilution Water
Pail label / preparation date 1:04/19
Hardness of dilution water (mg/L) 199

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C 3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C 3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C

Comments/Observations:
0hr: heppt
48hr: Surficial ppt, ppt on bottom of jar

Reviewed By: SS Date Reviewed: 2022105102

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC 164 Reference 2122-1998-03

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/04/26	1525	KMICH	2	MF
1	2022/04/27	0945	LC	-	SC
2	2022/04/28	1015	EP	2	CC

Sample Information

Initial pH:	7.8
Initial EC (µS/cm):	1991
Salinity (ppt):	2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	8.2	8.2	8.2	7.7	7.7	7.7				
2	8.1	8.0	8.0	8.1	8.1	8.1				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	455	448	445	2110	2140	2150				
2	~~584~~ 474	468	469	19 EP 2110	2100	2130				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (l, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar CLICS Jar(s) mortality 7 days prior to test (must be ≤25%) 0/.

QA (previous month)

Days to first brood (≤12 days) 7

Average number of young produced (≥15 young) 17

Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - 0 (must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 9.8 Temperature (°C) of sample prior to aeration: 12

DO % of sample prior to aeration: 106% Is aeration required (<40% or >100%)? (Yes) or No

Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20mm Filtered with 110um screen prior to testing Yes or (No)

Hardness (mg $CaCO_3$/L) of 100% : 1348 Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —

Alkalinity of 100% sample (mg $CaCO_3$/L): 435

Dilution Water

Pail label / preparation date 1:C4/A

Hardness of dilution water (mg/L) 199

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

Comments/Observations:

0hr: hopp+

48hr: slight surficial ppt

Reviewed By: SS Date Reviewed: 2022/05/02

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS Client TEC 164 Reference 2122-1998-04

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/04/26	1530	VTMICH	2	ME
1	2022/04/27	0940	CH	-	SC
2	2022/04/28	1005	EP	2	CC

Sample Information

Initial pH:	7.8
Initial EC (µS/cm):	1991
Salinity (ppt):	2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	8.1	8.1	8.1	8.0	8.0	8.0				
2	7.9	7.9	7.9	8.4	8.4	8.4				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	460	449	447	2116	2136	2146				
2	431	449	450	1999	2090	2110				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	8.2	8.2	8.2				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	18	18	18				
2	20	20	20	20	20	20				

Number Alive (l, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar C1C3 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)

Days to first brood (≤12 days) 7

Average number of young produced (≥15 young) 17

Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - (must be ≤10%) 0

Sample

DO (mg/L) of sample prior to aeration: 8.3 Temperature (°C) of sample prior to aeration: 18

DO % of sample prior to aeration: 113% Is aeration required (<40% or >100%)? (Yes) or No

Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20min Filtered with 110um screen prior to testing Yes or (No)

Hardness (mg $CaCO_3$/L) of 100% : 1348 Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —

Alkalinity of 100% sample (mg $CaCO_3$/L): 435

Dilution Water

Pail label / preparation date 1:64/16

Hardness of dilution water (mg/L) 199

Antiscalant

Final Concentration in Sample: 5mg/L

Volume of sample: 350mL Volume of antiscalant: 39.5µL

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Comments/Observations:

0hr: hoppt

48hr: Slight surficial ppt

Reviewed By: SS Date Reviewed: 2022105102

APPENDIX C – Chain-of-custody form

Teck

COC ID: EVO NAUTILUS April 25 2022 | TURNAROUND TIME: | RUSH:

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO			
Facility Name / Job#	Elkview Operations			Lab Name	Nautilus Environmental - BC			Report Format / Distribution	Excel	PDF	EDD
Project Manager	Group 1; Brett Mason			Lab Contact				Email 1: [redacted]	X	X	X
Email	Brett.Mason@teck.com			Email	jacklyn@nautilusenvironmental.ca			Email 2: teckcoal@equisonline.com			X
Address	RR1 HWY 3			Address	10823 27th Street SE			Email 3: DL-EVO-SRF-LAB@teck.com	X	X	X
								Email 4:			
City	Sparwood	Province	BC	City	Calgary	Province	AB	Email 5:			
								Email 6:			
								Email 7:			
								Email 8:			
								Email 9:			
								Email 10:			
								Email 11:			
								Email 12:			
								Email 13:			
Postal Code	V0B 2G0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada				
Phone Number	250-425-6179			Phone Number	403-253-7121			PO number	822027		

SAMPLE DETAILS | **ANALYSIS REQUESTED** | Filtered - F: Field, L: Lab, FL: Field & Lab, N: None

2022/04/26
11:00
Manitoulin
SC
8x10L carboy, 4x20L carboys
NoS/NoI
Good Condition

Sample ID 2122-1998	Sample Location (sys_loc_code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	FIL.	PRESERV.	ANALYSIS: 48hr Daphnia Magna Single Concentration Acute Toxicity 20C	48hr Daphnia Magna Single Concentration Acute Toxicity 10C	48hr Daphnia Magna Single Concentration Acute Toxicity Anitscalent	96hr Rainbow Trout Single Concentration Acute Toxicity (20 L Bladder)	96hr Rainbow Trout Single Concentration Acute Toxicity (10 L Bladder)	48hr Daphnia Magna Single Concentration Toxicity 15C					
EV_EC1_WS_2022-04-25_N-SRF -01	EV_EC1	WS		2022/04/25	9:30	G	12			2	2			8	6.4°C					
EV_EC1_WS_2022-04-25_N-SRF-AS -02	EV_EC1	WS		2022/04/25	9:31	G	1					1			↓					
EV_ECOUT_WS_2022-04-25_N-SRF -03	EV_ECOUT	WS		2022/04/25	12:00	G	8			2	2		4		8.5°C					
EV_ECOUT_WS_2022-04-25_N-SRF-AS -04	EV_ECOUT	WS		2022/04/25	12:01	G	1					1			↓					

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME
Field Temperatures		April 25, 2022		
ECOUT:				

SERVICE REQUEST (rush - subject to availability)

Regular (default)	X
Priority (2-3 business days) - 50% surcharge	
Emergency (1 Business Day) - 100% surcharge	
For Emergency <1 Day, ASAP or Weekend - Contact ALS	

Sampler's Name		Mobile #	
Sampler's Signature		Date/Time	April 25, 2022

END OF REPORT

Acute Toxicity Test Results

Samples collected April 25, 2022

Final Report

May 25, 2022

Submitted to: **Teck Coal Ltd.**
Sparwood, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates					
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation	*Daphnia magna* antiscalant test initiation
F2_BPO_WG_2022-04-25_N/ 2122-1999-01	25-Apr-22 at 0800h	26-Apr-22 at 1100h	26-Apr-22 at 1435h	27-Apr-22 at 1510h	27-Apr-22 at 1505h	-
F2_BPO_WG_2022-04-25_N-AS/ 2122-1999-02	25-Apr-22 at 0801h	26-Apr-22 at 1100h	-	-	-	27-Apr-22 at 1515h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
F2_BPO_WG_2022-04-25_N	12.2°C	1266	508
F2_BPO_WG_2022-04-25_N-AS	12.2°C	1266	508

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)
- *Daphnia magna* 48-h single concentration screening test (conducted with 20 mg/L antiscalant)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample			
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
F2_BPO_WG_2022-04-25_N	100	100	100	-
F2_BPO_WG_2022-04-25_N-AS	-	-	-	100

Sample ID	Percent Immobility in 100 (% v/v)		
	Daphnia magna 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
F2_BPO_WG_2022-04-25_N	0	0	-
F2_BPO_WG_2022-04-25_N-AS	-	-	0

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
F2_BPO_WG_2022-04-25_N	Rainbow trout	Precipitate observed on the test vessel	None
	Daphnia magna	Surficial precipitate observed in the 20 degree test	None
F2_BPO_WG_2022-04-25_N-AS	*Daphnia magna*	None	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	3.9 (3.5-4.4) g/L KCl[1]	6.5 (6.0-7.0) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.3 (2.5-4.5) g/L KCl	6.5 (5.5-7.7) g/L NaCl
Reference toxicant CV	9.7%	5.7%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, April 11, 2022; [2] Test Date April 25, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation



Report By:
Courtney Hewitt, BSc
Biologist



Reviewed By:
Leila Oosterbroek, P Biol
Environmental Scientist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Control/dilution water for antiscalant test	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L), Na_2SeO_4 (2 µg Se/L) and 20 mg/L antiscalant
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC164 Reference 2122-1999-01 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022-04-26	1435 *	LC / KO	1	JCC
1	2022-04-27	0850	CH	-	MF
2	2022-04-28	0910	EP	-	MF
3	2022-04-29	0950	EP	-	MF
4	2022-04-30	0945	AC / EP	1	CH

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 8.0
Initial EC (µS/cm): 1977
Salinity (ppt): 2

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L: **yes/no**

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	10.1	8.9			
Temp (°C) of 100%	14				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: **5.5-8.5**)								
Day 0	7.7	8.0						
Day 4	8.1	8.4						
EC (uS/cm)								
Day 0	456	1915						
Day 4	463	1886						
DO (mg/L) (**70-100% saturation at test temp.**)								
Day 0	8.9	8.9						
Day 4	8.6	8.7						
Temperature (°C) (range: **14-16°C**)								
Day 0	14	14						
Day 4	15	15						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	4.1	0.8
2	3.7	0.6
3	3.6	0.6
4	3.9	0.7
5	4.1	0.9
6	3.8	0.8
7	3.2	0.4
8	3.7	0.6
9	4.5	1.2
10	3.6	0.6

Loading Density (g/L): 0.4 (must be ≤0.5 g/L)
Mean Length (cm): 3.8
Length Range (cm): 3.2-4.5
Mean Weight (g): 0.7 (Must be ≥0.3g)
Weight Range: (g): 0.4-1.2

Test Organism Information

Batch 20220224TR
Source troutlodge
Tank # 7
Days Held at 15± 2°C (must be ≥14 days): 34
Percent stock mortality (7 days prior to test, must be ≤2%): 0.6
Test Volume (L): 18

Comments :
96 hrs: ppt on bottom of tank

Reviewed By: MH Date Reviewed: 2022/05/04

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 26 Client TEC 164 Reference 2122-1999-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/04/27	1505	LC/JCC	2	KTH
1	2022/04/28	0850	AC/MAF	-	MF
2	2022/04/29	1100	KTH/KD	3	CH

Sample Information

Initial pH:	8.0
Initial EC (µS/cm):	1977
Salinity (ppt):	2

Lab Code	CTL A	CTL B	CTL C	100 A	100 B	100 C

pH (units) (range: 6.0-8.5)

day										
0	6.0	8.0	8.1	7.8	7.8	7.8				
2	8.3	8.2	8.2	8.5	8.5	8.6				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	461	462	457	2100	2110	2110				
2	453	486	473	~~2050~~ 1867 KD	2030	1937				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.9	7.9	7.9				
2	7.7	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	20	20	20				
2	21	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar C3 Jar(s) mortality 7 days prior to test (must be ≤25%) 0

QA (previous month)

Days to first brood (≤12 days) 8

Average number of young produced (≥15 young) 17

Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - 0 (must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 7.9 Temperature (°C) of sample prior to aeration: 20

DO % of sample prior to aeration: 100 Is aeration required (<40% or >100%)? **Yes or (No)**

Duration of aeration (37.5 +/- 12.5 mL/min/L) : — Filtered with 110um screen prior to testing **Yes or (No)**

Hardness (mg $CaCO_3$/L) of 100% : 1266 Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or (No)**

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —

Alkalinity of 100% sample (mg $CaCO_3$/L): 508

Dilution Water

Pail label / preparation date 2:04/22

Hardness of dilution water (mg/L) 206

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C — 3.1 to 7.7 mg/L at 21°C

3.2 to 8.1 mg/L at 19°C — 3.0 to 7.6 mg/L at 22°C

3.2 to 7.9 mg/L at 20°C

Comments/Observations:

0hr: NO ppt

48hr: Surficial ppt

Reviewed By: MG Date Reviewed: 2022/05/04

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC 164 Reference 2122-1999-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/04/27	1510	LC/JCC	2	KRM
1	2022/04/28	0830	AF/MAF	-	MF
2	2022/04/29	1110	KRM/KC	3	CH

Sample Information

Initial pH: 8.0
Initial EC (µS/cm): 1977
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	7.8	7.8	7.9	7.7	7.8	7.7				
2	8.2	8.2	8.2	8.5	8.6	8.5				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	465	458	456	2110	2120	2110				
2	460	377	474	1957	1996	2030				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar C2 Jar(s) mortality 7 days prior to test (must be ≤25%) 5%

QA (previous month)

Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 17
Were test treatments randomized on test tray? (Yes) No

Control Validity Criteria

Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 9.4
DO % of sample prior to aeration: 100
Duration of aeration (37.5 +/- 12.5 mL/min/L) : —
Hardness (mg $CaCO_3$/L) of 100% : 1266
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 508

Temperature (°C) of sample prior to aeration: 12
Is aeration required (<40% or >100%)? **Yes or (No)**
Filtered with 110um screen prior to testing **Yes or (No)**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or (No)**

Dilution Water

Pail label / preparation date 2:04/22
Hardness of dilution water (mg/L) 206

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

Comments/Observations:

0hr: noppt
48hr: noppt

Reviewed By: ML Date Reviewed: 2022/05/04

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS Client TEC 164 Reference 2122-1999-02

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/04/27	1515	LC/JCC	2	KMM
1	2022/04/28	0850	AE/MAF	-	MF
2	2022/04/29	1030	KTH/KD	3	CH

Sample Information

Initial pH: 8.0
Initial EC (µS/cm): 1977
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	8.1	8.2	8.1	7.9	7.9	7.9				
2	8.2	8.2	8.2	8.6	8.6	8.6				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	463	460	465	2170	2070	2080				
2	450	470	460	1912	2026	1943				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.9	7.9	7.9				
2	7.7	7.7	7.7	7.7	7.7	7.7				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	20	20	20				
2	21	21	21	21	21	21				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar C2 Jar(s) mortality 7 days prior to test (must be ≤25%) 5%

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 17
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 7.9
DO % of sample prior to aeration: 100
Duration of aeration (37.5 +/- 12.5 mL/min/L): —
Hardness (mg $CaCO_3$/L) of 100% : 1266
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 508

Temperature (°C) of sample prior to aeration: 20
Is aeration required (<40% or >100%)? **Yes or No**
Filtered with 110um screen prior to testing **Yes or No**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Dilution Water
Pail label / preparation date 2:04/22
Hardness of dilution water (mg/L) 206

Antiscalant
Final Concentration in Sample: 20 mg/L
Volume of sample: 500 mL Volume of antiscalant: 158 µL

Comments/Observations:
0hr: no ppt
48hr: no ppt

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Reviewed By: MG Date Reviewed: 2022/05/04

APPENDIX C – Chain-of-custody form

Teck

COC ID: F2 NAUTILUS April 25 2022 | **TURNAROUND TIME:** | **RUSH:**

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO			
Facility Name / Job#	F2 SRF			Lab Name	Nautilus Environmental - BC			Report Format / Distribution	Excel	PDF	EDD
Project Manager	BRETT MASON			Lab Contact				Email 1: [redacted]	X	X	X
Email	BRETT.MASON@TECK.COM			Email	jacklyn@nautilusenvironmental.ca			Email 1: teckcoal@equisonline.com			X
Address	RR1 HWY 3			Address	10823 27th Street SE			Email 2: DL-EVO-SRF-LAB@teck.com	X	X	X
								Email 3:			
City	Sparwood	Province	BC	City	Calgary	Province	AB	Email 4:			
								Email 5:			
								Email 6:			
								Email 7:			
								Email 8:			
								Email 10:			
								Email 11:			
								Email 12:			
								Email 13:			
Postal Code	V0B 2G0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada				
Phone Number	250-425-6179			Phone Number	403-253-7121			PO number	822027		

SAMPLE DETAILS | **ANALYSIS REQUESTED** | Filtered - F: Field, L: Lab, FL: Field & Lab, N: None

2022/04/25
11:00
Manitoulin
OC
4x20L carboys, 6x1L bottles
N6S/NaI
Good Condition

Sample ID 2122-1999	Sample Location (sys loc code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	Fil.	48hr Daphnia Magna Single Concentration Acute Toxicity 20C	48hr Daphnia Magna Single Concentration Acute Toxicity 10C	48hr Daphnia Magna Single Concentration Acute Toxicity Anitscalent	96hr Rainbow Trout Single Concentration Acute Toxicity (20L Bladders)	48hr Daphnia Magna Single Concentration Toxicity 15C							
								1	ANALYSIS											
F2_BPO_WG_2022-04-25_N -01	F2_BPO	WG		2022/04/25	8:00	G	8		2	2		4	12.2°C							
F2_BPO_WG_2022-04-25_N-AS -02	F2_BPO	WG		2022/04/25	8:01	G	1				1		12.2°C							

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME
		April 25, 2022		

SERVICE REQUEST (rush - subject to availability)					
Regular (default)	X	Sampler's Name		Mobile #	
Priority (2-3 business days) - 50% surcharge					
Emergency (1 Business Day) - 100% surcharge		Sampler's Signature		Date/Time	April 25, 2022
For Emergency <1 Day, ASAP or Weekend - Contact ALS					

END OF REPORT

Acute Toxicity Test Results

Samples collected April 26, 2022

Final Report

May 25, 2022

Submitted to: **Teck Coal Ltd.**
Elkford, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates					
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation	*Daphnia magna* antiscalant test initiation
EV_GT1_WS_2022-04-26_N-SRF/ 2122-2020-01	26-April-22 at 0850h	27-April-22 at 0905h	28-April-22 at 1505h	28-April-22 at 1520h	28-April-22 at 1530h	-
EV_BC1_WS_2022-04-26_N-SRF/ 2122-2020-02	26-April-22 at 0950h	27-April-22 at 0905h	28-April-22 at 1505h	28-April-22 at 1525h	28-April-22 at 1530h	-
EV_BC1_WS_2022-04-26_N-SRF-AS/ 2122-2020-03	26-April-22 at 0851h	27-April-22 at 0905h	-	-	-	28-April-22 at 1535h
EV_GT1_WS_2022-04-26_N-SRF-AS/ 2122-2020-04	26-April-22 at 0951h	27-April-22 at 0905h	-	-	-	28-April-22 at 1540h

SAMPLE CHEMISTRY

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
EV_GT1_WS_2022-04-26_N-SRF	9.9°C	1163	241
EV_BC1_WS_2022-04-26_N-SRF	5.8°C	984	278
EV_BC1_WS_2022-04-26_N-SRF-AS	5.8°C	984	278
EV_GT1_WS_2022-04-26_N-SRF -AS	9.9°C	1163	241

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)
- *Daphnia magna* 48-h single concentration screening test (conducted with 5 mg/L antiscalant)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample			
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
EV_GT1_WS_2022-04-26_N-SRF	100	100	100	100
EV_BC1_WS_2022-04-26_N-SRF	100	100	100	100

Sample ID	Percent Immobility in 100 (% v/v)		
	Daphnia magna 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
EV_GT1_WS_2022-04-26_N-SRF	0	3	0
EV_BC1_WS_2022-04-26_N-SRF	0	0	0

Sample ID	*Daphnia magna*	
	Percent survival in 100% (v/v) sample	Percent Immobility in 100% (v/v) sample
EV_GT1_WS_2022-04-26_N-SRF	100	3
EV_BC1_WS_2022-04-26_N-SRF	100	0
EV_BC1_WS_2022-04-26_N-SRF-AS	100	0
EV_GT1_WS_2022-04-26_N-SRF -AS	100	0

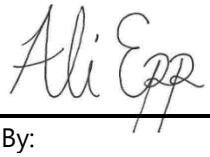
Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
EV_GT1_WS_2022-04-26_N-SRF	Rainbow trout	None	None
	Daphnia magna	None	None
	Daphnia magna	None	None
EV_BC1_WS_2022-04-26_N-SRF	Rainbow trout	Precipitate observed on bottom of vessel	None
	Daphnia magna	Surficial precipitate observed in 20 degree vessel	None
EV_BC1_WS_2022-04-26_N-SRF-AS	*Daphnia magna*	None	None
EV_GT1_WS_2022-04-26_N-SRF-AS	*Daphnia magna*	None	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	3.9 (3.5-4.4) g/L KCl[1]	6.8 (6.5 -7.1) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.3 (2.5 -4.5) g/L KCl	6.5 (5.5 - 7.6) g/L NaCl
Reference toxicant CV	9.7%	5.4%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date April 11, 2022; [2] Test Date May 3, 2022



Report By:
Ali Epp
Biologist



Reviewed By:
Courtney Bogstie, P. Biol.
Senior Biologist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Control/dilution water for antiscalant test	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L), Na_2SeO_4 (2 µg Se/L) and 5 mg/L antiscalant
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC164 Reference 2122-2020-01 Chamber 2

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	4/28/2022	1505 *	JCC/KO	1	KM
1	4/29/2022	0805	EP	-	CL
2	4/30/2022	0925	CH	-	MAE
3	5/1/2022	0900	DM	-	JCC
4	5/2/2022	0935	JCC/KM/MA	1	JCC

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 8.3
Initial EC (µS/cm): 1926
Salinity (ppt): 2

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L : yes/no

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	9.8	9.3	8.8		
Temp (°C) of 100%	15				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: **5.5-8.5**)								
Day 0	8.2	8.3						
Day 4	7.9	8.1						
EC (uS/cm)								
Day 0	456	1904						
Day 4	448	1793						
DO (mg/L) (**70-100% saturation at test temp.**)								
Day 0	8.8	8.8						
Day 4	8.8	8.8						
Temperature (°C) (range: **14-16°C**)								
Day 0	15	15						
Day 4	15	15						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	9*						
Day 2	10	9						
Day 3	10	9						
Day 4	10	9						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.0	0.3
2	3.0	0.3
3	3.1	0.3
4	3.0	0.3
5	3.0	0.3
6	2.8	0.2
7	3.3	0.4
8	3.0	0.3
9	3.4	0.5
10	3.0	0.3

Loading Density (g/L): 0.2 (must be ≤0.5 g/L)
Mean Length (cm): 3.1
Length Range (cm): 2.8-3.4
Mean Weight (g): 0.3 (Must be ≥0.3g)
Weight Range: (g): 0.2-0.5

Test Organism Information

Batch 20220224TR
Source Troutlodge
Tank # 8
Days Held at 15± 2°C 36 (must be ≥14 days)
Percent stock mortality 0.3 (7 days prior to test, must be ≤2%)
Test Volume (L) 16 ~~18~~

Comments :

* jumped out of tank, don't include in mortality

96hrs: NO PPT

Reviewed By: CB Date Reviewed: 2022/05/10

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC164 Reference 2122-2020-02 Chamber 2

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	4/28/2022	1605 *	JCC/KO	1	VMM
1	4/29/2022	0806	EP	-	CC
2	4/30/2022	0925	CH	-	MAF
3	5/1/2022	0910	DM	-	JCC
4	5/2/2022	1100	KY/LC/CC	1	MAF

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 8.1
Initial EC (µS/cm): 1948
Salinity (ppt): 2

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L : **yes/no**

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	9.6	9.1	8.6		
Temp (°C) of 100%	16				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	7.9	8.3						
Day 4	8.0	8.1						
EC (uS/cm)								
Day 0	456	1913						
Day 4	451	1801						
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	8.8	8.6						
Day 4	8.8	8.8						
Temperature (°C) (range: 14-16°C)								
Day 0	15	16						
Day 4	15	15						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	9	10						
Day 4	9	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.2	0.3
2	3.1	0.3
3	3.0	0.3
4	3.4	0.4
5	3.0	0.3
6	3.2	0.4
7	2.9	0.2
8	3.0	0.3
9	3.3	0.4
* 10	—	—

Loading Density (g/L): 0.2 (must be ≤0.5 g/L)
Mean Length (cm): 3.1
Length Range (cm): 2.9-3.4
Mean Weight (g): 0.3 (Must be ≥0.3g)
Weight Range: (g): 0.2-0.4

Test Organism Information

Batch 20220224TR
Source Troutlodge
Tank # 8
Days Held at 15± 2°C 36 (must be ≥14 days)
Percent stock mortality 0.3 (7 days prior to test, must be ≤2%)
Test Volume (L) 18

Comments :

96hrs: ppt present on bottom of tank.

Reviewed By: CB Date Reviewed: 2022/05/10

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC164 Reference 2122-2020-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/04/28	1530	EP/KTM/CC	2	MF
1	2022/04/29	0830	AF/CP	-	JC
2	20220430	0940	CH	2	MF

Sample Information

Initial pH: 8.3
Initial EC (µS/cm): 1926
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

day — pH (units) (range: 6.0-8.5)

day										
0	8.1	8.1	8.2	8.1	8.2	8.2				
2	7.9	7.9	7.9	8.1	8.1	8.1				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	451	450	453	1967	1985	1987				
2	437	452	454	1886	1939	1946				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.7	7.7	7.7				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	21	21	21				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar C9 used — Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 35
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 9.1
Temperature (°C) of sample prior to aeration: 19 20
DO % of sample prior to aeration: 116
Is aeration required (<40% or >100%)? **Yes or No**
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20 min
Filtered with 110um screen prior to testing **Yes or No**
Hardness (mg $CaCO_3$/L) of 100% : 1163
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 241

Dilution Water
Pail label / preparation date 2:04/22
Hardness of dilution water (mg/L) 206

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Comments/Observations:
0hr: no ppt
48hr: surficial ppt, ppt on jar

Reviewed By: CB Date Reviewed: 2022/05/06

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC164 Reference 2122-2020-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/04/28	1520	EP/KTM/CC	2	MF
1	2022/04/29	0900	AF	-	SL
2	2022/04/30	1010	CH	2	MF

Sample Information

Initial pH: 8.3
Initial EC (µS/cm): 1926
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	7.7	7.7	7.8	8.2	8.3	8.3				
2	8.1	8.1	8.1	8.3	8.3	8.4				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	437	451	452	2100	2100	2110				
2	468	463	460	1955	2100	2090				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar C2 used — Jar(s) mortality 7 days prior to test (must be ≤25%) 0%.

QA (previous month)

Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 35
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 9.4
Temperature (°C) of sample prior to aeration: 12
DO % of sample prior to aeration: 100
Is aeration required (<40% or >100%)? Yes or (No)
Duration of aeration (37.5 +/- 12.5 mL/min/L) : -
Filtered with 110um screen prior to testing Yes or (No)
Hardness (mg $CaCO_3$/L) of 100% : 116.3
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) -
Alkalinity of 100% sample (mg $CaCO_3$/L): 241

Dilution Water

Pail label / preparation date 2:04/22
Hardness of dilution water (mg/L) 206

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

Comments/Observations:

0hr: no ppt
48hr: NO ppt

Reviewed By: CB Date Reviewed: 2022/05/06

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC164 Reference 2122-2020-02

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/04/28	1530	EP/KTM/CC	2	MF
1	2022/04/29	0830	AE/EP	-	JC
2	2022/04/30	0945	CH	2	MAF

Sample Information

Initial pH: 8.1
Initial EC (µS/cm): 1948
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	8.0	8.0	8.0	8.0	8.1	8.1				
2	8.1	8.0	8.0	8.1	8.1	8.1				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	432	458	451	~~1900~~ 1981	1987	2070				
2	452	451	457	1860	1934	1940				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.7	7.7	7.7				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	21	21	21				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar D1 wed Jar(s) mortality 7 days prior to test (must be ≤25%) 5%

QA (previous month)

Days to first brood (≤12 days) 9
Average number of young produced (≥15 young) 31
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - (must be ≤10%) 0

Sample

DO (mg/L) of sample prior to aeration: 8.8
DO % of sample prior to aeration: 114
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20 min
Hardness (mg $CaCO_3$/L) of 100% : 948
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 278

Temperature (°C) of sample prior to aeration: 21
Is aeration required (<40% or >100%)? **Yes or No**
Filtered with 110um screen prior to testing **Yes or No**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Dilution Water

Pail label / preparation date 2:04/22
Hardness of dilution water (mg/L) 2056

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Comments/Observations:

Obs: no 48hr. surficial ppt

Reviewed By: CB Date Reviewed: 2022/05/06

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC164 Reference 2122-2020-02

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/04/28	1525	EP/KTM/CC	2	MF
1	2022/04/29	0900	AE	-	SL
2	2022/04/30	1010	CH	2	MAF

Sample Information

Initial pH:	8.1
Initial EC (µS/cm):	1948
Salinity (ppt):	2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	8.1	8.1	8.1	8.0	8.0	8.0				
2	8.2	8.1	8.1	8.3	8.3	8.4				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	451	463	454	2080	2090	2100				
2	453	465	463	1952	1982	2080				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar wed C2/C84 EP

Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)

Days to first brood (≤12 days) 7

Average number of young produced (≥15 young) 35

Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - 0

(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 9.4

Temperature (°C) of sample prior to aeration: 12

DO % of sample prior to aeration: 100

Is aeration required (<40% or >100%)? **Yes or (No)**

Duration of aeration (37.5 +/- 12.5 mL/min/L) : —

Filtered with 110um screen prior to testing **Yes or (No)**

Hardness (mg $CaCO_3$/L) of 100% : 948

Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or (No)**

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —

Alkalinity of 100% sample (mg $CaCO_3$/L): 278

Dilution Water

Pail label / preparation date 2:0 4/22

Hardness of dilution water (mg/L) 206

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

Comments/Observations:

Ohr: no ppt

48hr: NO ppt

Reviewed By: CB Date Reviewed: 2022/05/06

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS (AS) Client TEC1164 Reference ~~2022-~~ 2020-03 2122-

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/04/28	1535	FP/KTM/CC	2	SS
1	2022/04/29	0830	AE/EP	-	SC
2	2022/04/30	0950	CM	2	MAF

Sample Information

Initial pH:	8.1
Initial EC (µS/cm):	1948
Salinity (ppt):	2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				
day				pH (units) (range: 6.0-8.5)						
0	8.2	8.1	8.1	8.1	8.1	8.1				
2	8.1	8.1	8.1	8.3	8.3	8.4				
	The pH of the sample was not adjusted prior to test setting, unless noted in the comments below									
				EC (uS/cm)						
0	453	450	455	1961	1983	1993				
2	451	455	457	1891	1956	1970				
				DO (mg/L) (**40-100% saturation at test temp.**)						
0	7.9	7.9	7.9	7.7	7.7	7.7				
2	7.9	7.9	7.9	7.9	7.9	7.9				
				Temperature (°C) (range: **18-22 °C**)						
0	20	20	20	21	21	21				
2	20	20	20	20	20	20				
				Number Alive (I, immobile)						
0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar Cl wed Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 35
Were test treatments randomized on test tray? Yes / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0

Sample
DO (mg/L) of sample prior to aeration: 8.7
Temperature (°C) of sample prior to aeration: 21
DO % of sample prior to aeration: 112
Is aeration required (<40% or >100%)? Yes or No
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20min
Filtered with 110um screen prior to testing Yes or No
Hardness (mg $CaCO_3$/L) of 100% : 948
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or No
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 278

Dilution Water
Pail label / preparation date 2: 04/22
Hardness of dilution water (mg/L) 206

Antiscalant
Final Concentration in Sample: 5mg/L
Volume of sample: 500mL Volume of antiscalant: 39.5 ml

Comments/Observations:
0hr: no ppt
48hr: NO PPT

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Reviewed By: SS CB Date Reviewed: 2022/05/06

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS Client TEC1164 Reference 2122–2020-04

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/04/28	1540	ERIKTN/CC	2	SS
1	2022/04/29	0830	AE/EP		SC
2	2022/04/30	0950	CH	2	MAF

Sample Information

Initial pH:	8.3
Initial EC (µS/cm):	1926
Salinity (ppt):	2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	8.2	8.2	8.1	8.1	8.2	8.2				
2	8.1	8.1	8.1	8.4	8.4	8.4				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	457	456	454	1976 1868	1961	1977				
2	458	460	461	1909	1975	1973				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.7	7.7	7.7				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	21	21	21				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar C4/C2/D4 Jar(s) mortality 7 days prior to test (must be ≤25%) 2/.

QA (previous month)

Days to first brood (≤12 days) 8

Average number of young produced (≥15 young) 33

Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - (must be ≤10%) 0

Sample

DO (mg/L) of sample prior to aeration: 8.7 Temperature (°C) of sample prior to aeration: 21

DO % of sample prior to aeration: 113 Is aeration required (<40% or >100%)? (Yes) or No

Duration of aeration (37.5 +/- 12.5 mL/min/L): 20 min Filtered with 110um screen prior to testing Yes or (No)

Hardness (mg $CaCO_3$/L) of 100% : 163 Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —

Alkalinity of 100% sample (mg $CaCO_3$/L): 241

Dilution Water

Pail label / preparation date 2:04/22

Hardness of dilution water (mg/L) 266

Antiscalant

Final Concentration in Sample: 5mg/L

Volume of sample: 500mL Volume of antiscalant: 39.5 M1

Comments/Observations:

0hr: no ppt

48hr: NO ppt

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Reviewed By: CB Date Reviewed: 2022/05/06

APPENDIX C – Chain-of-custody form

Teck

COC ID: EVO NAUTILUS April 26 2022 | TURNAROUND TIME: | RUSH:

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO			
Facility Name / Job#	Elkview Operations			Lab Name	Nautilus Environmental - BC			Report Format / Distribution	Excel	PDF	EDD
Project Manager	Group 1; Brett Mason			Lab Contact				Email 1:			
Email	Brett.Mason@teck.com			Email	jacklyn@nautilusenvironmental.ca			Email 2:			
Address	RR1 HWY 3			Address	10823 27th Street SE			Email 3:			
								Email 4:			
City	Sparwood	Province	BC	City	Calgary	Province	AB	Email 5:			
								Email 6:			
								Email 7: teckcoal@equisonline.com			X
								Email 8: DL-EVO-SRF@teck.com	X	X	X
								Email 9: Cole.Macgregor@teck.com	X	X	X
								Email 10:			
								Email 11:			
								Email 12:			
								Email 13:			
Postal Code	V0B 2G0	Country	Canada	Postal Code	T2H 2K1	Country	Canada				
Phone Number	250-425-6179			Phone Number	T2Z 3V9			PO number	822027		

SAMPLE DETAILS — **ANALYSIS REQUESTED** (Filtered - F: Field, L: Lab, FL: Field & Lab, N: None)

2122-2020
2022/04/27 0905
8 x 20L carboys, 10 x 1L bottles
manitoulin
WS/N
good condition
JCC

Sample ID	Sample Location (sys_loc_code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	Fil.	Pres.	48hr Daphnia Magna Single Concentration Acute Toxicity 20C	48hr Daphnia Magna Single Concentration Acute Toxicity 10C	48hr Daphnia Magna Single Concentration Acute Toxicity Antiscalent	96hr Rainbow Trout Single Concentration Acute Toxicity (20 L Bladder)	96hr Rainbow Trout Single Concentration Acute Toxicity (20 L Bladder)	48hr Daphnia Magna Single Concentration Toxicity 15C						
EV_GT1_WS_2022-04-26_N-SRF -01	EV_GT1	WS		2022/04/26	8:50	G	8			2	2			4		9.9°C					
EV_BC1_WS_2022-04-26_N-SRF -02	EV_BC1	WS		2022/04/26	9:50	G	8			2	2			4		5.8°C					
EV_BC1_WS_2022-04-26_N-SRF-AS -03	EV_BC1	WS		2022/04/26	8:51	G	1					1				5.8°C					
EV_GT1_WS_2022-04-26_N-SRF-AS -04	EV_GT1	WS		2022/04/26	9:51	G	1					1				9.9°C					

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS
Field Temperatures

RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME
Nick Lagarde Teck	April 26, 2022 1330		

SERVICE REQUEST (rush - subject to availability)

Regular (default)	X
Priority (2-3 business days) - 50% surcharge	
Emergency (1 Business Day) - 100% surcharge	
For Emergency <1 Day, ASAP or Weekend - Contact ALS	

Sampler's Name	Dan Nieger	Mobile #	
Sampler's Signature		Date/Time	April 26, 2022

END OF REPORT

Acute Toxicity Test Results

Sample collected May 2, 2022

Final Report

May 31, 2022

Submitted to: **Teck Coal Ltd.**
Sparwood, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates					
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation	*Daphnia magna* antiscalant test initiation
F2_BPO_WG_2022-05-02_N/ 2122-2070-01	2-May-22 at 0920h	3-May-22 at 1255h	4-May-22 at 1520h	3-May-22 at 1625h	3-May-22 at 1612h	-
F2_BPO_WG_2022-05-02_N-AS/ 2122-2070-02	2-May-22 at 0920h	3-May-22 at 1255h	-	-	-	3-May-22 at 1615h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
F2_BPO_WG_2022-05-02_N	6.4°C	1408	503
F2_BPO_WG_2022-05-02_N-AS	6.4°C	1408	503

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)
- *Daphnia magna* 48-h single concentration screening test (conducted with 20 mg/L antiscalant)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample			
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
F2_BPO_WG_2022-05-02_N	100	100	100	-
F2_BPO_WG_2022-05-02_N-AS	-	-	-	100

Sample ID	Percent Immobility in 100 (% v/v)		
	Daphnia magna 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
F2_BPO_WG_2022-05-02_N	0	0	0
F2_BPO_WG_2022-05-02_N-AS	0	0	0

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
F2_BPO_WG_2022-05-02_N	Rainbow trout	Precipitate observed on the test vessel	None
	Daphnia magna	Surficial precipitate and precipitate on the test vessel observed in the 20-degree test	None
F2_BPO_WG_2022-05-02_N-AS	*Daphnia magna*	None	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	3.9 (3.5-4.4) g/L KCl[1]	6.8 (6.5 -7.1) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.3 (2.5 -4.5) g/L KCl	6.5 (5.5 - 7.6) g/L NaCl
Reference toxicant CV	9.7%	5.4%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, April 11, 2022; [2] Test Date May 3, 2022



Report By:
Ali Epp, BSc
Biologist



Reviewed By:
Leila Oosterbroek, P Biol
Environmental Scientist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Control/dilution water for antiscalant test	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L), Na_2SeO_4 (2 µg Se/L) and 20 mg/L antiscalant
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS ENVIRONMENTAL

Trout Bench Sheet

Method TRS Client TEC164 Reference 2122-2070-01 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022/05/04	1520 *	CC/NA/KCRM	1	MTM
1	2022/05/05	1010	NA	-	MAF
2	2022/05/06	0915	KC/MAF	-	MF
3	2022/05/07	0920	CM	-	MAF
4	2022/05/08	0930	LC/DM	1	JCC

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 7.8
Initial EC (µS/cm): 2070
Salinity (ppt): 2

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L (yes/no)

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	8.6	8.8			
Temp (°C) of 100%	16				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

	Conc. CTL	100						
pH (units) (range: **5.5-8.5**)								
Day 0	8.3	8.0						
Day 4	8.0	8.2						
EC (uS/cm)								
Day 0	433	1951						
Day 4	439	1884						
DO (mg/L) (**70-100% saturation at test temp.**)								
Day 0	8.8	8.8						
Day 4	8.8	8.8						
Temperature (°C) (range: **14-16°C**)								
Day 0	15	15						
Day 4	15	15						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10 (1)						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	2.7	0.2
2	3.7	0.6
3	3.4	0.4
4	3.1	0.3
5	3.3	0.3
6	3.0	0.3
7	3.4	0.4
8	3.3	0.4
9	3.2	0.4
10	3.0	0.3

Loading Density (g/L): 0.2 (must be ≤0.5 g/L)
Mean Length (cm): 3.2
Length Range (cm): 2.7-3.7
Mean Weight (g): 0.4 (Must be ≥0.3g)
Weight Range: (g): 0.2-0.6

Test Organism Information

Batch 20220224TR
Source Troutlodge
Tank # 8
Days Held at 15± 2°C 42 (must be ≥14 days)
Percent stock mortality 0.82 (7 days prior to test, must be <2%)
Test Volume (L) 18

Comments :

96HRS: ppt present on bottom of tank

Reviewed By: SS Date Reviewed: 2022/05/09

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS20 Client TEC164 Reference 2122-2070-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/05/03	1602	KTM/LL	3	JCC
1	2022/05/04	0905	IC	-	KTM
2	2022/05/05	0800	CH	3	CC

Sample Information

Initial pH: 7.8
Initial EC (µS/cm): 2076
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	8.1	8.1	8.1	8.1	8.1	8.1				
2	8.4	8.3	8.3	8.6	8.5	8.5				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	456	468	469	2010	2080	2180				
2	473	475	482	1975	2110	2030				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	8.1	8.72	8.72				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	19	18	18				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	9 CH	10	10	10 CH	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar Wed C2 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 35
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 3%
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 9.3
DO % of sample prior to aeration: 114%
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20mn
Hardness (mg $CaCO_3$/L) of 100% : 1408
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 503

Temperature (°C) of sample prior to aeration: 18
Is aeration required (<40% or >100%)? Yes or No
Filtered with 110um screen prior to testing Yes or No
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)

Dilution Water

Pail label / preparation date 1:04/22
Hardness of dilution water (mg/L) 179

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Comments/Observations:
0hr: no ppt
48hr: CH No ppt ppt on jar, surficial ppt.

Reviewed By: SS Date Reviewed: 2022/05/09

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS10 Client TEC164 Reference 2122-2070-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/05/03	1625	VM/CC	3	CC
1	2022/05/04	0900	CH	-	VM
2	2022/05/05	0800	CH	3	CC

Sample Information

Initial pH: 7.8
Initial EC (µS/cm): 2070
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	8.1	8.2	8.2	8.0	8.0	8.0				
2	8.2	8.3	8.3	8.5	8.5	8.6				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	469	470	470	2050	2180	2096				
2	447	477	476	1975	2050	2080				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar INPAC2 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 35
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0

Sample

DO (mg/L) of sample prior to aeration: 10.2
Temperature (°C) of sample prior to aeration: 12
DO % of sample prior to aeration: 108%
Is aeration required (<40% or >100%)? Yes or No
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 2 bubbles
Filtered with 110um screen prior to testing Yes or No
Hardness (mg $CaCO_3$/L) of 100% : 1468
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or No
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 503

Dilution Water
Pail label / preparation date 1:04/29
Hardness of dilution water (mg/L) 179

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

Comments/Observations:
0hr: noppt
48hr: No ppt

Reviewed By: SS Date Reviewed: 2022105109

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS Client TEC164 Reference 2122-2070-02

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/05/03	1615	KTM/LC	3	JCC
1	2022/05/04	0905	CH	3	KTM
2	2022/05/05	0830	CH	3	CC

Sample Information

Initial pH: 7.8
Initial EC (µS/cm): 2070
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				
day	pH (units) (range: 6.0-8.5)									
0	8.1	8.1	8.1	8.0	8.0	8.0				
2	8.3	8.3	8.3	8.6	8.6	8.6				
	The pH of the sample was not adjusted prior to test setting, unless noted in the comments below									
	EC (uS/cm)									
0	474	479	480	2010	2170	2090				
2	473	496	490	2050	2020	2140				
	DO (mg/L) (**40-100% saturation at test temp.**)									
0	7.9	7.9	7.9	7.9	8.72	8.72				
2	7.9	7.9	7.9	7.9	7.9	7.9				
	Temperature (°C) (range: **18-22 °C**)									
0	20	20	20	20	19	19				
2	20	20	20	20	20	20				
	Number Alive (I, immobile)									
0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	9*				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar wed C1 Jar(s) mortality 7 days prior to test (must be ≤25%) 5%

QA (previous month)
Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 35
Were test treatments randomized on test tray? Yes / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0

Sample
DO (mg/L) of sample prior to aeration: 8.9 Temperature (°C) of sample prior to aeration: 18
DO % of sample prior to aeration: 108% Is aeration required (<40% or >100%)? Yes or No
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20min Filtered with 110um screen prior to testing Yes or No
Hardness (mg $CaCO_3$/L) of 100% : 1408 Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or No
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 503

Dilution Water
Pail label / preparation date 1/04/29
Hardness of dilution water (mg/L) 179

Antiscalant
Final Concentration in Sample: 20mg/L
Volume of sample: ~~50mL~~ KTM 500mL Volume of antiscalant: 158mL

Comments/Observations:
0hr: reppt
48hr: No ppt
*I dried to side of jar, not included in mortality

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C 3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C 3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C

Reviewed By: SS Date Reviewed: 2022/05/09

APPENDIX C – Chain-of-custody form

Teck

COC ID:	F2 NAUTILUS May 2 2022	TURNAROUND TIME:		RUSH:	

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name / Job#	F2 SRF			Lab Name	Nautilus Environmental - BC			Report Format / Distribution		Excel	PDF	EDD
Project Manager	BRETT MASON			Lab Contact				Email 1:	Cole.Macgregor@teck.com	X	X	X
Email	BRETT.MASON@TECK.COM			Email	jacklyn@nautilusenvironmental.ca			Email 1:	teckcoal@equisonline.com			X
Address	RR1 HWY 3			Address	10823 27th Street SE			Email 2:	DL-EVO-SRF-LAB@teck.cor	X	X	X
								Email 3:				
City	Sparwood	Province	BC	City	Calgary	Province	AB	Email 4:				
								Email 5:				
								Email 6:				
								Email 7:				
								Email 8:				
								Email 10:				
								Email 11:				
								Email 12:				
								Email 13:				
Postal Code	V0B 2G0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada					
Phone Number	250-425-6179			Phone Number	403-253-7121			PO number	822027			

SAMPLE DETAILS / **ANALYSIS REQUESTED** — Filtered - F: Field, L: Lab, FL: Field & Lab, N: None

2022/05/03 12:55
Manitoulin
SRS
4x20L carboys, ~~4~~ 5 x 1L bottles
NOS NoI
Good Condition

	Sample ID 2122-2070	Sample Location (sys_loc_code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	ANALYSIS	48hr Daphnia Magna Single Concentration Acute Toxicity 20C	48hr Daphnia Magna Single Concentration Acute Toxicity 10C	48hr Daphnia Magna Single Concentration Acute Toxicity Anitscalent	96hr Rainbow Trout Single Concentration Acute Toxicity (20L Bladders)	48hr Daphnia Magna Single Concentration Toxicity 15C
-01	F2_BPO_WG_2022-05-02_N	F2_BPO	WG		2022/05/02	9:20	G	8		2	2		4	6.4°C
-02	F2_BPO_WG_2022-05-02_N-AS	F2_BPO	WG		2022/05/02	9:20	G	1				1		6.4°C

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME
		May 2, 2022		

SERVICE REQUEST (rush - subject to availability)					
Regular (default)	X	Sampler's Name		Mobile #	
Priority (2-3 business days) - 50% surcharge					
Emergency (1 Business Day) - 100% surcharge		Sampler's Signature		Date/Time	May 2, 2022
For Emergency <1 Day, ASAP or Weekend - Contact ALS					

END OF REPORT

Acute Toxicity Test Results

Samples collected May 9, 2022

Final Report

June 15, 2022

Submitted to: **Teck Coal Ltd.**
Sparwood, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates					
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation	*Daphnia magna* antiscalant test initiation
EV_EC1_WS_2022-05-09_N-SRF/ 2122-2161-01	9-May-22 at 1120h	10-May-22 at 1000h	12-May-22 at 1050h	11-May-22 at 1415h	11-May-22 at 1510h	-
EV_EC1_WS_2022-05-09_N-SRF-AS/ 2122-2161-02	9-May-22 at 1121h	10-May-22 at 1000h	-	-	-	11-May-22 at 1410h
EV_ECOUT_WS_2022-05-09_N-SRF/ 2122-2161-03	9-May-22 at 1300h	10-May-22 at 1000h	12-May-22 at 1055h	11-May-22 at 1340h	11-May-22 at 1345h	-
EV_ECOUT_WS_2022-05-09_N-SRF-AS/ 2122-2161-04	9-May-22 at 1301h	10-May-22 at 1000h	-	-	-	11-May-22 at 1505h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
EV_EC1_WS_2022-05-09_N-SRF	10.7°C	998	340
EV_EC1_WS_2022-05-09_N-SRF-AS	10.7°C	998	340
EV_ECOUT_WS_2022-05-09_N-SRF	9.7°C	1312	390
EV_ECOUT_WS_2022-05-09_N-SRF-AS	9.7°C	1312	390

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)
- *Daphnia magna* 48-h single concentration screening test (conducted with 5 mg/L antiscalant)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample			
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
EV_EC1_WS_2022-05-09_N-SRF	100	100	100	-
EV_EC1_WS_2022-05-09_N-SRF-AS	-	-	-	100
EV_ECOUT_WS_2022-05-09_N-SRF	100	100	97	-
EV_ECOUT_WS_2022-05-09_N-SRF-AS	-	-	-	97

Sample ID	Percent Immobility in 100 (% v/v)		
	Daphnia magna 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
EV_EC1_WS_2022-05-09_N-SRF	0	0	-
EV_EC1_WS_2022-05-09_N-SRF-AS	-	-	0
EV_ECOUT_WS_2022-05-09_N-SRF	0	41	-
EV_ECOUT_WS_2022-05-09_N-SRF-AS	-	-	53

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
EV_EC1_WS_2022-05-09_N-SRF	Rainbow trout	None	None
	Daphnia magna	Surficial precipitate and precipitate on the test vessel observed in the 20-degree test.	None
EV_EC1_WS_2022-05-09_N-SRF-AS	*Daphnia magna*	None	None
EV_ECOUT_WS_2022-05-09_N-SRF	Rainbow trout	None	None
	Daphnia magna	Surficial precipitate and precipitate on the test vessel observed in both the 10- and 20-degree tests	Precipitate observed on carapace in 20-degree test
EV_ECOUT_WS_2022-05-09_N-SRF-AS	*Daphnia magna*	Surficial precipitate observed	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	3.4 (3.0-3.9) g/L KCl[1]	5.9 (5.6-6.2) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.3 (2.5-4.4) g/L KCl	6.5 (5.6-7.6) g/L NaCl
Reference toxicant CV	9.4%	5.0%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test Date, May 5, 2022; [2] Test Date, May 18, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation



Report By:
Courtney Hewitt, BSc
Biologist



Reviewed By:
Leila Oosterbroek, P Biol
Environmental Scientist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Control/dilution water for antiscalant test	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L), Na_2SeO_4 (2 µg Se/L) and 5 mg/L antiscalant
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC164 Reference 2122-2161-01 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022/05/12	1060 *	JCC/LC	1	MAF
1	2022/05/13	0845	CB	-	MAF
2	2022/05/14	1930	KLM	-	MAF
3	2022/05/15	1220	DM	-	DN
4	2022/05/16	1135	PE/LC	7	DN

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 8.1
Initial EC (µS/cm): 1561
Salinity (ppt): 1

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L : yes/no

	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
Preaeration time					
DO(mg/L) of 100%	8.9	8.6			
Temp (°C) of 100%	16				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	7.9	8.0						
Day 4	8.1	8.1						
EC (uS/cm)								
Day 0	445	1750						
Day 4	419	1524						
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	8.8	8.6						
Day 4	8.8	8.8						
Temperature (°C) (range: 14-16°C)								
Day 0	15	16						
Day 4	15	15						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.1	0.3
2	2.7	0.2
3	2.7	0.3
4	3.1	0.3
5	4.0	0.8
6	3.0	0.3
7	3.2	0.4
8	3.2	0.4
9	3.3	0.4
10	2.7	0.2

Loading Density (g/L): 0.2 (must be ≤0.5 g/L)
Mean Length (cm): 3.1
Length Range (cm): 2.7-4.0
Mean Weight (g): 0.4 (Must be ≥0.3g)
Weight Range: (g): 0.2-0.8

Test Organism Information

Batch 20220413TR
Source Smoky Trout Farm
Tank # 6
Days Held at 15± 2°C 29 (must be ≥14 days)
Percent stock mortality 0.05 (7 days prior to test, must be <2%)
Test Volume (L) 18

Comments :

96hrs: NO PPT

Reviewed By: EV Date Reviewed: 2022/05/26

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC164 Reference 2122-2161-03 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022/05/12	1055 *	JCC/LC	1	MMF
1	2022/05/13	0845	CB	-	MMF
2	2022/05/14	1130	KM	-	MMF
3	2022/05/15	1220	OM	-	MMF
4	2022/05/16	1140	AE/LC	-	MMF

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 7.7
Initial EC (µS/cm): 1688
Salinity (ppt): 1

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L : **yes/no**

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	9.6	8.6			
Temp (°C) of 100%	16				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: **5.5-8.5**)								
Day 0	7.9	7.8						
Day 4	8.2	8.2						
EC (uS/cm)								
Day 0	447	1911						
Day 4	416	1558						
DO (mg/L) (**70-100% saturation at test temp.**)								
Day 0	8.8	9.6						
Day 4	8.5	8.7						
Temperature (°C) (range: **14-16°C**)								
Day 0	15	16						
Day 4	15	15						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.2	0.4
2	3.3	0.4
3	2.9	0.3
4	2.9	0.3
5	3.0	0.3
6	2.6	0.2
7	3.0	0.4
8	3.1	0.3
9	3.0	0.3
10	3.0	0.3

Loading Density (g/L): 0.2
(must be ≤0.5 g/L)
Mean Length (cm): 3.0
Length Range (cm): 2.6-3.5
Mean Weight (g): 0.3
(Must be ≥0.3g)
Weight Range: (g): 0.2-0.4

Test Organism Information

Batch 20220413TR
Source Smoky Trout Farm
Tank # 6
Days Held at 15± 2°C 29
(must be ≥14 days)
Percent stock mortality 0.05
(7 days prior to test, must be <2%)
Test Volume (L) 17

Comments :

96hrs: NO PPT

Reviewed By: EV Date Reviewed: 2022/05/26

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC164 Reference 2122-2161-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/05/11	1510	JC/CH	1	MAF
1	2022/05/12	1835	LC		JCC
2	2022/05/13	0900	CH	2	EP

Sample Information

Initial pH: 8.1
Initial EC (µS/cm): 1561
Salinity (ppt): 1

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	7.9	7.9	7.9	8.0	8.0	8.0				
2	7.9	8.0	8.0	8.3	8.3	8.2				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	399	399	401	1584	1580	1578				
2	393	418	419	1541	1569	1587				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.9	7.9	7.9				
2	8.1	8.1	8.1	8.1	8.1	8.1				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	20	20	20				
2	19	19	19	19	19	19				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10(I)	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar WD2 Jar(s) mortality 7 days prior to test (must be ≤25%) 0

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 22
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 9.2
DO % of sample prior to aeration: 115
Duration of aeration (37.5 +/- 12.5 mL/min/L): 20min
Hardness (mg $CaCO_3$/L) of 100% : 998
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 340

Temperature (°C) of sample prior to aeration: 20
Is aeration required (<40% or >100%)? Yes or No
Filtered with 110um screen prior to testing Yes or No
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)

Dilution Water
Pail label / preparation date 1:05/06
Hardness of dilution water (mg/L) 187

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Comments/Observations:
0HR: no ppt
48HR: surficial ppt, ppt on jar

Reviewed By: EV Date Reviewed: 2022/05/26

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC164 Reference 2122-2161-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/05/11	1415	JC/CH	7	MAF
1	2022/05/12	0840	CC		JCC
2	2022/05/13	1010	CH	2	EP

Sample Information

Initial pH:	8.1
Initial EC (µS/cm):	1561
Salinity (ppt):	1

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	7.9	7.9	7.9	8.0	8.0	8.0				
2	8.1	8.1	8.1	8.4	8.4	8.4				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	399	398	401	1554	1577	1577				
2	403	401	401	1498	1597	1596				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (l, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar W03 Jar(s) mortality 7 days prior to test (must be ≤25%) 0

QA (previous month)

Days to first brood (≤12 days) 8

Average number of young produced (≥15 young) 22

Were test treatments randomized on test tray? Yes / No

Control Validity Criteria

Mean % mortality at 48 hours - (must be ≤10%) 0

Sample

DO (mg/L) of sample prior to aeration: 10.8 / 9.2 DCC

DO % of sample prior to aeration: 115

Duration of aeration (37.5 +/- 12.5 mL/min/L): 20min

Hardness (mg $CaCO_3$/L) of 100% : 998

Temperature (°C) of sample prior to aeration: 12

Is aeration required (<40% or >100%)? **Yes or No**

Filtered with 110um screen prior to testing **Yes or No**

Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) –

Alkalinity of 100% sample (mg $CaCO_3$/L): 340

Dilution Water

Pail label / preparation date 1.05|06

Hardness of dilution water (mg/L) 187

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

Comments/Observations:

0HR: No PPT

48HR: No PPT

Reviewed By: EV Date Reviewed: 2022/05/26

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS 5 Client TEC164 Reference 2122-2161-02

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/05/11	1410	JCC/CH	2	MAF
1	2022/05/12	0835	LC	-	JCC
2	2022/05/13	0905	CH	2	EP

Sample Information

Initial pH: 8.1
Initial EC (µS/cm): 1561
Salinity (ppt): 1

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				
day	pH (units) (range: 6.0-8.5)									
0	8.0	8.0	8.0	8.1	8.1	8.1				
2	8.1	8.1	8.1	8.3	8.3	8.4				
	The pH of the sample was not adjusted prior to test setting, unless noted in the comments below									
	EC (uS/cm)									
0	400	405	406	1557	1573	1585				
2	400	401	402	1530	1563	1579				
	DO (mg/L) (**40-100% saturation at test temp.**)									
0	7.9	7.9	7.9	7.9	7.9	7.9				
2	8.1	8.1	7.9	8.1	8.1	8.1				
	Temperature (°C) (range: **18-22 °C**)									
0	20	20	20	20	20	20				
2	19	19	20	19	19	19				
	Number Alive (I, immobile)									
0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar WC1 Jar(s) mortality 7 days prior to test (must be ≤25%) 0

QA (previous month)
Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 36
Were test treatments randomized on test tray? Yes / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0

Sample
DO (mg/L) of sample prior to aeration: 9.2
DO % of sample prior to aeration: 115
Duration of aeration (37.5 +/- 12.5 mL/min/L): 20min
Hardness (mg $CaCO_3$/L) of 100%: 998
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 340

Temperature (°C) of sample prior to aeration: 20
Is aeration required (<40% or >100%)? Yes or No
Filtered with 110um screen prior to testing Yes or No
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or No

Dilution Water
Pail label / preparation date 1:05106
Hardness of dilution water (mg/L) 187

Antiscalant
Final Concentration in Sample: 5mg/L
Volume of sample: 500mL Volume of antiscalant: 39.5µL

Comments/Observations:
0HR: no ppt
48HR: NO ppt

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Reviewed By: EV Date Reviewed: 2022/05/26

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC164 Reference 2122-2161-03

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/05/11	1345	JCC/CH	2	MAF
1	2022/05/12	1835	JC	-	JC
2	2022/05/13	0920	CH	2	EP

Sample Information

Initial pH: 7.7
Initial EC (µS/cm): 1688
Salinity (ppt): 1

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	8.0	8.0	8.0	7.8	7.8	7.8				
2	8.1	8.1	8.1	8.0	8.0	8.0				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	402	404	402	1726	1734	1726				
2	429	425	411	1651	1662	1678				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.9	7.9	7.9				
2	8.1	8.1	8.1	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	20	20	20				
2	19	19	19	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10(3I)	8(2I)	10(6I)				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar WDH
Jar(s) mortality 7 days prior to test (must be ≤25%) 0

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 22
Were test treatments randomized on test tray? Yes / No

Control Validity Criteria
Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 9.2
DO % of sample prior to aeration: 115
Duration of aeration (37.5 +/- 12.5 mL/min/L): 20m
Hardness (mg $CaCO_3$/L) of 100% : 1312
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 390

Temperature (°C) of sample prior to aeration: 20
Is aeration required (<40% or >100%)? **Yes or No**
Filtered with 110um screen prior to testing **Yes or No**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Dilution Water
Pail label / preparation date 1:06/06
Hardness of dilution water (mg/L) 187

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Comments/Observations:
0HR: no ppt
48HR: Surficial ppt, ppt on jar, ppt on carapace *1 dried to side of jar (not in mortality) & 1 dead

Reviewed By: EV Date Reviewed: 2022/05/24

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC164 Reference 2122-2161-03

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/05/11	1340	JC/CH	2	MAP
1	2022/05/12	0840	CC	-	JCS
2	2022/05/13	1000	CH	2	EP

Sample Information

Initial pH: 7.7
Initial EC (µS/cm): 1688
Salinity (ppt): 1

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	6.0	6.0	6.0	7.8	7.8	7.8				
2	8.2	8.2	8.2	8.2	8.2	8.2				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	400	402	404	1691	1714	1731				
2	402	402	406	1648	1719	1742				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar WC3 Jar(s) mortality 7 days prior to test (must be ≤25%) 0

QA (previous month)
Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 36
Were test treatments randomized on test tray? Yes / No

Control Validity Criteria
Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 10.8
DO % of sample prior to aeration: 115
Duration of aeration (37.5 +/- 12.5 mL/min/L): 20min
Hardness (mg $CaCO_3$/L) of 100% : 1312
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 390

Temperature (°C) of sample prior to aeration: 12
Is aeration required (<40% or >100%)? **Yes or No**
Filtered with 110um screen prior to testing **Yes or No**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Dilution Water
Pail label / preparation date 1:05/06
Hardness of dilution water (mg/L) 167

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

Comments/Observations:
0HR: no ppt
48HR: surficial ppt, ppt on jar

Reviewed By: EP Date Reviewed: 2022/05/26

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS 5 Client TEC164 Reference 2122-2161-04

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/05/11	1505	JC/CH	2	MAE
1	2022/05/12	1835	JC	-	JCC
2	2022/05/13	0925	CH	2	EP

Sample Information

Initial pH: 7.7
Initial EC (µS/cm): 1689
Salinity (ppt): 1

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	8.0	7.9	7.9	7.9	7.9	7.9				
2	8.0	8.1	8.0	8.4	8.4	8.4				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	401	409	408	1715	1696	1715				
2	398	412	410	1657	1688	1687				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.9	7.9	7.9				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	20	20	20				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10(5I)	10(7I)	9(3I)				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar W04 Jar(s) mortality 7 days prior to test (must be ≤25%) 0

QA (previous month)
Days to first brood (≤12 days) 9
Average number of young produced (≥15 young) 22
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0

Sample
DO (mg/L) of sample prior to aeration: 9.2
DO % of sample prior to aeration: 115
Duration of aeration (37.5 +/- 12.5 mL/min/L): 20min
Hardness (mg $CaCO_3$/L) of 100% : 1312
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 390

Temperature (°C) of sample prior to aeration: 20
Is aeration required (<40% or >100%)? **Yes or No**
Filtered with 110um screen prior to testing **Yes or No**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Dilution Water
Pail label / preparation date 1:05/06
Hardness of dilution water (mg/L) 187

Antiscalant
Final Concentration in Sample: 5mg/L
Volume of sample: 500mL Volume of antiscalant: 39.5mL

Comments/Observations:
0HR: NO ppt
48HR: Surficial ppt

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Reviewed By: EV Date Reviewed: 2022/05/26

APPENDIX C – Chain-of-custody form

Teck

COC ID: EVO NAUTILUS May 9 2022 | TURNAROUND TIME: | RUSH:

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name / Job#	Elkview Operations			Lab Name	Nautilus Environmental - BC			Report Format / Distribution		Excel	PDF	EDD
Project Manager	Group 1; Brett Mason			Lab Contact				Email 1:	[redacted]	X	X	X
Email	Brett.Mason@teck.com			Email	jacklyn@nautilusenvironmental.ca			Email 2:	teckcoal@equisonlinc.com			X
Address	RR1 HWY 3			Address	10823 27th Street SE			Email 3:	DL-EVO-SRF-LAB@teck.com	X	X	X
								Email 4:				
City	Sparwood	Province	BC	City	Calgary	Province	AB	Email 5:				
								Email 6:				
								Email 7:				
								Email 8:				
								Email 9:				
								Email 10:				
								Email 11:				
								Email 12:				
								Email 13:				
Postal Code	V0B 2G0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada					
Phone Number	250-425-6179			Phone Number	403-253-7121			PO number	822027			

SAMPLE DETAILS — **ANALYSIS REQUESTED** (Filtered - F: Field, L: Lab, FL: Field & Lab, N: None)

2022/05/10
10:00
Manitoulin
JC
6x&10L carboys, 4x20L carboys, 10x1L bottles
NoG/NoL
Good Condition

Sample ID 2122-2161	Sample Location (sys loc code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	Filtered	Preserved	ANALYSIS: 48hr Daphnia Magna Single Concentration Acute Toxicity 20C	48hr Daphnia Magna Single Concentration Acute Toxicity 10C	48hr Daphnia Magna Single Concentration Acute Toxicity Antiscalent	96hr Rainbow Trout Single Concentration Acute Toxicity (20 L Bladder)	96hr Rainbow Trout Single Concentration Acute Toxicity (10 L Bladder)	48hr Daphnia Magna Single Concentration Toxicity 15C					
EV_EC1_WS_2022-05-09_N-SRF -01	EV_EC1	WS		2022/05/09	11:20	G	12			2	2			8	10.2°C					
EV_EC1_WS_2022-05-09_N-SRF-AS -02	EV_EC1	WS		2022/05/09	11:21	G	1					1			10.7°C					
EV_ECOUT_WS_2022-05-09_N-SRF -03	EV_ECOUT	WS		2022/05/09	13:00	G	8			2	2		4		9.7°C					
EV_ECOUT_WS_2022-05-09_N-SRF-AS -04	EV_ECOUT	WS		2022/05/09	13:01	G	1					1			9.7°C					

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME
Field Temperatures ECOUT:		May 9, 2022		

SERVICE REQUEST (rush - subject to availability)	
Regular (default)	X
Priority (2-3 business days) - 50% surcharge	
Emergency (1 Business Day) - 100% surcharge	
For Emergency <1 Day, ASAP or Weekend - Contact ALS	

Sampler's Name	Ariana Lewis	Mobile #	
Sampler's Signature		Date/Time	May 9, 2022

END OF REPORT

Acute Toxicity Test Results

Samples collected May 9, 2022

Final Report

June 20, 2022

Submitted to: **Teck Coal Ltd.**
Sparwood, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates					
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation	*Daphnia magna* antiscalant test initiation
F2_BPO_WG_2022-05-09_N/ 2122-2162-01	9-May-22 at 0810h	10-May-22 at 1000h	12-May-22 at 1045h	11-May-22 at 1350h	11-May-22 at 1350h	-
F2_BPO_WG_2022-05-09_N-AS/ 2122-2162-02	9-May-22 at 0811h	10-May-22 at 1000h	-	-	-	11-May-22 at 1355h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
F2_BPO_WG_2022-05-09_N	5.0°C	1301	472
F2_BPO_WG_2022-05-09_N-AS	5.0°C	1301	472

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)
- *Daphnia magna* 48-h single concentration screening test (conducted with 20 mg/L antiscalant)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample			
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
F2_BPO_WG_2022-05-09_N	100	100	100	-
F2_BPO_WG_2022-05-09_N-AS	-	-	-	100

Sample ID	Percent Immobility in 100 (% v/v)		
	***Daphnia magna* 10˚C**	***Daphnia magna* 20˚C**	***Daphnia magna* antiscalant**
F2_BPO_WG_2022-05-09_N	0	3	-
F2_BPO_WG_2022-05-09_N-AS	-	-	0

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
F2_BPO_WG_2022-05-09_N	Rainbow trout	Precipitate observed on the bottom and sides of test tank	None
	Daphnia magna	Surficial precipitate observed in the 20 degree test.	None
F2_BPO_WG_2022-05-09_N-AS	*Daphnia magna*	None	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	3.4 (3.0-3.9) g/L KCl[1]	5.9 (5.6-6.2) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.3 (2.5-4.4) g/L KCl	6.5 (5.6-7.6) g/L NaCl
Reference toxicant CV	9.4%	5.0%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	See Below
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, May 5, 2022; [2] Test Date May 18, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation

The dissolved oxygen measurements for the 100% test vessels of the 20 degree *Daphnia magna* test were not taken at test termination, resulting in a protocol deviation.



Report By:
Courtney Hewitt, BSc
Biologist



Reviewed By:
Courtney Bogstie, P. Biol.
Senior Biologist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	Moderately-hard reconstituted water supplemented with B12 (2 µg/L)
Control/dilution water for antiscalant test	Moderately-hard reconstituted water supplemented with B12 (2 µg/L) and 20 mg/L antiscalant
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	Moderately-hard reconstituted water supplemented with B12 (2 µg/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC164 Reference 2122-2162-01 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022/05/12	1045 *	JCC/LC	1	MAF
1	2022/05/13	0845	CB	-	MAF
2	2022/05/14	0930	KM	-	MAF
3	2022/05/15	1220	DM	-	
4	2022/05/16	1130	AE/LC	7	

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 7.8
Initial EC (µS/cm): 1773
Salinity (ppt): 1

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L : yes/no

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	8.6	8.6			
Temp (°C) of 100%	16				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: **5.5-8.5**)								
Day 0	8.0	7.8						
Day 4	8.3	8.2						
EC (uS/cm)								
Day 0	448	1962						
Day 4	418	1617						
DO (mg/L) (**70-100% saturation at test temp.**)								
Day 0	8.8	8.6						
Day 4	8.6	8.6						
Temperature (°C) (range: **14-16°C**)								
Day 0	15	16						
Day 4	16	16						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.2	0.3
2	3.1	0.4
3	2.9	0.3
4	3.2	0.4
5	3.4	0.5
6	3.2	0.3
7	3.5	0.5
8	3.7	0.7
9	3.4	0.5
10	3.3	0.5

Loading Density (g/L): 0.2
(must be ≤0.5 g/L)
Mean Length (cm): 3.3
Length Range (cm): 2.9-3.7
Mean Weight (g): 0.4
(Must be ≥0.3g)
Weight Range: (g): 0.3-0.7

Test Organism Information

Batch 20220413TR
Source Smoky Trout Farm
Tank # 6
Days Held at 15± 2°C 29
(must be ≥14 days)
Percent stock mortality 0.05
(7 days prior to test, must be <2%)
Test Volume (L) 18

Comments :

96hrs: PPT on bottom + sides

Reviewed By: SS Date Reviewed: 2022/05/30

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC164 Reference 2122-2162-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/05/11	1350	JC/CH	7	MAP
1	2022/05/~~11~~12	0855	CC	-	JCC
2	2022/05/~~11~~13	0855	E.P	2	CH

Sample Information

Initial pH: 7.8
Initial EC (µS/cm): 1773
Salinity (ppt): 1

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	7.9	7.9	7.9	7.7	7.7	7.7				
2	8.1	8.1	8.1	8.4	8.4	8.4				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	401	405	400	1780	1738	1780				
2	402	406	448	1868	1846	1764				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.9	7.9	7.9				
2	7.9	7.9	7.9							

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	20	20	20				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10(I)				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar WDH

Jar(s) mortality 7 days prior to test (must be ≤25%) 0

QA (previous month)

Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 22
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 7.9
DO % of sample prior to aeration: 100
Duration of aeration (37.5 +/- 12.5 mL/min/L) : -
Hardness (mg $CaCO_3$/L) of 100% : 1301
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 472

Temperature (°C) of sample prior to aeration: 20
Is aeration required (<40% or >100%)? **Yes or (No)**
Filtered with 110um screen prior to testing **Yes or (No)**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or (No)**

Dilution Water

Pail label / preparation date 1:05/06
Hardness of dilution water (mg/L) 187

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Comments/Observations:

0HR: no ppt
48HR: Surficial ppt

Reviewed By: SS Date Reviewed: 2022105130

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC164 Reference 2122-2162-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/05/11	1350	KC/CH	2	MAP
1	2022/05/12	0845	CC	-	JCC
2	2022/05/13	1000	CH	2	EP

Sample Information

Initial pH: 7.8
Initial EC (µS/cm): 1773
Salinity (ppt): 1

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	7.8	7.8	7.9	7.7	7.7	7.7				
2	8.0	8.1	8.1	8.5	8.5	8.4				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	396	401	402	1768	1760	1778				
2	401	404	398	1691	1785	1779				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar WCH — Jar(s) mortality 7 days prior to test (must be ≤25%) 0

QA (previous month)

Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 36
Were test treatments randomized on test tray? Yes / No

Control Validity Criteria

Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 9.4
Temperature (°C) of sample prior to aeration: 12
DO % of sample prior to aeration: 100
Is aeration required (<40% or >100%)? **Yes or No**
Duration of aeration (37.5 +/- 12.5 mL/min/L) : ✓
Filtered with 110um screen prior to testing **Yes or No**
Hardness (mg $CaCO_3$/L) of 100% : 1301
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 472

Dilution Water

Pail label / preparation date 1:05/06
Hardness of dilution water (mg/L) 187

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

Comments/Observations:

0HR: NO PPT
48HR: NO PPT

Reviewed By: SS Date Reviewed: 20221051330

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS Client TEC164 Reference 2122-2162-02

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/05/11	1655	MKH	7	MAE
1	2022/05/12	0855	CC	-	SEC
2	2022/05/13	0905	CH	2	EP

Sample Information

Initial pH: 7.8
Initial EC (µS/cm): 1773
Salinity (ppt): 1

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	7.0	7.9	7.9	7.7	7.7	7.7				
2	8.0	8.0	8.0	8.4	8.4	8.4				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	401	401	400	1780	1776	1789				
2	423	416	412	1743	1796	1804				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.9	7.9	7.9				
2	8.1	8.1	8.1	8.1	8.1	8.1				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	20	20	20				
2	19	19	19	19	19	19				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar WD2 Jar(s) mortality 7 days prior to test (must be ≤25%) 0

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 22
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0

Sample
DO (mg/L) of sample prior to aeration: 7.9
DO % of sample prior to aeration: 100
Duration of aeration (37.5 +/- 12.5 mL/min/L): —
Hardness (mg $CaCO_3$/L) of 100% : 130
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 472

Temperature (°C) of sample prior to aeration: 20
Is aeration required (<40% or >100%)? **Yes or (No)**
Filtered with 110um screen prior to testing **Yes or (No)**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or (No)**

Dilution Water
Pail label / preparation date 1;05106
Hardness of dilution water (mg/L) 187

Antiscalant
Final Concentration in Sample: 20mg/L
Volume of sample: 500mL Volume of antiscalant: 158µL

Comments/Observations:
0HR: no ppt
48HR: NO ppt

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Reviewed By: SS Date Reviewed: 2022105/30

APPENDIX C – Chain-of-custody form

Teck

COC ID: F2 NAUTILUS May 9 2022 | **TURNAROUND TIME:** | **RUSH:**

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO			
Facility Name / Job#	F2 SRF			Lab Name	Nautilus Environmental - BC			Report Format / Distribution	Excel	PDF	EDD
Project Manager	BRETT MASON			Lab Contact				Email 1: [redacted]	X	X	X
Email	BRETT.MASON@TECK.COM			Email	jacklyn@nautilusenvironmental.ca			Email 1: teckcoal@equisonline.com			X
Address	RR1 HWY 3			Address	10823 27th Street SE			Email 2: DL-EVO-SRF-LAB@teck.com	X	X	X
								Email 3:			
City	Sparwood	Province	BC	City	Calgary	Province	AB	Email 4:			
								Email 5:			
								Email 6:			
								Email 7:			
								Email 8:			
								Email 10:			
								Email 11:			
								Email 12:			
								Email 13:			
Postal Code	V0B 2G0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada				
Phone Number	250-425-6179			Phone Number	403-253-7121			PO number	822027		

SAMPLE DETAILS | **ANALYSIS REQUESTED** | Filtered - F: Field, L: Lab, FL: Field & Lab, N: None

2022/05/10
@ 10:00
Manitoulin
SC
4x20L carboys, 5x1L bottles
NoS/NoI
Good Condition

Sample ID 2122-2162	Sample Location (sys loc code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	Filt.	ANALYSIS: 48hr Daphnia Magna Single Concentration Acute Toxicity 20C	48hr Daphnia Magna Single Concentration Acute Toxicity 10C	48hr Daphnia Magna Single Concentration Acute Toxicity Anitscalent	96hr Rainbow Trout Single Concentration Acute Toxicity (20L Bladders)	48hr Daphnia Magna Single Concentration Toxicity 15C	
F2_BPO_WG_2022-05-09_N -01	F2_BPO	WG		2022/05/09	8:10	G	8		2	2		4	5.0	L
F2_BPO_WG_2022-05-09_N-AS -02	F2_BPO	WG		2022/05/09	8:11	G	1				1		5.0	L

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME
		May 9, 2022		

SERVICE REQUEST (rush - subject to availability)

Regular (default)	X
Priority (2-3 business days) - 50% surcharge	
Emergency (1 Business Day) - 100% surcharge	
For Emergency <1 Day, ASAP or Weekend - Contact ALS	

Sampler's Name	Ariana Lewis	Mobile #	
Sampler's Signature		Date/Time	May 9, 2022

END OF REPORT

Acute Toxicity Test Results

Samples collected May 10, 2022

Final Report

June 13, 2022

Submitted to: **Teck Coal Ltd.**
Sparwood, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates					
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation	*Daphnia magna* antiscalant test initiation
EV_GT1_WS_2022-05-10_N-SRF/ 2122-2176-01	10-May-22 at 0940h	11-May-22 at 0940h	12-May-22 at 1105h	12-May-22 at 1245h	12-May-22 at 1240h	-
EV_BC1_WS_2022-05-10_N-SRF/ 2122-2176-02	10-May-22 at 1100h	11-May-22 at 0940h	12-May-22 at 1100h	12-May-22 at 1230h	12-May-22 at 1245h	-
EV_BC1_WS_2022-05-10_N-SRF-AS/ 2122-2176-03	10-May-22 at 1101h	11-May-22 at 0940h	-	-	-	12-May-22 at 1250h
EV_GT1_WS_2022-05-10_N-SRF-AS/ 2122-2176-04	10-May-22 at 0941h	11-May-22 at 0940h	-	-	-	12-May-22 at 1250h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
EV_GT1_WS_2022-05-10_N-SRF	9.5°C	1222	330
EV_BC1_WS_2022-05-10_N-SRF	11.1°C	1242	275
EV_BC1_WS_2022-05-10_N-SRF-AS	13.4°C	1242	275
EV_GT1_WS_2022-05-10_N-SRF-AS	12.8°C	1222	330

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)
- *Daphnia magna* 48-h single concentration screening test (conducted with 5 mg/L antiscalant)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample			
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
EV_GT1_WS_2022-05-10_N-SRF	100	100	100	-
EV_BC1_WS_2022-05-10_N-SRF	100	100	100	-
EV_BC1_WS_2022-05-10_N-SRF-AS	-	-	-	100
EV_GT1_WS_2022-05-10_N-SRF-AS	-	-	-	100

Sample ID	Percent Immobility in 100 (% v/v)		
	Daphnia magna 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
EV_GT1_WS_2022-05-10_N-SRF	0	0	-
EV_BC1_WS_2022-05-10_N-SRF	0	0	-
EV_BC1_WS_2022-05-10_N-SRF-AS	-	-	0
EV_GT1_WS_2022-05-10_N-SRF-AS	-	-	0

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
EV_GT1_WS_2022-05-10_N-SRF	Rainbow trout	Precipitate observed on the bottom of test vessel	None
	Daphnia magna	Surficial precipitate observed in 20 degree sample	None
EV_BC1_WS_2022-05-10_N-SRF	Rainbow trout	None	None
	Daphnia magna	Surficial precipitate observed in 20 degree sample	None
EV_BC1_WS_2022-05-10_N-SRF-AS	*Daphnia magna*	None	None
EV_GT1_WS_2022-05-10_N-SRF-AS	*Daphnia magna*	None	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	3.4 (3.0-3.9) g/L KCl[1]	5.9 (5.6-6.2) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.3 (2.5-4.4) g/L KCl	6.5 (5.6-7.6) g/L NaCl
Reference toxicant CV	9.4%	5.0%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, May 5, 2022; [2] Test Date May 18, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation



Report By:
Katheryn Munson, BSc
Biologist



Reviewed By:
Courtney Bogstie, P. Biol.
Senior Biologist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	Moderately-hard reconstituted water supplemented with B12 (2 µg/L)
Control/dilution water for antiscalant test	Moderately-hard reconstituted water supplemented with B12 (2 µg/L) and 5 mg/L antiscalant
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	Moderately-hard reconstituted water supplemented with B12 (2 µg/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC164 Reference 2122-2176-01 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022/05/12	1105 *	JCC/LC	1	MAF
1	2022/05/13	0845	CB	-	MAF
2	2022/05/14	1930	KLM	-	MAF
3	2022/05/15	1230	DM	-	KLM
4	2022/05/16	1020	AE/EC/MD	1	KLM

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 8.4
Initial EC (µS/cm): 1631
Salinity (ppt): 2

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L : **yes/no**

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	9.2	8.9	8.6		
Temp (°C) of 100%	16				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	8.0	8.1						
Day 4	8.2	8.2						
EC (uS/cm)								
Day 0	457	1774						
Day 4	408	1570						
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	8.8	8.6						
Day 4	8.6	8.7						
Temperature (°C) (range: 14-16°C)								
Day 0	15	16						
Day 4	16	16						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.5	0.5
2	3.0	0.3
3	3.4	0.4
4	3.1	0.3
5	3.4	0.4
6	3.7	0.6
7	3.1	0.3
8	2.9	0.3
9	3.4	0.4
10	3.3	0.4

Loading Density (g/L): 0.2 cc ~~3.3~~ (must be ≤0.5 g/L)
Mean Length (cm): 3.3
Length Range (cm): 2.9-3.7
Mean Weight (g): 0.4 (Must be ≥0.3g)
Weight Range: (g): 0.3-0.6

Test Organism Information

Batch 20220413TR
Source Smoky Trout Farm
Tank # 6
Days Held at 15± 2°C 29 (must be ≥14 days)
Percent stock mortality 0.05 (7 days prior to test, must be <2%)
Test Volume (L) 18

Comments :

96hrs: ppt on bottom

Reviewed By: SS Date Reviewed: 2022105124

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC164 Reference 2122-2176-02 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022/05/12	1100 *	JCC/LC	1	MAF
1	2022/05/13	0845	CB	-	MAF
2	2022/05/14	0930	KLM	-	MAF
3	2022/05/15	1230	DM	-	AW
4	2022/05/16	~~1025~~ 1125	AE/LC	7	AW

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 8.1
Initial EC (µS/cm): 1630
Salinity (ppt): 2

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L : **yes/no**

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	9.1	8.8			
Temp (°C) of 100%	15				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	7.9	8.0						
Day 4	7.9	8.1						
EC (uS/cm)								
Day 0	446	1627						
Day 4	416	1634						
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	8.6	8.8						
Day 4	8.6	8.6						
Temperature (°C) (range: 14-16°C)								
Day 0	15	15						
Day 4	16	16						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.7	0.6
2	3.4	0.4
3	3.0	0.3
4	3.6	0.6
5	3.0	0.3
6	3.1	0.3
7	3.2	0.3
8	3.0	0.3
9	2.8	0.3
10	2.9	0.3

Loading Density (g/L): 0.2 (must be ≤0.5 g/L)
Mean Length (cm): 3.2
Length Range (cm): 2.8-3.7
Mean Weight (g): 0.4 (Must be ≥0.3g)
Weight Range: (g): 0.3-0.6

Test Organism Information

Batch 20220413TR
Source Smoky Trout Farm
Tank # 6
Days Held at 15± 2°C 29 (must be ≥14 days)
Percent stock mortality 0.05 (7 days prior to test, must be <2%)
Test Volume (L) 18

Comments :

96hrs: NO PPT

Reviewed By: SS Date Reviewed: 2022/05/24

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS20 Client TEC164 Reference 2122-2176-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/05/12	1240	MAF/DW	2	JCC
1	2022/05/13	0800	maf	-	EP
2	2022/05/14	0750	maf	2	EP

Sample Information

Initial pH: 8.4
Initial EC (µS/cm): 1631
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	7.8	7.7	7.7	8.0	8.0	8.0				
2	8.1	8.1	8.1	8.0	8.1	8.1				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	398	397	396	1588	1631	1632				
2	469	403	402	1523	1580	1591				

DO (mg/L) (**40-100% saturation at test temp.**)

0	8.2	8.2	8.2	7.7	7.7	7.7				
2	7.9	7.9	7.9	7.7	7.7	7.7				

Temperature (°C) (range: **18-22 °C**)

0	18	18	18	21 maf	21 maf	21 maf				
2	20	20	20	21	21	21				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar Wed E2 Jar(s) mortality 7 days prior to test (must be ≤25%) 5%.

QA (previous month)
Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 26
Were test treatments randomized on test tray? (Yes) No

Control Validity Criteria
Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 8.7
DO % of sample prior to aeration: 110%
Duration of aeration (37.5 +/- 12.5 mL/min/L): 20m
Hardness (mg $CaCO_3$/L) of 100% : 222
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 330

Temperature (°C) of sample prior to aeration: 21
Is aeration required (<40% or >100%)? (Yes) or No
Filtered with 110um screen prior to testing Yes or (No)
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)

Dilution Water
Pail label / preparation date 2:05/06
Hardness of dilution water (mg/L) 181

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Comments/Observations:
0hrs: No ppt
48hrs: MAF surficial ppt.

Reviewed By: SS Date Reviewed: 2022/05/24

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS10 Client TEC164 Reference 2122-2176-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/05/12	1245	MAF/DW	2	JCC
1	2022/05/13	0820	maf	-	EP
2	2022/05/14	0810	MAF	2	EP

Sample Information

Initial pH: 8.4
Initial EC (µS/cm): 16231
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

day	pH (units) (range: 6.0-8.5)									
0	7.8	7.8	7.8	8.0	8.0	8.0				
2	8.1	8.1	8.1	8.4	8.4	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

	EC (uS/cm)									
0	397	397	398	1655	1656	1657				
2	420	420	423	1556	1606	1609				

	DO (mg/L) (**40-100% saturation at test temp.**)									
0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

	Temperature (°C) (range: **8-12 °C**)									
0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

	Number Alive (I, immobile)									
0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar E2Wed Jar(s) mortality 7 days prior to test (must be ≤25%) 5%

QA (previous month)
Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 26
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 10.3
DO % of sample prior to aeration: 109
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 2cm
Hardness (mg $CaCO_3$/L) of 100% : 1222
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 330

Temperature (°C) of sample prior to aeration: 12
Is aeration required (<40% or >100%)? **Yes or No**
Filtered with 110um screen prior to testing **Yes or No**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Dilution Water
Pail label / preparation date 2:05/06
Hardness of dilution water (mg/L) 181

DO Levels (40-100% saturation) - corrected for altitude -
4.1 to 10.3 mg/L at 8°C
4.0 to 10.0 mg/L at 9°C
3.9 to 9.8 mg/L at 10°C
3.8 to 9.6 mg/L at 11°C
3.7 to 9.4 mg/L at 12°C

Comments/Observations:
0 hrs: No ppt
48Hrs: Ncppt.

Reviewed By: SS Date Reviewed: 2022/05/24

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS20 Client TEC164 Reference 2122-2176-02

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/05/12	1945	MAF/DW	2	JCC
1	2022/05/13	0750	maf	-	EP
2	2022/05/14	1155	maf	2	EP

Sample Information

Initial pH: 8.1
Initial EC (µS/cm): 1630
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	7.8	7.8	7.8	8.0	8.0	8.0				
2	7.9	7.9	7.9	8.1	8.1	8.1				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	392	395	396	1657	1658	1604				
2	405	401	402	1612	1637	1639				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9 maf	7.9	7.9	7.7	7.7	7.7				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	18.2 maf	20	20	21	21	21				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar Wedell Jar(s) mortality 7 days prior to test (must be ≤25%) 5/.

QA (previous month)

Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 26
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 8.4
DO % of sample prior to aeration: 107
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20m
Hardness (mg $CaCO_3$/L) of 100% : 1242
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 275

Temperature (°C) of sample prior to aeration: 21
Is aeration required (<40% or >100%)? **Yes or No**
Filtered with 110um screen prior to testing **Yes or (No)**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or (No)**

Dilution Water

Pail label / preparation date 2:05/06
Hardness of dilution water (mg/L) 180

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Comments/Observations:

0hrs: No ppt
48hrs: surficial ppt

Reviewed By: SS Date Reviewed: 2022/05/24

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS10 Client TEC164 Reference 2122-2176-02

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/05/12	1230	MAF/DW	2	JCC
1	2022/05/13	0825	MAF	-	EP
2	2022/05/14	0820	MAF	2	EP

Sample Information

Initial pH: 8.1
Initial EC (µS/cm): 1630
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				
day				pH (units) (range: 6.0-8.5)						
0	7.5	7.6	7.6	7.7	7.8	7.8				
2	8.1	8.1	8.1	8.3	8.3	8.3				
				The pH of the sample was not adjusted prior to test setting, unless noted in the comments below						
				EC (uS/cm)						
0	405	397	397	1603	1656	1680				
2	413	411	411	1637	1749	1743				
				DO (mg/L) (**40-100% saturation at test temp.**) MAF						
0	9.4	9.4	9.4	9.4	9.4	9.4	~~9.4~~			
2	9.4	9.4	9.4	9.4	9.4	9.4				
				Temperature (°C) (range: **8-12 °C**)						
0	12	12	12	12	12	12				
2	12	12	12	12	12	12				
				Number Alive (I, immobile)						
0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar ~~E2~~ C1 MAF Wed Jar(s) mortality 7 days prior to test (must be ≤25%) 5%

QA (previous month)
Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 36
Were test treatments randomized on test tray? Yes / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0

Sample
DO (mg/L) of sample prior to aeration: 9.4
Temperature (°C) of sample prior to aeration: 12
DO % of sample prior to aeration: 100%
Is aeration required (<40% or >100%)? **Yes or No**
Duration of aeration (37.5 +/- 12.5 mL/min/L) : —
Filtered with 110um screen prior to testing **Yes or No**
Hardness (mg $CaCO_3$/L) of 100% : 1242
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 275

Dilution Water
Pail label / preparation date 2:05/06
Hardness of dilution water (mg/L) 187

DO Levels (40-100% saturation) - corrected for altitude -
4.1 to 10.3 mg/L at 8°C
4.0 to 10.0 mg/L at 9°C
3.9 to 9.8 mg/L at 10°C
3.8 to 9.6 mg/L at 11°C
3.7 to 9.4 mg/L at 12°C

Comments/Observations:
0 hrs: No ppt
48Hrs: no ppt.

Reviewed By: SS Date Reviewed: 2022/05/24

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS5 Client TEC164 Reference 2122-2174-04 6mar 3

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/05/12	1150	MAF/DW	2	JCC
1	2022/05/13	0915	MAF	-	EP
2	2022/05/14	0910	CH	2	AE

Sample Information

Initial pH: 8.1
Initial EC (µS/cm): 1630
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

day	pH (units) (range: 6.0-8.5)									
0	7.7	7.7	7.7	8.0	8.0	8.0				
2	8.0	8.1	8.1	8.3	8.3	8.4				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

	EC (µS/cm)									
0	394	393	397	1628	1633	1634				
2	394	411	409	1551	1664	1636				

	DO (mg/L) (**40-100% saturation at test temp.**)									
0	7.9	7.9	7.9	7.7	7.7	7.7				
2	8.1	7.9	7.9	7.9	7.9	7.9				

	Temperature (°C) (range: **18-22 °C**)									
0	20	20	20	21	21	21				
2	19	20	20	20	20	20				

	Number Alive (l, immobile)									
0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar LedC4 Jar(s) mortality 7 days prior to test (must be ≤25%) 80mar

QA (previous month)
Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 36
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0

Sample
DO (mg/L) of sample prior to aeration: 8.4
DO % of sample prior to aeration: 107%
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20m
Hardness (mg $CaCO_3$/L) of 100% : 1242
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 275

Temperature (°C) of sample prior to aeration: 21
Is aeration required (<40% or >100%)? (Yes) or No
Filtered with 110um screen prior to testing Yes or (No)
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)

Dilution Water
Pail label / preparation date 2:05/06
Hardness of dilution water (mg/L) 187

Antiscalant
Final Concentration in Sample: 5mg/L
Volume of sample: 500mL Volume of antiscalant: 39.5uL

Comments/Observations:
0hrs: No ppt
48hrs: NO ppt

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Reviewed By: SS Date Reviewed: 20221051 24

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS5 Client TEC164 Reference 2122-2174-03 6 mmf 4

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/05/12	1250	MAF/DW	2	JCC
1	2022/05/13	0730	mmf	-	EP
2	2022/05/14	0905	CM	2	AE

Sample Information

Initial pH: 8.4
Initial EC (µS/cm): 1631
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	7.8	7.8	7.8	8.1	8.1	8.1				
2	8.1	8.1	8.1	8.3	8.3	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	397	397	396	1145	1629	1630				
2	396	400	403	1605	1661	1655				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.7	7.7	7.7				
2	8.1	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	21	21	21				
2	19	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar WEDC1 Jar(s) mortality 7 days prior to test (must be ≤25%) 0

QA (previous month)
Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 36
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0

Sample
DO (mg/L) of sample prior to aeration: 8.7 Temperature (°C) of sample prior to aeration: 21
DO % of sample prior to aeration: 110% Is aeration required (<40% or >100%)? (Yes) or No
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20m Filtered with 110um screen prior to testing (Yes) or No
Hardness (mg $CaCO_3$/L) of 100% : 16222 mmf Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 330

Dilution Water
Pail label / preparation date 2:05/06
Hardness of dilution water (mg/L) 187

Antiscalant
Final Concentration in Sample: 5mg/L
Volume of sample: 500mL Volume of antiscalant: 39.5uL

Comments/Observations:
0hrs: No ppt
48hrs: NO PPT

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Reviewed By: SS Date Reviewed: 2022105124

APPENDIX C – Chain-of-custody form

Teck

COC ID:	EVO NAUTILUS May 10 2022	TURNAROUND TIME:		RUSH:

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name / Job#	Elkview Operations			Lab Name	Nautilus Environmental - BC			Report Format / Distribution		Excel	PDF	EDD
Project Manager	Group 1; Brett Mason			Lab Contact				Email 1:				
Email	Brett.Mason@teck.com			Email	jacklyn@nautilusenvironmental.ca			Email 2:				
Address	RR1 HWY 3			Address	10823 27th Street SE			Email 3:				
								Email 4:				
City	Sparwood	Province	BC	City	Calgary	Province	AB	Email 5:				
								Email 6:				
								Email 7:	teckcoal@equisonline.com			X
								Email 8:	DL-EVO-SRF@teck.com	X	X	X
								Email 9:	[illegible]	X	X	X
								Email 10:				
								Email 11:				
								Email 12:				
								Email 13:				
Postal Code	V0B 2G0	Country	Canada	Postal Code	T2H 2K1	Country	Canada					
Phone Number	250-425-6179			Phone Number	T2Z 3V9			PO number	822027			

SAMPLE DETAILS

2022/05/11
09:40
Manitoulin
JC/AC
4x20L carboys, 8x10L carboys, 10x1L bottles
NoS/NoI
Good Cond.

ANALYSIS REQUESTED — Filtered - F: Field, L: Lab, FL: Field & Lab, N: None

Sample ID 2122-2176	Sample Location (sys_loc_code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	48hr Daphnia Magna Single Concentration Acute Toxicity 20C	48hr Daphnia Magna Single Concentration Acute Toxicity 10C	48hr Daphnia Magna Single Concentration Acute Toxicity Anilscalent	96hr Rainbow Trout Single Concentration Acute Toxicity (10 L Bladder)	96hr Rainbow Trout Single Concentration Acute Toxicity (20 L Bladder)	48hr Daphnia Magna Single Concentration Toxicity 15C						
EV_GT1_WS_2022-05-10_N-SRF -01	EV_GT1	WS		2022/05/10	9:40	G	8	2	2			4		9.5°C					
EV_BC1_WS_2022-05-10_N-SRF -02	EV_BC1	WS		2022/05/10	11:00	G	12	2	2		8			11.1°C					
EV_BC1_WS_2022-05-10_N-SRF-AS -03	EV_BC1	WS		2022/05/10	11:01	G	1			1				13.4°C					
EV_GT1_WS_2022-05-10_N-SRF-AS -04	EV_GT1	WS		2022/05/10	9:41	G	1			1				12.8°C					

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME
Field Temperatures		May 10, 2022		

SERVICE REQUEST (rush - subject to availability)

Regular (default)	X	Sampler's Name		Mobile #	
Priority (2-3 business days) - 50% surcharge					
Emergency (1 Business Day) - 100% surcharge		Sampler's Signature		Date/Time	May 10, 2022
For Emergency <1 Day, ASAP or Weekend - Contact ALS					

END OF REPORT

Acute Toxicity Test Results

Samples collected May 16, 2022

Final Report

June 30, 2022

Submitted to: **Teck Coal Ltd.**
Sparwood, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates					
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation	*Daphnia magna* antiscalant test initiation
F2_BPO_WG_2022-05-16_N / 2122-2228-01	16-May-22 at 0830h	17-May-22 at 1000h	18-May-22 at 1500h	18-May-22 at 1600h	18-May-22 at 1600h	-
F2_BPO_WG_2022-05-16_N-AS / 2122-2228-02	16-May-22 at 0830h	17-May-22 at 1000h	-	-	-	18-May-22 at 1605h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
F2_BPO_WG_2022-05-16_N	9.8°C	1346	414
F2_BPO_WG_2022-05-16_N-AS	9.8°C	1346	414

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)
- *Daphnia magna* 48-h single concentration screening test (conducted with 20 mg/L antiscalant)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample			
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
F2_BPO_WG_2022-05-16_N	100	100	87	-
F2_BPO_WG_2022-05-16_N-AS	-	-	-	100

Sample ID	Percent Immobility in 100 (% v/v)		
	Daphnia magna 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
F2_BPO_WG_2022-05-16_N	37	100	-
F2_BPO_WG_2022-05-16_N-AS	-	-	0

Precipitate observations

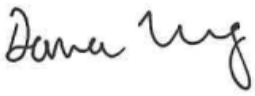
Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
F2_BPO_WG_2022-05-16_N	Rainbow trout	Precipitate observed on the test vessel	None
	Daphnia magna	Precipitate observed on the surface of the sample and bottom of test vessel	Precipitate observed on carapace
F2_BPO_WG_2022-05-16_N-AS	*Daphnia magna*	Precipitate observed on the surface of the sample and bottom of test vessel	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	3.8 (3.3-4.3) g/L KCl[1]	6.7 (6.4-6.9) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.4 (2.6-4.4) g/L KCl	6.6 (5.7-7.6) g/L NaCl
Reference toxicant CV	8.7%	4.7%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, May 17, 2022; [2] Test Date May 17, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation



Report By:
Dana Wong, BSc
Biologist



Reviewed By:
Jacklyn Poole, BSc
Laboratory and Quality Manager

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Control/dilution water for antiscalant test	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L), Na_2SeO_4 (2 µg Se/L) and 20 mg/L antiscalant
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS ENVIRONMENTAL

Trout Bench Sheet

Method TRS Client TEC164 Reference 2122-2228-01 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022/05/18	1500 *	CC/AM	1	EP
1	2022/05/19	1030	AM/KO	-	MAF
2	2022/05/20	0840	AM	-	MAF
3	2022/05/21	0845	NA	-	MAF
4	2022/05/22	0915	NA/DM	1	MAF

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 7.7
Initial EC (µS/cm): 1777
Salinity (ppt): 3

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L : yes/no

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	8.6	8.6			
Temp (°C) of 100%	16				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: **5.5-8.5**)								
Day 0	8.0	7.8						
Day 4	7.9	8.1						
EC (uS/cm)								
Day 0	395	1766						
Day 4	394	1586						
DO (mg/L) (**70-100% saturation at test temp.**)								
Day 0	8.8	8.6						
Day 4	8.8	8.8						
Temperature (°C) (range: **14-16°C**)								
Day 0	15	16						
Day 4	15	15						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10(1)						
Day 4	10	10(1)						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.3	0.4
2	3.1	0.4
3	3.0	0.3
4	3.2	0.4
5	3.5	0.5
6	3.1	0.3
7	3.5	0.5
8	3.4	0.4
9	3.0	0.3
10	3.1	0.4

Loading Density (g/L): 0.2 (must be ≤0.5 g/L)
Mean Length (cm): 3.2
Length Range (cm): 3.0-3.5
Mean Weight (g): 0.4 (Must be ≥0.3g)
Weight Range: (g): 0.3-0.5

Test Organism Information

Batch 20220428TR
Source LSL
Tank # 3
Days Held at 15± 2°C 20 (must be ≥14 days)
Percent stock mortality 0.3 (7 days prior to test, must be <2%)
Test Volume (L) 18

Comments :
96Hrs: excessive ppt. on bottom/sides of tank.

Reviewed By: SS Date Reviewed: 2022105126

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC 164 Reference 2122-2228-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/05/18	1600	KIM/NA	3	DW
1	2022/05/19	1161	kim	-	mat
2	2022/05/20	0950	CHINA	2	kim

Sample Information

Initial pH: 7.7
Initial EC (µS/cm): 1777
Salinity (ppt): 3

Lab Code	CTL A	CTL B	CTL C	100 A	100 B	100 C				
day										
0	8.0	8.0	8.0	7.9	7.9	7.9				
2	7.9	7.9	7.9	7.8	7.8	7.8				
0	413	418	421	1785	1799	1875				
2	430	432	435	1751	1726	1764				
0	7.9	7.9	7.9	7.9	7.9	7.9				
2	7.9	7.9	7.9	7.9	7.9	7.9				
0	20	20	20	20	20	20				
2	20	20	20	20	20	20				
0	10	10	10	10	10	10				
1	10	10	10	10(8I)	10(7I)	10(10I)				
2	10	10	10	9(9I)	9(9I)	8(8I)				

pH (units) (range: 6.0-8.5)

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

DO (mg/L) (**40-100% saturation at test temp.**)

Temperature (°C) (range: **18-22 °C**)

Number Alive (I, immobile)

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar MON C1

Jar(s) mortality 7 days prior to test (must be ≤25%) 0.1

QA (previous month)

Days to first brood (≤12 days) 8

Average number of young produced (≥15 young) 35

Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 8.9

DO % of sample prior to aeration: 114

Duration of aeration (37.5 +/- 12.5 mL/min/L): 20 min

Hardness (mg $CaCO_3$/L) of 100% : 1346

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —

Alkalinity of 100% sample (mg $CaCO_3$/L): 414

Temperature (°C) of sample prior to aeration: 21

Is aeration required (<40% or >100%)? (Yes) or No

Filtered with 110um screen prior to testing Yes or (No)

Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)

Dilution Water

Pail label / preparation date 2:05/10

Hardness of dilution water (mg/L) 184

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Comments/Observations:

0hr: NO ppt.

48hr: Surficial ppt, ppt on jar, ppt on carapace

Reviewed By: SS Date Reviewed: 2022105/26

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method: DAS AS 20 | Client: TEC 164 | Reference: 2122-2228-02

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/05/18	1605	KTM/NA	3	DW
1	2022/05/19	1105	ktm	-	MAP
2	2022/05/20	1000	CHINA	2	ktm

Sample Information

Initial pH: 7.7
Initial EC (µS/cm): 1743 77
Salinity (ppt): 3

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	8.0	8.0	8.0	8.1	8.1	8.1				
2	8.0	8.0	8.0	8.2	8.3	8.2				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm) NA 1751

0	414	426	419	1763	~~1599~~	1759				
2	428	433	435	1779	1818	1803				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.7	7.7	7.7				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	21	21	21				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar: MON C1 — Jar(s) mortality 7 days prior to test (must be ≤25%): 0%

QA (previous month)

Days to first brood (≤12 days): 8
Average number of young produced (≥15 young): 35
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - (must be ≤10%): 0

Sample

DO (mg/L) of sample prior to aeration: 9.0 — Temperature (°C) of sample prior to aeration: 21
DO % of sample prior to aeration: 115 — Is aeration required (<40% or >100%)? **Yes or No**
Duration of aeration (37.5 +/- 12.5 mL/min/L): 20 min — Filtered with 110um screen prior to testing **Yes or No**
Hardness (mg $CaCO_3$/L) of 100%: 1162 → 1346 — Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L): —
Alkalinity of 100% sample (mg $CaCO_3$/L): 472 → 414

Dilution Water

Pail label / preparation date: 2:05/10
Hardness of dilution water (mg/L): 184

Antiscalant

Final Concentration in Sample: 20 mg/L
Volume of sample: 500 mL — Volume of antiscalant: 158 uL

Comments/Observations:

0hr: no ppt.
48hr: surficial ppt, ppt on jar

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Reviewed By: SS — Date Reviewed: 2022/05/26

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC 164 Reference 2122-2228-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/05/18	1600	KTM/NA	3	
1	2022/05/19	1055	KTM	-	MAF
2	2022/05/20	1120	CHINA	2	KTM

Sample Information

Initial pH: 7.7
Initial EC (µS/cm): NA ~~1745~~ 1777
Salinity (ppt): 3

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				
day										
0	8.1	8.1	8.1	7.8	7.8	7.8				
2	8.1	8.0	8.1	7.9	8.0	8.0				

pH (units) (range: 6.0-8.5)

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

0	416	411	421	1799	1813	1812				
2	424	432	434	1796	1830	1828				

EC (uS/cm)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

DO (mg/L) (**40-100% saturation at test temp.**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Temperature (°C) (range: **8-12 °C**)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10(4F)	10(7F)				

Number Alive (I, immobile)

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar MON E1 Jar(s) mortality 7 days prior to test (must be ≤25%) 5%

QA (previous month)
Days to first brood (≤12 days) 9
Average number of young produced (≥15 young) 18
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - CH 0%
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 9.7 ~~9.0~~ NA
DO % of sample prior to aeration: 106 ~~115~~ NA
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20 min
Hardness (mg $CaCO_3$/L) of 100% : NA ~~1462~~ 1346
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): NA ~~472~~ 414

Temperature (°C) of sample prior to aeration: 12 ~~21~~ NA
Is aeration required (<40% or >100%)? Yes or No
Filtered with 110um screen prior to testing Yes or No
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or No

Dilution Water
Pail label / preparation date 2:05/10
Hardness of dilution water (mg/L) 184

DO Levels (40-100% saturation) - corrected for altitude -
4.1 to 10.3 mg/L at 8°C
4.0 to 10.0 mg/L at 9°C
3.9 to 9.8 mg/L at 10°C
3.8 to 9.6 mg/L at 11°C
3.7 to 9.4 mg/L at 12°C

Comments/Observations:
0hr: no ppt.
48hr: Surficial ppt, ppt on jar, ppt on carapace

Reviewed By: SS Date Reviewed: 2022/05/26

APPENDIX C – Chain-of-custody form

Teck

COC ID:	F2 NAUTILUS May 16 2022	TURNAROUND TIME:		RUSH:	

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name / Job#	F2 SRF			Lab Name	Nautilus Environmental - BC			Report Format / Distribution		Excel	PDF	EDD
Project Manager	BRETT MASON			Lab Contact				Email 1:	Cole.Macgregor@teck.com	X	X	X
Email	BRETT.MASON@TECK.COM			Email	jacklyn@nautilusenvironmental.ca			Email 1:	teckcoal@equisonline.com			X
Address	RR1 HWY 3			Address	10823 27th Street SE			Email 2:	DL-EVO-SRF-LAB@teck.com	X	X	X
								Email 3:				
City	Sparwood	Province	BC	City	Calgary	Province	AB	Email 4:				
								Email 5:				
								Email 6:				
								Email 7:				
								Email 8:				
								Email 10:				
								Email 11:				
								Email 12:				
								Email 13:				
Postal Code	V0B 2G0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada					
Phone Number	250-425-6179			Phone Number	403-253-7121			PO number	822027			

SAMPLE DETAILS — **ANALYSIS REQUESTED** — Filtered - F: Field, L: Lab, FL: Field & Lab, N: None

2022/05/17
10:00
Manitoulin
4x 20 L carboys, 5 x 1 L bottles
SRS
No NoI
Good Condition

Sample ID 2122-2228	Sample Location (sys_loc_code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	Fil.	48hr Daphnia Magna Single Concentration Acute Toxicity 20C	48hr Daphnia Magna Single Concentration Acute Toxicity 10C	48hr Daphnia Magna Single Concentration Acute Toxicity Anitscalent	96hr Rainbow Trout Single Concentration Acute Toxicity (20L Bladders)	48hr Daphnia Magna Single Concentration Toxicity 15C							
-01 F2_BPO_WG_2022-05-16_N	F2_BPO	WG		2022/05/16	8:30	G	8		2	2		4		9.8°C						
-02 F2_BPO_WG_2022-05-16_N-AS	F2_BPO	WG		2022/05/16	8:30	G	1				1			9.8°C						

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME
		May 16, 2022		

SERVICE REQUEST (rush - subject to availability)

Regular (default)	X
Priority (2-3 business days) - 50% surcharge	
Emergency (1 Business Day) - 100% surcharge	
For Emergency <1 Day, ASAP or Weekend - Contact ALS	

Sampler's Name		Mobile #	
Sampler's Signature		Date/Time	May 16, 2022

END OF REPORT

Acute Toxicity Test Results

Samples collected May 23, 2022

Final Report

July 14, 2022

Submitted to: **Teck Coal Ltd.**
Sparwood, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates					
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation	*Daphnia magna* antiscalant test initiation
F2_BPO_WG_2022-05-23_N/ 2122-2293-01	23-May-22 at 0745h	24-May-22 at 1630h	25-May-22 at 1510h	25-May-22 at 1435h	25-May-22 at 1430h	-
F2_BPO_WG_2022-05-23_N-AS/ 2122-2293-02	23-May-22 at 0746h	24-May-22 at 1630h	-	-	-	25-May-22 at 1440h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
F2_BPO_WG_2022-05-23_N	16.6°C	1160	507
F2_BPO_WG_2022-05-23_N-AS	16.6°C	1160	507

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)
- *Daphnia magna* 48-h single concentration screening test (conducted with 20 mg/L antiscalant)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample			
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
F2_BPO_WG_2022-05-23_N	100	100	100	-
F2_BPO_WG_2022-05-23_N-AS	-	-	-	100

Sample ID	Percent Immobility in 100 (% v/v)		
	Daphnia magna 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
F2_BPO_WG_2022-05-23_N	0	0	-
F2_BPO_WG_2022-05-23_N-AS	-	-	0

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
F2_BPO_WG_2022-05-23_N	Rainbow trout	Precipitate observed on test vessel	None
	Daphnia magna	Surficial precipitate observed in 20˚C test	None
F2_BPO_WG_2022-05-23_N-AS	*Daphnia magna*	None	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	3.8 (3.3-4.3) g/L KCl[1]	5.7 (5.4-5.9) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.4 (2.6-4.4) g/L KCl	6.5 (5.5-7.6) g/L NaCl
Reference toxicant CV	8.7%	5.4%
Organism health history	Acceptable	Acceptable
Protocol deviations	See below	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, May 17, 2022; [2] Test Date June 1, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation

Continuous aeration was interrupted on day 4 of testing resulting in a protocol deviation.



Report By:
Lily Cole, BSc
Laboratory Biologist



Reviewed By:
Émilie Viczko, MSc
Project Biologist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	Moderately hard reconstituted water supplemented with B12 (2 µg/L)
Control/dilution water for antiscalant test	Moderately-hard reconstituted water supplemented with B12 (2 µg/L) and 20 mg/L antiscalant
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	Moderately-hard reconstituted water supplemented with B12 (2 µg/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC164 Reference 2122-2293-01 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022-05-25	1570 *	CC /AM	1	LC
1	2022-05-26	0800	KLM	-	MAF
2	2022-05-27	0800	CH	-	MAF
3	2022-05-28	0810	CH	-	MAF
4	2022-05-29	0735	DM/LC/NA	1	AN

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 7.8
Initial EC (µS/cm): 11160
Salinity (ppt): 2

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L: **yes/no**

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	8.4	8.9			
Temp (°C) of 100%	14				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	8.2	7.9						
Day 4	8.3	8.3						
EC (uS/cm)								
Day 0	435	1581						
Day 4	433	1718						
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	8.8	8.9						
Day 4	8.4	8.2						
Temperature (°C) (range: 14-16°C)								
Day 0	15	14						
Day 4	16	16						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	4.0	0.6
2	3.4	0.4
3	3.3	0.3
4	3.0	0.3
5	2.7	0.2
6	3.1	0.3
7	2.9	0.2
8	2.7	0.2
9	3.0	0.2
10	2.8	0.3

Loading Density (g/L): 0.2 (must be ≤0.5 g/L)
Mean Length (cm): 3.1
Length Range (cm): 2.7-4.0
Mean Weight (g): 0.3 (Must be ≥0.3g)
Weight Range: (g): 0.2-0.6

Test Organism Information

Batch 20220428TR
Source LSL
Tank # 3
Days Held at 15± 2°C 27 (must be ≥14 days)
Percent stock mortality 0.22 (7 days prior to test, must be <2%)
Test Volume (L) 18

Comments : * PPT in 100%
96Hrs:

Reviewed By: CB Date Reviewed: 2022/05/30

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC 164 Reference 2122-2293-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/05/25	1430	LC/CH	2	LJ
1	2022/05/26	0905	CC	-	MAF
2	2022/05/27	0850	CC	2	CB

Sample Information

Initial pH: 7.8
Initial EC (µS/cm): 1845
Salinity (ppt): 2

Lab Code	CTL A	CTL B	CTL C	100 A	100 B	100 C

pH (units) (range: 6.0-8.5)

day										
0	7.6	7.6	7.6	8.1	8.1	8.1				
2	7.9	~~8.1~~ 7.9	7.9	8.1	8.3	8.2				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	279	286	283	1816	1886	1900				
2	307	297	291	1739	1810	1838				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.9	7.9	8.1				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	20	20	19				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar Wed C3 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 9
Average number of young produced (≥15 young) 27
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0%
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 9.9
DO % of sample prior to aeration: 118%
Duration of aeration (37.5 +/- 12.5 mL/min/L): 20m
Hardness (mg $CaCO_3$/L) of 100%: 1160
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 507

Temperature (°C) of sample prior to aeration: 18
Is aeration required (<40% or >100%)? (Yes) or No
Filtered with 110um screen prior to testing Yes or (No)
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)

Dilution Water
Pail label / preparation date (MHRW) D2: 05120
Hardness of dilution water (mg/L) 84

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Comments/Observations:
0 HR: NO PPT
48 HR: surficial ppt

Reviewed By: CB Date Reviewed: 2022/05/30

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC 164 Reference 2122-2293-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/05/25	1435	LC/CH	2	AW
1	2022/05/26	0915	CC	-	MAF
2	2022/05/27	0930	CC	2	CB

Sample Information

Initial pH: 7.8
Initial EC (µS/cm): 1845
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	7.7	7.6	7.6	8.1	8.1	8.1				
2	7.7	7.7	7.7	8.4	8.5	8.5				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	278	286	287	1818	1884	1897				
2	282	290	290	1775	1883	1901				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar Wed C3 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 9
Average number of young produced (≥15 young) 27
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0%
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 11.1
DO % of sample prior to aeration: 118%
Duration of aeration (37.5 +/- 12.5 mL/min/L): 20m
Hardness (mg $CaCO_3$/L) of 100% : 1160
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 507

Temperature (°C) of sample prior to aeration: 12
Is aeration required (<40% or >100%)? Yes or No
Filtered with 110um screen prior to testing Yes or No
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)

Dilution Water

Pail label / preparation date (MHRW) D2:05120
Hardness of dilution water (mg/L) 84

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

Comments/Observations:
0 HR: NO PPT
48 HR: NO PPT

Reviewed By: CB Date Reviewed: 2022/05/30

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS 20 Client TEC 164 Reference 2122-2293-02

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/05/25	1440	LC/CH	2	NF
1	2022/05/26	0910	CC	-	MAF
2	2022/05/27	0850	CC	2	CB

Sample Information

Initial pH: 7.8
Initial EC (µS/cm): 1845
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	7.8	7.7	7.7	8.0	8.0	8.0				
2	7.8	7.9	7.8	8.4	8.4	8.5				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	282	289	290	1839	1900	1908				
2	303	298	299	1816	1876	1889				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.9	7.9	8.1				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	20	20	19				
2	20	20	20	20	20	20				

Number Alive (l, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar Wed C3 Jar(s) mortality 7 days prior to test (must be ≤25%) 0/1.

QA (previous month)
Days to first brood (≤12 days) 9
Average number of young produced (≥15 young) 27
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0%

Sample
DO (mg/L) of sample prior to aeration: 10.0
DO % of sample prior to aeration: 122 ~~117.6~~
Duration of aeration (37.5 +/- 12.5 mL/min/L): 20m
Hardness (mg $CaCO_3$/L) of 100% : 1160
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) ——
Alkalinity of 100% sample (mg $CaCO_3$/L): 507
Temperature (°C) of sample prior to aeration: 18
Is aeration required (<40% or >100%)? **Yes or No**
Filtered with 110um screen prior to testing **Yes or No**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Dilution Water
Pail label / preparation date (MHRW) D2:05120
Hardness of dilution water (mg/L) 84

Antiscalant
Final Concentration in Sample: 20mg/L
Volume of sample: 500mL Volume of antiscalant: 158µL

Comments/Observations:
0 HR: NO PPT
48 HR: NO PPT

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Reviewed By: CB Date Reviewed: 2022105130

APPENDIX C – Chain-of-custody form

Teck

COC ID: F2 NAUTILUS May 23 2022 | **TURNAROUND TIME:** | **RUSH:**

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO			
Facility Name / Job#	F2 SRF			Lab Name	Nautilus Environmental - BC			Report Format / Distribution		Excel	PDF	EDD
Project Manager	BRETT MASON			Lab Contact				Email 1:	Cole.Macgregor@teck.com	X	X	X
Email	BRETT.MASON@TECK.COM			Email	jacklyn@nautilusenvironmental.ca			Email 1:	teckcoal@equisonline.com			X
Address	RR1 HWY 3			Address	10823 27th Street SE			Email 2:	DL-EVO-SRF-LAB@teck.com	X	X	X
								Email 3:				
City	Sparwood	Province	BC	City	Calgary	Province	AB	Email 4:				
								Email 5:				
								Email 6:				
								Email 7:				
								Email 8:				
								Email 10:				
								Email 11:				
								Email 12:				
								Email 13:				
Postal Code	V0B 2G0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada					
Phone Number	250-425-6179			Phone Number	403-253-7121			PO number	00822027			

SAMPLE DETAILS

2022/05/24
16:30
Manitoulin
°C
4 x 20L carboys, 5 x 1L bottles
Ice/Not
Good Cond.

ANALYSIS REQUESTED

Filtered - F: Field, L: Lab, FL: Field & Lab, N: None

Sample ID 2122-2293	Sample Location (sys loc code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	Fil.	48hr Daphnia Magna Single Concentration Acute Toxicity 20C	48hr Daphnia Magna Single Concentration Acute Toxicity 10C	48hr Daphnia Magna Single Concentration Acute Toxicity Anitscalent	96hr Rainbow Trout Single Concentration Acute Toxicity (20L Bladders)	48hr Daphnia Magna Single Concentration Toxicity 15C
F2_BPO_WG_2022-05-23_N -01	F2_BPO	WG		2022/05/23	7:45	G	8		2	2		4	16,69C
F2_BPO_WG_2022-05-23_N-AS -02	F2_BPO	WG		2022/05/23	7:46	G	1				1		↓

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME
		May 23, 2022		

SERVICE REQUEST (rush - subject to availability)					
Regular (default)	X	Sampler's Name	Ariana Lewis	Mobile #	
Priority (2-3 business days) - 50% surcharge					
Emergency (1 Business Day) - 100% surcharge		Sampler's Signature		Date/Time	May 23, 2022
For Emergency <1 Day, ASAP or Weekend - Contact ALS					

END OF REPORT

Acute Toxicity Test Results

Samples collected May 24, 2022

Final Report

July 13, 2022

Submitted to: **Teck Coal Ltd.**
Sparwood, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates					
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation	*Daphnia magna* antiscalant test initiation
EV_GTI_WS_2022-05-24_N-SRF / 2122-2301-01	24-May-22 at 0945h	25-May-22 at 1020h	26-May-22 at 1530h	26-May-22 at 1450h	26-May-22 at 1445h	-
EV_BCI_WS_2022-05-24_N-SRF / 2122-2301-02	24-May-22 at 0750h	25-May-22 at 1020h	26-May-22 at 1530h	26-May-22 at 1430h	26-May-22 at 1450h	-
EV_BCI_WS_2022-05-24_N-SRF-AS / 2122-2301-03	24-May-22 at 0751h	25-May-22 at 1020h	-	-	-	26-May-22 at 1500h
EV_GTI_WS_2022-05-24_N-SRF-AS / 2122-2301-04	24-May-22 at 0946h	25-May-22 at 1020h	-	-	-	26-May-22 at 1505h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
EV_GTI_WS_2022-05-24_N-SRF	6.8°C	1032	305
EV_BCI_WS_2022-05-24_N-SRF	10.3°C	1121	236
EV_BCI_WS_2022-05-24_N-SRF-AS	10.3°C	1121	236
EV_GTI_WS_2022-05-24_N-SRF-AS	6.8°C	1032	305

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)
- *Daphnia magna* 48-h single concentration screening test (conducted with 5 mg/L antiscalant)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample			
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
EV_GTI_WS_2022-05-24_N-SRF	100	100	100	-
EV_BCI_WS_2022-05-24_N-SRF	100	100	100	-
EV_BCI_WS_2022-05-24_N-SRF-AS	-	-	-	100
EV_GTI_WS_2022-05-24_N-SRF-AS	-	-	-	100

Sample ID	Percent Immobility in 100 (% v/v)		
	Daphnia magna 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
EV_GTI_WS_2022-05-24_N-SRF	0	7	-
EV_BCI_WS_2022-05-24_N-SRF	0	0	-
EV_BCI_WS_2022-05-24_N-SRF-AS	-	-	0
EV_GTI_WS_2022-05-24_N-SRF-AS	-	-	3

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
EV_GTI_WS_2022-05-24_N-SRF	Rainbow trout	None	None
	Daphnia magna	Precipitate observed on the surface and bottom of test vessel	Precipitate observed on the carapace in 20 degree test
EV_BCI_WS_2022-05-24_N-SRF	Rainbow trout	None	None
	Daphnia magna	Precipitate observed on the surface and bottom of test vessel in 20 degree test	None
EV_BCI_WS_2022-05-24_N-SRF-AS	*Daphnia magna*	None	None
EV_GTI_WS_2022-05-24_N-SRF-AS	*Daphnia magna*	None	

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	3.8 (3.3-4.3) g/L KCl[1]	5.7 (5.4-5.9) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.4 (2.6-4.4) g/L KCl	6.5 (5.5-7.6) g/L NaCl
Reference toxicant CV	8.7%	5.4%
Organism health history	Acceptable	Acceptable
Protocol deviations	See below	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, May 17, 2022; [2] Test Date June 1, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation

Continuous aeration was interrupted between day 3 and day 4 of testing resulting in a protocol deviation.



Report By:
Lily Cole, B.Sc.

Laboratory Biologist



Reviewed By:
Ebi Lari, P. Biol., Ph.D.

Laboratory Manager and
Environmental Scientist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	Moderately-hard reconstituted water supplemented with B12 (2 µg/L)
Control/dilution water for antiscalant test	Moderately-hard reconstituted water supplemented with B12 (2 µg/L) and 5 mg/L antiscalant
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	Moderately-hard reconstituted water supplemented with B12 (2 µg/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC 164 Reference 2122-2301-01 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022/05/26	1530 *	KO/AM	1	SS
1	2022/05/27	0805	CM	-	MAE
2	2022/05/28	0810	CM	-	MAE
3	2022/05/29	0830	NA	-	AN
4	2022/05/30	0845	KC/AM	1	KM

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 8.2
Initial EC (µS/cm): 1801
Salinity (ppt): 3

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L : yes/no

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	9.5	8.6			
Temp (°C) of 100%	16				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	7.9	8.2						
Day 4	7.9	8.0						
EC (uS/cm)								
Day 0	438	1840						
Day 4	481	1918						
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	8.8	8.6						
Day 4	8.16	8.3						
Temperature (°C) (range: 14-16°C)								
Day 0	15	16						
Day 4	16	No						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.9	0.7
2	3.4	0.5
3	3.3	0.4
4	3.1	0.3
5	3.3	0.4
6	3.3	0.4
7	3.5	0.5
8	3.5	0.5
9	3.3	0.3
10	2.9	0.2

Loading Density (g/L): 0.2 (must be ≤0.5 g/L)
Mean Length (cm): 3.4
Length Range (cm): 2.9-3.9
Mean Weight (g): 0.4 (Must be ≥0.3g)
Weight Range: (g): 0.2-0.7

Test Organism Information

Batch 20220428TR
Source LSL
Tank # 4
Days Held at 15± 2°C 28 (must be ≥14 days)
Percent stock mortality 0.04 (7 days prior to test, must be <2%)
Test Volume (L) 18

Comments :
96h: no ppt.

Reviewed By: CB Date Reviewed: 2022/06/02

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC 164 Reference 2122-2301-02 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022/05/26	1530 *	KO/AM	1	SS
1	2022/05/27	0805	CH	-	MAF
2	2022/05/28	0810	CH	-	MAF
3	2022/05/29	0830	NA	-	DJ
4	2022/05/30	0850	LC/AM	1	WM

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 8.0
Initial EC (µS/cm): 1809
Salinity (ppt): 4

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L : **yes/no**

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	9.2	8.6			
Temp (°C) of 100%	16				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	7.7	8.0						
Day 4	8.0	8.1						
EC (uS/cm)								
Day 0	441	1871						
Day 4	482	2010						
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	8.8	8.6						
Day 4	8.6	8.6						
Temperature (°C) (range: 14-16°C)								
Day 0	15	16						
Day 4	16	16						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.9	0.6
2	3.3	0.4
3	3.2	0.3
4	3.5	0.4
5	3.4	0.4
6	3.1	0.3
7	3.2	0.3
8	3.2	0.3
9	3.5	0.5
10	2.7	0.2

Loading Density (g/L): 0.2 (must be ≤0.5 g/L)
Mean Length (cm): 3.3
Length Range (cm): 2.7-3.9
Mean Weight (g): 0.4 (Must be ≥0.3g)
Weight Range: (g): 0.2-0.6

Test Organism Information

Batch 20220428TR
Source LSL
Tank # 4
Days Held at 15± 2°C 28 (must be ≥14 days)
Percent stock mortality 0.04 (7 days prior to test, must be <2%)
Test Volume (L) 18

Comments :
96h: no ppt.

Reviewed By: CB Date Reviewed: 2022/06/02

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC 164 Reference 2122-2301-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/05/26	1450	CH/CC	2	AC
1	2022/05/27	0910	CH	-	MAP
2	2022/05/28	1050	CH	2	MAP

Sample Information

Initial pH:	8.2
Initial EC (µS/cm):	1801
Salinity (ppt):	3

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	7.7	7.7	7.6	8.0	8.1	8.1				
2	8.0	7.9	7.9	8.2	8.2	8.2				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	271	284	286	1823	1864	1874				
2	291	291	292	1742	1824	1851				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar Wed E2 Jar(s) mortality 7 days prior to test (must be ≤25%) 10/1.

QA (previous month)
Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 32
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 10.1 Temperature (°C) of sample prior to aeration: 12
DO % of sample prior to aeration: 107 % 10/1. Is aeration required (<40% or >100%)? Yes or No
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20m Filtered with 110um screen prior to testing Yes or No
Hardness (mg $CaCO_3$/L) of 100% : 1032 Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or No
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 305

Dilution Water
Pail label / preparation date (MH/RW) D2: 05/20
Hardness of dilution water (mg/L) 84

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

Comments/Observations:
0h: NO PPT
48h: surficial ppt, ppt on jar

Reviewed By: CB Date Reviewed: 2022/06/02

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC 164 Reference 2122-2301-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/05/26	1445	CH/CC	2	AE
1	2022/05/27	0845	CM	-	MAE
2	2022/05/28	1030	CH	2	MAE

Sample Information

Initial pH: 8.2
Initial EC (µS/cm): 1801
Salinity (ppt): 3

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	7.8	7.7	7.7	8.1	8.2	8.2				
2	7.8	7.8	7.8	8.1	8.1	8.1				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	287	288	287	1769	1837	1848				
2	312	301	303	1712	1790	1793				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.9	7.9	7.9				
2	8.1	8.1	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	20	20	20				
2	19	19	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10(27)	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar Wed C1 Jar(s) mortality 7 days prior to test (must be ≤25%) 0/1.

QA (previous month)
Days to first brood (≤12 days) 9
Average number of young produced (≥15 young) 31
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 9.4 Temperature (°C) of sample prior to aeration: 20
DO % of sample prior to aeration: 117. Is aeration required (<40% or >100%)? **Yes or No**
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20m Filtered with 110um screen prior to testing **Yes or (No)**
Hardness (mg $CaCO_3$/L) of 100% : 1032 Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or (No)**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 305

Dilution Water
Pail label / preparation date (MHRW) 02:05/20
Hardness of dilution water (mg/L) 84

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Comments/Observations:
0h: NO PPt
48h: Surficial ppt, ppt on jar, ppt on carapace

Reviewed By: CB Date Reviewed: 2022/06/02

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC 164 Reference 2122-2301-02

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/05/26	1430	CH/CC	2	AE
1	2022/05/27	0910	CH	-	MAP
2	2022/05/28	1050	CH	2	MAP

Sample Information

Initial pH: 8.0
Initial EC (µS/cm): 1809
Salinity (ppt): 4

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	7.8	7.7	7.7	7.8	7.8	7.9				
2	7.9	7.9	7.9	8.3	8.2	8.4				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	275	286	287	1832	1901	1916				
2	284	292	291	1805	1908	1916				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar Wed D2 Jar(s) mortality 7 days prior to test (must be ≤25%) 0 %

QA (previous month)
Days to first brood (≤12 days) 9
Average number of young produced (≥15 young) 34
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 9.4 Temperature (°C) of sample prior to aeration: 12
DO % of sample prior to aeration: 100 % Is aeration required (<40% or >100%)? **Yes or (No)**
Duration of aeration (37.5 +/- 12.5 mL/min/L) : — Filtered with 110um screen prior to testing **Yes or (No)**
Hardness (mg $CaCO_3$/L) of 100% : 1121 Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or (No)**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 236

Dilution Water
Pail label / preparation date (MHRW) D2:05/20
Hardness of dilution water (mg/L) 84

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

Comments/Observations:
0h: NO PPE
48h: NO PPE

Reviewed By: CB Date Reviewed: 2022/06/02

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC 164 Reference 2122-2301-02

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/05/26	1450	CH/CC	2	AE
1	2022/05/27	0850	CH	-	MAP
2	2022/05/28	1035	CH	2	MAP

Sample Information

Initial pH: 8.0
Initial EC (µS/cm): 1809
Salinity (ppt): 4

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	7.8	7.7	7.7	8.1	8.1	8.1				
2	7.8	7.8	7.8	8.1	8.2	8.2				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	277	287	287	1824	1885	1890				
2	298	301	304	1839	1907	1943				

DO (mg/L) (**40-100% saturation at test temp.**)

0	8.1	7.9	7.9	7.9	7.9	7.9				
2	8.1	8.1	8.1	8.1	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	19	20	20	20	20	20				
2	19	19	19	19	20	20				

Number Alive (l, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar Wed D1 Jar(s) mortality 7 days prior to test (must be ≤25%) 0/1.

QA (previous month)
Days to first brood (≤12 days) 9
Average number of young produced (≥15 young) 34
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 8.9 Temperature (°C) of sample prior to aeration: 20
DO % of sample prior to aeration: 111% Is aeration required (<40% or >100%)? **Yes or No**
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20m Filtered with 110um screen prior to testing **Yes or No**
Hardness (mg $CaCO_3$/L) of 100% : 1121 Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 236

Dilution Water
Pail label / preparation date (MHRW) D2:05/20
Hardness of dilution water (mg/L) 84

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Comments/Observations:
0h: NO PPT
48h: SURFICIAL PPT, PPT ON JAR

Reviewed By: CB Date Reviewed: 2022/06/02

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS 9 Client TEC 164 Reference 2122-2301-03

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/05/26	1501	CH/CC	2	AE
1	2022/05/27	0850	CH	-	MAF
2	2022/05/28	1040	CH	1	MAF

Sample Information

Initial pH: 8.6
Initial EC (µS/cm): 1809
Salinity (ppt): 4

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	7.7	7.7	7.7	8.1	8.1	8.1				
2	8.0	7.9	7.8	8.3	8.4	8.4				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	286	287	288	1887	1883	1895				
2	304	299	303	1829	1918	1926				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.9	7.9	7.9				
2	8.1	8.1	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	20	20	20				
2	19	19	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar WedEl Jar(s) mortality 7 days prior to test (must be ≤25%) 15%

QA (previous month)
Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 32
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0

Sample
DO (mg/L) of sample prior to aeration: 8.7
DO % of sample prior to aeration: 110%
Duration of aeration (37.5 +/- 12.5 mL/min/L): 20m
Hardness (mg $CaCO_3$/L) of 100% : 112
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 236
Temperature (°C) of sample prior to aeration: 20
Is aeration required (<40% or >100%)? **Yes or No**
Filtered with 110um screen prior to testing **Yes or No**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Dilution Water
Pail label / preparation date (MHRW) D2:0520
Hardness of dilution water (mg/L) 84

Antiscalant
Final Concentration in Sample: 5mg/L
Volume of sample: 200mL Volume of antiscalant: 39.5mL

Comments/Observations:
0h: No ppt
48h: NO ppt

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Reviewed By: CB Date Reviewed: 2022/06/02

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS 5 Client TEC 164 Reference 2122-2301-04

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/05/26	1505	CH/CC	2	AE
1	2022/05/27	0850	CH	-	MAE
2	2022/05/28	1045	CH	2	MAE

Sample Information

Initial pH:	8.6
Initial EC (µS/cm):	1809
Salinity (ppt):	4

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	7.7	7.7	7.7	8.1	8.1	8.1				
2	8.0	7.9	7.8	8.4	8.4	8.5				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	278	286	288	1843	1840	1850				
2	301	306	302	1806	1887	1907				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.9	7.9	7.9				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	20	20	20				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10(1I)				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar wed E1 Jar(s) mortality 7 days prior to test (must be ≤25%) 15%

QA (previous month)

Days to first brood (≤12 days) 7

Average number of young produced (≥15 young) 32

Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - (must be ≤10%) 0

Sample

DO (mg/L) of sample prior to aeration: 8.6 Temperature (°C) of sample prior to aeration: 21

DO % of sample prior to aeration: 109% Is aeration required (<40% or >100%)? **Yes or No**

Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20m Filtered with 110um screen prior to testing **Yes or No**

Hardness (mg $CaCO_3$/L) of 100% : ~~121~~ 182 Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —

Alkalinity of 100% sample (mg $CaCO_3$/L): ~~235~~ 305.

Dilution Water

Pail label / preparation date (MHRW) D2:05/20

Hardness of dilution water (mg/L) 84

Antiscalant

Final Concentration in Sample: 5mg/L

Volume of sample: 500ml Volume of antiscalant: 39.5ML

Comments/Observations:

0h: NO PPT

48h: NO PPT

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Reviewed By: CB Date Reviewed: 2022/06/02

APPENDIX C – Chain-of-custody form

Teck

COC ID:	EVO NAUTILUS May 24 2022	TURNAROUND TIME:		RUSH:	

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name / Job#	Elkview Operations			Lab Name	Nautilus Environmental - BC			Report Format / Distribution		Excel	PDF	EDD
Project Manager	Group 1; Brett Mason			Lab Contact				Email 1:	teckcoal@equisonline.com			X
Email	Brett.Mason@teck.com			Email	jacklyn@nautilusenvironmental.ca			Email 2:	DL-EVO-SRF-LAB@teck.co	X	X	X
Address	RR1 HWY 3			Address	10823 27th Street SE			Email 3:	Cole.Macgregor@teck.com	X	X	X
								Email 4:				
City	Sparwood	Province	BC	City	Calgary	Province	AB	Email 5:				
								Email 6:				
								Email 7:				
								Email 8:				
								Email 9:				
								Email 10:				
								Email 11:				
								Email 12:				
								Email 13:				
Postal Code	V0B 2G0	Country	Canada	Postal Code	T2H 2K1	Country	Canada					
Phone Number	250-425-6179			Phone Number	T2Z 3V9			PO number	822027			

SAMPLE DETAILS

2022/05/25
10:20
Manitoulin
JC/SRS/AC/
4x20L carboys, 5x10L carboys, 10x1L bottles
NoS/NoT
Good Cond.

ANALYSIS REQUESTED — Filtered - F: Field, L: Lab, FL: Field & Lab, N: None

Sample ID	Sample Location (sys_loc_code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	48hr Daphnia Magna Single Concentration Acute Toxicity 20C	48hr Daphnia Magna Single Concentration Acute Toxicity 10C	48hr Daphnia Magna Single Concentration Acute Toxicity Anitscalent	96hr Rainbow Trout Single Concentration Acute Toxicity (10 L Bladder)	96hr Rainbow Trout Single Concentration Acute Toxicity (20 L Bladder)	48hr Daphnia Magna Single Concentration Toxicity 15C
EV_GT1_WS_2022-05-24_N-SRF 2122-2301-01	EV_GT1	WS		2022/05/24	9:45	G	8	2	2			4	6.8°C
EV_BC1_WS_2022-05-24_N-SRF -02	EV_BC1	WS		2022/05/24	7:50	G	12	2	2		8		10.3°C
EV_BC1_WS_2022-05-24_N-SRF-AS -03	EV_BC1	WS		2022/05/24	7:51	G	1			1			10.3°C
EV_GT1_WS_2022-05-24_N-SRF-AS -04	EV_GT1	WS		2022/05/24	9:46	G	1			1			6.8°C

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME
Field Temperatures	James Winter - Teck	May 24, 2022		
	[signature]	1200		

SERVICE REQUEST (rush - subject to availability)					
Regular (default)	X	Sampler's Name	Alana Block	Mobile #	
Priority (2-3 business days) - 50% surcharge					
Emergency (1 Business Day) - 100% surcharge		Sampler's Signature	[signature]	Date/Time	May 24, 2022
For Emergency <1 Day, ASAP or Weekend - Contact ALS					

END OF REPORT

Acute Toxicity Test Results

Samples collected June 2, 2022

Final Report

July 21, 2022

Submitted to: **Teck Coal Ltd.**
Sparwood, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates					
	Collected	**Received**	**Rainbow trout test initiation**	***Daphnia magna* 10˚C test initiation**	***Daphnia magna* 20˚C test initiation**	***Daphnia magna* antiscalant test initiation**
EV_EC1_WS_2022-06-02_N-SRF/ 2122-2401-01	2-Jun-22 at 0715h	3-Jun-22 at 0925h	4-Jun-22 at 1515h	3-Jun-22 at 1600h	3-Jun-22 at 1600h	-
EV_EC1_WS_2022-06-02_N-SRF-AS/ 2122-2401-02	2-Jun-22 at 0716h	3-Jun-22 at 0925h	-	-	-	3-Jun-22 at 1605h
EV_ECOUT_WS_2022-06-02_N-SRF/ 2122-2401-03	2-Jun-22 at 0930h	3-Jun-22 at 0925h	4-Jun-22 at 1520h	3-Jun-22 at 1610h	3-Jun-22 at 1620h	-
EV_ECOUT_WS_2022-06-02_N-SRF-AS/ 2122-2401-04	2-Jun-22 at 0931h	3-Jun-22 at 0925h	-	-	-	3-Jun-22 at 1615h
EV_EC_FLOW4_WS_2022-06-02_N-SRF/ 2122-2401-05	2-Jun-22 at 1000h	3-Jun-22 at 0925h	4-Jun-22 at 1520h	4-Jun-22 at 1520h	4-Jun-22 at 1515h	-
EV_EC_FLOW4_WS_2022-06-02_N-SRF-AS/ 2122-2401-06	2-Jun-22 at 1001h	3-Jun-22 at 0925h	-	-	-	4-Jun-22 at 1525h
EV_ECUP_WS_2022-06-02_N-SRF/ 2122-2401-07	2-Jun-22 at 1030h	3-Jun-22 at 0925h	4-Jun-22 at 1525h	4-Jun-22 at 1535h	4-Jun-22 at 1530h	-
EV_ECUP_WS_2022-06-02_N-SRF-AS/ 2122-2401-08	2-Jun-22 at 1031h	3-Jun-22 at 0925h	-	-	-	4-Jun-22 at 1540h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
EV_EC1_WS_2022-06-02_N-SRF	9.2°C	1045	308
EV_EC1_WS_2022-06-02_N-SRF-AS	9.2°C	1045	308
EV_ECOUT_WS_2022-06-02_N-SRF	9.9°C	1251	435
EV_ECOUT_WS_2022-06-02_N-SRF-AS	9.9°C	1251	435
EV_EC_FLOW4_WS_2022-06-02_N-SRF	12.3°C	1186	382
EV_EC_FLOW4_WS_2022-06-02_N-SRF-AS	12.3°C	1186	382
EV_ECUP_WS_2022-06-02_N-SRF	13.1°C	1142	401
EV_ECUP_WS_2022-06-02_N-SRF-AS	13.1°C	1142	401

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)
- *Daphnia magna* 48-h single concentration screening test (conducted with 5 mg/L antiscalant)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample			
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
EV_EC1_WS_2022-06-02_N-SRF	90	100	100	-
EV_EC1_WS_2022-06-02_N-SRF-AS	-	-	-	100
EV_ECOUT_WS_2022-06-02_N-SRF	100	100	100	-
EV_ECOUT_WS_2022-06-02_N-SRF-AS	-	-	-	100
EV_EC_FLOW4_WS_2022-06-02_N-SRF	100	100	100	-
EV_EC_FLOW4_WS_2022-06-02_N-SRF-AS	-	-	-	100
EV_ECUP_WS_2022-06-02_N-SRF	90	100	80	-
EV_ECUP_WS_2022-06-02_N-SRF-AS	-	-	-	97

Sample ID	Percent Immobility in 100 (% v/v)		
	Daphnia magna 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
EV_EC1_WS_2022-06-02_N-SRF	0	13	-
EV_EC1_WS_2022-06-02_N-SRF-AS	-	-	0
EV_ECOUT_WS_2022-06-02_N-SRF	0	3	-
EV_ECOUT_WS_2022-06-02_N-SRF-AS	-	-	0
EV_EC_FLOW4_WS_2022-06-02_N-SRF	0	3	-
EV_EC_FLOW4_WS_2022-06-02_N-SRF-AS	-	-	0
EV_ECUP_WS_2022-06-02_N-SRF	3	53	-
EV_ECUP_WS_2022-06-02_N-SRF-AS	-	-	3

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
EV_EC1_WS_2022-06-02_N-SRF	Rainbow trout	Precipitate observed on the test vessel	None
	Daphnia magna	Surficial precipitate observed	None
EV_EC1_WS_2022-06-02_N-SRF-AS	*Daphnia magna*	None	None
EV_ECOUT_WS_2022-06-02_N-SRF	Rainbow trout	Precipitate observed on the test vessel	None
	Daphnia magna	Surficial precipitate observed; precipitate observed on test vessel in 20-degree test	None
EV_ECOUT_WS_2022-06-02_N-SRF-AS	*Daphnia magna*	Surficial precipitate observed	None
EV_EC_FLOW4_WS_2022-06-02_N-SRF	Rainbow trout	Precipitate observed on the test vessel	None
	Daphnia magna	Surficial precipitate and precipitate observed on the test vessels	None
EV_EC_FLOW4_WS_2022-06-02_N-SRF-AS	*Daphnia magna*	Surficial precipitate and precipitate observed on the test vessels	None
EV_ECUP_WS_2022-06-02_N-SRF	Rainbow trout	Precipitate observed on the test vessel	None
	Daphnia magna	Surficial precipitate and precipitate observed on the test vessels	None
EV_ECUP_WS_2022-06-02_N-SRF-AS	*Daphnia magna*	Surficial precipitate observed	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*	*Daphnia magna*
Reference toxicant LC50 (95% CL)	3.4 (3.0-3.9) g/L KCl[1]	6.3 (6.0-6.5) g/L NaCl[2]	5.7 (5.4-5.9) g/L NaCl[3]
Reference toxicant historical mean (2 SD Range)	3.3 (2.5-4.4) g/L KCl	6.5 (5.5-7.6) g/L NaCl	6.5 (5.5-7.6) g/L NaCl
Reference toxicant CV	9.4%	5.3%	5.0%
Organism health history	Acceptable	Acceptable	Acceptable
Protocol deviations	None	None	None
Water quality range deviations	None	None	None
Control performance	Acceptable	Acceptable	Acceptable
Test performance	Valid	Valid	Valid

[1] Test date, May 5, 2022; [2] Test Date June 3, 2022, [3] Test Date June 3, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation



Report By:
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Reviewed By:
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Environmental Scientist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L) or moderately hard reconstituted water supplemented with B12 (2 µg/L)
Control/dilution water for antiscalant test	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L), Na_2SeO_4 (2 µg Se/L) and 5 mg/L antiscalant or moderately hard reconstituted water supplemented with B12 (2 µg/L) and 5 mg/L antiscalant
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L) or moderately hard reconstituted water supplemented with B12 (2 µg/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC 164 Reference 2122-2401-01 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022-06-04	1515 *	CH / KO	1	KTM
1	2022-06-05	1140	AC/DLR	-	KTM
2	2022-06-06	0910	NA	-	AN
3	2022-06-07	0935	KTM/ML	-	MAF
4	2022-06-08	0930	KTM/ML/CO	1	KTM

Note: * - time when the test was loaded with fish

Sample Information

Initial pH: 8.0
Initial EC (µS/cm): 1869
Salinity (ppt): 1

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L: **yes/no**

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	8.6	8.8			
Temp (°C) of 100%	16				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: **5.5-8.5**)								
Day 0	7.6	8.0						
Day 4	7.9	8.2						
EC (uS/cm)								
Day 0	496	1872						
Day 4	486	1918						
DO (mg/L) (**70-100% saturation at test temp.**)								
Day 0	8.8	8.8						
Day 4	8.6	8.8						
Temperature (°C) (range: **14-16°C**)								
Day 0	15	15						
Day 4	16	15						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	9						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.9	0.7
2	3.3	0.4
3	3.8	0.9
4	3.4	0.5
5	3.4	0.5
6	3.4	0.4
7	3.6	0.6
8	3.6	0.6
9	3.6	0.4
10	3.5	0.4

Loading Density (g/L): 0.3 (must be ≤0.5 g/L)
Mean Length (cm): 3.5
Length Range (cm): 3.3-3.8
Mean Weight (g): 0.5 (Must be ≥0.3g)
Weight Range: (g): 0.4-0.8

Test Organism Information

Batch 20220413TR
Source Smoky Trout Farm
Tank # 5
Days Held at 15± 2°C 20 (must be ≥14 days)
Percent stock mortality 0.07 (7 days prior to test, must be <2%)
Test Volume (L) 16

Comments :
96hr: No ppt on sides and bottom of tank

Reviewed By: CB Date Reviewed: 2022/06/09

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC 164 Reference 2122-2401-03 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022-06-04	1520 *	CH / KO	1	KTM
1	2022-06-05	1145	AC IDW	-	KTM
2	2022-06-06	0910	NA	-	AC
3	2022-06-07	0840	KC/KO	-	MAP
4	2022-06-08	~~0805~~	KC/KO/ML/KO	1	KTM

Note: * : time when the test was loaded with fish

Sample Information

Initial pH: 7.8
Initial EC (µS/cm): 1981
Salinity (ppt): 1

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L: **yes/no**

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	8.6	8.6			
Temp (°C) of 100%	16				

to 0936

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	7.6	7.7						
Day 4	8.1	8.1						
EC (uS/cm)								
Day 0	486	1992						
Day 4	~~1355~~ 484	1765						
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	8.8	8.6						
Day 4	8.8	8.8						
Temperature (°C) (range: 14-16°C)								
Day 0	15	16						
Day 4	15	15						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	2.9	0.3
2	3.1	0.4
3	2.9	0.3
4	3.0	0.3
5	3.1	0.4
6	3.6	0.6
7	3.4	0.5
8	3.9	0.3
9	3.4	0.5
10	2.9	0.3

Loading Density (g/L): 0.3 (must be ≤0.5 g/L)
Mean Length (cm): 3.2
Length Range (cm): 2.9-3.9
Mean Weight (g): 0.4 (Must be ≥0.3g)
Weight Range: (g): 0.3-0.8

Test Organism Information

Batch 20220413TR
Source Smoky Trout Farm
Tank # 5
Days Held at 15± 2°C 20 (must be ≥14 days)
Percent stock mortality 0.07 (7 days prior to test, must be <2%)
Test Volume (L) 15

Comments :
96hr: to No ppt on sides and bottom of tank

Reviewed By: CB Date Reviewed: 2022/06/09

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC 164 Reference 2122-2401-05 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022-06-04	1520*	CH / KQ	1	KTM
1	2022-06-05	1030	AC IDW	-	MF KTM
2	2022-06-06	0910	NA	-	AJ
3	2022-06-07	0840	ICarm	-	MAF
4	2022-06-08	0840	KC RM/MF/KQ	1	KTM

KC Note: * : time when the test was loaded with fish 0930

Sample Information

Initial pH: 7.8
Initial EC (µS/cm): 1805
Salinity (ppt): 1

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L (yes/no)

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	8.6	8.6			
Temp (°C) of 100%	16				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	7.6	7.7						
Day 4	8.1	8.2						
EC (uS/cm)								
Day 0	488	1984						
Day 4	493	1736						
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	8.8	8.6						
Day 4	8.8	8.8						
Temperature (°C) (range: 14-16°C)								
Day 0	15	16						
Day 4	15	15						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	2.7	0.2
2	3.8	0.7
3	2.9	0.3
4	3.6	0.5
5	3.6	0.4
6	3.5	0.5
7	3.4	0.5
8	3.1	0.3
9	3.7	0.7
10	3.1	0.4

Loading Density (g/L): 3.0 (must be ≤0.5 g/L)
Mean Length (cm): 3.3
Length Range (cm): 2.7-3.8
Mean Weight (g): 0.5 (Must be ≥0.3g)
Weight Range: (g): 0.2-0.7

Test Organism Information

Batch 20220413TR
Source Smoky Trout Farm
Tank # 5
Days Held at 15± 2°C 20 (must be ≥14 days)
Percent stock mortality 0.07 (7 days prior to test, must be <2%)
Test Volume (L) 18

Comments :
96hr: no N/O ppt on sides/bottom tank

Reviewed By: CB Date Reviewed: 20221006/09

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC 164 Reference 2122-2401-07 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022-06-04	1525 *	CH / KO	1	KTM
1	2022-06-05	1100	ACIBW	-	KTM
2	2022-06-06	0915	NA	-	AN
3	2022-06-07	0840	KCRM	-	MAP
4	2022-06-08	~~0845~~	KCRM/MI/KO	1	KTM

Note: * ; time when the test was loaded with fish

KO 0930

Sample Information

Initial pH: 7.7
Initial EC (µS/cm): 1984
Salinity (ppt): 1

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L : **yes/no**

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	8.6	8.6			
Temp (°C) of 100%	16				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	7.6	7.6						
Day 4	8.2	8.1						
EC (uS/cm)								
Day 0	487	1992						
Day 4	503	1778						
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	8.8	8.6						
Day 4	8.8	8.8						
Temperature (°C) (range: 14-16°C)								
Day 0	15	16						
Day 4	15	15						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10(1)						
Day 4	10	9						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.2	0.4
2	3.6	0.7
3	3.4	0.5
4	3.0	0.4
5	3.1	0.4
6	3.3	0.4
7	3.7	0.3
8	3.1	0.4
9	3.2	0.5
10	3.0	0.3

Loading Density (g/L): ~~0.48~~ 0.3 KCRM
(must be ≤0.5 g/L)

Mean Length (cm): 3.2

Length Range (cm): 2.7-3.6

Mean Weight (g): ~~0.8~~ 0.4 KCRM
(Must be ≥0.3g)

Weight Range: (g): 0.3-0.7

Test Organism Information

Batch 20220413TR
Source Smoky Trout Farm
Tank # 5
Days Held at 15± 2°C (must be ≥14 days) 20
Percent stock mortality (7 days prior to test, must be <2%) 0.07
Test Volume (L) 17

Comments :
96hr: N/O ppt on sides/bottom tank
KO

Reviewed By: [signature] Date Reviewed: 2022/06/09

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC 164 Reference 2122-2401-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/06/03	1600	EP/DH	2	MAF
1	2022/06/04	0755	MAF	-	KTM
2	2022/06/05	1040	KTM	2	AV

Sample Information

Initial pH: 8.0
Initial EC (µS/cm): 1869
Salinity (ppt): 1

Lab Code	CTL A	CTL B	CTL C	100 A	100 B	100 C

day

pH (units) (range: 6.0-8.5)

day										
0	7.9	7.9	7.9	7.9	8.0	8.0				
2	8.2	8.1	8.1	8.1	8.1	8.1				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	469	483	484	1858	1893	1898				
2	492	492	493	1799	1814	1829				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.9	7.9	7.9				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	20	20	20				
2	20	20	20	20	20	20				

Number Alive (l, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10(LH)	10	10(LH) KTM				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar MDN E1 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)

Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 19
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 9.6
DO % of sample prior to aeration: 118
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20 min
Hardness (mg $CaCO_3$/L) of 100% : 1045
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) -
Alkalinity of 100% sample (mg $CaCO_3$/L): 308

Temperature (°C) of sample prior to aeration: EP 19
Is aeration required (<40% or >100%)? Yes or (No)
Filtered with 110um screen prior to testing Yes or No
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)

Dilution Water

Pail label / preparation date 1 : 05/31
Hardness of dilution water (mg/L) 183

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Comments/Observations:

0h: no ppt
48h: artificial ppt

Reviewed By: CB Date Reviewed: 2022/06/09

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC 164 Reference 2122-2401-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/06/03	1600	EP DM	2	MAP
1	2022/06/04	0755	MAP	-	VTM
2	2022/06/05	1040	VTM	2	

Sample Information

Initial pH: 8.0
Initial EC (µS/cm): 1869
Salinity (ppt): 1

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	7.8	7.8	7.8	7.9	7.9	7.9				
2	~~7.88.1~~ VTM	~~7.92.1~~	~~7.96.~~	8.03	8.02	8.03				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	447	478	484	1871	1897	1904				
2	484	LOD	~~496~~ 489	~~temperature~~ 1860	~~temperature~~ 1878	~~temperature~~ VTM				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (l, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar Mon E1 Jar(s) mortality 7 days prior to test (must be ≤25%) 0 %

QA (previous month)

Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 19
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - (must be ≤10%) 0%

Sample

DO (mg/L) of sample prior to aeration: 9.4 ~~9.58~~
DO % of sample prior to aeration: 100
Duration of aeration (37.5 +/- 12.5 mL/min/L) : -
Hardness (mg $CaCO_3$/L) of 100% : 1045
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) -
Alkalinity of 100% sample (mg $CaCO_3$/L): 308

Temperature (°C) of sample prior to aeration: 12
Is aeration required (<40% or >100%)? **Yes or No**
Filtered with 110um screen prior to testing **Yes or No**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Dilution Water

Pail label / preparation date 1:05/31
Hardness of dilution water (mg/L) 183

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

Comments/Observations:

0h: no ppt
48h: survival ppt

Reviewed By: CB Date Reviewed: 2022/06/09

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS Client TEC 164 Reference 2122-2401-02

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/06/03	1605	EP/SH	2	MAF
1	2022/06/04	0730	MAF	-	WM
2	2022/06/05	1100	WM	2	D

Sample Information

Initial pH:	8.0
Initial EC (µS/cm):	1869
Salinity (ppt):	1

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	7.9	7.9	7.9	8.0	8.0	8.0				
2	8.1	8.1	8.0	8.3	8.3	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	471	482	485	1891 EP 1886	1877	1891				
2	478	488	488	1834	1850	1852				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.9	7.9	7.9				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	20	20	20				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar mon E1 Jar(s) mortality 7 days prior to test (must be ≤25%) 0 %

QA (previous month)

Days to first brood (≤12 days) 8

Average number of young produced (≥15 young) 19

Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - (must be ≤10%) 0%

Sample

DO (mg/L) of sample prior to aeration: 9.6

DO % of sample prior to aeration: 116

Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20 min

Hardness (mg $CaCO_3$/L) of 100% : 1045

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) -

Alkalinity of 100% sample (mg $CaCO_3$/L): 308

Temperature (°C) of sample prior to aeration: 18

Is aeration required (<40% or >100%)? (Yes) or No

Filtered with 110um screen prior to testing Yes or (No)

Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)

Dilution Water

Pail label / preparation date 1:05/31

Hardness of dilution water (mg/L) 183

Antiscalant

Final Concentration in Sample: 5mg/L

Volume of sample: 500mL Volume of antiscalant: 39.5mL

Comments/Observations:

0h: no ppt

48h: heavy ppt

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Reviewed By: CB Date Reviewed: 2022/06/09

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC 164 Reference 2122-2401-03

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/06/03	1620	EP/DM	2	MAF
1	2022/06/04	0730	MAF	-	KM
2	2022/06/05	1100	KM	2	AW

Sample Information

Initial pH: 7.8
Initial EC (µS/cm): 1981
Salinity (ppt): 1

Lab Code	CTL A	CTL B	CTL C	100 A	100 B	100 C

pH (units) (range: 6.0-8.5)

day										
0	7.9	7.9	7.9	7.8	7.8	7.8				
2	7.9	7.9	7.9	7.9	7.8	7.9				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	463	486	485	2050	2070	2070				
2	474	484	490	1856	1892	1877				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.9	7.9	7.9				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	20	20	20				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10(11)				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar mon D1/E1 Jar(s) mortality 7 days prior to test (must be ≤25%) 3%

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 21
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0%
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 9.5
DO % of sample prior to aeration: 115
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20 min
Hardness (mg $CaCO_3$/L) of 100% : 1251
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) -
Alkalinity of 100% sample (mg $CaCO_3$/L): 435

Temperature (°C) of sample prior to aeration: 18
Is aeration required (<40% or >100%)? **Yes or No**
Filtered with 110um screen prior to testing **Yes or No**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Dilution Water
Pail label / preparation date 1:05/31
Hardness of dilution water (mg/L) 183

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Comments/Observations:
0h: no ppt
48h: surface ppt and mat on jar

Reviewed By: CB Date Reviewed: 2022/06/09

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC 164 Reference 2122-2401-03

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/06/03	1610	EP/DM	2	MAF
1	2022/06/04	0755	MAF	-	VTM
2	2022/06/05	1040	VTM	2	

Sample Information

Initial pH: 7.8
Initial EC (µS/cm): 1981
Salinity (ppt): 1

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	7.9	7.9	7.9	7.5	7.6	7.6				
2	7.8	7.9	7.9	8.0	8.0	8.0				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	465	479	492	1931	2060	2070				
2	484	491	494	1961	1990	1998				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar mon E1 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)

Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 19
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - 0%
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 9.4
DO % of sample prior to aeration: 100
Duration of aeration (37.5 +/- 12.5 mL/min/L) : —
Hardness (mg $CaCO_3$/L) of 100% : 1251
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 435

Temperature (°C) of sample prior to aeration: 12
Is aeration required (<40% or >100%)? **Yes or (No)**
Filtered with 110um screen prior to testing **Yes or (No)**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or (No)**

Dilution Water

Pail label / preparation date 1: 05/31
Hardness of dilution water (mg/L) 183

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

Comments/Observations:

0h: no ppt
48h: surficial ppt

Reviewed By: [illegible] Date Reviewed: 2022/06/09

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS Client TEC 164 Reference 2122-2401-04

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/06/03	1615	EP/DM	2	MAP
1	2022/06/04	0750	MAP	-	MAP
2	2022/06/05	1130	MAP	2	MAP

Sample Information

Initial pH: 7.8
Initial EC (µS/cm): 1981
Salinity (ppt): 1

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	7.7	7.8	7.8	7.7	7.8	7.8				
2	8.0	8.0	8.0	8.4	8.4	8.4				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	443	487	490	1976	2060	2070				
2	437	488	494	1953	1972	1961				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	8.1	8.1	8.1				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	19	19	19				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar mon E1 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 19
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0%

Sample
DO (mg/L) of sample prior to aeration: 9.5 Temperature (°C) of sample prior to aeration: 18
DO % of sample prior to aeration: 115 Is aeration required (<40% or >100%)? (Yes or No)
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20 min Filtered with 110um screen prior to testing Yes or (No)
Hardness (mg $CaCO_3$/L) of 100% : 1251 Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) –
Alkalinity of 100% sample (mg $CaCO_3$/L): 435

Dilution Water
Pail label / preparation date 1:05/31
Hardness of dilution water (mg/L) 183

Antiscalant
Final Concentration in Sample: 5mg/L
Volume of sample: 500mL Volume of antiscalant: 39.5mL

Comments/Observations:
0h: no ppt
48h: survival ppt

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Reviewed By: CB Date Reviewed: 20220609

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC 164 Reference 2122-2401-05

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/06/~~03~~ 04	1515	KTM/CH	2	CH
1	2022/06/~~04~~ 05	0810	NA	-	KTM
2	2022/06/~~05~~ 06	1190	DM	3	DW

Sample Information

Initial pH:	7.8
Initial EC (µS/cm):	1805
Salinity (ppt):	1

Lab Code	CTL A	CTL B	CTL C	100 A	100 B	100 C				
day				pH (units) (range: 6.0-8.5)						
0	7.7	7.8	7.8	8.0	8.0	8.0				
2	7.7	7.8	7.7	7.9	7.8	7.9				
				The pH of the sample was not adjusted prior to test setting, unless noted in the comments below						
				EC (uS/cm)						
0	331	337	343	1957	1972	1987				
2	359	379	345	1859	1889	1881				
				DO (mg/L) (**40-100% saturation at test temp.**)						
0	7.9	7.9	7.9	7.7	7.7	7.7				
2	7.9	7.7	7.9	7.9	7.7	7.7				
				Temperature (°C) (range: **18-22 °C**)						
0	20	20	20	21	21	21				
2	21	21	20	20	21	21				
				Number Alive (I, immobile)						
0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10(1 I)	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar Wed C3 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)

Days to first brood (≤12 days) 7

Average number of young produced (≥15 young) 38

Were test treatments randomized on test tray? Yes / No

Control Validity Criteria

Mean % mortality at 48 hours - (must be ≤10%) 0

Sample

DO (mg/L) of sample prior to aeration: 8.9

Temperature (°C) of sample prior to aeration: 21

DO % of sample prior to aeration: 113%

Is aeration required (<40% or >100%)? **Yes or No**

Duration of aeration (37.5 +/- 12.5 mL/min/L) : ~~110~~ 20 min

Filtered with 110um screen prior to testing **Yes or No**

Hardness (mg $CaCO_3$/L) of 100% : 1100

Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —

Alkalinity of 100% sample (mg $CaCO_3$/L): 382

Dilution Water (MHRW)

Pail label / preparation date 3:05128

Hardness of dilution water (mg/L) 80

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Comments/Observations:

0h: NO PPT

48h: Surficial ppt, ppt on jar

Reviewed By: CB Date Reviewed: 2022/06/09

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC 164 Reference 2122-2401-05

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/06/~~03~~ 04	1520	KTM/KA	2	[illegible]
1	2022/06/~~04~~ 05	0810	NA	-	[illegible]
2	2022/06/~~05~~ 06	1145	DM	3	[illegible]

Sample Information

Initial pH:	7.8
Initial EC (µS/cm):	1805
Salinity (ppt):	1

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				
day				pH (units) (range: 6.0-8.5)						
0	7.9	7.9	7.9	7.7	7.8	7.7				
2	7.6	7.7	7.7	8.0	8.0	8.1				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

				EC (uS/cm)						
0	~~179~~ 311 KTM	~~23~~ 328 KTM	331	2070	2080	2080				
2	346	347	350	1915	1976	1998				
				DO (mg/L) (**40-100% saturation at test temp.**)						
0	9.4	9.4	9.4	9.9	9.9	9.9				
2	9.4	9.4	9.4	9.4	9.4	9.4				
				Temperature (°C) (range: **8-12 °C**)						
0	12	12	12	12	12	12				
2	12	12	12	12	12	12				
				Number Alive (I, immobile)						
0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar WedC3 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)

Days to first brood (≤12 days) 7

Average number of young produced (≥15 young) 30

Were test treatments randomized on test tray? Yes / No

Control Validity Criteria

Mean % mortality at 48 hours - (must be ≤10%) 0

Sample

DO (mg/L) of sample prior to aeration: 9.9 ~~9.9~~ CB

Temperature (°C) of sample prior to aeration: 12

DO % of sample prior to aeration: 106%

Is aeration required (<40% or >100%)? Yes or No

Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20min

Filtered with 110um screen prior to testing Yes or No

Hardness (mg $CaCO_3$/L) of 100% : 1186

Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or No

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —

Alkalinity of 100% sample (mg $CaCO_3$/L): 382

Dilution Water (MHRW)

Pail label / preparation date 3:05128

Hardness of dilution water (mg/L) 80

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C

4.0 to 10.0 mg/L at 9°C

3.9 to 9.8 mg/L at 10°C

3.8 to 9.6 mg/L at 11°C

3.7 to 9.4 mg/L at 12°C

Comments/Observations:

0h: NO PPT

48h: Surficial ppt. ppt on jar.

Reviewed By: CB Date Reviewed: 2022/06/09

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS Client TEC 164 Reference 2122-2401-06

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/06/04	1825	[illegible]	2	—
1	2022/06/05	0815	NA	-	[illegible]
2	2022/06/06	1125	DH	3	[illegible]

Sample Information

Initial pH: 7.8
Initial EC (µS/cm): 1585
Salinity (ppt): 1

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	7.9	8.0	8.0	8.1	8.1	8.1				
2	7.6	7.7	7.7	8.3	8.3	8.4				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	314	334	335	1956	1964	1971				
2	326	355	387	1984	1944	2050				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.9	7.9	7.9				
2	7.7	7.7	7.9	7.9	7.9	7.7				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	20	20	20				
2	21	21	20	20	20	21				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	#9	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar wedC21D4 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 35
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0

Sample
DO (mg/L) of sample prior to aeration: 8.7 Temperature (°C) of sample prior to aeration: 21
DO % of sample prior to aeration: 111% Is aeration required (<40% or >100%)? **Yes or No**
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20mm Filtered with 110um screen prior to testing **Yes or No**
Hardness (mg $CaCO_3$/L) of 100% : 11860 Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 382

Dilution Water
Pail label / preparation date UHKW 31-05-22
Hardness of dilution water (mg/L) 80

Antiscalant
Final Concentration in Sample: 5 mg/L
Volume of sample: 500mL Volume of antiscalant: 39.5mL

Comments/Observations:
#1 stock on jar
0h: NEPT
48h: Surficial ppt. ppt on jar

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Reviewed By: [illegible] Date Reviewed: 2022/06/09

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC 164 Reference 2122-2401-07

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/06/03 04	1530	VSM/CH	2	—
1	2022/06/04 05	0815	NA	-	DV
2	2022/06/05 06	1100	DM	3	DV

Sample Information

Initial pH: 7.7
Initial EC (µS/cm): 1494
Salinity (ppt): 1

Lab Code	CTL A	CTL B	CTL C	100 A	100 B	100 C

pH (units) (range: 6.0-8.5)

day										
0	7.7	7.7	7.8	7.7	7.7	7.7				
2	7.6 GB 7.0	7.6	7.7	7.8	7.9	8.0				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	303	317	328	1967	20667	20667				
2	321	334	346	1796	18667	19672				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.9	7.9	7.9				
2	7.7	7.7	7.7	7.7	7.7	7.7				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	20	20	20				
2	21	21	21	21	21	21				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	*8	10	*9	4(4I)	10(3I)	10(3I)				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar Weld D2 Jar(s) mortality 7 days prior to test (must be ≤25%) 5%

QA (previous month)
Days to first brood (≤12 days) 9
Average number of young produced (≥15 young) 32
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 8.9 Temperature (°C) of sample prior to aeration: 20
DO % of sample prior to aeration: 112% Is aeration required (<40% or >100%)? (Yes) or No
Duration of aeration (37.5 +/- 12.5 mL/min/L) : zero Filtered with 110um screen prior to testing Yes or (No)
Hardness (mg $CaCO_3$/L) of 100% : 1142 Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 401

Dilution Water (MHRW)
Pail label / preparation date 3-OCT28
Hardness of dilution water (mg/L) 80

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Comments/Observations: #2 stuck to jar.
0h: 10 PPT #1 stuck to jar
48h: Surficial ppt. Ppt on jar

Reviewed By: GB Date Reviewed: 2022/06/09

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC 164 Reference 2122-2401-07

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/06/~~03~~ 04	1535	VM/LH	2	—
1	2022/06/~~04~~ 05	0815	NA	-	DW
2	2022/06/~~05~~ 06	1150	DM	3	DW

Sample Information

Initial pH: 7.7
Initial EC (µS/cm): 1984
Salinity (ppt): 1

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				
day				pH (units) (range: 6.0-8.5)						
0	7.9	7.9	7.9	7.6	7.6	7.6				
2	7.6	7.7	7.7	8.1	8.0	8.0				
				The pH of the sample was not adjusted prior to test setting, unless noted in the comments below						
				EC (uS/cm)						
0	319	320	325	1990	2070	2090				
2	325	344	180	1923	2000	1985				
				DO (mg/L) (**40-100% saturation at test temp.**)						
0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				
				Temperature (°C) (range: **8-12 °C**)						
0	12	12	12	12	12	12				
2	12	12	12	12	12	12				
				Number Alive (I, immobile)						
0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10 DM	10(1I)	10	10(1I)	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar Wed03 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 38
Were test treatments randomized on test tray? Yes / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0

Sample
DO (mg/L) of sample prior to aeration: ~~9.7~~ CB 9.9
Temperature (°C) of sample prior to aeration: 12
DO % of sample prior to aeration: 108%
Is aeration required (<40% or >100%)? **Yes or No**
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20min
Filtered with 110um screen prior to testing **Yes or No**
Hardness (mg $CaCO_3$/L) of 100% : 1142
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) 4 VM
Alkalinity of 100% sample (mg $CaCO_3$/L): 401

Dilution Water
Pail label / preparation date (mHRW) 3:05128
Hardness of dilution water (mg/L) 80

DO Levels (40-100% saturation) - corrected for altitude -
4.1 to 10.3 mg/L at 8°C
4.0 to 10.0 mg/L at 9°C
3.9 to 9.8 mg/L at 10°C
3.8 to 9.6 mg/L at 11°C
3.7 to 9.4 mg/L at 12°C

Comments/Observations:
0h: NO PPT
48h: Surficial ppt. Ppt on jar

Reviewed By: CB Date Reviewed: 2022/06/09

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS Client TEC 164 Reference 2122-2401-08

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/06/~~03~~ 04	1540	KM/CH	2	
1	2022/06/~~04~~ 05	0815	NA	-	[illegible]
2	2022/06/~~05~~ 06	1050	DM	3	[illegible]

Sample Information

Initial pH: 7.7
Initial EC (µS/cm): 1984
Salinity (ppt): 1

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				
day				pH (units) (range: 6.0-8.5)						
0	7.8	7.8	7.9	7.6	7.7	7.7				
2	7.5	7.6	7.6	8.3	8.3	8.3				
				The pH of the sample was not adjusted prior to test setting, unless noted in the comments below						
				EC (uS/cm)						
0	312	318	321	1970	1995	2080				
2	334	335	341	1919	1986	1984				
				DO (mg/L) (**40-100% saturation at test temp.**)						
0	7.9	7.9	7.9	7.7	7.7	7.7	~~7.7~~ km			
2	7.9	7.7	7.7	7.7	7.7	7.7				
				Temperature (°C) (range: **18-22 °C**)						
0	20	20	20	21	21	21				
2	20	21	21	21	21	21				
				Number Alive (I, immobile)						
0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	9	10	9	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar Wed 03 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 9
Average number of young produced (≥15 young) 32
Were test treatments randomized on test tray? Yes / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0

Sample
DO (mg/L) of sample prior to aeration: 88 Temperature (°C) of sample prior to aeration: 20
DO % of sample prior to aeration: 112% Is aeration required (<40% or >100%)? **Yes or No**
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20min Filtered with 110um screen prior to testing **Yes or No**
Hardness (mg $CaCO_3$/L) of 100% : 1142 Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 401

Dilution Water (mitten)
Pail label / preparation date 3:05128
Hardness of dilution water (mg/L) 80

Antiscalant
Final Concentration in Sample: 5mg/L
Volume of sample: 500mL Volume of antiscalant: 39.5mL

Comments/Observations: *dried to side of Jar
0h: NO PPT
48h: surficial ppt

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C 3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C 3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C

Reviewed By: CB Date Reviewed: 2022/06/09

APPENDIX C – Chain-of-custody form

Teck

COC ID:	EVO NAUTILUS June 2 2022	TURNAROUND TIME:		RUSH:

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name / Job#	Elkview Operations			Lab Name	Nautilus Environmental - BC			Report Format / Distribution		Excel	PDF	EDD
Project Manager	Group 1; Brett Mason			Lab Contact				Email 1:	Cole.Macgregor@teck.com	X	X	X
Email	Brett.Mason@teck.com			Email	jacklyn@nautilusenvironmental.ca			Email 2:	teckcoal@equisonlinc.com			X
Address	RR1 HWY 3			Address	10823 27th Street SE			Email 3:	DL-EVO-SRF-LAB@teck.com	X	X	X
								Email 4:				
City	Sparwood	Province	BC	City	Calgary	Province	AB	Email 5:				
								Email 6:				
								Email 7:				
								Email 8:				
								Email 9:				
								Email 10:				
								Email 11:				
								Email 12:				
								Email 13:				
Postal Code	V0B 2G0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada					
Phone Number	250-425-6179			Phone Number	403-253-7121			PO number	00822027			

SAMPLE DETAILS — **ANALYSIS REQUESTED** — Filtered - F: Field, L: Lab, FL: Field & Lab, N: None

22/06/03
09:25
Manitoulin
~~8~~ 8 x 10 L carboys, 12 x 20 L carboys
20 x 1 L bottles
SRS/RMSC
Nos No I
Good condition

Sample ID 2122-2401	Sample Location (sys_loc_code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	FIL	PRESERV.	ANALYSIS: 48hr Daphnia Magna Single Concentration Acute Toxicity 20C	48hr Daphnia Magna Single Concentration Acute Toxicity 10C	48hr Daphnia Magna Single Concentration Acute Toxicity Anitscalent	96hr Rainbow Trout Single Concentration Acute Toxicity (20 L Bladder)	96hr Rainbow Trout Single Concentration Acute Toxicity (10 L Bladder)	48hr Daphnia Magna Single Concentration Toxicity 15C
-01 EV_EC1_WS_2022-06-02_N-SRF	EV_EC1	WS		2022/06/02	7:15	G	12			2	2			8	9.2°C
-01A EV_EC1_WS_2022-06-02_N-SRF-AS	EV_EC1	WS		2022/06/02	7:16	G	1					1			↓
-02 EV_ECOUT_WS_2022-06-02_N-SRF	EV_ECOUT	WS		2022/06/02	9:30	G	8			2	2		4		9.9°C
-02A EV_ECOUT_WS_2022-06-02_N-SRF-AS	EV_ECOUT	WS		2022/06/02	9:31	G	1					1			↓
-05 EV_EC_FLOW4_WS_2022-06-02_N-SRF	EV_EC_FLOW4	WS		2022/06/02	10:00	G	8			2	2		4		12.3°C
-06 EV_EC_FLOW4_WS_2022-06-02_N-SRF-AS	EV_EC_FLOW4	WS		2022/06/02	10:01	G	1					1			↓
-07 EV_ECUP_WS_2022-06-02_N-SRF	EV_ECUP	WS		2022/06/02	10:30	G	8			2	2		4		13.1°C
-07A EV_ECUP_WS_2022-06-02_N-SRF-AS	EV_ECUP	WS		2022/06/02	10:31	G	1					1			↓

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME
Field Temperatures ECOUT: 5.5		June 2, 2022		

SERVICE REQUEST (rush - subject to availability)					
Regular (default)	X	Sampler's Name		Mobile #	
Priority (2-3 business days) - 50% surcharge					
Emergency (1 Business Day) - 100% surcharge		Sampler's Signature		Date/Time	June 2, 2022
For Emergency <1 Day, ASAP or Weekend - Contact ALS					

END OF REPORT

Acute Toxicity Test Results

Samples collected June 6, 2022

Final Report

July 8, 2022

Submitted to: **Teck Coal Ltd.**
Sparwood, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates							
	Collected	**Received**	**Rainbow pass/fail trout test initiation**	**Rainbow LC50 trout test initiation**	***Daphnia magna* 10˚C test initiation**	***Daphnia magna* 20˚C test initiation**	***Daphnia magna* antiscalant test initiation**	***Daphnia magna* LC50 test initiation**
EV_EC1_WS_2022-06-06_N-SRF / 2122-2445-01	6-Jun-22 at 1005h	7-Jun-22 at 1000h	10-Jun-22 at 1040h	11-Jun-22 at 1505h	7-Jun-22 at 1605h	7-Jun-22 at 1600h	-	10-Jun-22 at 1415h
EV_EC1_WS_2022-06-06_N-SRF-AS / 2122-2445-02	6-Jun-22 at 1006h	7-Jun-22 at 1000h	-	-	-	-	7-Jun-22 at 1610h	-
EV_ECOUT_WS_2022-06-06_N-SRF / 2122-2445-03	6-Jun-22 at 1200h	7-Jun-22 at 1000h	10-Jun-22 at 1050h	-	7-Jun-22 at 1620h	7-Jun-22 at 1615h	-	-
EV_ECOUT_WS_2022-06-06_N-SRF-AS / 2122-2445-04	6-Jun-22 at 1201h	7-Jun-22 at 1000h	-	-	-	-	7-Jun-22 at 1630h	-

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
EV_EC1_WS_2022-06-06_N-SRF	8.1°C	1229	366
EV_EC1_WS_2022-06-06_N-SRF-AS	7.4°C	1229	366
EV_ECOUT_WS_2022-06-06_N-SRF	5.1°C	1306	391
EV_ECOUT_WS_2022-06-06_N-SRF-AS	6.9°C	1306	391

TEST TYPES

- Rainbow trout 96-h LC50 test
- *Daphnia magna* 48-h LC50, EC50 test
- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)
- *Daphnia magna* 48-h single concentration screening test (conducted with 5 mg/L antiscalant)

RESULTS

Toxicity test results

Sample ID	LC50/EC50 (% v/v)		
	Rainbow trout	*Daphnia magna*	
	LC50	LC50	EC50
EV_EC1_WS_2022-06-06_N-SRF	>100	>100	>100

LC = Lethal Concentration, EC= Effect Concentration

Sample ID	Percent survival in 100% (v/v) sample			
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
EV_EC1_WS_2022-06-06_N-SRF	100	100	47	-
EV_EC1_WS_2022-06-06_N-SRF-AS	-	-	-	100
EV_ECOUT_WS_2022-06-06_N-SRF	100	100	100	-
EV_ECOUT_WS_2022-06-06_N-SRF-AS	-	-	-	97

Sample ID	Percent Immobility in 100 (% v/v)		
	Daphnia magna 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
EV_EC1_WS_2022-06-06_N-SRF	0	67	-
EV_EC1_WS_2022-06-06_N-SRF-AS	-	-	0
EV_ECOUT_WS_2022-06-06_N-SRF	0	7	-
EV_ECOUT_WS_2022-06-06_N-SRF-AS	-	-	3

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
EV_EC1_WS_2022-06-06_N-SRF	Rainbow trout	Precipitate observed on sides and bottom of test vessel in LC50 test vessel	None
	Daphnia magna	Surficial precipitate observed in both 10˚C, 20˚C and LC50 tests, as well as precipitate on the 20˚C test vessels.	Precipitate observed on carapace of 20˚C test
EV_EC1_WS_2022-06-06_N-SRF-AS	*Daphnia magna*	None	None
EV_ECOUT_WS_2022-06-06_N-SRF	Rainbow trout	Precipitate observed on sides and bottom of test vessel	None
	Daphnia magna	Surficial precipitate observed in both 10˚C and 20˚C test, as well as precipitate on the test vessels of 20˚C	None
EV_ECOUT_WS_2022-06-06_N-SRF-AS	*Daphnia magna*	None	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	3.5 (3.0 - 4.0) g/L KCl[1]	6.3 (6.0 - 6.5) g/L NaCl[2] 5.6 (5.1 - 6.0) g/L NaCl[3]
Reference toxicant historical mean (2 SD Range)	3.4 (2.6 - 4.4) g/L KCl	6.4 (5.5 - 7.6) g/L NaCl[2] 6.4 (5.4-7.6) g/L NaCl[3]
Reference toxicant CV	8.7%	5.3%[2] 5.7%[3]
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, June 13, 2022; [2] Test Date June 20, 2022 for pass/fail testing; [3]Test date, June 17, 2022 for LC50

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation



Report By:
Mia Fearey, BIT
Biologist



Reviewed By:
Jacklyn Poole, BSc
Laboratory and Quality Manager

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control [1] Five concentrations, plus laboratory control[2]
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival [1] 96-hour LC50 [2]
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

[1]For pass/fail tests; [2] For LC50 test

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control[1] Five concentrations, plus laboratory control[2]
Test replicates	3 per treatment[1] 1 per treatment[2]
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)[1] Moderately-hard reconstituted water supplemented with B12 (2 µg/L)[2]
Control/dilution water for antiscalant test	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L), Na_2SeO_4 (2 µg Se/L) and 5 mg/L antiscalant
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival[1] 96-hour LC50[2]
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

[1]For pass/fail tests; [2] For LC50 test

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC164 Reference 2122-2445-01 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022/06/10	1040 *	AM/ML	1	EP
1	2022/06/11	0800	CM	-	MAF
2	2022/06/12	0830	MA	-	DF
3	2022/06/13	1510	ML	-	DF
4	2022/06/14	1300	AM/ML/MD	1	CM

Note: * ; time when the test was loaded with fish KCRM

Sample Information

Initial pH: 8.0
Initial EC (µS/cm): 1922
Salinity (ppt): 3

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L : **yes/no**

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	8.8	8.6			
Temp (°C) of 100%	15				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: **5.5-8.5**)								
Day 0	7.6	7.9						
Day 4	8.0	8.0						
EC (uS/cm)								
Day 0	489	1835						
Day 4	474	1736						
DO (mg/L) (**70-100% saturation at test temp.**)								
Day 0	8.6	8.6						
Day 4	8.6	8.6						
Temperature (°C) (range: **14-16°C**)								
Day 0	16	16						
Day 4	16	16						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.2	0.5
2	3.0	0.3
3	3.0	0.3
4	3.0	0.3
5	3.7	0.7
6	3.3	0.4
7	3.3	0.5
8	2.7	0.2
9	2.7	0.2
10	3.4	0.4

KO 3.0

Loading Density (g/L): 0.2 (must be ≤0.5 g/L)
Mean Length (cm): 3.2
Length Range (cm): 2.7-3.4
Mean Weight (g): 0.4 (Must be ≥0.3g)
Weight Range: (g): 0.2-0.7

Test Organism Information

Batch 20220526TR
Source LSL
Tank # 2
Days Held at 15± 2°C 15 (must be ≥14 days)
Percent stock mortality 0.92 (7 days prior to test, must be <2%)
Test Volume (L) 18

Comments :
96 hrs: NO PPT

Reviewed By: DP Date Reviewed: 2022/06/22

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC164 Reference 2122-2445-03 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022/06/10	1050 *	AM/ML	1	EF
1	2022/06/11	0800	CH	-	MAF
2	2022/06/12	0820	NA	-	AF
3	2022/06/13	0840	ML	-	AF
4	2022/06/14	1200	AM/ML/KO/KCRM	1	CH

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 7.7
Initial EC (µS/cm): 2030
Salinity (ppt): 4

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L (yes/no)

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	8.8	8.6			
Temp (°C) of 100%	15				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100					
pH (units) (range: **5.5-8.5**)							
Day 0	7.5	7.6					
Day 4	8.0	8.0					
EC (uS/cm)							
Day 0	476	1920					
Day 4	473	1740					
DO (mg/L) (**70-100% saturation at test temp.**)							
Day 0	8.6	8.6					
Day 4	8.6	8.6					
Temperature (°C) (range: **14-16°C**)							
Day 0	16	16					
Day 4	16	16					
Number Alive (In brackets number stressed)							
Day 0	10	10					
Day 1	10	10					
Day 2	10	10					
Day 3	10	10					
Day 4	10	10					

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.2	0.4
2	3.3	0.4
3	3.2	0.4
4	3.2	0.4
5	3.0	0.3
6	3.0	0.3
7	3.0	0.3
8	3.0	0.3
9	2.8	0.3
10	2.6	0.2

Loading Density (g/L): 0.2 (must be ≤0.5 g/L)
Mean Length (cm): 3.0
Length Range (cm): 2.6-3.3
Mean Weight (g): 0.3 (Must be ≥0.3g)
Weight Range: (g): 0.2-0.4

Test Organism Information

Batch 20220526TR
Source LSL
Tank # 2
Days Held at 15± 2°C: 15 (must be ≥14 days)
Percent stock mortality: 0.92 (7 days prior to test, must be <2%)
Test Volume (L): 18

Comments :
96 hrs: POT on sides + bottom

Reviewed By: CH Date Reviewed: 2022/06/22

NAUTILUS

Trout Bench Sheet

Method TRD Client TEC164 Reference 2122-2445-01 Chamber 2

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022/06/11	1505 *	CC / CH / MAF	1	bmm
1	2022/06/12	0805	NA	-	AF
2	2022/06/13	0810	Karm	-	AF
3	2022/06/14	0915	Karm	-	AJ
4	2022/06/15	0835	Karm	1	bmm

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 8.0
Initial EC (µS/cm): 1922
Salinity (ppt): 3

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L : **yes/no**

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	9.6	8.6			
Temp (°C) of 100%	16				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	6.25	12.5	25	50	100		
pH (units) (range: 5.5-8.5)								
Day 0	7.5	7.6	7.7	7.7	7.9	8.1		
Day 4	8.1	8.2	8.2	8.3	8.3	8.3		
EC (uS/cm)								
Day 0	480	570	714	829	1201	1827		
Day 4	475	561	700	809	1134	1650		
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	8.6	7.8	7.8	8.6	8.6	8.6		
Day 4	8.5	8.6	8.6	8.6	8.6	8.6		
Temperature (°C) (range: 14-16°C)								
Day 0	16	16	16	16	16	16		
Day 4	16	16	15	15	15	15		
Number Alive (In brackets number stressed)								
Day 0	10	10	10	10	10	10		
Day 1	10	10	10	10	10	10		
Day 2	10	10	10	10	10	10		
Day 3	10	10	10	10	10	9		
Day 4	10	10	10	10	10	9		

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	2.8	0.2
2	2.5	0.2
3	3.0	0.2
4	3.3	0.4
5	2.8	0.2
6	3.0	0.3
7	3.5	0.5
8	3.1	0.1
9	3.6	0.5
10	2.9	0.3

Loading Density (g/L): 0.2 (must be ≤0.5 g/L)
Mean Length (cm): 3.0
Length Range (cm): 2.5-3.6
Mean Weight (g): 0.3 (Must be ≥0.3g)
Weight Range: (g): 0.1-05

Test Organism Information

Batch 20220526TR
Source LSL
Tank # 2
Days Held at 15± 2°C 16 (must be ≥14 days)
Percent stock mortality 1.12 (7 days prior to test, must be <2%)
Test Volume (L) 12 ~~18~~ cc

Comments : 96Hrs: PPT on sides and bottom

Reviewed By: [signature] Date Reviewed: 2022/06/16

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC 164 Reference 2122-2445-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/06/07	1600	EP/KTM	3	MAF
1	2022/06/08	850	DM	-	MAF
2	2022/06/09	950	DM	3	KTM

Sample Information

Initial pH: 8.0
Initial EC (µS/cm): 1922
Salinity (ppt): 3

Lab Code	CTL A	CTL B	CTL C	100 A	100 B	100 C				
day				pH (units) (range: 6.0-8.5)						
0	7.9	7.9	7.9	8.1	8.1	8.1				
2	8.2	8.1	8.1	7.9	8.0	8.2				
				The pH of the sample was not adjusted prior to test setting, unless noted in the comments below						
				EC (uS/cm)						
0	464	493	497	1837	1910	1923				
2	487	502	503	1781	1845	1856				
				DO (mg/L) (**40-100% saturation at test temp.**)						
0	7.9	7.9	7.9	7.9	7.9	7.9				
2	7.9	7.9	7.9	7.9	7.9	7.9				
				Temperature (°C) (range: **18-22 °C**)						
0	20	20	20	20	20	20				
2	20	20	20	20	20	20				
				Number Alive (I, immobile)						
0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	9	10	4(4I)	0	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar monci Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 9
Average number of young produced (≥15 young) 18
Were test treatments randomized on test tray? Yes / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0%

Sample
DO (mg/L) of sample prior to aeration: 9.2
Temperature (°C) of sample prior to aeration: 19
DO % of sample prior to aeration: 111
Is aeration required (<40% or >100%)? Yes or No
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20 min
Filtered with 110um screen prior to testing Yes or No
Hardness (mg $CaCO_3$/L) of 100% : 1229
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or No
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 366

Dilution Water
Pail label / preparation date 1:05/31
Hardness of dilution water (mg/L) EP ~~189~~ 183

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Comments/Observations:
0h: no ppt
48h: Surficial ppt ppt on jar
2 stuck at surface
1 dried to side
not included in mortality
ppt on carapace
not included in mortality

Reviewed By: [signature] Date Reviewed: 2022/06/22.

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC 164 Reference 2122- 2445 -C1

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/06/07	1605	EP/KTM	3	MAF
1	2022/06/08	0900	DM	-	MAF
2	2022/06/09	1055	DM	3	KTM

Sample Information

Initial pH: 8.0
Initial EC (µS/cm): 1927
Salinity (ppt): 3

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	7.9	7.9	7.9	7.9	7.9	7.9				
2	8.2	8.2	8.2	8.4	8.4	8.4				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	479	497	497	1892	1940	1964				
2	488	501	503	1852	1910	1906				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.8	9.4	9.8				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar mon C1 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 9
Average number of young produced (≥15 young) 18
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0%
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 9.4 Temperature (°C) of sample prior to aeration: 12
DO % of sample prior to aeration: 100 Is aeration required (<40% or >100%)? Yes or (No)
Duration of aeration (37.5 +/- 12.5 mL/min/L) : — Filtered with 110um screen prior to testing Yes or (No)
Hardness (mg $CaCO_3$/L) of 100% : 1229 Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 3606

Dilution Water
Pail label / preparation date 1:05/31
Hardness of dilution water (mg/L) ~~189~~ 183

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

Comments/Observations:
0hr: No ppt
48hr: Surficial ppt

Reviewed By: GP Date Reviewed: 2022/06/22.

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS Client TEC 164 Reference 2122-2445-02

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/06/07	1610	FP/KTM	3	MAF
1	2022/06/08	0955	DM	-	MAF
2	2022/06/09	1000	DM	3	KTM

Sample Information

Initial pH: 8.0
Initial EC (µS/cm): 1922
Salinity (ppt): 3

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	7.9	7.9	7.9	8.1	8.1	8.1				
2	8.1	8.1	8.1	8.4	8.4	8.4				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	488	499	499	1824	1908	1916				
2	490	502	500	1824	1810	1985				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.9	7.9	7.9				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	20	20	20				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar: mon C1 Jar(s) mortality 7 days prior to test (must be ≤25%): 0%

QA (previous month)
Days to first brood (≤12 days): 9
Average number of young produced (≥15 young): 18
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%): 0%

Sample
DO (mg/L) of sample prior to aeration: 9.9
DO % of sample prior to aeration: 117
Duration of aeration (37.5 +/- 12.5 mL/min/L): ~~1220~~ 20min
Hardness (mg $CaCO_3$/L) of 100% : 1229 KTM
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L): —
Alkalinity of 100% sample (mg $CaCO_3$/L): 306

Temperature (°C) of sample prior to aeration: 18
Is aeration required (<40% or >100%)? (Yes) or No
Filtered with 110um screen prior to testing Yes or (No)
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)

Dilution Water
Pail label / preparation date: 1:05131
Hardness of dilution water (mg/L): 183

Antiscalant
Final Concentration in Sample: 5mg/L
Volume of sample: 500mL Volume of antiscalant: 395 µL

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Comments/Observations:
0hr: no ppt
48hr: no ppt

Reviewed By: ST Date Reviewed: 20220622

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC 164 Reference 2122-2445-03

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/06/07	1615	EM/KTH	3	MAF
1	2022/06/08	855	DM	-	MAF
2	2022/06/09	1000	DM	3	KIM

Sample Information

Initial pH: 7.7
Initial EC (µS/cm): 2036
Salinity (ppt): 4

Lab Code	CTL A	CTL B	CTL C	100 A	100 B	100 C

pH (units) (range: 6.0-8.5)

day	CTL A	CTL B	CTL C	100 A	100 B	100 C
0	7.9	7.9	7.9	7.9	7.9	7.9
2	8.2	~~8.4~~ 8.1	8.2	8.0	8.1	8.1

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	467	491	497	1940	2100	2030
2	506	510	~~531~~ 519	1890	1919	1955

DO (mg/L) (**40-100% saturation at test temp**.)

0	7.9	7.9	7.9	7.9	7.9	7.9
2	7.9	7.9	7.9	7.9	7.9	7.9

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	20	20	20
2	20	20	20	20	20	20

Number Alive (l, immobile)

0	10	10	10	10	10	10
1	10	10	10	10	10	10
2	10	10	10	10	10(21)	10

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar mon CL — Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 9
Average number of young produced (≥15 young) 18
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0%
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 10.3 — Temperature (°C) of sample prior to aeration: 19
DO % of sample prior to aeration: 125 — Is aeration required (<40% or >100%)? **Yes or No**
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20min — Filtered with 110um screen prior to testing **Yes or No**
Hardness (mg $CaCO_3$/L) of 100% : 1306 — Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 391

Dilution Water
Pail label / preparation date 1:05/31
Hardness of dilution water (mg/L) 183

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C — 3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C — 3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C

Comments/Observations:
0h: No ppt
48h: Surficial ppt. Ppt on jar

Reviewed By: MF Date Reviewed: 2022/06/22

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC 164 Reference 2122- 2445-03

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/06/07	1620	FP/KTM	3	MAF
1	2022/06/08	900	DM	-	MAF
2	2022/06/09	1115	DM	3	KTM

Sample Information

Initial pH: 7.7
Initial EC (µS/cm): 7636
Salinity (ppt): 4

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	8.0	8.0	7.9	8.0	8.0	8.0				
2	8.3	8.2	8.2	8.1	8.2	8.2				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	466	494	498	1965	2040	2060				
2	493	502	508	1926	1956	1976				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.6	9.8	9.9	9.9	9.8	9.8				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar mon C1 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 9
Average number of young produced (≥15 young) 18
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0%
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 10.5
Temperature (°C) of sample prior to aeration: 12
DO % of sample prior to aeration: 112
Is aeration required (<40% or >100%)? (Yes) or No
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20 min
Filtered with 110um screen prior to testing Yes or (No)
Hardness (mg $CaCO_3$/L) of 100% : 1360
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 391

Dilution Water
Pail label / preparation date 1:05/31
Hardness of dilution water (mg/L) 183

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

Comments/Observations:
0hr: no ppt
48hr: Surficial ppt.

Reviewed By: GP Date Reviewed: 2022/06/22

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS 5 Client TEC 164 Reference 2122-2445-04

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/06/07	1630	EP/KTM	3	MAF
1	2022/06/08	0905	CC	-	MAP
2	2022/06/09	1005	DM	3	KTM

Sample Information

Initial pH:	7.7
Initial EC (µS/cm):	2030
Salinity (ppt):	4

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	7.9	7.9	7.9	7.9	7.9	7.9				
2	8.0	8.0	8.0	8.4	8.4	8.4				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	479	494	498	1911	2080	2030				
2	491	501	504	1970	2070	1987				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.9	7.9	7.9				
2	7.9	7.4	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	20	20	20				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	9				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar mon cl Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)

Days to first brood (≤12 days) 9

Average number of young produced (≥15 young) 18

Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - (must be ≤10%) 0%

Sample

DO (mg/L) of sample prior to aeration: 10.2

DO % of sample prior to aeration: 120

Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20 min

Hardness (mg $CaCO_3$/L) of 100% : 1360

Temperature (°C) of sample prior to aeration: 18

Is aeration required (<40% or >100%)? **Yes or No**

Filtered with 110um screen prior to testing **Yes or (No)**

Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or (No)**

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —

Alkalinity of 100% sample (mg $CaCO_3$/L): 341

Dilution Water

Pail label / preparation date 1:05/31

Hardness of dilution water (mg/L) 183

Antiscalant

Final Concentration in Sample: 5mg/L

Volume of sample: 500mL Volume of antiscalant: 39.5µL

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Comments/Observations:

0hr: no ppt

48hr: no ppt

Reviewed By: [illegible] Date Reviewed: 2022/06/22

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAD Client TEC164 Reference 2122-2445-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/06/10	1415	CC/CH	2	EP
1	2022/06/11	0750	MAF	-	[illegible]
2	2022/06/12	0925	NA	3	[illegible]

Sample Information

Initial pH: 8.0
Initial EC (µS/cm): 1922
Salinity (ppt): 3

Lab Code	CTL	6.25	12.5	25	50	100				
day				pH (units) (range: 6.0-8.5)						
0	7.8	7.8	7.9	7.9	8.0	7.9				
2	7.7	7.9	8.0	8.1	8.3	7.8				
				EC (uS/cm)						
0	309	441	563	808	1189	1915				
2	324	467	589	825	1222	1936				
				DO (mg/L) (**40-100% saturation at test temp.**)						
0	7.7	7.7	7.9	7.9	7.9	7.9				
2	7.9	7.9	7.9	7.9	7.9	7.9				
				Temperature (°C) (range: **18-22 °C**)						
0	21	21	20	20	20	20				
2	20	20	20	20	20	20				
				Number Alive (I, immobile)						
0	10	10	10	10	10	10				
1	10	10	10	10	10	10(1I)				
2	10	10	10	10	10	10(1I)				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar Wed D3 Jar(s) mortality 7 days prior to test (must be ≤25%) 10%

QA (previous month)
Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 21
Were test treatments randomized on test tray? Yes / No

Control Validity Criteria
Mean % mortality at 48 hours - 0%
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 9.7
Temperature (°C) of sample prior to aeration: 20
DO % of sample prior to aeration: 122%
Is aeration required (<40% or >100%)? Yes or No
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20min.
Filtered with 110um screen prior to testing Yes or No
Hardness (mg $CaCO_3$/L) of 100% : 1229
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or No
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) CC -
Alkalinity of 100% sample (mg $CaCO_3$/L): 366

Dilution Water
Pail label / preparation date 2:06/01
Hardness of dilution water (mg/L) 80

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Comments/Observations:
0 hrs: No ppt
48 hrs: surficial ppt.

Reviewed By: [illegible] Date Reviewed: 2022/06/22

APPENDIX C – Chain-of-custody form

Teck

Page 1 of 1

COC ID: EVO NAUTILUS June 6 2022 | TURNAROUND TIME: | RUSH:

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name / Job#	Elkview Operations			Lab Name	Nautilus Environmental - BC			Report Format / Distribution		Excel	PDF	EDD
Project Manager	Group 1; Brett Mason			Lab Contact				Email 1:	Cole.Macgregor@teck.com	X	X	X
Email	Brett.Mason@teck.com			Email	jacklyn@nautilusenvironmental.ca			Email 2:	teckcoal@equisonline.com			X
Address	RR1 HWY 3			Address	10823 27th Street SE			Email 3:	DL-EVO-SRF-LAB@teck.com	X	X	X
								Email 4:				
City	Sparwood	Province	BC	City	Calgary	Province	AB	Email 5:				
								Email 6:				
								Email 7:				
								Email 8:				
								Email 9:				
								Email 10:				
								Email 11:				
								Email 12:				
								Email 13:				
Postal Code	V0B 2G0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada					
Phone Number	250-425-6179			Phone Number	403-253-7121			PO number	00822027			

SAMPLE DETAILS

2022/06/07
10:00
Manitoulin
8 X 10 L carboys, ~~4 X 1 L bottles~~
4 X 20 L carboys, 10 X 1 L bottles
SRS/RM/AC
NOS NOI
Good Condition

ANALYSIS REQUESTED

Filtered - F: Field, L: Lab, FL: Field & Lab, N: None

Sample ID 2122-2445	Sample Location (sys loc code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	PRESERV.	FIL	ANALYSIS: 48hr Daphnia Magna Single Concentration Acute Toxicity 20C	48hr Daphnia Magna Single Concentration Acute Toxicity 10C	48hr Daphnia Magna Single Concentration Acute Toxicity Anitscalent	96hr Rainbow Trout Single Concentration Acute Toxicity (20 L Bladder)	96hr Rainbow Trout Single Concentration Acute Toxicity (10 L Bladder)	48hr Daphnia Magna Single Concentration Toxicity 15C						
-01 EV_EC1_WS_2022-06-06_N-SRF	EV_EC1	WS		2022/06/06	10:05	G	12			2	2			8		8.1°C					
-02 EV_EC1_WS_2022-06-06_N-SRF-AS	EV_EC1	WS		2022/06/06	10:06	G	1					1				7.1°C					
-03 EV_ECOUT_WS_2022-06-06_N-SRF	EV_ECOUT	WS		2022/06/06	12:00	G	8			2	2		4			5.9°C					
-04 EV_ECOUT_WS_2022-06-06_N-SRF-AS	EV_ECOUT	WS		2022/06/06	12:01	G	1					1				6.9°C					

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME
Field Temperatures ECOUT: 6.22		June 6, 2022		

SERVICE REQUEST (rush - subject to availability)					
Regular (default)	X	Sampler's Name		Mobile #	
Priority (2-3 business days) - 50% surcharge					
Emergency (1 Business Day) - 100% surcharge		Sampler's Signature		Date/Time	June 6, 2022
For Emergency <1 Day, ASAP or Weekend - Contact ALS					

END OF REPORT

Acute Toxicity Test Results

Samples collected June 6, 2022

Final Report

July 20, 2022

Submitted to: **Teck Coal Ltd.**
Sparwood, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates					
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation	*Daphnia magna* antiscalant test initiation
F2_BPO_WG_2022-06-06 / 2122-2446-01	6-June-22 at 0800h	7-June-22 at 1000h	10-June-22 at 1050h	8-June-22 at 1450h	8-June-22 at 1445h	-
F2_BPO_WG_2022-06-06_N-AS/ 2122-2446-02	6-June-22 at 0801h	7-June-22 at 1000h	-	-	-	8-June-22 at 1450h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
F2_BPO_WG_2022-06-06	4.9°C	1270	458
F2_BPO_WG_2022-06-06_N-AS	5.4°C	1270	458

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)
- *Daphnia magna* 48-h single concentration screening test (conducted with 20 mg/L antiscalant)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample			
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
F2_BPO_WG_2022-06-06	100	100	100	-
F2_BPO_WG_2022-06-06_N-AS	-	-	-	100

Sample ID	Percent Immobility in 100 (% v/v)		
	Daphnia magna 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
F2_BPO_WG_2022-06-06	0	0	-
F2_BPO_WG_2022-06-06_N-AS	-	-	0

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
F2_BPO_WG_2022-06-06	Rainbow trout	Precipitate observed on the test vessel	None
	Daphnia magna	Precipitate observed on the test vessel in 10 degree test; Surficial precipitate observed in 20 degree test	None
F2_BPO_WG_2022-06-06_N-AS	*Daphnia magna*	None	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	3.5 (3.0-4.0) g/L KCl[1]	5.6 (5.1-6.0) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.4 (2.6-4.4) g/L KCl	6.4 (5.4-7.6) g/L NaCl
Reference toxicant CV	8.7%	5.7%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, June 13, 2022; [2] Test Date June 17, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation



Report By:
Alyssa Minifie, BSc

Laboratory Biologist



Reviewed By:
Ebi Lari, P. Biol., Ph.D.

Laboratory Manager and
Environmental Scientist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory contro
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control 3 per treatment
Test replicates	10 per replicate
Number of organisms	Moderately-hard reconstituted water supplemented with B12 (2 µg/L)
Control/dilution water	Moderately-hard reconstituted water supplemented with B12 (2 µg/L) 20 mg/L antiscalant
Control/dilution water for antiscalant test	None
Test solution renewal	20 ± 2°C
Test temperature	None
Feeding	400 to 800 lux
Light intensity	16 hours light/8 hours dark
Photoperiod	None
Aeration	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival Environment Canada (2000), EPS 1/RM/14
Test measurements	None
Test protocol	Mean Percent survival
Statistical software	Survival ≥ 90%
Test endpoints	Sodium chloride (NaCl)
Test acceptability criteria for controls	
Reference toxicant	

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	Moderately-hard reconstituted water supplemented with B12 (2 µg/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC164 Reference 2122-2446-01 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022/06/10	1050 *	AM/ML	1	EP
1	2022/06/11	0810	CH	-	mmf
2	2022/06/12	0830	NA	-	NF
3	2022/06/13	0851+0	ML	-	AF
4	2022/06/14	1200	AM/ML/KO/KCRM	1	CH

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 7.5
Initial EC (µS/cm): 2080
Salinity (ppt): 4

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L (yes/no)

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	8.8	8.6			
Temp (°C) of 100%	15				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: **5.5-8.5**)								
Day 0	7.5	7.5						
Day 4	8.0	8.1						
EC (uS/cm)								
Day 0	488	2010						
Day 4	479	~~1717~~ 1737						
DO (mg/L) (**70-100% saturation at test temp.**)								
Day 0	8.6	8.6						
Day 4	8.6	8.6						
Temperature (°C) (range: **14-16°C**)								
Day 0	16	16						
Day 4	16	16						
Number Alive (In brackets number stressed)								
	10	10						
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4								

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	2.9	0.3
2	3.5	0.6
3	2.9	0.3
4	3.0	0.3
5	2.9	0.3
6	2.5	0.2
7	3.2	0.4
8	3.5	0.6
9	3.0	0.3
10	3.1	0.3

Loading Density (g/L): 0.2 (must be ≤0.5 g/L)
Mean Length (cm): 3.0
Length Range (cm): 2.5-3.5
Mean Weight (g): 0.4 (Must be ≥0.3g)
Weight Range: (g): 0.2-0.6

Test Organism Information

Batch 20220526TR
Source LSL
Tank # 2
Days Held at 15± 2°C 15 (must be ≥14 days)
Percent stock mortality 0.92 (7 days prior to test, must be <2%)
Test Volume (L) 18

Comments :
96 hrs: PPT

Reviewed By: CB Date Reviewed: 2022/06/14

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC 164 Reference 2122-2446-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/06/08	1445	CH/DM	2	DM
1	2022/06/09	850	DM	-	KM
2	2022/06/10	1010	DM	2	EP

Sample Information

Initial pH: 7.5
Initial EC (µS/cm): 2080
Salinity (ppt): 4

Lab Code	CTL A	CTL B	CTL C	100 A	100 B	100 C

pH (units) (range: 6.0-8.5)

day										
0	8.0	7.9	7.9	8.2	8.2	8.3				
2	8.0	7.9	7.8	8.2	8.2	8.2				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	310	311	314	2090	2170	2180				
2	312	312	319	1969	2060	2100				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.9	7.9	7.7				
2	8.1	8.1	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	20	20	21				
2	19	19	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar Wed DA Jar(s) mortality 7 days prior to test (must be ≤25%) 5%

QA (previous month)
Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 28
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0%
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 8.4 Temperature (°C) of sample prior to aeration: 21
DO % of sample prior to aeration: 107% Is aeration required (<40% or >100%)? (Yes) or No
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20m Filtered with 110um screen prior to testing Yes or (No)
Hardness (mg $CaCO_3$/L) of 100% : 1270 Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 458

Dilution Water
Pail label / preparation date MHRW D2 : 06101
Hardness of dilution water (mg/L) 80

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Comments/Observations:
0hr: NO PPE
48hr: Surficial ppt. No ppt on Carapace.

Reviewed By: CS Date Reviewed: 20221061114

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC 164 Reference 2122-2446-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/06/08	1450	CH/DM	2	RW
1	2022/06/09	0915	EP	-	KTM
2	2022/06/10	1040	CH	2	EP

Sample Information

Initial pH: 7.5
Initial EC (µS/cm): 2080
Salinity (ppt): 4

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	8.1	8.0	8.0	8.2	8.2	8.2				
2	8.0	7.9	7.9	8.4	8.5	8.5				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	310	312	313	2090	2170	2180				
2	311	316	317	2110	2170	2200				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar WEDE1 Jar(s) mortality 7 days prior to test (must be ≤25%) 5%

QA (previous month)
Days to first brood (≤12 days) 9
Average number of young produced (≥15 young) 30
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0

Sample
DO (mg/L) of sample prior to aeration: 10.1
DO % of sample prior to aeration: 107%
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20m
Hardness (mg $CaCO_3$/L) of 100% : 1270
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 458

Temperature (°C) of sample prior to aeration: 12
Is aeration required (<40% or >100%)? **Yes or No**
Filtered with 110um screen prior to testing **Yes or No**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Dilution Water
Pail label / preparation date MHRW D2: 06/01
Hardness of dilution water (mg/L) 80

DO Levels (40-100% saturation) - corrected for altitude -
4.1 to 10.3 mg/L at 8°C
4.0 to 10.0 mg/L at 9°C
3.9 to 9.8 mg/L at 10°C
3.8 to 9.6 mg/L at 11°C
3.7 to 9.4 mg/L at 12°C

Comments/Observations:
0hr: NO PPT
48hr: PPT on jar

Reviewed By: CB Date Reviewed: 2022/06/14

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS 20 Client TEC 164 Reference 2122-2446-02

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/06/08	1450	CH/DM	2	AW
1	2022/06/09	0900	EP	-	DM
2	2022/06/10	1010	CH	2	EP

Sample Information

Initial pH: 7.5
Initial EC (µS/cm): 2080
Salinity (ppt): 4

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	8.1	8.0	7.9	8.2	8.2	8.2				
2	7.9	7.8	7.8	8.4	8.5	8.5				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	313	317	312	2090	2170	2190				
2	316	328	323	2070	2160	2180				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.7	7.7	7.7	7.7	7.7	7.7				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	21	21	21	21	21	21				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar Wed E2 Jar(s) mortality 7 days prior to test (must be ≤25%) 5%

QA (previous month)
Days to first brood (≤12 days) 9
Average number of young produced (≥15 young) 30
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0

Sample
DO (mg/L) of sample prior to aeration: 8.5 Temperature (°C) of sample prior to aeration: 21
DO % of sample prior to aeration: 108% Is aeration required (<40% or >100%)? **Yes or (No)**
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20m Filtered with 110um screen prior to testing **Yes or (No)**
Hardness (mg $CaCO_3$/L) of 100% : 1270 Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or (No)**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 458

Dilution Water
Pail label / preparation date MHRW D2:0610
Hardness of dilution water (mg/L) 80

Antiscalant
Final Concentration in Sample: 20mg/L
Volume of sample: 500 mL Volume of antiscalant: 158mL

Comments/Observations:
0hr: NO PPT
48hr: NO PPT

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Reviewed By: CB Date Reviewed: 2022/06/14

APPENDIX C – Chain-of-custody form

Teck

Page 1 of 1

COC ID:	F2 NAUTILUS June 6 2022	TURNAROUND TIME:		RUSH:	

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name / Job#	F2 SRF			Lab Name	Nautilus Environmental - BC			Report Format / Distribution		Excel	PDF	EDD
Project Manager	BRETT MASON			Lab Contact				Email 1:	Cole.Macgregor@teck.com	X	X	X
Email	BRETT.MASON@TECK.COM			Email	jacklyn@nautilusenvironmental.ca			Email 1:	teckcoal@equisonline.com			X
Address	RR1 HWY 3			Address	10823 27th Street SE			Email 2:	DL-EVO-SRF-LAB@teck.com	X	X	X
								Email 3:				
City	Sparwood	Province	BC	City	Calgary	Province	AB	Email 4:				
								Email 5:				
								Email 6:				
								Email 7:				
								Email 8:				
								Email 10:				
								Email 11:				
								Email 12:				
								Email 13:				
Postal Code	V0B 2G0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada					
Phone Number	250-425-6179			Phone Number	403-253-7121			PO number	00822027			

SAMPLE DETAILS

2022/06/07
10:00
Manitoulin
4x20 L carboys, 5x1 L bottles
SRS/RMIAE
Nos Nos I
Good Condition

ANALYSIS REQUESTED

Filtered - F: Field, L: Lab, FL: Field & Lab, N: None

Sample ID	Sample Location (sys_loc_code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	PtL	ANALYSIS: 48hr Daphnia Magna Single Concentration Acute Toxicity 20C	48hr Daphnia Magna Single Concentration Acute Toxicity 10C	48hr Daphnia Magna Single Concentration Acute Toxicity Anitscalent	96hr Rainbow Trout Single Concentration Acute Toxicity (20L Bladders)	48hr Daphnia Magna Single Concentration Toxicity 15C
-01 F2_BPO_WG_2022-06-06_N 4.9°C	F2_BPO	WG		2022/06/06	8:00	G	8		2	2		4	
-02 F2_BPO_WG_2022-06-06_N-AS 5.4°C	F2_BPO	WG		2022/06/06	8:01	G	1				1		

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME
		June 6, 2022		

SERVICE REQUEST (rush - subject to availability)					
Regular (default)	X	Sampler's Name		Mobile #	
Priority (2-3 business days) - 50% surcharge					
Emergency (1 Business Day) - 100% surcharge		Sampler's Signature		Date/Time	June 6, 2022
For Emergency <1 Day, ASAP or Weekend - Contact ALS					

END OF REPORT

Acute Toxicity Test Results

Samples collected June 7, 2022

Final Report

July 27, 2022

Submitted to: **Teck Coal Ltd.**
Sparwood, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates					
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation	*Daphnia magna* antiscalant test initiation
EV_GT1_WS_2022-06-07_N-SRF/ 2122-2459-01	7-Jun-22 at 1100h	8-Jun-22 at 0900h	10-Jun-22 at 1100h	8-Jun-22 at 1540h	8-Jun-22 at 1550h	-
EV_BC1_WS_2022-06-07_N-SRF/ 2122-2459-02	7-Jun-22 at 0820h	8-Jun-22 at 0900h	10-Jun-22 at 1100h	8-Jun-22 at 1555h	8-Jun-22 at 1545h	-
EV_BC1_WS_2022-06-07_N-SRF-AS/ 2122-2459-03	7-Jun-22 at 0820h	8-Jun-22 at 0900h	-	-	-	8-Jun-22 at 1600h
EV_GT1_WS_2022-06-07_N-SRF-AS/ 2122-2459-04	7-Jun-22 at 1100h	8-Jun-22 at 0900h	-	-	-	8-Jun-22 at 1605h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
EV_GT1_WS_2022-06-07_N-SRF	13.1°C	1117	348
EV_BC1_WS_2022-06-07_N-SRF	11.1°C	1158	385
EV_BC1_WS_2022-06-07_N-SRF-AS	9.8°C	1158	385
EV_GT1_WS_2022-06-07_N-SRF-AS	9.3°C	1117	348

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)
- *Daphnia magna* 48-h single concentration screening test (conducted with 5 mg/L antiscalant)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample			
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
EV_GT1_WS_2022-06-07_N-SRF	100	100	100	-
EV_BC1_WS_2022-06-07_N-SRF	100	100	100	-
EV_BC1_WS_2022-06-07_N-SRF-AS	-	-	-	100
EV_GT1_WS_2022-06-07_N-SRF-AS	-	-	-	100

Sample ID	Percent Immobility in 100 (% v/v)		
	Daphnia magna 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
EV_GT1_WS_2022-06-07_N-SRF	0	0	-
EV_BC1_WS_2022-06-07_N-SRF	0	0	-
EV_BC1_WS_2022-06-07_N-SRF-AS	-	-	0
EV_GT1_WS_2022-06-07_N-SRF-AS	-	-	0

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
EV_GT1_WS_2022-06-07_N-SRF	Rainbow trout	Precipitate observed on the test vessel	None
	Daphnia magna	Surficial precipitate observed in both 10- and 20-degree tests; precipitate observed on the test vessels in 20-degree test	None
EV_BC1_WS_2022-06-07_N-SRF	Rainbow trout	Precipitate observed on the test vessel	None
	Daphnia magna	Surficial precipitate observed in both 10- and 20-degree tests; precipitate observed on the test vessels in 20-degree test	None
EV_BC1_WS_2022-06-07_N-SRF-AS	*Daphnia magna*	None	None
EV_GT1_WS_2022-06-07_N-SRF-AS	*Daphnia magna*	None	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	3.5 (3.0-4.0) g/L KCl[1]	5.7 (5.4-5.9) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.4 (2.6-4.4) g/L KCl	6.5 (5.5-7.6) g/L NaCl
Reference toxicant CV	8.7%	5.4%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	See below
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, June 13, 2022; [2] Test Date June 1, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation

The replicate C control test vessel in the 10 degree *D. magna* test for sample EV_BC1_WS_2022-06-07_S-SRF was loaded with 11 organisms at test initiation instead of the required 10.



Report By:
Kristin McKenzie
Biologist



Reviewed By:
Leila Oosterbroek, P Biol
Environmental Scientist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	Moderately hard reconstituted water supplemented with B12 (2 µg/L)
Control/dilution water for antiscalant test	Moderately hard reconstituted water supplemented with B12 (2 µg/L) and 5 mg/L antiscalant
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	Moderately hard reconstituted water supplemented with B12 (2 µg/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC164 Reference 2122-2459-01 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022/06/10	1100 *	AM/ML	1	EP
1	2022/06/11	0815	CH	-	MAF
2	2022/06/12	0835	NA	-	AN
3	2022/06/13	0850	ML	-	AF
4	2022/06/14	1215	AM/ML/KCRM	1	CH

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 8.2
Initial EC (µS/cm): 1938
Salinity (ppt): 3

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L (yes/no)

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	8.9	8.9			
Temp (°C) of 100%	14				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: **5.5-8.5**)								
Day 0	8.1	8.1						
Day 4	8.0	8.0						
EC (uS/cm)								
Day 0	480	1881						
Day 4	473	1752						
DO (mg/L) (**70-100% saturation at test temp.**)								
Day 0	8.8	8.9						
Day 4	8.6	8.6						
Temperature (°C) (range: **14-16°C**)								
Day 0	15	14						
Day 4	16	16						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	2.8	0.2
2	3.1	0.3
3	3.0	0.3
4	3.1	0.4
5	2.8	0.3
6	2.9	0.3
7	2.8	0.3
8	2.8	0.2
9	2.8	0.2
10	3.0	0.4

Loading Density (g/L): 0.2 (must be ≤0.5 g/L)
Mean Length (cm): 2.9
Length Range (cm): 2.8-3.2
Mean Weight (g): 0.3 (Must be ≥0.3g)
Weight Range: (g): 0.2-0.4

Test Organism Information

Batch 20220526TR
Source LSL
Tank # 2
Days Held at 15± 2°C 15 (must be ≥14 days)
Percent stock mortality 0.92 (7 days prior to test, must be <2%)
Test Volume (L) 17 ~~18~~ AM

Comments :
96 hrs: PPT on sides + bottom

Reviewed By: SS Date Reviewed: 20221006117

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC164 Reference 2122-2459-02 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022/06/10	1100 *	AM/ML	1	EF
1	2022/06/11	0815	CH	-	MAF
2	2022/06/12	0835	NA	-	AF
3	2022/06/13	1550	MM	-	AF
4	2022/06/14	1320	AM/ML/KM	1	CH

Note: * ; time when the test was loaded with fish KCRM

Sample Information

Initial pH: 8.1
Initial EC (µS/cm): 1994
Salinity (ppt): 3

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L : yes/no

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	8.8	8.8			
Temp (°C) of 100%	15				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: **5.5-8.5**)								
Day 0	8.1	8.0						
Day 4	8.0	8.1						
EC (uS/cm)								
Day 0	478	1937						
Day 4	518	1758						
DO (mg/L) (**70-100% saturation at test temp.**)								
Day 0	8.6	8.8						
Day 4	8.6	8.6						
Temperature (°C) (range: **14-16°C**)								
Day 0	16	15						
Day 4	16	16						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	2.9	0.2
2	2.9	0.3
3	3.1	0.4
4	2.9	0.2
5	2.8	0.2
6	3.0	0.4
7	2.9	0.3
8	2.8	0.2
9	3.5	0.6
10	3.0	0.3

Loading Density (g/L): 0.2 (must be ≤0.5 g/L)
Mean Length (cm): 3.0
Length Range (cm): 2.8-3.5
Mean Weight (g): 0.3 (Must be ≥0.3g)
Weight Range: (g): 0.2-0.6

Test Organism Information

Batch 20220526TR
Source LSL
Tank # 2
Days Held at 15± 2°C 15 (must be ≥14 days)
Percent stock mortality 0.92 (7 days prior to test, must be <2%)
Test Volume (L) 18

Comments :
96 hrs: PPT on sides + bottom

Reviewed By: SS Date Reviewed: 2022/06/17

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC 164 Reference 2122-2459-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/06/08	1550	NA/EP	2	CH
1	2022/06/09	8:30	D.M	-	VM
2	2022/06/10	0840	EP	2	CH

Sample Information

Initial pH:	8.2
Initial EC (µS/cm):	1938
Salinity (ppt):	3

Lab Code	CTL A	CTL B	CTL C	100 A	100 B	100 C

pH (units) (range: 6.0-8.5)

day										
0	8.0	8.0	8.0	8.1	8.2	8.2				
2	8.0	7.9	7.9	8.0	8.0	8.0				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	317	314	313	1921	1990	2080				
2	319	318	315	1824	1928	1927				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.9	7.9	7.9				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	20	20	20				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar Wed D3 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)

Days to first brood (≤12 days) 7

Average number of young produced (≥15 young) 28

Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - 0 (must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 9.7 Temperature (°C) of sample prior to aeration: 19

DO % of sample prior to aeration: 119 Is aeration required (<40% or >100%)? (Yes) or No

Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20 min Filtered with 110um screen prior to testing Yes or (No)

Hardness (mg $CaCO_3$/L) of 100% : 1117 Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —

Alkalinity of 100% sample (mg $CaCO_3$/L): 348

Dilution Water

Pail label / preparation date 2:06/01

Hardness of dilution water (mg/L) 90

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Comments/Observations:

0hr: no ppt

48hr: Surficial ppt, ppt on bottom of jar

Reviewed By: SS Date Reviewed: 2022/06/17

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC 164 Reference 2122-2459-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/06/08	1540	NA/EP	2	CM
1	2022/06/09	0915	EP	-	wm
2	2022/06/10	0830	EP	2	CM

Sample Information

Initial pH:	8.2
Initial EC (µS/cm):	1938
Salinity (ppt):	3

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	7.9	7.9	7.9	8.1	8.2	8.2				
2	7.7	7.7	7.7	8.1	8.1	8.1				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	299	310	312	1937	2070	2080				
2	316	319	321	1916	1974	2090				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar Wed E3 Jar(s) mortality 7 days prior to test (must be ≤25%) 10%

QA (previous month)

Days to first brood (≤12 days) 9

Average number of young produced (≥15 young) 30

Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 9.4 Temperature (°C) of sample prior to aeration: 12

DO % of sample prior to aeration: 100 Is aeration required (<40% or >100%)? **Yes or (No)**

Duration of aeration (37.5 +/- 12.5 mL/min/L) : — Filtered with 110um screen prior to testing **Yes or (No)**

Hardness (mg $CaCO_3$/L) of 100% : 1117 Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or (No)**

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —

Alkalinity of 100% sample (mg $CaCO_3$/L): 348

Dilution Water

Pail label / preparation date 2:06/01

Hardness of dilution water (mg/L) 80

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

Comments/Observations:

0hr: no ppt

48hr: Slight surficial ppt

Reviewed By: SS Date Reviewed: 2022/06/17

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC 164 Reference 2122-2459-02

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/06/08	1545	NA/EP	2	CM
1	2022/06/09	0845	EP	-	CM
2	2022/06/10	0855	EP	2	CM

Sample Information

Initial pH:	8.1
Initial EC (µS/cm):	1994
Salinity (ppt):	3

Lab Code	CTL A	CTL B	CTL C	100 A	100 B	100 C

pH (units) (range: 6.0-8.5)

day										
0	7.8	7.9	7.9	8.1	8.1	8.1				
2	7.9	7.9	7.9	8.1	8.1	8.1				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	298	308	311	1961	2100	2130				
2	312	328	330	1891	1974	2080				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.9	7.9	7.9				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	20	20	20				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar Wed E2 Jar(s) mortality 7 days prior to test (must be ≤25%) 5/1.

QA (previous month)

Days to first brood (≤12 days) 9

Average number of young produced (≥15 young) 30

Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - 0 (must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 9.5 Temperature (°C) of sample prior to aeration: 18

DO % of sample prior to aeration: 115 Is aeration required (<40% or >100%)? (Yes) or No

Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20 min Filtered with 110um screen prior to testing Yes or (No)

Hardness (mg $CaCO_3$/L) of 100% : 1158 Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —

Alkalinity of 100% sample (mg $CaCO_3$/L): 385

Dilution Water

Pail label / preparation date 2:06/01

Hardness of dilution water (mg/L) 80

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Comments/Observations:

0hr: NO ppt

48hr: Surficial ppt, ppt on bottom of jar

Reviewed By: SS Date Reviewed: 2022/06/17

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC 164 Reference 2122-2459-02

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/06/08	1555	NA/EP	2	CH
1	2022/06/09	0915	EP	-	with CH
2	2022/06/10	0850	EP	2	CH

Sample Information

Initial pH:	8.1
Initial EC (µS/cm):	1994
Salinity (ppt):	3

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	8.0	8.0	8.0	8.1	8.1	8.1				
2	7.8	7.8	7.8	8.1	8.1	8.1				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	312	310	313	1962	2110	2130				
2	303	315	316	1937	2070	2100				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (l, immobile)

0	10	10	* EP 11 ~~10~~	10	10	10				
1	10	10	11	10	10	10				
2	10	10	11	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar wed E2 Jar(s) mortality 7 days prior to test (must be ≤25%) 5 %

QA (previous month)

Days to first brood (≤12 days) 9

Average number of young produced (≥15 young) 30

Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 9.4

Temperature (°C) of sample prior to aeration: 12

DO % of sample prior to aeration: 100

Is aeration required (<40% or >100%)? (Yes) or No

Duration of aeration (37.5 +/- 12.5 mL/min/L) : N 20 min

Filtered with 110um screen prior to testing Yes or (No)

Hardness (mg $CaCO_3$/L) of 100% : 1158 EP

Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —

Alkalinity of 100% sample (mg $CaCO_3$/L): 385

Dilution Water

Pail label / preparation date 2:06/01

Hardness of dilution water (mg/L) 80

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

Comments/Observations:

0hr: no ppt

48hr: N EP Surficial ppt

* misloaded w/ 11 organisms verified w/ DM

Reviewed By: SS Date Reviewed: 20221006117

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS Client TEC 164 Reference 2122-2459-03

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/06/08	1600	Na/EP	2	CM
1	2022/06/09	0830	EP	-	KM
2	2022/06/10	0845	EP	2	CM

Sample Information

Initial pH:	8.1
Initial EC (µS/cm):	1994
Salinity (ppt):	3

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	7.9	7.9	7.9	8.1	8.1	8.1				
2	7.8	7.8	7.8	8.3	8.3	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	322	311	318	1968	2110	2120				
2	314	316	315	1906	2070	2090				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.9	7.9	7.9				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	20	20	20				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar Wcd D1 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)

Days to first brood (≤12 days) 7

Average number of young produced (≥15 young) 28

Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - (must be ≤10%) 0

Sample

DO (mg/L) of sample prior to aeration: 9.5 Temperature (°C) of sample prior to aeration: 18

DO % of sample prior to aeration: 115 Is aeration required (<40% or >100%)? (Yes) or No

Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20min Filtered with 110um screen prior to testing Yes or (No)

Hardness (mg $CaCO_3$/L) of 100% : 1158 Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —

Alkalinity of 100% sample (mg $CaCO_3$/L): 385

Dilution Water

Pail label / preparation date 2:06/01

Hardness of dilution water (mg/L) 80

Antiscalant

Final Concentration in Sample: 5mg/L

Volume of sample: 500 mL Volume of antiscalant: 39.5µL

Comments/Observations:

0hr: no ppt

48hr: no ppt

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Reviewed By: SS Date Reviewed: 2022/06/17

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS Client TEC 164 Reference 2122-2459-04

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/06/08	1605	Na/EP	2	
1	2022/06/09	0820	EP	-	
2	2022/06/10	0835	EP	2	

Sample Information

Initial pH: 8.2
Initial EC (µS/cm): 1938
Salinity (ppt): 3

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	8.0	7.9	7.9	8.1	8.2	8.2				
2	7.8	7.8	7.8	8.3	8.3	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	317	313	312	1923	2060	2070				
2	323	321	326	1885	1968	2070				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.7	7.7	7.7	7.9	7.9	7.9				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	21	21	21	20	20	20				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar Lord D1 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 28
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0

Sample
DO (mg/L) of sample prior to aeration: 9.7
DO % of sample prior to aeration: 119
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20min
Hardness (mg $CaCO_3$/L) of 100% : 1117
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 348

Temperature (°C) of sample prior to aeration: 19
Is aeration required (<40% or >100%)? (Yes) or No
Filtered with 110um screen prior to testing Yes or (No)
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)

Dilution Water
Pail label / preparation date 2:06/01
Hardness of dilution water (mg/L) 80

Antiscalant
Final Concentration in Sample: 5mg/L
Volume of sample: 500 mL Volume of antiscalant: 39.5 µL

Comments/Observations:
0hr: no ppt
48hr: no ppt

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Reviewed By: SS Date Reviewed: 20221061 17

APPENDIX C – Chain-of-custody form

Teck

COC ID: EVO NAUTILUS June 7 2022 | TURNAROUND TIME: | RUSH:

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO			
Facility Name / Job#	Elkview Operations			Lab Name	Nautilus Environmental - BC			Report Format / Distribution		Excel	PDF	EDD
Project Manager	Group 1; Brett Mason			Lab Contact				Email 1:	teckcoal@equisonline.com			X
Email	Brett.Mason@teck.com			Email	jacklyn@nautilusenvironmental.ca			Email 2:	DL-EVO-SRF-LAB@teck.co	X	X	X
Address	RR1 HWY 3			Address	10823 27th Street SE			Email 3:	Cole.Macgregor@teck.com	X	X	X
								Email 4:				
City	Sparwood	Province	BC	City	Calgary	Province	AB	Email 5:				
								Email 6:				
								Email 7:				
								Email 8:				
								Email 9:				
								Email 10:				
								Email 11:				
								Email 12:				
								Email 13:				
Postal Code	V0B 2G0	Country	Canada	Postal Code	T2H 2K1	Country	Canada					
Phone Number	250-425-6179			Phone Number	T2Z 3V9			PO number	822027			

SAMPLE DETAILS | **ANALYSIS REQUESTED** (Filtered - F: Field, L: Lab, FL: Field & Lab, N: None)

2022/06/08
09:00
Manitoulin
8 x 20 L carboys, 10 x 1 L bottles
SRS/RM/AC
Nos NOI
Good Condition

Sample ID 2122-2459	Sample Location (sys loc code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	FIL	PRESERV.	48hr Daphnia Magna Single Concentration Acute Toxicity 20C	48hr Daphnia Magna Single Concentration Acute Toxicity 10C	48hr Daphnia Magna Single Concentration Acute Toxicity Anitscalent	96hr Rainbow Trout Single Concentration Acute Toxicity (10 L Bladder)	96hr Rainbow Trout Single Concentration Acute Toxicity (20 L Bladder)	48hr Daphnia Magna Single Concentration Toxicity 15C						
-01 EV_GT1_WS_2022-06-07_N-SRF	EV_GT1	WS		2022/06/07	11:00	G	8			2	2			4		13.1°C					
-02 EV_BC1_WS_2022-06-07_N-SRF	EV_BC1	WS		2022/06/07	8:20	G	8			2	2			4		11.1°C					
-03 EV_BC1_WS_2022-06-07_N-SRF-AS	EV_BC1	WS		2022/06/07	8:20	G	1					1				9.9°C					
-04 EV_GT1_WS_2022-06-07_N-SRF-AS	EV_GT1	WS		2022/06/07	11:00	G	1					1				9.3°C					

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME
Field Temperatures		June 7, 2022		

SERVICE REQUEST (rush - subject to availability)					
Regular (default)	X	Sampler's Name		Mobile #	
Priority (2-3 business days) - 50% surcharge					
Emergency (1 Business Day) - 100% surcharge		Sampler's Signature		Date/Time	June 7, 2022
For Emergency <1 Day, ASAP or Weekend - Contact ALS					

END OF REPORT

Acute Toxicity Test Results

Samples collected June 13, 2022

Final Report

July 26, 2022

Submitted to: **Teck Coal Ltd.**
Sparwood, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates					
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation	*Daphnia magna* antiscalant test initiation
F2_BPO_WG_2022-06-13_N / 2122-2525-01	13-Jun-22 at 0840h	14-Jun-22 at 0945h	14-Jun-22 at 1515h	14-Jun-22 at 1420h	14-Jun-22 at 1415h	-
F2_BPO_WG_2022-06-13_N-AS / 2122-2525-02	13-Jun-22 at 0841h	14-Jun-22 at 0945h	-	-	-	14-Jun-22 at 1425h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
F2_BPO_WG_2022-06-13_N	9.6°C	1293	460
F2_BPO_WG_2022-06-13_N-AS	9.6°C	1293	460

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)
- *Daphnia magna* 48-h single concentration screening test (conducted with 20 mg/L antiscalant)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample			
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
F2_BPO_WG_2022-06-13_N	100	100	100	-
F2_BPO_WG_2022-06-13_N-AS	-	-	-	100

Sample ID	Percent Immobility in 100 (% v/v)		
	Daphnia magna 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
F2_BPO_WG_2022-06-13_N	0	0	-
F2_BPO_WG_2022-06-13_N-AS	-	-	0

Precipitate observations

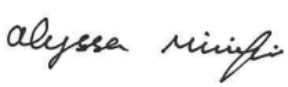
Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
F2_BPO_WG_2022-06-13_N	Rainbow trout	Precipitate observed on the test vessel	None
	Daphnia magna	None	None
		Surficial precipitate and precipitate observed on the test vessel in the 20-degree test	None
F2_BPO_WG_2022-06-13_N-AS	*Daphnia magna*	Surficial precipitate observed	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	3.5 (3.0-4.0) g/L KCl[1]	5.7 (5.4-5.9) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.4 (2.6-4.4) g/L KCl	6.4 (5.4-7.6) g/L NaCl
Reference toxicant CV	8.7%	5.6%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, June 13, 2022; [2] Test Date June 28, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation



Report By:
Alyssa Minifie, BSc
Laboratory Biologist



Reviewed By:
Leila Oosterbroek, P Biol
Environmental Scientist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	Moderately-hard reconstituted water supplemented with B12 (2 µg/L)
Control/dilution water for antiscalant test	Moderately-hard reconstituted water supplemented with B12 (2 µg/L) and 20 mg/L antiscalant
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	Moderately-hard reconstituted water supplemented with B12 (2 µg/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC 164 Reference 2122-2525-01 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022-06-14	1515 *	KO/ML	1	[illegible]
1	2022-06-15	1100	ML	-	[illegible]
2	2022-06-16	1130	ML	-	[illegible]
3	2022-06-17	0830	ML	-	[illegible]
4	2022-06-18	1110	cc/~~[illegible]~~ cc	1	MAF

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 7.4
Initial EC (µS/cm): 2130
Salinity (ppt): 3

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L : yes/no

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	9.3	8.8			
Temp (°C) of 100%	15				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	7.5	7.5						
Day 4	8.3	8.2						
EC (uS/cm)								
Day 0	464	1982						
Day 4	465	1846						
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	8.6	8.8						
Day 4	8.6	8.6						
Temperature (°C) (range: 14-16°C)								
Day 0	16	15						
Day 4	16	16						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.1	0.3
2	2.7	0.2
3	2.9	0.2
4	3.7	0.5
5	2.9	0.3
6	3.5	0.4
7	3.0	0.3
8	2.9	0.3
9	3.7	0.6
10	2.7	0.2

Loading Density (g/L): 0.2
(must be ≤0.5 g/L)

Mean Length (cm): 3.1

Length Range (cm): 2.7-3.7

Mean Weight (g): 0.3
(Must be ≥0.3g)

Weight Range: (g): 0.2-0.6

Test Organism Information

Batch 20220526TR
Source LSL
Tank # 1
Days Held at 15± 2°C 19
(must be ≥14 days)
Percent stock mortality 0.74
(7 days prior to test, must be <2%)
Test Volume (L) 16.5
~~18~~ KO

Comments :
96h: ppt on bottom + sides

Reviewed By: SS Date Reviewed: 2022106123

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC164 Reference 2122-2525-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/06/14	1415	CC/CH	2	EP
1	2022/06/15	0830	AE/AA	-	YM
2	2022/06/16	1015	AE/AA	2	EP

Sample Information

Initial pH: 7.4
Initial EC (µS/cm): 2130
Salinity (ppt): 3

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	7.8	7.8	7.8	7.8	7.8	7.8				
2	7.9	7.8	7.8	8.2	8.2	8.2				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	329	329	327	2140	2240	2260				
2	321	336	332	2120	2200	2190				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	8.1	8.1	8.1				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	19	19	19				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar Wed D1 MHRW Jar(s) mortality 7 days prior to test (must be ≤25%) 5%

QA (previous month)
Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 25
Were test treatments randomized on test tray? Yes / No

Control Validity Criteria
Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 9.2
Temperature (°C) of sample prior to aeration: 18
DO % of sample prior to aeration: 112 %
Is aeration required (<40% or >100%)? **Yes or No**
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20mn
Filtered with 110um screen prior to testing **Yes or No**
Hardness (mg $CaCO_3$/L) of 100% : 1293
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 460

Dilution Water
Pail label / preparation date 2; 06/01
Hardness of dilution water (mg/L) 80

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Comments/Observations:
0 hrs: ND ppt
48 hrs: Surficial ppt, Slight ppt on bottom of jar

Reviewed By: SS Date Reviewed: 20221006123

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client- TEC164 Reference 2122- 2525-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/06/14	1420	CC/CH	2	EP
1	2022/06/15	0900	AE/AI	-	WM
2	2022/06/16	1000	AE/AI	2	QV

Sample Information

Initial pH: 7.4
Initial EC (µS/cm): 2130
Salinity (ppt): 3

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	7.8	7.8	7.8	7.8	7.8	7.9				
2	7.8	7.8	7.8	8.3	8.3	8.4				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	316	326	325	2150	2240	2270				
2	328	334	331	2080	2220	2260				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.2	9.2	9.4	9.2	9.2	9.2				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	~~15~~12	~~15~~12	~~15~~12	~~15~~12	~~15~~12	~~15~~12				

AE

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar Wed D1 MHRW Jar(s) mortality 7 days prior to test (must be ≤25%) 5%.

QA (previous month)
Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 25
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0%
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 9.9
DO % of sample prior to aeration: 105%
Duration of aeration (37.5 +/- 12.5 mL/min/L): 20 min
Hardness (mg $CaCO_3$/L) of 100% : 1293
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 460

Temperature (°C) of sample prior to aeration: 12.
Is aeration required (<40% or >100%)? **Yes or No**
Filtered with 110um screen prior to testing **Yes or No**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Dilution Water
Pail label / preparation date 2022/06/01
Hardness of dilution water (mg/L) 80

DO Levels (40-100% saturation) - corrected for altitude -
4.1 to 10.3 mg/L at 8°C
4.0 to 10.0 mg/L at 9°C
3.9 to 9.8 mg/L at 10°C
3.8 to 9.6 mg/L at 11°C
3.7 to 9.4 mg/L at 12°C

Comments/Observations:
0 hrs: No ppt
48 hrs: No ppt

Reviewed By: SS Date Reviewed: 2022/06/23

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS 20 Client TEC164 Reference 2122-2525-02

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/06/14	1425	CC/CH	2	EP
1	2022/06/15	0845	AE/AI	-	MM
2	2022/06/16	0940	AE/AI	2	CC

Sample Information

Initial pH: 7.4
Initial EC (µS/cm): 2130
Salinity (ppt): 3

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	7.8	7.8	7.7	7.8	7.8	7.8				
2	7.7	7.7	7.7	8.2	8.3	8.2				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	332	330	329	2140	2246	2260				
2	336	340	339	2090	2180	2210				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	8.1	8.1	8.1				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	19	19	19				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	9	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar Wed C4 MH RW Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 29
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 3%

Sample
DO (mg/L) of sample prior to aeration: 9.2
DO % of sample prior to aeration: 112%
Duration of aeration (37.5 +/- 12.5 mL/min/L): 20 min
Hardness (mg $CaCO_3$/L) of 100% : 1293
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 460

Temperature (°C) of sample prior to aeration: 18
Is aeration required (<40% or >100%)? (Yes) or No
Filtered with 110um screen prior to testing (Yes) or No
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)

Dilution Water
Pail label / preparation date 22/06/01
Hardness of dilution water (mg/L) 80

Antiscalant
Final Concentration in Sample: ~~20 µL~~ cc 158 µL → 20 cc
Volume of sample: 500mL Volume of antiscalant: ~~158~~ mg/L

Comments/Observations:
0 hrs: No ppt
48 hrs: Surficial ppt

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Reviewed By: SS Date Reviewed: 2022/06/23

APPENDIX C – Chain-of-custody form

Teck

COC ID: F2 NAUTILUS June 13 2022 | **TURNAROUND TIME:** | **RUSH:**

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name / Job#	F2 SRF			Lab Name	Nautilus Environmental - BC			Report Format / Distribution		Excel	PDF	EDD
Project Manager	BRETT MASON			Lab Contact				Email 1:	Cole.Macgregor@teck.com	X	X	X
Email	BRETT.MASON@TECK.COM			Email	jacklyn@nautilusenvironmental.ca			Email 1:	teckcoal@equisonline.com			X
Address	RR1 HWY 3			Address	10823 27th Street SE			Email 2:	DL-EVO-SRF-LAB@teck.com	X	X	X
								Email 3:				
City	Sparwood	Province	BC	City	Calgary	Province	AB	Email 4:				
								Email 5:				
								Email 6:				
								Email 7:				
								Email 8:				
								Email 10:				
								Email 11:				
								Email 12:				
								Email 13:				
Postal Code	V0B 2G0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada					
Phone Number	250-425-6179			Phone Number	403-253-7121			PO number	00822027			

SAMPLE DETAILS

2022/06/14
Manitoulin
4 x 20 L carboys, 5 x 1 L ~~carboys~~ bottles
SRS
NOS NOI
Good condition

ANALYSIS REQUESTED

Filtered - F: Field, L: Lab, FL: Field & Lab, N: None

Sample ID	Sample Location (sys loc code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	Filt	48hr Daphnia Magna Single Concentration Acute Toxicity 20C	48hr Daphnia Magna Single Concentration Acute Toxicity 10C	48hr Daphnia Magna Single Concentration Acute Toxicity Anitscalent	96hr Rainbow Trout Single Concentration Acute Toxicity (20L Bladders)	48hr Daphnia Magna Single Concentration Toxicity 15C
-01 F2_BPO_WG_2022-06-13_N	F2_BPO	WG		2022/06/13	8:40	G	8		2	2		4	9.6°C
-02 F2_BPO_WG_2022-06-13_N-AS	F2_BPO	WG		2022/06/13	8:41	G	1				1		↓

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME
		June 13, 2022		

SERVICE REQUEST (rush - subject to availability)					
Regular (default)	X	Sampler's Name		Mobile #	
Priority (2-3 business days) - 50% surcharge					
Emergency (1 Business Day) - 100% surcharge		Sampler's Signature		Date/Time	June 13, 2022
For Emergency <1 Day, ASAP or Weekend - Contact ALS					

END OF REPORT

Acute Toxicity Test Results

Samples collected June 16, 2022

Final Report

July 14, 2022

Submitted to: **Teck Coal Ltd.**
Sparwood, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates					
	Collected	**Received**	**Rainbow trout test initiation**	***Daphnia magna* 10˚C test initiation**	***Daphnia magna* 20˚C test initiation**	***Daphnia magna* antiscalant test initiation**
EV_EC1_WS_2022-06-16_N-SRF/ 2122-2579-01	16-Jun-22 at 0730h	17-Jun-22 at 1000h	17-Jun-22 at 1545h	20-Jun-22 at 1410h	20-Jun-22 at 1425h	-
EV_EC1_WS_2022-06-16_N-SRF-AS/ 2122-2579-02	16-Jun-22 at 0731h	17-Jun-22 at 1000h	-	-	-	20-Jun-22 at 1435h
EV_ECOUT_WS_2022-06-16_N-SRF/ 2122-2579-03	16-Jun-22 at 1010h	17-Jun-22 at 1000h	17-Jun-22 at 1545h	20-Jun-22 at 1430h	20-Jun-22 at 1520h	-
EV_ECOUT_WS_2022-06-16_N-SRF-AS/ 2122-2579-04	16-Jun-22 at 1011h	17-Jun-22 at 1000h	-	-	-	20-Jun-22 at 1515h
EV_MC3_WS_2022-06-16_N-SRF/ 2122-2579-05	16-Jun-22 at 0840h	17-Jun-22 at 1000h	17-Jun-22 at 1630h	20-Jun-22 at 1435h	20-Jun-22 at 1440h	-
EV_MC3_WS_2022-06-16_N-SRF-AS / 2122-2579-06	16-Jun-22 at 0841h	17-Jun-22 at 1000h	-	-	-	20-Jun-22 at 1455h
EV_MCDSEC_WS_2022-06-16_N-SRF/ 2122-2579-07	16-Jun-22 at 0740h	17-Jun-22 at 1000h	17-Jun-22 at 1630h	20-Jun-22 at 1500h	20-Jun-22 at 1440h	-
EV_MCDSEC_WS_2022-06-16_N-SRF-AS/ 2122-2579-08	16-Jun-22 at 0741h	17-Jun-22 at 1000h	-	-	-	20-Jun-22 at 1510h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
EV_EC1_WS_2022-06-16_N-SRF	13.4°C	1088	396
EV_EC1_WS_2022-06-16_N-SRF-AS	14.9°C	1088	396
EV_ECOUT_WS_2022-06-16_N-SRF	11.7°C	1154	366
EV_ECOUT_WS_2022-06-16_N-SRF-AS	15.2°C	1154	366
EV_MC3_WS_2022-06-16_N-SRF	12.7°C	77	102
EV_MC3_WS_2022-06-16_N-SRF-AS	15.4°C	77	102
EV_MCDSEC_WS_2022-06-16_N-SRF	14.8°C	256	159
EV_MCDSEC_WS_2022-06-16_N-SRF-AS	15.4°C	256	159

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)
- *Daphnia magna* 48-h single concentration screening test (conducted with 5 mg/L antiscalant)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample			
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
EV_EC1_WS_2022-06-16_N-SRF	100	100	100	-
EV_EC1_WS_2022-06-16_N-SRF-AS	-	-	-	100
EV_ECOUT_WS_2022-06-16_N-SRF	100	100	100	-
EV_ECOUT_WS_2022-06-16_N-SRF-AS	-	-	-	90
EV_MC3_WS_2022-06-16_N-SRF	100	100	100	-
EV_MC3_WS_2022-06-16_N-SRF-AS	-	-	-	100
EV_MCDSEC_WS_2022-06-16_N-SRF	100	100	100	-
EV_MCDSEC_WS_2022-06-16_N-SRF-AS	-	-	-	100

Sample ID	Percent Immobility in 100 (% v/v)		
	Daphnia magna 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
EV_EC1_WS_2022-06-16_N-SRF	0	0	-
EV_EC1_WS_2022-06-16_N-SRF-AS	-	-	0
EV_ECOUT_WS_2022-06-16_N-SRF	0	0	-
EV_ECOUT_WS_2022-06-16_N-SRF-AS	-	-	10
EV_MC3_WS_2022-06-16_N-SRF	0	0	-
EV_MC3_WS_2022-06-16_N-SRF-AS	-	-	0
EV_MCDSEC_WS_2022-06-16_N-SRF	0	0	-
EV_MCDSEC_WS_2022-06-16_N-SRF-AS	-	-	0

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
EV_EC1_WS_2022-06-16_N-SRF	Rainbow trout	None	None
	Daphnia magna	None	None
EV_EC1_WS_2022-06-16_N-SRF-AS	*Daphnia magna*	None	None
EV_ECOUT_WS_2022-06-16_N-SRF	Rainbow trout	Precipitate observed on bottom of test vessel	None
	Daphnia magna	Surficial precipitate and precipitate on test vessel observed in the 20 degree test	None
EV_ECOUT_WS_2022-06-16_N-SRF-AS	*Daphnia magna*	Surficial precipitate observed	None
EV_MC3_WS_2022-06-16_N-SRF	Rainbow trout	None	None
	Daphnia magna	None	None
EV_MC3_WS_2022-06-16_N-SRF-AS	*Daphnia magna*	None	None
EV_MCDSEC_WS_2022-06-16_N-SRF	Rainbow trout	None	None
	Daphnia magna	None	None
EV_MCDSEC_WS_2022-06-16_N-SRF-AS	*Daphnia magna*	None	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	3.5 (3.0-4.0) g/L KCl[1]	5.6 (5.1-6.0) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.4 (2.6-4.4) g/L KCl	6.4 (5.4-7.6) g/L NaCl
Reference toxicant CV	8.7%	5.7%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	See below
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, June 13, 2022; [2] Test Date June 17, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation

For sample EV_EC1_WS_2022-06-16_N-SRF, the laboratory control replicate A was loaded with 11 daphnids at test initiation in the 20 degree test.

Report By:
Christine Chanhao, BSc
Biologist

Reviewed By:
Jacklyn Poole, BSc
Laboratory and Quality Manager

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	Moderately hard reconstituted water supplemented with B12 (2 µg/L)
Control/dilution water for antiscalant test	Moderately-hard reconstituted water supplemented with B12 (2 µg/L) and 5 mg/L antiscalant
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	Moderately hard reconstituted water supplemented with B12 (2 µg/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC164 Reference 2122-2579-01 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022-06-17	1545 *	KO/ML/AM	1	
1	2022-06-18	1100	KO	-	MAF
2	2022-06-19	0900	AE	-	
3	2022-06-20	0930	ML	-	
4	2022-06-21	1115	ML	1	AE

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 7.9
Initial EC (µS/cm): 1927
Salinity (ppt): 1

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L yes/no

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	8.6 FML	8.6			
Temp (°C) of 100%	16				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: **5.5-8.5**)								
Day 0	7.2	7.9						
Day 4	8.1	8.2						
EC (uS/cm)								
Day 0	450	1760						
Day 4	466	1566						
DO (mg/L) (**70-100% saturation at test temp.**)								
Day 0	8.6	8.6						
Day 4	8.6	8.6						
Temperature (°C) (range: **14-16°C**)								
Day 0	16	16						
Day 4	16	16						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.2	0.4
2	4.0	0.7
3	3.0	0.3
4	3.8	0.7
5	3.5	0.5
6	3.4	0.4
7	3.2	0.3
8	3.0	0.3
9	3.5	0.5
10	3.3	0.4

Loading Density (g/L): 0.3 (must be ≤0.5 g/L)
Mean Length (cm): 3.4
Length Range (cm): 3.0-4.0
Mean Weight (g): 0.5 (Must be ≥0.3g)
Weight Range: (g): 0.3-0.7

Test Organism Information

Batch 20220526TR
Source LSL
Tank # 1
Days Held at 15± 2°C 21 (must be ≥14 days)
Percent stock mortality 0.22 (7 days prior to test, must be <2%)
Test Volume (L) AM ~~18~~ 15

Comments :
96 hrs: No ppt

Reviewed By: EV Date Reviewed: 2022/06/24

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC164 Reference 2122-2579-03 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022-06-17	1545 *	KO/ML/AM	1	EP
1	2022-06-18	1100	KO	-	
2	2022-06-19	0900	AE	-	
3	2022-06-20	0830	ML	-	
4	2022-06-21	1130	ML	1	AE

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: AM 7.7 7.4
Initial EC (µS/cm): 3050
Salinity (ppt): 3

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L (yes/no)

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	8.8	8.8			
Temp (°C) of 100%	15				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	7.0	7.4						
Day 4	8.1	8.1						
EC (uS/cm)								
Day 0	428	1842						
Day 4	417	1687						
DO (mg/L) (70-100% saturation at test temp.)		8.8						
Day 0	8.6	8.6 ML						
Day 4	8.6	8.6						
Temperature (°C) (range: 14-16°C)		15						
Day 0	16	16 ML						
Day 4	16	16						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.4	0.4
2	4.0	0.7
3	3.2	0.4
4	3.6	0.5
5	3.4	0.4
6	3.6	0.5
7	4.0	0.8
8	3.3	0.4
9	3.2	0.4
10	3.0	0.3

Loading Density (g/L): 0.3 (must be ≤0.5 g/L)
Mean Length (cm): 3.5
Length Range (cm): 3.0-4.0
Mean Weight (g): 0.5 (Must be ≥0.3g)
Weight Range: (g): 0.2-0.8

Test Organism Information

Batch 20220526TR
Source LSL
Tank # 1
Days Held at 15± 2°C 21 (must be ≥14 days)
Percent stock mortality 0.22 (7 days prior to test, must be <2%)
Test Volume (L) ML 18 16.5

Comments :
96 hrs: ppt on 100 ~~No ppt on 100 AS~~

Reviewed By: EV Date Reviewed: 2022/06/24

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC164 Reference 2122-2579-05 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022-06-17	1630 *	KO/ML/AM	1	EP
1	2022-06-18	1100	KO	-	MF
2	2022-06-19	0800	AF	-	
3	2022-06-20	0830	ML	-	
4	2022-06-21	1130	ML	1	AL

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 7.9
Initial EC (µS/cm): 244
Salinity (ppt): 0

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L (yes/no)

	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
Preaeration time					
DO(mg/L) of 100%	8.8	8.8			
Temp (°C) of 100%	15				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	7.3	7.8						
Day 4	8.1	7.9						
EC (uS/cm)								
Day 0	429	203.3 µL						
Day 4	448	209						
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	8.6	8.8						
Day 4	8.6	8.6						
Temperature (°C) (range: 14-16°C)								
Day 0	16	15						
Day 4	16	16						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.3	0.5
2	3.0	0.3
3	3.1	0.3
4	4.4	0.9
5	3.9	0.7
6	3.8	0.6
7	3.5	0.5
8	2.9	0.3
9	3.1	0.3
10	3.8	0.6

Loading Density (g/L): 0.3 (must be ≤0.5 g/L)
Mean Length (cm): 3.5
Length Range (cm): 2.9-4.4
Mean Weight (g): 0.5 (Must be ≥0.3g)
Weight Range: (g): 0.3-0.9

Test Organism Information

Batch 20220526TR
Source LSL
Tank # 1
Days Held at 15± 2°C 21 (must be ≥14 days)
Percent stock mortality 0.22 (7 days prior to test, must be <2%)
Test Volume (L) 18

Comments :
96 hrs: No ppt

Reviewed By: EV Date Reviewed: 2022/06/24

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC164 Reference 2122-2579-07 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022-06-17	1630 *	AM ~~KO~~/ML/AM	1	EP
1	2022-06-18	1100	KO	-	MAP
2	2022-06-19	0800	AE	-	[illegible]
3	2022-06-20	0830	ML	-	[illegible]
4	2022-06-21	1130	ML	1	AE

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 8.0

Initial EC (µS/cm): 597.4 EV

Salinity (ppt): ~~0~~ 0 EV

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L : yes/no

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	8.8	8.8			
Temp (°C) of 100%	15				

DO in mg/L (70% - 100% saturation)**

6.2 mg/L - 8.9 mg/L at 14°C

6.1 mg/L - 8.8 mg/L at 15°C

6.0 mg/L - 8.6 mg/L at 16°C

**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
	ML 7.2							
pH (units) (range: **5.5-8.5**)								
Day 0	~~8.6~~	7.9						
Day 4	ML ~~16~~ 8.2	8.~~1~~ 1 EV						
EC (uS/cm)								
Day 0	472	54~~4~~ 1 EV						
Day 4	461	535						
DO (mg/L) (**70-100% saturation at test temp.**)								
Day 0	8.6	8.8						
Day 4	8.6	8.6						
Temperature (°C) (range: **14-16°C**)								
Day 0	16	15						
Day 4	16	16						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control

Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.9	0.6
2	3.5	0.4
3	3.3	0.4
4	3.0	0.3
5	3.2	0.4
6	3.5	0.5
7	3.4	0.4
8	3.4	0.5
9	3.8	0.6
10	4.0	0.6

Loading Density (g/L): 0.3 (must be ≤0.5 g/L)

Mean Length (cm): 3.5

Length Range (cm): 3.0-4.0

Mean Weight (g): 0.5 (Must be ≥0.3g)

Weight Range: (g): 0.3-0.6

Test Organism Information

Batch 20220526TR

Source LSL

Tank # 1

Days Held at 15± 2°C 21 (must be ≥14 days)

Percent stock mortality 0.22 (7 days prior to test, must be <2%)

Test Volume (L) 18

Comments :

96 hrs: No ppt

Reviewed By: EV Date Reviewed: 2022/06/24

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC164 Reference 2122-2579-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/06/20	1425	EP/DM	2	AE
1	2022/06/21	0830	DM	-	EV
2	2022/06/22	900	DM	2	AE

Sample Information

Initial pH: 7.9
Initial EC (µS/cm): 1927
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	7.8	7.7	7.7	7.7	7.8	7.8				
2	7.9	7.8	7.8	8.2	8.2	8.2				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	282	280	282	1712	1734	1740				
2	286	286	284	1609	1683	1695				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.7	7.7	7.7	7.7	7.7	7.7				
2	7.9	7.7	7.7	7.7	7.7	7.5				

Temperature (°C) (range: **18-22 °C**)

0	21	21	21	21	21	21				
2	20	21	21	21	21	21				

Number Alive (I, immobile)

0	~~10~~ 11	10	10	10	10	10				
1	11	10	10	10	10	10				
2	11	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar wed C4 Jar(s) mortality 7 days prior to test (must be ≤25%) 5%

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 42
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0%
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 7.7
DO % of sample prior to aeration: 100
Duration of aeration (37.5 +/- 12.5 mL/min/L) : —
Hardness (mg $CaCO_3$/L) of 100% : 1088
Temperature (°C) of sample prior to aeration: 21
Is aeration required (<40% or >100%)? **Yes or No**
Filtered with 110um screen prior to testing **Yes or No**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 396

Dilution Water
Pail label / preparation date 2:06/15
Hardness of dilution water (mg/L) 81

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Comments/Observations:
*CTLA mislocated day 0 w/ 11. AI verified
0 HR no ppt
48 HR no ppt

Reviewed By: EV Date Reviewed: 2022/06/24

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC 164 Reference 2122-2579-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/06/20	1410	EP/DM	2	AE
1	2022/06/21	830	DM	-	CV
2	2022/06/22	0940	AI/DM	2	AE

Sample Information

Initial pH:	7.9
Initial EC (µS/cm):	1927
Salinity (ppt):	2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	7.8	7.8	7.8	7.7	7.8	7.8				
2	7.7	7.8	7.8	8.3	8.4	8.4				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	~~277~~ 277 EP	282	280	1719	1949	1764				
2	278	283	286	1652	1729	1740				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar Wed C1 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)

Days to first brood (≤12 days) EV 8/8

Average number of young produced (≥15 young) 42

Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - (must be ≤10%) 0

Sample

DO (mg/L) of sample prior to aeration: 9.4

DO % of sample prior to aeration: 100

Duration of aeration (37.5 +/- 12.5 mL/min/L) : -

Hardness (mg $CaCO_3$/L) of 100% : 1088

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) -

Alkalinity of 100% sample (mg $CaCO_3$/L): 396

Temperature (°C) of sample prior to aeration: 12

Is aeration required (<40% or >100%)? Yes or (No)

Filtered with 110um screen prior to testing Yes or (No)

Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)

Dilution Water

Pail label / preparation date 2:06/15

Hardness of dilution water (mg/L) 81

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C
4.0 to 10.0 mg/L at 9°C
3.9 to 9.8 mg/L at 10°C
3.8 to 9.6 mg/L at 11°C
3.7 to 9.4 mg/L at 12°C

Comments/Observations:

0HR no ppt

48HR no ppt

Reviewed By: EV Date Reviewed: 2022/06/24

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS 5 Client TEC 164 Reference 2122-2579-02

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/06/20	1435	EP/DM	2	AE
1	2022/06/21	0900	AI/DM	-	EC
2	2022/06/22	930	DM	2	AE

Sample Information

Initial pH: 7.9
Initial EC (µS/cm): 1927
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				
day	pH (units) (range: 6.0-8.5)									
0	7.7	7.6	7.6	7.8	7.8	7.9				
2	7.9	7.8	7.8	8.3	8.4	8.4				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

	EC (uS/cm)									
0	270	283	280	1653	1719	1736				
2	291	288	291	1680	1679	1714				
	DO (mg/L) (**40-100% saturation at test temp.**)									
0	7.9	7.9	7.9	7.7	7.7	7.7				
2	7.9	7.9	7.9	7.9	7.9	7.9				
	Temperature (°C) (range: **18-22 °C**)									
0	20	20	20	21	21	21				
2	20	20	20	20	20	20				
	Number Alive (I, immobile)									
0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar wed C3 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)

Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 42
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - (must be ≤10%) 0%

Sample

DO (mg/L) of sample prior to aeration: 7.7
DO % of sample prior to aeration: 100
Duration of aeration (37.5 +/- 12.5 mL/min/L): —
Hardness (mg $CaCO_3$/L) of 100%: 1088
Temperature (°C) of sample prior to aeration: 21
Is aeration required (<40% or >100%)? Yes or (No)
Filtered with 110um screen prior to testing Yes or (No)
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 396

Dilution Water

Pail label / preparation date 2:06/15
Hardness of dilution water (mg/L) 81

Antiscalant

Final Concentration in Sample: 5mg/L
Volume of sample: 500mL Volume of antiscalant: 39.5µL

Comments/Observations:

0 HR no ppt
48 HR noppt

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Reviewed By: EV Date Reviewed: 2022/06/24

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC164 Reference 2122-2579-03

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/06/20	1520	EP/DM	2	AE
1	2022/06/21	0830	DM	-	CC
2	2022/06/22	1000	DM	2	AE

Sample Information

Initial pH:	7.4
Initial EC (µS/cm):	2050
Salinity (ppt):	2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	7.8	7.7	7.7	7.7	7.8	7.8				
2	8.0	7.8	7.9	8.1	8.0	8.1				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	276	282	283	1775	1863	1880				
2	280	297	292	1712	1771	1775				

DO (mg/L) (**40-100% saturation at test temp.**)

7.7

0	~~7.9~~ EP	7.7	7.7	7.6	7.6	7.6				
2	7.9	8.1	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	21	21	21	22	22	22				
2	20	19	~~20~~ DM 20	20	20	20				

Number Alive (l, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	~~10~~ 9				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar used C3 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)

Days to first brood (≤12 days) 8

Average number of young produced (≥15 young) 42

Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - 0%

(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 9.0 Temperature (°C) of sample prior to aeration: 22

DO % of sample prior to aeration: 120 Is aeration required (<40% or >100%)? (Yes) or No

Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20 min Filtered with 110um screen prior to testing Yes or (No)

Hardness (mg $CaCO_3$/L) of 100% : 1154 Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —

Alkalinity of 100% sample (mg $CaCO_3$/L): 366

Dilution Water

Pail label / preparation date 2:0615

Hardness of dilution water (mg/L) 81

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Comments/Observations:

0 HR no ppt

48 HR Superficial ppt ppt on jar

Reviewed By: EV Date Reviewed: 2022/06/24

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC 164 Reference 2122-2579-03

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/06/20	1430	EP/DM	2	AE
1	2022/06/21	830	DM	-	CC
2	2022/06/22	0940	AI/DM	2	AE

Sample Information

Initial pH: 7.4
Initial EC (µS/cm): 2050
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	7.7	7.6	7.6	7.4	7.4	7.5				
2	7.8	7.9	7.9	8.2	8.2	8.2				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	269	280	282	1878	1914	1923				
2	281	285	286	1798	1866	1873				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar Wed C4 Jar(s) mortality 7 days prior to test (must be ≤25%) 5 %

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 42
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 9.4
Temperature (°C) of sample prior to aeration: 12
DO % of sample prior to aeration: 100
Is aeration required (<40% or >100%)? Yes or (No)
Duration of aeration (37.5 +/- 12.5 mL/min/L) : —
Filtered with 110um screen prior to testing Yes or (No)
Hardness (mg $CaCO_3$/L) of 100% : 1154
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 366

Dilution Water
Pail label / preparation date 2:06/15
Hardness of dilution water (mg/L) 81

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

Comments/Observations:

0HR no ppt
48HR no ppt

Reviewed By: EV Date Reviewed: 2022/06/24

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS 5 Client TEC 164 Reference 2122-2579-04

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/06/20	1515	EP/DM	2	AE CC
1	2022/06/21	900	DM	-	
2	2022/06/22	920	AH/EH	2	AE

Sample Information

Initial pH: 7.4
Initial EC (µS/cm): 2050
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	7.6	7.6	7.6	7.9	7.9	7.9				
2	7.8	7.8	7.8	8.3	8.4	8.1				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	270	281	284	1776	1859	1871				
2	295	291	295	1733	1831	1841				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	~~7.9~~ 7.7	7.7	7.7				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	21	21	21				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	8	10	9	8	10	9				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar wed D1 Jar(s) mortality 7 days prior to test (must be ≤25%) 10 %

QA (previous month)
Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 31
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 10

Sample

DO (mg/L) of sample prior to aeration: 9.3
Temperature (°C) of sample prior to aeration: 22
DO % of sample prior to aeration: 20 min ↑
Is aeration required (<40% or >100%)? **(Yes) or No**
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 1232
Filtered with 110um screen prior to testing **Yes or No**
Hardness (mg $CaCO_3$/L) of 100% : 1154
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or (No)**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 366

Dilution Water
Pail label / preparation date 22/06/15
Hardness of dilution water (mg/L) 81

Antiscalant
Final Concentration in Sample: 5mg/L
Volume of sample: 500mL Volume of antiscalant: 39.5 mL

Comments/Observations:
0 HR no ppt
48 HR Surficial ppt

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Reviewed By: EV Date Reviewed: 2022/06/24

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC164 Reference 2122-2579-05

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/06/20	1440	EP/DM	2	AE
1	2022/06/21	0900	AI/DM	-	CC
2	2022/06/22	0920	AI/DM	2	AE

Sample Information

Initial pH: 7.9
Initial EC (µS/cm): 244
Salinity (ppt): 0

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	7.7	7.7	7.7	7.7	7.6	7.6				
2	8.3	8.0	7.9	7.9	7.9	7.9				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	278	281	281	204	199	198				
2	359	295	287	205	202	201				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.7	7.7	7.7	7.7	7.7	7.7				
2	7.9	7.9	7.9	7.9	7.9	7.7				

Temperature (°C) (range: **18-22 °C**)

0	21	21	21	21	21	21				
2	20	20	20	20	20	21				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar Wed 04 — Jar(s) mortality 7 days prior to test (must be ≤25%) 22.1

QA (previous month)
Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 31
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0

Sample
DO (mg/L) of sample prior to aeration: 7.7 — Temperature (°C) of sample prior to aeration: 21
DO % of sample prior to aeration: 100 — Is aeration required (<40% or >100%)? **Yes or (No)**
Duration of aeration (37.5 +/- 12.5 mL/min/L) : — — Filtered with 110um screen prior to testing **Yes or (No)**
Hardness (mg $CaCO_3$/L) of 100% : 77 — Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or (No)**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 102

Dilution Water
Pail label / preparation date 2:06/15
Hardness of dilution water (mg/L) 81

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Comments/Observations:
0 HR no ppt
48 HR no ppt

Reviewed By: EV Date Reviewed: 2022/06/24

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC 164 Reference 2122-2579-05

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/06/20	1435	FB/DM	2	PE
1	2022/06/21	830	DM	-	CC
2	2022/06/22	940	AH/DM	2	PE

Sample Information

Initial pH:	7.9
Initial EC (µS/cm):	244
Salinity (ppt):	0

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	7.8	7.7	7.7	7.6	7.6	7.6				
2	8.0	7.9	7.9	8.0	8.0	8.0				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below EV

EC (uS/cm)

0	282	280	283	207	200	201				
2	302	288	286	207	202	202				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar wed C4 Jar(s) mortality 7 days prior to test (must be ≤25%) 5%

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 42
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 9.4
DO % of sample prior to aeration: 100
Duration of aeration (37.5 +/- 12.5 mL/min/L) : -
Hardness (mg $CaCO_3$/L) of 100% : 77
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) -
Alkalinity of 100% sample (mg $CaCO_3$/L): 102

Temperature (°C) of sample prior to aeration: 12
Is aeration required (<40% or >100%)? **Yes or (No)**
Filtered with 110um screen prior to testing **Yes or (No)**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or (No)**

Dilution Water
Pail label / preparation date 2:06/15
Hardness of dilution water (mg/L) 81

DO Levels (40-100% saturation) - corrected for altitude -
4.1 to 10.3 mg/L at 8°C
4.0 to 10.0 mg/L at 9°C
3.9 to 9.8 mg/L at 10°C
3.8 to 9.6 mg/L at 11°C
3.7 to 9.4 mg/L at 12°C

Comments/Observations:
0HR no ppt
48HR no ppt

Reviewed By: EV Date Reviewed: 2022/06/24

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS 5 Client TEC 164 Reference 2122-2579-06

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/06/20	1455	EP/DM	2	AE
1	2022/06/21	0930	DM	-	CC
2	2022/06/22	0930	AL/DM	12 AE	AE

Sample Information

Initial pH:	7.9
Initial EC (µS/cm):	244
Salinity (ppt):	0

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	7.6	7.6	7.6	7.6	7.6	7.6				
2	7.7	7.7	7.7	7.8	7.8	7.9				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	264	279	283	208	204	203				
2	281	285	286	209	207	206				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.7	7.7	7.7	7.7	7.7	7.7				
2	7.9	7.7	7.9	7.7	7.7	7.7				

Temperature (°C) (range: **18-22 °C**)

0	21	21	21	21	21	21				
2	20	21	20	21	21	21				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar wed D4 Jar(s) mortality 7 days prior to test (must be ≤25%) 22 %

QA (previous month)

Days to first brood (≤12 days) 7

Average number of young produced (≥15 young) 31

Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - (must be ≤10%) 0

Sample

DO (mg/L) of sample prior to aeration: 7.7 Temperature (°C) of sample prior to aeration: 21

DO % of sample prior to aeration: 100 Is aeration required (<40% or >100%)? **Yes or (No)**

Duration of aeration (37.5 +/- 12.5 mL/min/L) : — Filtered with 110um screen prior to testing **Yes or (No)**

Hardness (mg $CaCO_3$/L) of 100% : ~~204~~ EP 77 Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or (No)**

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —

Alkalinity of 100% sample (mg $CaCO_3$/L): ~~102~~ EP 102

Dilution Water

Pail label / preparation date 2:06/15

Hardness of dilution water (mg/L) 81

Antiscalant

Final Concentration in Sample: 5mg/L

Volume of sample: 500mL Volume of antiscalant: 39.5µL

Comments/Observations:

0 HR no ppt

48 HR no ppt

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Reviewed By: EV Date Reviewed: 2022/06/24

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC164 Reference 2122-2579-07

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/06/20	1440	EP/DM	2	AE
1	2022/06/21	0900	AI/DM	-	CC
2	2022/06/22	0930	AI/DM	2	AE

Sample Information

Initial pH: 8.0
Initial EC (µS/cm): 597
Salinity (ppt): 0

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	7.6	7.6	7.6	7.8	7.8	7.8				
2	7.7	7.8	7.8	8.1	8.2	8.1				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	266	279	282	535	549	548				
2	280	290	289	539	552	548				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.7	7.7	7.7	7.7	7.7	7.7				
2	7.9	7.9	7.9	7.9	7.7	7.7				

Temperature (°C) (range: **18-22 °C**)

0	21	21	21	21	21	21				
2	20	20	20	20	21	21				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar wed C2 Jar(s) mortality 7 days prior to test (must be ≤25%) 0 %.

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 42
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0

Sample
DO (mg/L) of sample prior to aeration: 7.9
DO % of sample prior to aeration: 100
Duration of aeration (37.5 +/- 12.5 mL/min/L) : —
Hardness (mg $CaCO_3$/L) of 100% : 256
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 159

Temperature (°C) of sample prior to aeration: 20
Is aeration required (<40% or >100%)? Yes or (No)
Filtered with 110um screen prior to testing Yes or (No)
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)

Dilution Water
Pail label / preparation date 2:06/15
Hardness of dilution water (mg/L) 81

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Comments/Observations:
0 HR no ppt
48 HR no ppt

Reviewed By: EV Date Reviewed: 2022/06/24

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC 164 Reference 2122-2579-07

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/06/20	1500	EP/DM	2	AE
1	2022/06/21	830	DM	-	CC
2	2022/06/22	940	AI/DM	2	AE

Sample Information

Initial pH: 8.0
Initial EC (µS/cm): 597
Salinity (ppt): 0

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	7.6	7.6	7.6	7.8	7.8	7.8				
2	7.7	7.8	7.8	8.2	8.2	8.2				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	271	281	282	535	552	554				
2	275	284	285	540	556	557				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	~~9.4~~ AI 9.6				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	~~12~~ 11 AI				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar wed C4 Jar(s) mortality 7 days prior to test (must be ≤25%) 5%

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 42
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 9.4
DO % of sample prior to aeration: 100
Duration of aeration (37.5 +/- 12.5 mL/min/L) : —
Hardness (mg $CaCO_3$/L) of 100% : 256
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 159

Temperature (°C) of sample prior to aeration: 12
Is aeration required (<40% or >100%)? Yes or (No)
Filtered with 110um screen prior to testing Yes or (No)
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)

Dilution Water
Pail label / preparation date 2:06/15
Hardness of dilution water (mg/L) 81

DO Levels (40-100% saturation) - corrected for altitude -
4.1 to 10.3 mg/L at 8°C
4.0 to 10.0 mg/L at 9°C
3.9 to 9.8 mg/L at 10°C
3.8 to 9.6 mg/L at 11°C
3.7 to 9.4 mg/L at 12°C

Comments/Observations:
0HR no ppt
48HR no ppt

Reviewed By: EV Date Reviewed: 2022/06/24

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS 5 Client TEC 164 Reference 2122-2579-08

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/06/20	1510	EP/DM	2	AK
1	2022/06/21	0900	DM	-	CC
2	2022/06/22	0935	AI/DM	2	AK

Sample Information

Initial pH: 8.0
Initial EC (µS/cm): 597
Salinity (ppt): 0

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	7.6	7.6	7.6	7.8	7.8	7.8				
2	7.7	7.7	7.7	8.0	8.1	8.1				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	273	281	283	512	526	528				
2	274	286	287	517	527	532				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.7	7.7	7.7	7.7	7.7	7.7				
2	7.7	7.7	7.7	7.7	7.7	7.7				

Temperature (°C) (range: **18-22 °C**)

0	21	21	21	21	21	21				
2	21	21	21	21	21	21				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar used C3/C4 Jar(s) mortality 7 days prior to test (must be ≤25%) 3%

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 42
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0

Sample
DO (mg/L) of sample prior to aeration: 7.7
Temperature (°C) of sample prior to aeration: 21
DO % of sample prior to aeration: 100
Is aeration required (<40% or >100%)? **Yes or (No)**
Duration of aeration (37.5 +/- 12.5 mL/min/L) : -
Filtered with 110um screen prior to testing **Yes or (No)**
Hardness (mg $CaCO_3$/L) of 100% : 256
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or (No)**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) -
Alkalinity of 100% sample (mg $CaCO_3$/L): 159

Dilution Water
Pail label / preparation date 2:06/15
Hardness of dilution water (mg/L) 81

Antiscalant
Final Concentration in Sample: 5mg/L
Volume of sample: 500mL Volume of antiscalant: 39.5µL

Comments/Observations:
0 HR no ppt
48 HR no ppt

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Reviewed By: EV Date Reviewed: 2022/06/24

APPENDIX C – Chain-of-custody form

Teck

COC ID: EVO NAUTILUS June 16 2022 | TURNAROUND TIME: | RUSH:

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name / Job#	Elkview Operations			Lab Name	Nautilus Environmental - BC			Report Format / Distribution		Excel	PDF	EDD
Project Manager	Group 1; Brett Mason			Lab Contact				Email 1:	Cole.Macgregor@teck.com	X	X	X
Email	Brett.Mason@teck.com			Email	jacklyn@nautilusenvironmental.ca			Email 2:	teckcoal@equisonline.com			X
Address	RR1 HWY 3			Address	10823 27th Street SE			Email 3:	DL-EVO-SRF-LAB@teck.com	X	X	X
								Email 4:				
City	Sparwood	Province	BC	City	Calgary	Province	AB	Email 5:				
								Email 6:				
								Email 7:				
								Email 8:				
								Email 9:				
								Email 10:				
								Email 11:				
								Email 12:				
								Email 13:				
Postal Code	V0B 2G0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada					
Phone Number	250-425-6179			Phone Number	403-253-7121			PO number	00822027			

SAMPLE DETAILS — **ANALYSIS REQUESTED** (Filtered - F: Field, L: Lab, FL: Field & Lab, N: None)

12 x 20L Carboys, 8 x 10L carboys, 20 x 1L bottles
2022/06/17
10:00
SRS/RM
No5 No I
Good condition
Manitoulin

Sample ID 2122-2570	Sample Location (sys_loc_code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	FIL	PRESERV	ANALYSIS: 48hr Daphnia Magna Single Concentration Acute Toxicity 20C	48hr Daphnia Magna Single Concentration Acute Toxicity 10C	48hr Daphnia Magna Single Concentration Acute Toxicity Anitscelent	96hr Rainbow Trout Single Concentration Acute Toxicity (20 L Bladder)	96hr Rainbow Trout Single Concentration Acute Toxicity (10 L Bladder)	48hr Daphnia Magna Single Concentration Toxicity 15C
-01 EV_EC1_WS_2022-06-16_N-SRF	EV_EC1	WS		2022/06/16	7:30	G	8			2	2		4	13.4°C	
-02 EV_EC1_WS_2022-06-16_N-SRF-AS	EV_EC1	WS		2022/06/16	7:31	G	1					1		14.9°C	
-03 EV_ECOUT_WS_2022-06-16_N-SRF	EV_ECOUT	WS		2022/06/16	10:10	G	8			2	2		4	11.7°C	
-04 EV_ECOUT_WS_2022-06-16_N-SRF-AS	EV_ECOUT	WS		2022/06/16	10:11	G	1					1		15.2°C	
-05 EV_MC3_WS_2022-06-16_N-SRF	EV_MC3	WS		2022/06/16	8:40	G	8			2	2		4	12.7°C	
-06 EV_MC3_WS_2022-06-16_N-SRF-AS	EV_MC3	WS		2022/06/16	8:41	G	1					1		15.4°C	
-07 EV_MCDSEC_WS_2022-06-16_N-SRF	EV_MCDSEC	WS		2022/06/16	7:40	G	12			2	2			8 14.8°C	
-08 EV_MCDSEC_WS_2022-06-16_N-SRF-AS	EV_MCDSEC	WS		2022/06/16	7:41	G	1					1		13.4°C	

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME
Field Temperatures ECOUT: 5.5	Am Livingston - TECK 1400.	June 16, 2022		

SERVICE REQUEST (rush - subject to availability)				
Regular (default) X	Sampler's Name	Am Bn	Mobile #	
Priority (2-3 business days) - 50% surcharge				
Emergency (1 Business Day) - 100% surcharge	Sampler's Signature		Date/Time	June 16, 2022
For Emergency <1 Day, ASAP or Weekend - Contact ALS				

END OF REPORT

Acute Toxicity Test Results

Samples collected June 20, 2022

Final Report

July 27, 2022

Submitted to: **Teck Coal Ltd.**
Sparwood, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates					
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation	*Daphnia magna* antiscalant test initiation
EV_EC1_WS_2022-06-20_N-SRF/ 2122-2620-01	20-Jun-22 at 1010h	21-Jun-22 at 0930h	21-Jun-22 at 1510h	22-Jun-22 at 1630h	22-Jun-22 at 1630h	-
EV_EC1_WS_2022-06-20_N-SRF-AS/ 2122-2620-02	20-Jun-22 at 1011h	21-Jun-22 at 0930h	-	-	-	22-Jun-22 at 1635h
EV_ECOUT_WS_2022-06-20_N-SRF/ 2122-2620-03	20-Jun-22 at 1315h	21-Jun-22 at 0930h	21-Jun-22 at 1515h	22-Jun-22 at 1620h	22-Jun-22 at 1650h	-
EV_ECOUT_WS_2022-06-20_N-SRF-AS/ 2122-2620-04	20-Jun-22 at 1316h	21-Jun-22 at 0930h	-	-	-	22-Jun-22 at 1640h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
EV_EC1_WS_2022-06-20_N-SRF	11.0°C	1136	350
EV_EC1_WS_2022-06-20_N-SRF-AS	9.8°C	1136	350
EV_ECOUT_WS_2022-06-20_N-SRF	12.1°C	1150	422
EV_ECOUT_WS_2022-06-20_N-SRF-AS	8.6°C	1150	422

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)
- *Daphnia magna* 48-h single concentration screening test (conducted with 5 mg/L antiscalant)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample			
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
EV_EC1_WS_2022-06-20_N-SRF	100	100	100	-
EV_EC1_WS_2022-06-20_N-SRF-AS	-	-	-	100
EV_ECOUT_WS_2022-06-20_N-SRF	100	100	100	-
EV_ECOUT_WS_2022-06-20_N-SRF-AS	-	-	-	100

Sample ID	Percent Immobility in 100 (% v/v)		
	Daphnia magna 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
EV_EC1_WS_2022-06-20_N-SRF	0	7	-
EV_EC1_WS_2022-06-20_N-SRF-AS	-	-	0
EV_ECOUT_WS_2022-06-20_N-SRF	7	7	-
EV_ECOUT_WS_2022-06-20_N-SRF-AS	-	-	0

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
EV_EC1_WS_2022-06-20_N-SRF	Rainbow trout	Precipitate observed on the test vessel	None
	Daphnia magna	Surficial precipitate observed	None
EV_EC1_WS_2022-06-20_N-SRF-AS	*Daphnia magna*	None	None
EV_ECOUT_WS_2022-06-20_N-SRF	Rainbow trout	Precipitate observed on the test vessel	None
	Daphnia magna	Surficial precipitate observed	Precipitate observed on carapace in the 20-degree test
EV_ECOUT_WS_2022-06-20_N-SRF-AS	*Daphnia magna*	Surficial precipitate observed	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	3.5 (3.1 - 4.0) g/L KCl[1]	5.6 (5.1 - 6.0) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.4 (2.6 - 4.4) g/L KCl	6.4 (5.4-7.6) g/L NaCl
Reference toxicant CV	8.7%	5.7%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, June 20, 2022; [2] Test Date June 17, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation



Report By:
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This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	Moderately-hard reconstituted water supplemented with B12 (2 µg/L)
Control/dilution water for antiscalant test	Moderately-hard reconstituted water supplemented with B12 (2 µg/L) and 5 mg/L antiscalant
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	Moderately-hard reconstituted water supplemented with B12 (2 µg/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC 164 Reference 2122-2620-01 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022-06-21	1510 *	KO/ML/CW	1	AV
1	2022-06-22	0845	ML	-	EP
2	2022-06-23	0830	ML	-	CC
3	2022-06-24	0850	AM	-	MAF
4	2022-06-25	0956	NA	1	MAF

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 7.8
Initial EC (µS/cm): 1729
Salinity (ppt): 2

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L (yes/no)

	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
Preaeration time					
DO(mg/L) of 100%	9.1	8.6			
Temp (°C) of 100%	16				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

KO

Conc.	CTL	100	~~100 AS~~					
pH (units) (range: **5.5-8.5**)								
Day 0	8.1	8.1						
Day 4	8.2	8.2						
EC (uS/cm)								
Day 0	373	1751						
Day 4	413	1592						
DO (mg/L) (**70-100% saturation at test temp.**)								
Day 0	8.8	8.6						
Day 4	8.8	8.9						
Temperature (°C) (range: **14-16°C**)								
Day 0	15	16						
Day 4	15	15						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.3	0.5
2	3.2	0.3
3	3.0	0.3
4	3.0	0.2
5	3.2	0.3
6	3.1	0.3
7	3.0	0.3
8	3.0	0.3
9	3.2	0.4
10	3.2	0.3

Loading Density (g/L): 0.2 (must be ≤0.5 g/L)
Mean Length (cm): 3.1
Length Range (cm): 3.0-3.3
Mean Weight (g): 0.3 (Must be ≥0.3g)
Weight Range: (g): 0.2-0.5

Test Organism Information

Batch 20220506TR
Source Trout Lodge
Tank # 4
Days Held at 15± 2°C 23 (must be ≥14 days)
Percent stock mortality 0.1 (7 days prior to test, must be <2%)
Test Volume (L) 18

Comments :
96h: ppt on bottom/sides of tank

Reviewed By: EV Date Reviewed: 2022/06/29

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC 164 Reference 2122-2620-03 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022-06-21	1515 *	KO/ML/CW	1	AF
1	2022-06-22	0845	ML	-	EP
2	2022-06-23	0845	ML	-	CC
3	2022-06-24	0850	AM	-	MAF
4	2022-06-25	0955	NA	1	MAF

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 7.5
Initial EC (µS/cm): 1859
Salinity (ppt): 3

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L : yes/no

	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
Preaeration time					
DO(mg/L) of 100%	9.4	8.6			
Temp (°C) of 100%	16				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

KC

Conc.	CTL	100	~~100 AS~~					
pH (units) (range: **5.5-8.5**)								
Day 0	8.1	7.9						
Day 4	8.1	8.2						
EC (uS/cm)								
Day 0	373	1858						
Day 4	384	1626						
DO (mg/L) (**70-100% saturation at test temp.**)								
Day 0	8.6	8.6						
Day 4	8.8	8.8						
Temperature (°C) (range: **14-16°C**)								
Day 0	16	16						
Day 4	15	15						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	MA 10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	2.6	0.2
2	3.1	0.3
3	3.1	0.3
4	3.5	0.5
5	3.4	0.4
6	3.3	0.4
7	3.5	0.5
8	3.0	0.2
9	3.0	0.3
10	3.2	0.4

Loading Density (g/L): 0.2 (must be ≤0.5 g/L)
Mean Length (cm): 3.2
Length Range (cm): 2.6-3.5
Mean Weight (g): 0.4 (Must be ≥0.3g)
Weight Range: (g): 0.2-0.5

Test Organism Information

Batch 20220506TR
Source Trout Lodge
Tank # 4
Days Held at 15± 2°C 23 (must be ≥14 days)
Percent stock mortality 0.1 (7 days prior to test, must be <2%)
Test Volume (L) 18

Comments :
96h: ppt on bottom/sides of tank

Reviewed By: EV Date Reviewed: 2022/06/29

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC 164 Reference 2122-2620-01

Test Log ch

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/06/21 22	1630	TM/AI	2	CC
1	2022/06/22 23	0730	AE	-	CC
2	2022/06/23 24	10:30	AI/DM	2	NA

Sample Information

Initial pH: 7.8
Initial EC (µS/cm): 1729
Salinity (ppt): 2

Lab Code	CTL A	CTL B	CTL C	100 A	100 B	100 C				
day				pH (units) (range: 6.0-8.5)						
0	7.4	7.6	7.6	7.9	7.9	8.0				
2	7.8	7.7	7.7	8.1	8.1	8.1				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

				EC (uS/cm)						
0	279	283	283	1741	1751	1765				
2	298	285	287	1635	1685	1731				

				DO (mg/L) (**40-100% saturation at test temp.**)						
0	7.7	7.7	7.7	7.7	7.7	7.7				
2	7.7	7.7	7.7	7.9	7.9	7.9				

				Temperature (°C) (range: **18-22 °C**)						
0	21	21	21	21	21	21				
2	21	21	21	20	20	20				

				Number Alive (I, immobile)						
0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	9*	10	10	10(1i)	10(1i)	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar wed E2 Jar(s) mortality 7 days prior to test (must be ≤25%) 11%

QA (previous month)
Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 33
Were test treatments randomized on test tray? Yes / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0

Sample
DO (mg/L) of sample prior to aeration: 8.4
Temperature (°C) of sample prior to aeration: 21
DO % of sample prior to aeration: 108
Is aeration required (<40% or >100%)? Yes or No
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20
Filtered with 110um screen prior to testing Yes or No
Hardness (mg $CaCO_3$/L) of 100% : 1136
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or No
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) -
Alkalinity of 100% sample (mg $CaCO_3$/L): 350

Dilution Water
Pail label / preparation date 2:06/15 (MHrn)
Hardness of dilution water (mg/L) 81
* CTL A: 1 stuck to jar: not mortality

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Comments/Observations:
0h: no ppt
48h: surficial ppt

Reviewed By: EV Date Reviewed: 2022/06/29

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC 164 Reference 2122-2620-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/06/21 22	1630	DM/KRM/AJ	2	CC
1	2022/06/22 23	0730	AE	-	CC
2	2022/06/23 24	1100	DM/AJ	2	NA

Sample Information

Initial pH: 7.8
Initial EC (µS/cm): 1729
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	8.0	8.0	8.0	8.1	8.1	8.1				
2	7.9	7.8	7.8	8.2	8.2	8.2				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	286	285	284	1695	1752	1759				
2	291	287	282	1616	1695	1720				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.84 AJ	9.54 AJ				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar Wed C2 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 6
Average number of young produced (≥15 young) 35
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0%

Sample

DO (mg/L) of sample prior to aeration: 8.4
Temperature (°C) of sample prior to aeration: 21
DO % of sample prior to aeration: 108
Is aeration required (<40% or >100%)? (Yes) or No
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20
Filtered with 110um screen prior to testing Yes or (No)
Hardness (mg $CaCO_3$/L) of 100% : 136
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 350

Dilution Water
Pail label / preparation date 2: 06/15 (MHRW)
Hardness of dilution water (mg/L) 81

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

Comments/Observations:
0h: NOPPT
48h: surficial ppt.

Reviewed By: EV Date Reviewed: 2022/06/29

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS 5 Client TEC 164 Reference 2122-2620-02

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/06/21 22	1635	AI / KTM	3	CL
1	2022/06/22 23	0730	AE	-	CL
2	2022/06/23 24	1030	DM	2	DA

Sample Information

Initial pH:	7-8
Initial EC (µS/cm):	1729
Salinity (ppt):	2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	7.8	7.8	7.8	8.1	8.1	8.1				
2	7.8	7.7	7.7	8.4	8.4	8.4				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	270	285	289	1689	1735	1753				
2	282	288	294	1711	1755	1760				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.9	7.7	7.7				
2	7.7	7.7	7.7	7.7	7.7	7.7				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	20	21	21				
2	21	21	21	21	21	21				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	*9	10	10	10	*9	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar Wed C4 Jar(s) mortality 7 days prior to test (must be ≤25%) 0

QA (previous month)

Days to first brood (≤12 days) 8

Average number of young produced (≥15 young) 35

Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - (must be ≤10%) 0%

Sample

DO (mg/L) of sample prior to aeration: 8.7 Temperature (°C) of sample prior to aeration: 21

DO % of sample prior to aeration: 111 Is aeration required (<40% or >100%)? **Yes or No**

Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20 Filtered with 110um screen prior to testing **Yes or No**

Hardness (mg $CaCO_3$/L) of 100% : 1136 Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) -

Alkalinity of 100% sample (mg $CaCO_3$/L): 350

Dilution Water

Pail label / preparation date 22/06/15 (MHRV)

Hardness of dilution water (mg/L) 81

Antiscalant

Final Concentration in Sample: 5mg/L

Volume of sample: 500mL Volume of antiscalant: 39.5mL

Comments/Observations:

0h: no ppt

48h: no ppt

*Moved to jar. exclude from mortality

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Reviewed By: EV Date Reviewed: 2022/06/29

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC 164 Reference 2122-2620-03

Test Log CM

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/06/21 22	1650	KM/AM	2	CL
1	2022/06/22 23	0730	AE	-	CC
2	2022/06/23 24	1030	DM	2	NA

Sample Information

Initial pH:	7.5
Initial EC (µS/cm):	1859
Salinity (ppt):	3

Lab Code	CTL A	CTL B	CTL C	100 A	100 B	100 C

pH (units) (range: 6.0-8.5)

day						
0	8.1	~~8.0~~ DM	8.0	8.0	8.1	8.1
2	7.8	7.7	7.6	8.0	8.0	8.0

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	271	222	280	1791	1846	1946
2	294	297	290	1654	1728	1732

DO (mg/L) (**40-100% saturation at test temp.**) 7.6

0	DM ~~9.4~~	7.6	7.6	7.6	7.6	7.6
2	7.9	7.4	7.9	7.4	7.9	7.4

Temperature (°C) (range: **18-22 °C**)

0	22	22	22	22	22	22
2	20	20	20	20	20	20

Number Alive (I, immobile)

0	10	10	10	10	10	10
1	10	10	10	10	10	10
2	10	10	10	10(1I)	10(1I)	10

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar Wed C2 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)

Days to first brood (≤12 days) 8

Average number of young produced (≥15 young) 35

Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - 0%

(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 9.8

Temperature (°C) of sample prior to aeration: 20

DO % of sample prior to aeration: 106

Is aeration required (<40% or >100%)? **Yes or No**

Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20

Filtered with 110um screen prior to testing **Yes or No**

Hardness (mg $CaCO_3$/L) of 100% : 1150

Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) -

Alkalinity of 100% sample (mg $CaCO_3$/L): 422

Dilution Water

Pail label / preparation date 2022/06/15

Hardness of dilution water (mg/L) 81

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Comments/Observations:

0h: NOPP

48h: Surficial ppt. Ppt on carapace

Reviewed By: EV Date Reviewed: 2022/06/29

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC 164 Reference 2122-2620-03

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/06/21 22	1620	DM/AI	2	CC
1	2022/06/22 23	0730	AE	-	CC
2	2022/06/23 24	11:30	AI/DM	2	NA

Sample Information

Initial pH: 7.5
Initial EC (µS/cm): 1859
Salinity (ppt): 3

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				
day				pH (units) (range: 6.0-8.5)						
0	7.6	7.7	7.7	7.8	7.8	7.8				
2	7.8	7.8	7.7	8.1	8.1	8.1				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

				EC (uS/cm)						
0	272	281	284	1849	1851	1882				
2	279	290	282	1762	1807	1834				

				DO (mg/L) (**40-100% saturation at test temp.**)						
	9.4	9.4	9.4							
0	~~7.7~~	~~7.7~~	~~7.7~~	9.4	9.4	9.4				
2	9.4	~~9.5~~ 9.4	~~9.5~~ 9.4	~~9.5~~ 9.4	~~9.5~~ 9.4	~~9.6~~ 9.4 DM				

				Temperature (°C) (range: **8-12 °C**)						
	12	12	12							
0	~~21~~	~~21~~	~~21~~	12	12	12				
2	12	12	12	12	12	12				

				Number Alive (I, immobile)						
0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10 (2i)	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar wedC3 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 35
Were test treatments randomized on test tray? Yes / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0

Sample
DO (mg/L) of sample prior to aeration: 9.8
Temperature (°C) of sample prior to aeration: 12
DO % of sample prior to aeration: 106
Is aeration required (<40% or >100%)? Yes or No
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20
Filtered with 110um screen prior to testing Yes or No
Hardness (mg $CaCO_3$/L) of 100% : 1150
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or No
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) -
Alkalinity of 100% sample (mg $CaCO_3$/L): 422

Dilution Water
Pail label / preparation date 2:06/15(MHRW)
Hardness of dilution water (mg/L) 81

DO Levels (40-100% saturation) - corrected for altitude -
4.1 to 10.3 mg/L at 8°C
4.0 to 10.0 mg/L at 9°C
3.9 to 9.8 mg/L at 10°C
3.8 to 9.6 mg/L at 11°C
3.7 to 9.4 mg/L at 12°C

Comments/Observations:
0h: no ppt
48h: surficial ppt

Reviewed By: EV Date Reviewed: 2022/06/29

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS 5 Client TEC 164 Reference 2122-2620-04

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/06/21 22	1640	DM/KTA/AL	2	CC
1	2022/06/22 23	0800	IC	-	CC
2	2022/06/23 24	1000	DM	2	NA

Sample Information

Initial pH: 7.5
Initial EC (µS/cm): 1859
Salinity (ppt): 3

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	7.9	7.9	7.9	8.1	8.1	8.1				
2	7.7	7.6	7.6	8.4	8.4	8.4				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	271	283	285	1782	1946	1855				
2	277	288	289	1764	1821	1827				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.6	7.6	7.6	7.6	7.6	7.6				
2	7.7	7.7	7.7	7.7	7.7	7.7				

Temperature (°C) (range: **18-22 °C**)

0	22	22	22	22	22	22				
2	21	21	21	21	21	21				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar Med CZ
Jar(s) mortality 7 days prior to test (must be ≤25%) 0%.

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 35
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0%

Sample
DO (mg/L) of sample prior to aeration: 8.5
DO % of sample prior to aeration: 109
Duration of aeration (37.5 +/- 12.5 mL/min/L): 20
Hardness (mg $CaCO_3$/L) of 100% : 1150
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 422

Temperature (°C) of sample prior to aeration: 21
Is aeration required (<40% or >100%)? **Yes or No**
Filtered with 110um screen prior to testing **Yes or** (No)
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Dilution Water
Pail label / preparation date 2:06/15
Hardness of dilution water (mg/L) 81

Antiscalant
Final Concentration in Sample: 5mg/L
Volume of sample: 500mL Volume of antiscalant: 39.5µL

Comments/Observations:
0h: No ppt
48h: Surficial ppt

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Reviewed By: EV Date Reviewed: 2022/06/29

APPENDIX C – Chain-of-custody form

Teck

COC ID: EVO NAUTILUS June 20 2022 | TURNAROUND TIME: | RUSH:

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO			
Facility Name / Job#	Elkview Operations			Lab Name	Nautilus Environmental - BC			Report Format / Distribution		Excel	PDF	EDD
Project Manager	Group 1; Brett Mason			Lab Contact				Email 1:	Cole.Macgregor@teck.com	X	X	X
Email	Brett.Mason@teck.com			Email	jacklyn@nautilusenvironmental.ca			Email 2:	teckcoal@equisonline.com			X
Address	RR1 HWY 3			Address	10823 27th Street SE			Email 3:	DL-EVO-SRF-LAB@teck.com	X	X	X
								Email 4:				
City	Sparwood	Province	BC	City	Calgary	Province	AB	Email 5:				
								Email 6:				
								Email 7:				
								Email 8:				
								Email 9:				
								Email 10:				
								Email 11:				
								Email 12:				
								Email 13:				
Postal Code	V0B 2G0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada					
Phone Number	250-425-6179			Phone Number	403-253-7121			PO number	00822027			

SAMPLE DETAILS | **ANALYSIS REQUESTED** | Filtered - F: Field, L: Lab, FL: Field & Lab, N: None

2022/06/21
09:30
Manitoulin
DC/SRS/RM 4x
8x 10L carboys, 20L carboys, 10x 1L bottles
NGS/NOL
Good Condition

Sample ID 2122-2620	Sample Location (sys loc code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	Filt.	Preserv.	48hr Daphnia Magna Single Concentration Acute Toxicity 20C	48hr Daphnia Magna Single Concentration Acute Toxicity 10C	48hr Daphnia Magna Single Concentration Acute Toxicity Anitscalent	96hr Rainbow Trout Single Concentration Acute Toxicity (20 L Bladder)	96hr Rainbow Trout Single Concentration Acute Toxicity (10 L Bladder)	48hr Daphnia Magna Single Concentration Toxicity 15C					
								ANALYSIS												
EV_EC1_WS_2022-06-20_N-SRF -01	EV_EC1	WS		2022/06/20	10:10	G	12			2	2			8	11.0°C					
EV_EC1_WS_2022-06-20_N-SRF-AS -02	EV_EC1	WS		2022/06/20	10:11	G	1					1			9.8°C					
EV_ECOUT_WS_2022-06-20_N-SRF -03	EV_ECOUT	WS		2022/06/20	13:15	G	8			2	2		4		12.1°C					
EV_ECOUT_WS_2022-06-20_N-SRF-AS -04	EV_ECOUT	WS		2022/06/20	13:16	G	1					1			8.6°C					

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME
Field Temperatures		June 20, 2022		
ECOUT:				

SERVICE REQUEST (rush - subject to availability)

Regular (default)	X
Priority (2-3 business days) - 50% surcharge	
Emergency (1 Business Day) - 100% surcharge	
For Emergency <1 Day, ASAP or Weekend - Contact ALS	

Sampler's Name	Ariana Lewis	Mobile #	
Sampler's Signature		Date/Time	June 20, 2022

END OF REPORT

Acute Toxicity Test Results

Samples collected June 20, 2022

Final Report

July 27, 2022

Submitted to: **Teck Coal Ltd.**
Sparwood, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates					
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation	*Daphnia magna* antiscalant test initiation
F2_BPO_WG_2022-06-20_N / 2122-2621-01	20-Jun-22 at 0800h	21-Jun-22 at 0930h	21-Jun-22 at 1520h	22-Jun-22 at 1420h	22-Jun-22 at 1445h	-
F2_BPO_WG_2022-06-20_N-AS / 2122-2621-02	20-Jun-22 at 0801h	21-Jun-22 at 0930h	-	-	-	22-Jun-22 at 1455h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
F2_BPO_WG_2022-06-20_N	11.9°C	1254	477
F2_BPO_WG_2022-06-20_N-AS	7.4°C	1254	477

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)
- *Daphnia magna* 48-h single concentration screening test (conducted with 20 mg/L antiscalant)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample			
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
F2_BPO_WG_2022-06-20_N	100	100	100	-
F2_BPO_WG_2022-06-20_N-AS	-	-	-	100

Sample ID	Percent Immobility in 100 (% v/v)		
	Daphnia magna 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
F2_BPO_WG_2022-06-20_N	0	3	-
F2_BPO_WG_2022-06-20_N-AS	-	-	0

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
F2_BPO_WG_2022-06-20_N	Rainbow trout	Precipitate observed on test vessel	None
	Daphnia magna	Surficial precipitate observed in 20-degree test	None
F2_BPO_WG_2022-06-20_N-AS	*Daphnia magna*	None	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	3.5 (3.1 - 4.0) g/L KCl[1]	5.7 (5.4-5.9) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.4 (2.6 - 4.4) g/L KCl	6.4 (5.4-7.6) g/L NaCl
Reference toxicant CV	8.7%	5.6%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, June 20, 2022; [2] Test Date June 28, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation



Report By:
Mia Fearey, BIT
Biologist



Reviewed By:
Leila Oosterbroek, P Biol
Environmental Scientist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	Moderately-hard reconstituted water supplemented with B12 (2 µg/L)
Control/dilution water for antiscalant test	Moderately-hard reconstituted water supplemented with B12 (2 µg/L) and 20 mg/L antiscalant
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	Moderately-hard reconstituted water supplemented with B12 (2 µg/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC 164 Reference 2122-2621-01 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022-06-21	1520 *	KO/ML/CW	1	AJ
1	2022-06-22	0845	ML	-	EP
2	2022-06-23	0845	ML	-	CC
3	2022-06-24	0850	AM	-	MAF
4	2022-06-25	0955	NA	1	MAF

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 7.4
Initial EC (µS/cm): 1933
Salinity (ppt): 2

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L : yes/no

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	8.6	8.6			
Temp (°C) of 100%	16				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

KO

Conc.	CTL	100	~~100 AS~~					
pH (units) (range: **5.5-8.5**)								
Day 0	7.7	7.8						
Day 4	8.1	8.3						
EC (uS/cm)								
Day 0	357	1940						
Day 4	368	1673						
DO (mg/L) (**70-100% saturation at test temp.**)								
Day 0	8.9	8.6						
Day 4	8.8	8.8						
Temperature (°C) (range: **14-16°C**)								
Day 0	15	16						
Day 4	15	15						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.5	0.4
2	2.8	0.2
3	3.2	0.3
4	3.4	0.4
5	3.0	0.2
6	3.0	0.3
7	3.2	0.4
8	3.3	0.4
9	3.4	0.4
10	3.0	0.3

Loading Density (g/L): 0.2 (must be ≤0.5 g/L)
Mean Length (cm): 3.2
Length Range (cm): 2.8-3.5
Mean Weight (g): 0.3 (Must be ≥0.3g)
Weight Range: (g): 0.2-0.4

Test Organism Information

Batch 20220506TR
Source Trout Lodge
Tank # 4
Days Held at 15± 2°C 23 (must be ≥14 days)
Percent stock mortality 0.1 (7 days prior to test, must be <2%)
Test Volume (L) 18

Comments :
96h: ppt on bottom / sides of tank

Reviewed By: EV Date Reviewed: 2022/06/29

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method: DAS 20 | Client: TEC 164 | Reference: 2122-2621-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/06/22	1445	CH/DM	2	DJ
1	2022/06/23	0750	IC	-	CC
2	2022/06/24	1025	AI/DM	2	NA

Sample Information

Initial pH: 7.4
Initial EC (µS/cm): 1933
Salinity (ppt): 1

Lab Code	CTL A	CTL B	CTL C	100 A	100 B	100 C

pH (units) (range: 6.0-8.5)

day	CTL A	CTL B	CTL C	100 A	100 B	100 C
0	7.9	7.9	7.8	8.0	8.0	8.0
2	7.6	7.5	7.6	8.3	8.3	8.3

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	285	284	283	1855	1923	1942
2	281	291	253	1812	1878	1906

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.7	7.7	7.7	7.7	7.7
2	7.9	7.9	7.9	7.9	7.9	7.9

Temperature (°C) (range: **18-22 °C**)

0	20	21	21	21	21	21
2	20	20	20	20	20	20

Number Alive (I, immobile)

0	10	10	10	10	10	10
1	10	10	10(1i)	10	10	10
2	10	9*	10(1i)	10	10(1I)	10

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar: WedE2 — Jar(s) mortality 7 days prior to test (must be ≤25%): 11%

QA (previous month)
Days to first brood (≤12 days): 7
Average number of young produced (≥15 young): 33
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%): 0

Sample
DO (mg/L) of sample prior to aeration: 8.4
DO % of sample prior to aeration: 106%
Duration of aeration (37.5 +/- 12.5 mL/min/L): 20m
Hardness (mg $CaCO_3$/L) of 100% : 1254
Temperature (°C) of sample prior to aeration: 20
Is aeration required (<40% or >100%)? **Yes or No**
Filtered with 110um screen prior to testing **Yes or No**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L): —
Alkalinity of 100% sample (mg $CaCO_3$/L): 477

Dilution Water
Pail label / preparation date: D2:0615(MH2W)
Hardness of dilution water (mg/L): 61

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

*CTL B: 1 stuck to jar : Do not include in mortality

Comments/Observations:
0h: NO PPE
48h: Surfacial ppt

Reviewed By: EV — Date Reviewed: 2022/06/29

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC 164 Reference 2122-2621-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/06/22	1420	CH/DM	2	RW
1	2022/06/23	0745	LC	-	EC
2	2022/06/24	1125	AH/DM	2	NA

Sample Information

Initial pH: 7.4
Initial EC (µS/cm): 1939
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	7.9	7.9	7.9	7.5	7.5	7.5				
2	7.9	7.8	7.8	8.4	8.4	8.4				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	283	283	284	1888	1972	1979				
2	282	285	286	1813	1933	1942				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.3	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar Wed CA — Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 35
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 8.9
DO % of sample prior to aeration: 95%
Duration of aeration (37.5 +/- 12.5 mL/min/L) : —
Hardness (mg $CaCO_3$/L) of 100% : 175.4
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 177

Temperature (°C) of sample prior to aeration: 12
Is aeration required (<40% or >100%)? Yes or (No)
Filtered with 110um screen prior to testing Yes or (No)
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)

Dilution Water
Pail label / preparation date D2: 06115(MHRW)
Hardness of dilution water (mg/L) 81

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

Comments/Observations:
0 hr: NO PPT
48 hr: no ppt

Reviewed By: EV Date Reviewed: 2022/06/29

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS 20 Client TEC164 Reference 2122-2621-02

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/06/22	1455	CH/DM	2	AW
1	2022/06/23	0759	IC	-	CC
2	2022/06/24	0940	AM/DM	2	NA

Sample Information

Initial pH: 7.4
Initial EC (µS/cm): 1933
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	7.9	7.8	7.8	7.6	7.7	7.7				
2	7.5	7.6	7.6	8.3	8.4	8.4				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (µS/cm)

0	277	286	286	1898	1961	1973				
2	285	295	296	1845	1946	1943				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.7	7.7	7.7				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	21	21	21				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar Wed C1 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 35
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0

Sample
DO (mg/L) of sample prior to aeration: 7.7
DO % of sample prior to aeration: 100%
Duration of aeration (37.5 +/- 12.5 mL/min/L): —
Hardness (mg $CaCO_3$/L) of 100% : 1254
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 477

Temperature (°C) of sample prior to aeration: 21
Is aeration required (<40% or >100%)? **Yes or No**
Filtered with 110um screen prior to testing **Yes or No**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Dilution Water
Pail label / preparation date D2:06115(MH/RW)
Hardness of dilution water (mg/L) 31

Antiscalant
Final Concentration in Sample: 20mg/L
Volume of sample: 500mL Volume of antiscalant: 158µL

Comments/Observations:
0hr: NO PPT
48hr: no ppt

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Reviewed By: EV Date Reviewed: 2022/06/29

APPENDIX C – Chain-of-custody form

Teck

COC ID: F2 NAUTILUS June 20 2022 | **TURNAROUND TIME:** | **RUSH:**

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO			
Facility Name / Job#	F2 SRF			Lab Name	Nautilus Environmental - BC			Report Format / Distribution	Excel	PDF	EDD
Project Manager	BRETT MASON			Lab Contact				Email 1: Cole.Macgregor@teck.com	X	X	X
Email	BRETT.MASON@TECK.COM			Email	jacklyn@nautilusenvironmental.ca			Email 1: teckcoal@equisonline.com			X
Address	RR1 HWY 3			Address	10823 27th Street SE			Email 2: DL-EVO-SRF-LAB@teck.com	X	X	X
								Email 3:			
City	Sparwood	Province	BC	City	Calgary	Province	AB	Email 4:			
								Email 5:			
								Email 6:			
								Email 7:			
								Email 8:			
								Email 10:			
								Email 11:			
								Email 12:			
								Email 13:			
Postal Code	V0B 2G0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada				
Phone Number	250-425-6179			Phone Number	403-253-7121			PO number	00822027		

SAMPLE DETAILS | **ANALYSIS REQUESTED** | Filtered - F: Field, L: Lab, FL: Field & Lab, N: None

2022/06/21
09:30
Manitoulin
JC/SAS/RM
4x20L carboys, 5x1L bottles
NoS/NoL
Good Condition

Sample ID	Sample Location (sys_loc_code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	Fil.	ANALYSIS: 48hr Daphnia Magna Single Concentration Acute Toxicity 20C	48hr Daphnia Magna Single Concentration Acute Toxicity 10C	48hr Daphnia Magna Single Concentration Acute Toxicity Anitscalent	96hr Rainbow Trout Single Concentration Acute Toxicity (20L Bladders)	48hr Daphnia Magna Single Concentration Toxicity 15C
F2_BPO_WG_2022-06-20_N -01	F2_BPO	WG		2022/06/20	8:00	G	8		2	2		4	11.9°C
F2_BPO_WG_2022-06-20_N-AS -02	F2_BPO	WG		2022/06/20	8:01	G	1				1		7.4°C

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME
		June 20, 2022		

SERVICE REQUEST (rush - subject to availability)

Regular (default)	X
Priority (2-3 business days) - 50% surcharge	
Emergency (1 Business Day) - 100% surcharge	
For Emergency <1 Day, ASAP or Weekend - Contact ALS	

Sampler's Name	Ariana Lewis	Mobile #	
Sampler's Signature		Date/Time	June 20, 2022

END OF REPORT

Acute Toxicity Test Results

Samples collected June 21, 2022

Final Report

July 29, 2022

Submitted to: **Teck Coal Ltd.**
Sparwood, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates						
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 15˚C test initiation	*Daphnia magna* 20˚C test initiation	*Daphnia magna* antiscalant test initiation
EV_GT1_WS_2022-06-21_N_SRF / 2122-2642-01	21-Jun-22 at 1010h	22-Jun-22 at 0900h	24-Jun-22 at 1515h	23-Jun-22 at 1445h	-	23-Jun-22 at 1440h	-
EV_BC1_WS_2022-06-21_N_SRF / 2122-2642-02	21-Jun-22 at 1140h	22-Jun-22 at 0900h	24-Jun-22 at 1515h	23-Jun-22 at 1435h	23-Jun-22 at 1450h	23-Jun-22 at 1430h	-
EV_BC1_WS_2022-06-21_N_SRF-AS / 2122-2642-03	21-Jun-22 at 1141h	22-Jun-22 at 0900h	-	-	-	-	23-Jun-22 at 1445h
EV_GT1_WS_2022-06-21_N_SRF-AS/ 2122-2642-04	21-Jun-22 at 1011h	22-Jun-22 at 0900h	-	-	-	-	23-Jun-22 at 1455h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
EV_GT1_WS_2022-06-21_N_SRF	10.8°C	1206	329
EV_BC1_WS_2022-06-21_N_SRF	13.7°C	1141	325
EV_BC1_WS_2022-06-21_N_SRF-AS	13.3°C	1141	325
EV_GT1_WS_2022-06-21_N_SRF-AS	10.1°C	1206	329

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)
- *Daphnia magna* 48-h single concentration screening test (conducted at 15°C)
- *Daphnia magna* 48-h single concentration screening test (conducted with 5 mg/L antiscalant

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample				
	Rainbow trout	***Daphnia magna* 10˚C**	***Daphnia magna* 15˚C**	***Daphnia magna* 20˚C**	***Daphnia magna* antiscalant**
EV_GT1_WS_2022-06-21_N_SRF	100	100	-	100	-
EV_BC1_WS_2022-06-21_N_SRF	100	100	100	100	-
EV_BC1_WS_2022-06-21_N_SRF-AS	-	-	-	-	100
EV_GT1_WS_2022-06-21_N_SRF-AS	-	-	-	-	100

Sample ID	Percent Immobility in 100 (% v/v)			
	***Daphnia magna* 10˚C**	***Daphnia magna* 15˚C**	***Daphnia magna* 20˚C**	***Daphnia magna* antiscalant**
EV_GT1_WS_2022-06-21_N_SRF	0	-	0	-
EV_BC1_WS_2022-06-21_N_SRF	0	0	10	-
EV_BC1_WS_2022-06-21_N_SRF-AS	-	-	-	0
EV_GT1_WS_2022-06-21_N_SRF-AS	-	-	-	0

Precipitate observations

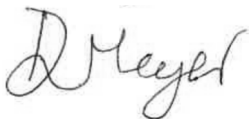
Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
EV_GT1_WS_2022-06-21_N_SRF	Rainbow trout	Precipitate observed on the bottom of test vessel	None
	Daphnia magna	Precipitate observed on the test vessel in the 10-degree test; surficial precipitate observed	None
EV_BC1_WS_2022-06-21_N_SRF	Rainbow trout	Precipitate observed on the bottom of test vessel	None
	Daphnia magna	Precipitate observed on the test vessels; surficial precipitate observed	None
EV_BC1_WS_2022-06-21_N_SRF-AS	*Daphnia magna*	None	None
EV_GT1_WS_2022-06-21_N_SRF-AS	*Daphnia magna*	None	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	3.5 (3.1-4.0) g/L KCl[1]	5.7 (5.4-5.9) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.4 (2.6-4.4) g/L KCl	6.4 (5.4-7.6) g/L NaCl
Reference toxicant CV	8.7%	5.6%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, June 20, 2022; [2] Test Date June 28, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation



Report By:
Daisy Meyer, BSc
Laboratory Biologist



Reviewed By:
Jacklyn Poole, BSc
Laboratory and Quality Manager

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	Moderately-hard reconstituted water supplemented with B12 (2 µg/L)
Control/dilution water for antiscalant test	Moderately-hard reconstituted water supplemented with B12 (2 µg/L) and 5 mg/L antiscalant
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	Moderately-hard reconstituted water supplemented with B12 (2 µg/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 4. Summary of test conditions: 48-h *Daphnia magna* survival test at 15˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	Moderately-hard reconstituted water supplemented with B12 (2 µg/L)
Test solution renewal	None
Test temperature	15 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC164 Reference 2122-2642-01 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022-06-24	1515 *	KO / ML	1	NA
1	2022-06-25	0830	NA	-	MAF
2	2022-06-26	0745	ML	-	AW
3	2022-06-27	1000	EP	-	MM
4	2022-06-28	1105	CC/KM	1	KO

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 8.2
Initial EC (µS/cm): 1768
Salinity (ppt): 2

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L (yes/no)

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	8.6	8.8			
Temp (°C) of 100%	16				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

	Conc.	CTL	100						
pH (units) (range: **5.5-8.5**)									
	Day 0	7.2	8.2						
	Day 4	8.0	8.2						
EC (uS/cm)									
	Day 0	355	1688						
	Day 4	349	1628						
DO (mg/L) (**70-100% saturation at test temp.**)									
	Day 0	8.8	8.8						
	Day 4	8.6	8.6						
Temperature (°C) (range: **14-16°C**)									
	Day 0	15	15						
	Day 4	16	16						
Number Alive (In brackets number stressed)									
	Day 0	10	10						
	Day 1	10	10						
	Day 2	10	10						
	Day 3	10	10						
	Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.1	0.3
2	3.2	0.3
3	3.2	0.3
4	3.3	0.3
5	2.4	0.1
6	3.2	0.3
7	3.0	0.3
8	3.6	0.5
9	3.3	0.4
10	2.9	0.3

Loading Density (g/L): 0.2 (must be ≤0.5 g/L)
Mean Length (cm): 3.1
Length Range (cm): 2.4-3.6
Mean Weight (g): 0.3 (Must be ≥0.3g)
Weight Range: (g): 0.1-0.5

Test Organism Information

Batch: 20220506TR
Source: Trout Lodge
Tank #: 3
Days Held at 15± 2°C: 26 (must be ≥14 days)
Percent stock mortality: 0.06 (7 days prior to test, must be <2%)
Test Volume (L): 18

Comments :
96 hrs ppt on bottom

Reviewed By: EV Date Reviewed: 2022/07/01

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC164 Reference 2122-2642-02 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022-06-24	1515 *	KD / ML	1	NA
1	2022-06-25	0830	NA	-	[illegible]
2	2022-06-26	0745	ML	-	AF
3	2022-06-27	0955	FD	-	WM
4	2022-06-28	1105	CC/Kerm	1	KD

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 7.9
Initial EC (µS/cm): 1338
Salinity (ppt): 0

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L : **yes/no**

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	8.6	8.9			
Temp (°C) of 100%	16				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	7.6	8.0						
Day 4	8.1	8.2						
EC (uS/cm)								
Day 0	393	1776						
Day 4	361	1707						
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	8.9	8.9						
Day 4	8.6	8.6						
Temperature (°C) (range: 14-16°C)								
Day 0	14	14						
Day 4	16	16						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.3	0.4
2	3.0	0.3
3	3.2	0.3
4	3.4	0.4
5	3.1	0.3
6	3.0	0.3
7	3.5	0.4
8	3.4	0.4
9	3.0	0.3
10	3.1	0.3

Loading Density (g/L): 0.2 (must be ≤0.5 g/L)
Mean Length (cm): 3.2
Length Range (cm): 3.0-3.5
Mean Weight (g): 0.3 (Must be ≥0.3g)
Weight Range: (g): 0.3-0.4

Test Organism Information

Batch 20220506TR
Source Trout Lodge
Tank # 3
Days Held at 15± 2°C 26 (must be ≥14 days)
Percent stock mortality 0.06 (7 days prior to test, must be <2%)
Test Volume (L) 18

Comments :
96 hrs ppt on bottom

Reviewed By: EV Date Reviewed: 2022/06/01 EV

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC 164 Reference 2122-2642-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/06/23	1440	CH/LC	2	EP
1	2022/06/24	845	AI	-	CC
2	2022/06/25	0915	LC	3	CH

Sample Information

Initial pH: 8.2
Initial EC (µS/cm): 1768
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	7.8	7.8	7.8	8.1	8.1	8.1				
2	7.7	7.7	7.7	8.1	8.1	8.1				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	278	284	284	1716	1794	1781				
2	276	289	286	1700	1711	1709				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.9	7.9	7.9				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	20	20	20				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar WRC D4 Jar(s) mortality 7 days prior to test (must be ≤25%) 11%

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 38
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0%
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 8.9
DO % of sample prior to aeration: 113%
Duration of aeration (37.5 +/- 12.5 mL/min/L): 20M
Hardness (mg $CaCO_3$/L) of 100% : 1206
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 329

Temperature (°C) of sample prior to aeration: 21
Is aeration required (<40% or >100%)? **Yes or No**
Filtered with 110um screen prior to testing **Yes or No**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Dilution Water
Pail label / preparation date D2: 06/15 (MHRW)
Hardness of dilution water (mg/L) 81

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Comments/Observations:
0HR: NO PPT
48HR: surficial PPT

Reviewed By: EV Date Reviewed: 2022/07/01

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC 164 Reference 2122-2642-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/06/23	1445	CH/LC	2	EP
1	2022/06/24	0915	AI	-	CC
2	2022/06/25	0905	CH	2	LL

Sample Information

Initial pH: 8.2
Initial EC (µS/cm): 1768
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	7.9	7.8	7.8	8.1	8.1	8.1				
2	7.3	7.4	7.5	8.1	8.2	8.2				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	277	284	284	1719	1783	1793				
2	284	288	296	1698	1782	1784				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar Wed C3 Jar(s) mortality 7 days prior to test (must be ≤25%) 5%

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 35
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 9.4 Temperature (°C) of sample prior to aeration: 12
DO % of sample prior to aeration: 100% Is aeration required (<40% or >100%)? Yes or (No)
Duration of aeration (37.5 +/- 12.5 mL/min/L) : — Filtered with 110um screen prior to testing Yes or (No)
Hardness (mg $CaCO_3$/L) of 100% : 1206 Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 329

Dilution Water
Pail label / preparation date D2: 06115 (MHRW)
Hardness of dilution water (mg/L) 81

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

Comments/Observations:
OHR; NO PPT
48HR; Slight surficial ppt, slight ppt on jar

Reviewed By: EV Date Reviewed: 2022/07/01

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC 164 Reference 2122-2642-02

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/06/23	1430	CH/LC	2	EP
1	2022/06/24	0845	AI	-	CC
2	2022/06/25	0830	CH	2	LC

Sample Information

Initial pH: 7.9
Initial EC (µS/cm): 1838
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	7.7	7.8	7.8	7.9	7.9	7.9				
2	7.9	7.8	7.8	8.0	8.1	8.1				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	271	282	283	1819	1874	1878				
2	279	287	292	1704	1782	1786				

DO (mg/L) (**40-100% saturation at test temp.**)

0	8.1	7.9	7.9	7.9	7.9	7.9				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	19	20	20	20	20	20				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10(1I)	10(2I)				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar Wed C3 Jar(s) mortality 7 days prior to test (must be ≤25%) 5%

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 35
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 8.5
Temperature (°C) of sample prior to aeration: 20
DO % of sample prior to aeration: 107%
Is aeration required (<40% or >100%)? **Yes or No**
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20m
Filtered with 110um screen prior to testing **Yes or No**
Hardness (mg $CaCO_3$/L) of 100% : 1141
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L)
Alkalinity of 100% sample (mg $CaCO_3$/L): 325

Dilution Water
Pail label / preparation date D2:06/15(MHRW)
Hardness of dilution water (mg/L) 81

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Comments/Observations:
DHR: NO PPt
48HR: surficial PPt, PPt on jar

Reviewed By: EV Date Reviewed: 2022/07/01

NAUTILUS ENVIRONMENTAL

Daphnia 15°C Bench Sheet

Method DAS 15 Client TEC 164 Reference 2122-2642-02

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/06/23	1450	CH/LC	2	EP
1	2022/06/24	845	AR/DM	-	EP
2	2022/06/25	0900	CH	2	LC

Sample Information

Initial pH: 7.9
Initial EC (µS/cm): 1838
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	7.8	7.8	7.8	7.8	7.9	7.9				
2	7.9	7.8	7.8	8.0	8.0	8.0				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	274	282	284	1822	1868	1876				
2	280	283	286	1744	1807	1829				

DO (mg/L) (**40-100% saturation at test temp.**)

0	8.4	8.4	8.4	8.4	8.4	8.4				
2	8.4	8.4	8.4	8.4	8.4	8.4				

Temperature (°C) (range: **13-17 °C**)

0	17	17	17	17	17	17				
2	17	17	17	17	17	17				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar Wed EA Jar(s) mortality 7 days prior to test (must be ≤25%) 6%

QA (previous month)
Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 34
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0

Sample
DO (mg/L) of sample prior to aeration: 9.1
DO % of sample prior to aeration: 100%
Duration of aeration (37.5 +/- 12.5 mL/min/L) : —
Hardness (mg $CaCO_3$/L) of 100% : 1141
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 325

Temperature (°C) of sample prior to aeration: 13
Is aeration required (<40% or >100%)? Yes or (No)
Filtered with 110um screen prior to testing Yes or (No)
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)

Dilution Water
Pail label / preparation date D2:06115(MHRW)
Hardness of dilution water (mg/L) 81

DO Levels (40-100% saturation) - corrected for altitude -
3.7 to 9.1 mg/L at 13°C
3.6 to 8.9 mg/L at 14°C
3.5 to 8.8 mg/L at 15°C
3.4 to 8.6 mg/L at 16°C
3.4 to 8.4 mg/L at 17°C

Comments/Observations:
0 Hr: NO PPT
48Hr: Surficial ppt, ppt on jar

Reviewed By: EV Date Reviewed: 2022/07/01

Daphnia 10°C Bench Sheet

NAUTILUS ENVIRONMENTAL

Method DAS 10 Client TEC 164 Reference 2122-2642-02

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/06/23	1435	CH/LC	2	EP
1	2022/06/24	0915	AI	-	CC
2	2022/06/25	0910	CH	2	LC

Sample Information

Initial pH: 7.9
Initial EC (µS/cm): 1838
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	7.9	7.9	7.8	8.0	8.0	8.0				
2	8.0	7.8	7.8	8.1	8.1	8.1				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	277	284	280	1799	1852	1856				
2	286	292	289	1736	1833	1844				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (l, immobile)

0	10	10	10	10	10	10				
1	*9	10	10	10	10	10				
2	9	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar Wed C4 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 35
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 9.4
DO % of sample prior to aeration: 100%
Duration of aeration (37.5 +/- 12.5 mL/min/L) : —
Hardness (mg $CaCO_3$/L) of 100% : 1141
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 325

Temperature (°C) of sample prior to aeration: 12
Is aeration required (<40% or >100%)? **Yes or (No)**
Filtered with 110um screen prior to testing **Yes or (No)**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or (No)**

Dilution Water
Pail label / preparation date D2: 0615 (MH/RW)
Hardness of dilution water (mg/L) 81

DO Levels (40-100% saturation) - corrected for altitude -
4.1 to 10.3 mg/L at 8°C
4.0 to 10.0 mg/L at 9°C
3.9 to 9.8 mg/L at 10°C
3.8 to 9.6 mg/L at 11°C
3.7 to 9.4 mg/L at 12°C

*CLA : 1 stuck to wall: do not count as mortality

Comments/Observations:
OHR: NO PPT
48HR: Surficial ppt, slight ppt on jar

Reviewed By: EV Date Reviewed: 2022/07/01

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS 5 Client TEC 164 Reference 2122-2642-03

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/06/23	1415	CH/LC	2	EP
1	2022/06/24	0930	AM	-	EC
2	2022/06/25	0830	CH	2	EC

Sample Information

Initial pH: 7.9
Initial EC (µS/cm): 1838
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	8.1	7.9	7.9	7.9	8.0	8.0				
2	7.9	7.8	7.7	8.3	8.3	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	292	296	297	1810	1859	1868				
2	301	301	302	1773	1824	1872				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	8.1	8.1	8.1				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	19	19	19				
2	20	20	20	20	20	20				

Number Alive (l, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar Wed D4 Jar(s) mortality 7 days prior to test (must be ≤25%) 11%

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 38
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0

Sample
DO (mg/L) of sample prior to aeration: 8.2
DO % of sample prior to aeration: 100%
Duration of aeration (37.5 +/- 12.5 mL/min/L) : —
Hardness (mg $CaCO_3$/L) of 100% : 1141
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 325

Temperature (°C) of sample prior to aeration: 18
Is aeration required (<40% or >100%)? **Yes or (No)**
Filtered with 110um screen prior to testing **Yes or (No)**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or (No)**

Dilution Water
Pail label / preparation date D2: 06/15 (MH/RW)
Hardness of dilution water (mg/L) 81

Antiscalant
Final Concentration in Sample: 5mg/L
Volume of sample: 500mL Volume of antiscalant: 39.5µL

Comments/Observations:
OHR: NO PPE
48HR: NO PPE

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Reviewed By: EV Date Reviewed: 2022/07/01

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS 5 Client TEC 164 Reference 2122-2642-04

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/06/23	1455	CH/LC	2	EP
1	2022/06/24	0950	AT	-	LC
2	2022/06/25	0835	CH	2	LC

Sample Information

Initial pH: 8.2
Initial EC (µS/cm): 1768
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	8.0	8.0	7.9	8.2	8.2	8.2				
2	7.7	7.7	7.7	8.3	8.3	8.4				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	296	301	301	1718	1773	1780				
2	362	308	307	1695	1742	1768				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.9	7.9	7.9				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	20	20	20				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar WedE4 Jar(s) mortality 7 days prior to test (must be ≤25%) 6%

QA (previous month)
Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 34
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0

Sample
DO (mg/L) of sample prior to aeration: 9.2
DO % of sample prior to aeration: 116%
Duration of aeration (37.5 +/- 12.5 mL/min/L): 20m
Hardness (mg $CaCO_3$/L) of 100% : 1206
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 329

Temperature (°C) of sample prior to aeration: 20
Is aeration required (<40% or >100%)? (Yes) or No
Filtered with 110um screen prior to testing **Yes or No**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or (No)**

Dilution Water
Pail label / preparation date D2:06/15(MHRW)
Hardness of dilution water (mg/L) 81

Antiscalant
Final Concentration in Sample: 5mg/L
Volume of sample: 500mL Volume of antiscalant: 39.5µL

Comments/Observations:
OHR: NO PPT
48HR: NO PPT

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Reviewed By: EV Date Reviewed: 2022/07/01

APPENDIX C – Chain-of-custody form

Teck

COC ID: EVO NAUTILUS June 21 2022 | **TURNAROUND TIME:** | **RUSH:**

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name / Job#	Elkview Operations			Lab Name	Nautilus Environmental - BC			Report Format / Distribution		Excel	PDF	EDD
Project Manager	Group 1; Brett Mason			Lab Contact				Email 1:	teckcoal@equisonline.com			X
Email	Brett.Mason@teck.com			Email	jacklyn@nautilusenvironmental.ca			Email 2:	DL-EVO-SRF-LAB@teck.com	X	X	X
Address	RR1 HWY 3			Address	10823 27th Street SE			Email 3:	[redacted]	X	X	X
								Email 4:				
City	Sparwood	Province	BC	City	Calgary	Province	AB	Email 5:				
								Email 6:				
								Email 7:				
								Email 8:				
								Email 9:				
								Email 10:				
								Email 11:				
								Email 12:				
								Email 13:				
Postal Code	V0B 2G0	Country	Canada	Postal Code	T2H 2K1	Country	Canada					
Phone Number	250-425-6179			Phone Number	T2Z 3V9			PO number	822027			

SAMPLE DETAILS — **ANALYSIS REQUESTED** — Filtered - F: Field, L: Lab, FL: Field & Lab, N: None

2022/06/22
09:00
Manitoulin
DC/BAS/RM
8x20L carboys, 11x1L bottles
NoS/NoI
Good Condition

Sample ID 2122-2642	Sample Location (sys_loc_code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	Filt.	Preserv.	ANALYSIS: 48hr Daphnia Magna Single Concentration Acute Toxicity 20C	48hr Daphnia Magna Single Concentration Acute Toxicity 10C	48hr Daphnia Magna Single Concentration Acute Toxicity Antiscalent	96hr Rainbow Trout Single Concentration Acute Toxicity (10 L Bladder)	96hr Rainbow Trout Single Concentration Acute Toxicity (20 L Bladder)	48hr Daphnia Magna Single Concentration Toxicity 15C	48hr Daphnia Magna Single Concentration Acute Toxicity 15C	GC		
EV_GT1_WS_2022-06-21_N-SRF -01	EV_GT1	WS		2022/06/21	10:10	G	8			2	2			4			10.8°C	10.8°C	
EV_BC1_WS_2022-06-21_N-SRF -02	EV_BC1	WS		2022/06/21	11:40	G	9			2	2			4		1		13.2°C	
EV_BC1_WS_2022-06-21_N-SRF-AS -03	EV_BC1	WS		2022/06/21	11:41	G	1					1						13.8°C	
EV_GT1_WS_2022-06-21_N-SRF-AS -04	EV_GT1	WS		2022/06/21	10:11	G	1					1						10.1°C	

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME
Field Temperatures		June 21, 2022		

SERVICE REQUEST (rush - subject to availability)

Regular (default)	X
Priority (2-3 business days) - 50% surcharge	
Emergency (1 Business Day) - 100% surcharge	
For Emergency <1 Day, ASAP or Weekend - Contact ALS	

Sampler's Name		Mobile #	
Sampler's Signature		Date/Time	June 21, 2022

END OF REPORT

Acute Toxicity Test Results

Samples collected June 27, 2022

Final Report

July 28, 2022

Submitted to: **Teck Coal Ltd.**
Sparwood, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates					
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation	*Daphnia magna* antiscalant test initiation
F2_BPO_WG_2022-06-27_N/ 2122-2715-01	27-Jun-22 at 0820h	28-Jun-22 at 0845h	29-Jun-22 at 1415h	28-Jun-22 at 1535h	28-Jun-22 at 1530h	-
F2_BPO_WG_2022-06-27_N-AS/ 2122-2715-02	27-Jun-22 at 0821h	28-Jun-22 at 0845h	-	-	-	28-Jun-22 at 1530h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
F2_BPO_WG_2022-06-27_N	12.3°C	1306	417
F2_BPO_WG_2022-06-27_N-AS	12.3°C	1306	417

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)
- *Daphnia magna* 48-h single concentration screening test (conducted with 20 mg/L antiscalant)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample			
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
F2_BPO_WG_2022-06-27_N	100	100	100	-
F2_BPO_WG_2022-06-27_N-AS	-	-	-	100

Sample ID	Percent Immobility in 100 (% v/v)		
	Daphnia magna 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
F2_BPO_WG_2022-06-27_N	0	0	-
F2_BPO_WG_2022-06-27_N-AS	-	-	0

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
F2_BPO_WG_2022-06-27_N	Rainbow trout	None	None
	Daphnia magna	Surficial precipitate and precipitate observed on the test vessel in 20-degree test	None
F2_BPO_WG_2022-06-27_N	*Daphnia magna*	None	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	3.5 (3.1 - 4.0) g/L KCl[1]	5.7 (5.4 - 5.9) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.4 (2.6 - 4.4) g/L KCl	6.4 (5.4 - 7.6) g/L NaCl
Reference toxicant CV	8.7%	5.6%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, June 20, 2022; [2] Test Date June 28, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation

Report By:
Kristin McKenzie
Biologist

Reviewed By:
Leila Oosterbroek, P Biol
Environmental Scientist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	Moderately-hard reconstituted water supplemented with B12 (2 µg/L)
Control/dilution water for antiscalant test	Moderately-hard reconstituted water supplemented with B12 (2 µg/L) and 20 mg/L antiscalant
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	Moderately-hard reconstituted water supplemented with B12 (2 µg/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC 164 Reference 2122-2715-01 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022/06/29	1415 *	KO/AM	1	EP
1	2022/06/30	0840	NA	-	MAF
2	2022/07/01	0800	ML	-	MAF
3	2022/07/02	0745	ML	-	MAF
4	2022/07/03	0845	ML	1	VTM

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 7.5
Initial EC (µS/cm): 1882
Salinity (ppt): 2

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L (yes/no)

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	8.6	8.6			
Temp (°C) of 100%	16				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	8.1	7.4						
Day 4	8.1	8.2						
EC (uS/cm)								
Day 0	352	1879						
Day 4	352	~~1775~~ 1778	EV					
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	8.6	8.6						
Day 4	8.6	8.6						
Temperature (°C) (range: 14-16°C)								
Day 0	16	16						
Day 4	16	16						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	EV ~~10~~ 10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.7	0.6
2	3.1	0.3
3	3.1	0.3
4	3.3	0.4
5	3.2	0.4
6	3.3	0.4
7	3.6	0.5
8	3.1	0.4
9	3.3	0.4
10	3.2	0.4

Loading Density (g/L): 0.2 (must be ≤0.5 g/L)
Mean Length (cm): 3.3
Length Range (cm): 3.1-3.7
Mean Weight (g): 0.4 (Must be ≥0.3g)
Weight Range: (g): 0.3-0.6

Test Organism Information

Batch 20220506TR
Source Trout Lodge
Tank # 3
Days Held at 15± 2°C 31 (must be ≥14 days)
Percent stock mortality 0 (7 days prior to test, must be <2%)
Test Volume (L) 18

Comments :
96h: No ppt

Reviewed By: EV Date Reviewed: 2022/07/06

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC 164 Reference 2122-2715-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/06/28	1530	EP/AI	3	AI
1	2022/06/29	0840	AI	-	MAE
2	2022/06/30	1000	DM	3	EC

Sample Information

Initial pH:	7.5
Initial EC (µS/cm):	1992
Salinity (ppt):	2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	7.9	7.8	7.8	7.4	7.4	7.4				
2	8.2	8.0	8.0	8.3	8.3	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	306	313	314	1908	1916	2020				
2	325	326	325	1900	1904	1978				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.9	7.9	7.9				
2	7.9	7.4	7.4	7.4	7.9	7.4				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	20	20	20				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar wed CY — Jar(s) mortality 7 days prior to test (must be ≤25%) 10%

QA (previous month)

Days to first brood (≤12 days) 8

Average number of young produced (≥15 young) 39

Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - 0%
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 7.9

DO % of sample prior to aeration: 100%

Duration of aeration (37.5 +/- 12.5 mL/min/L) : —

Hardness (mg $CaCO_3$/L) of 100% : 1306

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —

Alkalinity of 100% sample (mg $CaCO_3$/L): 417

Temperature (°C) of sample prior to aeration: 20

Is aeration required (<40% or >100%)? **Yes or (No)**

Filtered with 110um screen prior to testing **Yes or (No)**

Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or (No)**

Dilution Water

Pail label / preparation date 3.02/20

Hardness of dilution water (mg/L) 80

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Comments/Observations:

0hr: NO ppt

48hr: ppt on jar, surficial ppt.

Reviewed By: EV Date Reviewed: 2022/07/06

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC 164 Reference 2122-2715-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/06/28	1535	EP/AI	3	
1	2022/06/29	0930	AI	-	
2	2022/06/30	1050	AI	3	

Sample Information

Initial pH:	7.5
Initial EC (µS/cm):	1842
Salinity (ppt):	2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	7.8	7.8	7.8	7.4	7.4	7.4				
2	8.1	8.0	8.0	8.4	8.4	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	305	313	313	1852	1939	1950				
2	324	329	320	1860	1935	1941				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	8.9	8.9	8.9				
2 AI	~~10.1~~ 9.4	~~10.0~~ 9.4	~~10.2~~ 9.4	~~10.3~~ 9.4	~~10.4~~ 9.4	~~10.3~~ 9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar used C3 Jar(s) mortality 7 days prior to test (must be ≤25%) 10%

QA (previous month)

Days to first brood (≤12 days) 8

Average number of young produced (≥15 young) 39

Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 8.7

DO % of sample prior to aeration: 91%

Duration of aeration (37.5 +/- 12.5 mL/min/L) : -

Hardness (mg $CaCO_3$/L) of 100% : 1306

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) -

Alkalinity of 100% sample (mg $CaCO_3$/L): 417

Temperature (°C) of sample prior to aeration: 12

Is aeration required (<40% or >100%)? **Yes or (No)**

Filtered with 110um screen prior to testing **Yes or (No)**

Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or (No)**

Dilution Water

Pail label / preparation date 3.06120

Hardness of dilution water (mg/L) 80

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

Comments/Observations:

0hr: no ppt

48hr: no ppt

Reviewed By: EV Date Reviewed: 2022/07/04

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS 20 Client TEC 164 Reference 2122-2715-02

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/06/28	1520	EP/AI	3	
1	2022/06/29	0830	AH	-	
2	2022/06/30	1000	DL	3	

Sample Information

Initial pH: 7.5
Initial EC (µS/cm): 1892
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	7.8	7.8	7.8	7.4	7.4	7.4				
2	8.2	8.1	8.1	8.6	8.6	8.6				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	303	316	317	1830	2000	1928				
2	363	334	333	1974	1969	1909				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.9	7.9	7.9				
2	7.9	7.9	7.9	7.4	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	20	20	20				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar wed C4 Jar(s) mortality 7 days prior to test (must be ≤25%) 10 %

QA (previous month)

Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 39
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - (must be ≤10%) 0 %

Sample

DO (mg/L) of sample prior to aeration: 7.9
DO % of sample prior to aeration: 100 %
Duration of aeration (37.5 +/- 12.5 mL/min/L) : —
Hardness (mg $CaCO_3$/L) of 100% : 1306
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 417

Temperature (°C) of sample prior to aeration: 20
Is aeration required (<40% or >100%)? **Yes or (No)**
Filtered with 110um screen prior to testing **Yes or (No)**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or (No)**

Dilution Water

Pail label / preparation date 3-06120
Hardness of dilution water (mg/L) 80

Antiscalant

Final Concentration in Sample: 20 mg/L
Volume of sample: 500 mL Volume of antiscalant: 158 µL

Comments/Observations:

0hr: NO PPT
48hr: no ppt.

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Reviewed By: EV Date Reviewed: 2022/07/06

APPENDIX C – Chain-of-custody form

Teck

COC ID: F2 NAUTILUS June 27 2022 | **TURNAROUND TIME:** | **RUSH:**

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO			
Facility Name / Job#	F2 SRF			Lab Name	Nautilus Environmental - BC			Report Format / Distribution		Excel	PDF	EDD
Project Manager	BRETT MASON			Lab Contact				Email 1:	Cole.Macgregor@teck.com	X	X	X
Email	BRETT.MASON@TECK.COM			Email	jacklyn@nautilusenvironmental.ca			Email 1:	teckcoal@equisonline.com			X
Address	RR1 HWY 3			Address	10823 27th Street SE			Email 2:	DL-EVO-SRF-LAB@teck.com	X	X	X
								Email 3:				
City	Sparwood	Province	BC	City	Calgary	Province	AB	Email 4:				
								Email 5:				
								Email 6:				
								Email 7:				
								Email 8:				
								Email 10:				
								Email 11:				
								Email 12:				
								Email 13:				
Postal Code	V0B 2G0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada					
Phone Number	250-425-6179			Phone Number	403-253-7121			PO number	00822027			

SAMPLE DETAILS | **ANALYSIS REQUESTED** | Filtered - F: Field, L: Lab, FL: Field & Lab, N: None

2022/06/28
08:45
Manitoulin
4x20L carboys. 6x1L bottles
JC/SAS
NoS/NoI
Good Condition

Sample ID	Sample Location (sys loc code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	Filt.	48hr Daphnia Magna Single Concentration Acute Toxicity 20C	48hr Daphnia Magna Single Concentration Acute Toxicity 10C	48hr Daphnia Magna Single Concentration Acute Toxicity Aniscalent	96hr Rainbow Trout Single Concentration Acute Toxicity (20L Bladders)	48hr Daphnia Magna Single Concentration Toxicity 15C	
F2_BPO_WG_2022-06-27_N -01	F2_BPO	WG		2022-06-27	8:20	G	8		2	2		4		12.3°C
F2_BPO_WG_2022-06-27_N-AS -02	F2_BPO	WG		2022-06-27	8:21	G	1				1			

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME
		June 27, 2022		

SERVICE REQUEST (rush - subject to availability)					
Regular (default)	X	Sampler's Name		Mobile #	
Priority (2-3 business days) - 50% surcharge					
Emergency (1 Business Day) - 100% surcharge		Sampler's Signature		Date/Time	June 27, 2022
For Emergency <1 Day, ASAP or Weekend - Contact ALS					

END OF REPORT

Acute Toxicity Test Results

Samples collected July 4, 2022

Final Report

September 7, 2022

Submitted to: **Teck Coal Ltd.**
Sparwood, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates					
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation	*Daphnia magna* antiscalant test initiation
EV_EC1_WS_2022-07-04_N-SRF / 2122-2788-01	4-Jul-22 at 0950h	5-Jul-22 at 0920h	5-Jul-22 at 1515h	5-Jul-22 at 1520h	5-Jul-22 at 1515h	-
EV_EC1_WS_2022-07-04_N-SRF-AS / 2122-2788-02	4-Jul-22 at 0951h	5-Jul-22 at 0920h	-	-	-	5-Jul-22 at 1520h
EV_ECOUT_WS_2022-07-04_N-SRF / 2122-2788-03	4-Jul-22 at 1250h	5-Jul-22 at 0920h	5-Jul-22 at 1515h	5-Jul-22 at 1540h	5-Jul-22 at 1540h	-
EV_ECOUT_WS_2022-07-04_N-SRF-AS / 2122-2788-04	4-Jul-22 at 1251h	5-Jul-22 at 0920h	-	-	-	5-Jul-22 at 1610h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
EV_EC1_WS_2022-07-04_N-SRF	11.8°C	1209	446
EV_EC1_WS_2022-07-04_N-SRF-AS	12.4°C	1209	446
EV_ECOUT_WS_2022-07-04_N-SRF	10.9°C	1209	446
EV_ECOUT_WS_2022-07-04_N-SRF-AS	10.6°C	1209	446

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)
- *Daphnia magna* 48-h single concentration screening test (conducted with 5 mg/L antiscalant)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample			
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
EV_EC1_WS_2022-07-04_N-SRF	100	100	97	-
EV_EC1_WS_2022-07-04_N-SRF-AS	-	-	-	100
EV_ECOUT_WS_2022-07-04_N-SRF	100	100	100	-
EV_ECOUT_WS_2022-07-04_N-SRF-AS	-	-	-	100

Sample ID	Percent Immobility in 100 (% v/v)		
	Daphnia magna 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
EV_EC1_WS_2022-07-04_N-SRF	0	7	-
EV_EC1_WS_2022-07-04_N-SRF-AS	-	-	0
EV_ECOUT_WS_2022-07-04_N-SRF	0	7	-
EV_ECOUT_WS_2022-07-04_N-SRF-AS	-	-	0

Precipitate observations

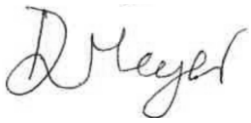
Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
EV_EC1_WS_2022-07-04_N-SRF	Rainbow trout	Precipitate observed on test vessel	None
	Daphnia magna	Surficial precipitate observed in 10˚C and 20˚C tests; precipitate observed on test vessel in 20˚C test	Precipitate observed on carapace in 20˚C test
EV_EC1_WS_2022-07-04_N-SRF-AS	*Daphnia magna*	None	None
EV_ECOUT_WS_2022-07-04_N-SRF	Rainbow trout	Precipitate observed on test vessel	None
	Daphnia magna	Surficial precipitate observed in 10˚C and 20˚C tests; precipitate observed on test vessel 20˚C test	Precipitate observed on carapace in 20˚C test
EV_ECOUT_WS_2022-07-04_N-SRF-AS	*Daphnia magna*	Surficial precipitate observed	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	3.5 (3.1-4.0) g/L KCl[1]	6.5 (6.0-7.0) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.4 (2.6-4.4) g/L KCl	6.4 (5.4-7.4) g/L NaCl
Reference toxicant CV	8.7%	5.4%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, June 20, 2022; [2] Test date, July 5, 2022

LC = Lethal Concentration; CL = Confidence Limit; SD = Standard Deviation; CV = Coefficient of Variation



Report By:
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Laboratory Biologist



Reviewed By:
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Biologist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Control/dilution water for antiscalant test	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L), Na_2SeO_4 (2 µg Se/L) and 5 mg/L antiscalant
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC164 Reference 2122-2788-01 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022/07/05	1515 *	AM/KO	1	WM
1	2022/07/06	0835	KCM	-	MAF
2	2022/07/07	0730	ML	-	NA
3	2022/07/08	0800	ML	-	MAF
4	2022/07/09	1045	ML	1	MAF

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 7.6
Initial EC (µS/cm): 1998
Salinity (ppt): 2

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L : yes/no

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	9.8	8.6			
Temp (°C) of 100%	16				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	7.7	8.2						
Day 4	8.1	8.0						
EC (uS/cm)								
Day 0	365	1675						
Day 4	387	1549						
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	8.6	8.6						
Day 4	8.6	8.6						
Temperature (°C) (range: 14-16°C)								
Day 0	16	16						
Day 4	16	16						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.9	0.7
2	4.1	0.8
3	3.6	0.6
4	3.7	0.6
5	3.6	0.6
6	3.5	0.5
7	3.7	0.6
8	3.4	0.5
9	3.0	0.3
10	3.1	0.3

Loading Density (g/L): 0.3
(must be ≤0.5 g/L)
Mean Length (cm): 3.6
Length Range (cm): 3.0-4.1
Mean Weight (g): 0.6
(Must be ≥0.3g)
Weight Range: (g): 0.3-0.8

Test Organism Information

Batch 20220506TR
Source Trout Lodge
Tank # 7
Days Held at 15± 2°C 37
(must be ≥14 days)
Percent stock mortality 0
(7 days prior to test, must be <2%)
Test Volume (L) 18

Comments :
96 hrs: ppt on sides of the tank

Reviewed By: TP Date Reviewed: JUL 13 2022

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC164 Reference 2122-2788-03 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022/07/05	1515 *	AM/KO	1	JC
1	2022/07/06	0840	KAM	-	MAF
2	2022/07/07	0930	ML	-	NA
3	2022/07/08	0800	ML	-	MAF
4	2022/07/09	1045	ML	1	MAF

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 7.7
Initial EC (µS/cm): 1859
Salinity (ppt): 2

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L: **yes/no**

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	10.0	8.9			
Temp (°C) of 100%	14				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

	Conc.	CTL	100						
pH (units) (range: **5.5-8.5**)	Day 0	7.8	8.1						
	Day 4	7.9	7.9						
EC (uS/cm)	Day 0	372	1751						
	Day 4	397	1605						
DO (mg/L) (**70-100% saturation at test temp.**)	Day 0	8.6	8.9						
	Day 4	8.6	8.6						
Temperature (°C) (range: **14-16°C**)	Day 0	16	14						
	Day 4	16	16						

Number Alive (In brackets number stressed)

Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	4.0	0.8
2	3.8	0.6
3	3.4	0.5
4	4.2	0.9
5	3.1	0.3
6	3.6	0.5
7	3.9	0.7
8	3.9	0.7
9	3.9	0.6
10	3.9	0.6

Loading Density (g/L): 0.3 ~~0.4~~ TP
(must be ≤0.5 g/L)
Mean Length (cm): 3.8
Length Range (cm): 3.1-4.2
Mean Weight (g): 0.6
(Must be ≥0.3g)
Weight Range: (g): 0.3-0.9

Test Organism Information

Batch 20220506TR
Source Trout Lodge
Tank # 7
Days Held at 15± 2°C 37
(must be ≥14 days)
Percent stock mortality 0
(7 days prior to test, must be <2%)
Test Volume (L) 18

Comments :
96 hrs: ppt on sides of the tank

Reviewed By: TP Date Reviewed: JUL 13 2022

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC 164 Reference 2122-2788-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/07/05	1515	NA/LC	3	UM
1	2022/07/06	1130	DM	-	MF
2	2022/07/07	930	DM/AJ	3	

Sample Information

Initial pH: 7.6
Initial EC (µS/cm): 1998
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	8.0 NA	7.9	7.9	8.2	8.2	8.2				
2	~~7.8~~ 8.2	8.2	8.1	8.0	8.1	8.0				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	390 NA	391	~~394~~ 390	1787	1796	1799				
2	419	409	404	(681)	1724	1742				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.7	7.7	7.7	7.9	7.9	7.9				
2	7.7	7.9	7.9	7.7	7.7	7.7				

Temperature (°C) (range: **18-22 °C**)

0	21	21	21	20	20	20				
2	21	20	20	21	21	21				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10(1;)	10	10(1;)				
2	10	10	10	9	10	10(1;)				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar MON D1 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 36
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0%
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 9.9
DO % of sample prior to aeration: 118%
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20min
Hardness (mg $CaCO_3$/L) of 100% : 1209
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 446

Temperature (°C) of sample prior to aeration: 18
Is aeration required (<40% or >100%)? (Yes) or No
Filtered with 110um screen prior to testing Yes or (No)
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)

Dilution Water
Pail label / preparation date 1:06/29
Hardness of dilution water (mg/L) 135

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Comments/Observations:
0 hr: No ppt.
48 hr: Surficial ppt. ppt on jar - ppt on carapace

Reviewed By: TP Date Reviewed: JUL 13 2022

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC 164 Reference 2122-2788-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/07/05	1520	NA/LC	3	KM
1	2022/07/06	1130	DM	-	MAF
2	2022/07/07	1030	DM/AI	3	AI

Sample Information

Initial pH: 7.62
Initial EC (µS/cm): 1998
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	7.9	7.9	8.0	8.2	8.2	8.2				
2	8.2	8.2	8.2	8.2	8.3	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	398	399	400	1781	1792	1796				
2	405	410	409	1710	1780	1796				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar MON D2 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)

Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 36
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - 0%
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 11.1
DO % of sample prior to aeration: 118%
Duration of aeration (37.5 +/- 12.5 mL/min/L): 20 min
Hardness (mg $CaCO_3$/L) of 100% : 1209
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 446

Temperature (°C) of sample prior to aeration: 12
Is aeration required (<40% or >100%)? (Yes) or No
Filtered with 110um screen prior to testing Yes or (No)
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)

Dilution Water

Pail label / preparation date 1:06 129
Hardness of dilution water (mg/L) 135

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

Comments/Observations:

0 hr: No ppt.
48 hr: Superficial ppt

Reviewed By: TP Date Reviewed: JUL 13 2022

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS Client TEC 164 Reference 2122-2788-02

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/07/05	1520	NA/LC	3	letm
1	2022/07/06	1130	DM	-	maf
2	2022/07/07	900	DM/AI	3	[illegible]

Sample Information

Initial pH: 7.6
Initial EC (µS/cm): 1998
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				
day				pH (units) (range: 6.0-8.5)						
0	8.0	8.0	8.0	8.2	8.2	8.2				
2	8.1	8.1	8.1	8.4	8.4	8.4				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

				EC (uS/cm)						
0	395	400	399	1753	1781	1784				
2	405	403	406	1695	1762	1764				
				DO (mg/L) (**40-100% saturation at test temp.**)						
0	7.7	7.7	7.7	7.9	7.9	7.9				
2	7.7	7.7	7.7	7.7	7.7	7.7				
				Temperature (°C) (range: **18-22 °C**)						
0	21	21	21	20	20	20				
2	21	20	21	21	21	21				
				Number Alive (I, immobile)						
0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar MON D1 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 36
Were test treatments randomized on test tray? Yes / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0%

Sample
DO (mg/L) of sample prior to aeration: 10.0 Temperature (°C) of sample prior to aeration: 19
DO % of sample prior to aeration: 121% Is aeration required (<40% or >100%)? **Yes or No**
Duration of aeration (37.5 +/- 12.5 mL/min/L): 20min Filtered with 110um screen prior to testing **Yes or No**
Hardness (mg $CaCO_3$/L) of 100%: 1209 Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 446

Dilution Water
Pail label / preparation date 1:06/29
Hardness of dilution water (mg/L) 135

Antiscalant
Final Concentration in Sample: 5mg/L
Volume of sample: 500mL Volume of antiscalant: 39.5µL

Comments/Observations:
0hr: No ppt.
48hr: No ppt.

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C 3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C 3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C

Reviewed By: TP Date Reviewed: JUL 13 2022

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC 164 Reference 2122-2788-03

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/07/05	1540	DM/AI	3	IC
1	2022/07/06	0900	AI	-	MAF
2	2022/07/07	0930	DM/AI	3	

Sample Information

Initial pH: 7.7
Initial EC (µS/cm): 1859
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	8.0	7.9	7.9	7.9	8.0	8.0				
2	8.1	8.1	8.1	8.0	8.0	8.0				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	386	399	400	1860	1886	1886				
2	390	405	408	1719	1765	1770				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	8.5	8.5	7.9	7.9	7.9				
2	7.7	7.7	7.7	7.7	7.7	7.7				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	20	20	20				
2	21	21	21	21	21	21				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10(1i)	10(1i)	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar Mon C1/D1 Jar(s) mortality 7 days prior to test (must be ≤25%) 5%

QA (previous month)
Days to first brood (≤12 days) ~~7.5~~ 8
Average number of young produced (≥15 young) ~~35.5~~ 36
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0%
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 10.1
DO % of sample prior to aeration: 122
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20 min
Hardness (mg $CaCO_3$/L) of 100% : 1209
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 446

Temperature (°C) of sample prior to aeration: 19
Is aeration required (<40% or >100%)? **Yes or No**
Filtered with 110um screen prior to testing **Yes or (No)**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or (No)**

Dilution Water
Pail label / preparation date 1:06/29
Hardness of dilution water (mg/L) 135

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Comments/Observations:
0 hr: NOPPT
48 hr: Surficial ppt. ppt on jar. ppt on carapace.

Reviewed By: TP Date Reviewed: JUL 13 2022

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC 164 Reference 2122-2788-03

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/07/05	1540	DM/AI	3	LC
1	2022/07/06	0905	AI	-	MAF
2	2022/07/07	1030	DM/AI	3	DW

Sample Information

Initial pH: 7.7
Initial EC (µS/cm): 1859
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				
day				pH (units) (range: 6.0-8.5)						
0	8.0	8.0	7.9	7.9	7.9	7.9				
2	8.~~3~~2 AI	8.2	8.2	8.1	8.1	8.1				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

				EC (uS/cm)						
0	DM ~~425~~ 386	DM ~~403~~ 399	400	1887	1894	1900				
2	413	412	408	1787	1815	1832				
				DO (mg/L) (**40-100% saturation at test temp.**)						
0	8.4	8.5	8.7	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				
				Temperature (°C) (range: **8-12 °C**)						
0	DM 12	12	12	12	12	12				
2	12	12	12	12	12	12				
				Number Alive (I, immobile)						
0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar Mon Cl Jar(s) mortality 7 days prior to test (must be ≤25%) 10%

QA (previous month)
Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 35
Were test treatments randomized on test tray? Yes / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0%

Sample
DO (mg/L) of sample prior to aeration: 10.4
Temperature (°C) of sample prior to aeration: 12
DO % of sample prior to aeration: 109
Is aeration required (<40% or >100%)? Yes or No
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20 min
Filtered with 110um screen prior to testing Yes or No
Hardness (mg $CaCO_3$/L) of 100% : 1209
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or No
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 446

Dilution Water
Pail label / preparation date 1:06/29
Hardness of dilution water (mg/L) 135

DO Levels (40-100% saturation) - corrected for altitude -
4.1 to 10.3 mg/L at 8°C
4.0 to 10.0 mg/L at 9°C
3.9 to 9.8 mg/L at 10°C
3.8 to 9.6 mg/L at 11°C
3.7 to 9.4 mg/L at 12°C

Comments/Observations:
0 hr: No ppt
48 hr: Surficial ppt.

Reviewed By: TP Date Reviewed: JUL 13 2022

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS 5 Client TEC 164 Reference 2122-2788-04

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/07/05	1610	~~NA/LC~~ DM/AI	3	LC
1	2022/07/06	0955	AI	-	MAP
2	2022/07/07	0930	DM/AI	3	AJ

Sample Information

Initial pH: 7.7
Initial EC (µS/cm): 1859
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	7.9	7.9	7.9	8.3	8.2	8.2				
2	8.1	8.0	8.01	8.4	8.4	8.4				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	391	399	399	1859	1870	1872				
2	388	401	409	1802	1846	1853				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.7	7.7	7.7	7.7	7.9	7.9				
2	7.7	7.7	7.7	7.7	7.7	7.7				

Temperature (°C) (range: **18-22 °C**)

0	~~20~~ 21	21	21	21	20	20				
2	21	21	21	21	21	21				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar Mon D2 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 36
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0%

Sample
DO (mg/L) of sample prior to aeration: 10.1
DO % of sample prior to aeration: 120
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20 min
Hardness (mg $CaCO_3$/L) of 100% : 1209
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 446

Temperature (°C) of sample prior to aeration: 18
Is aeration required (<40% or >100%)? **Yes or No**
Filtered with 110um screen prior to testing **Yes or No**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Dilution Water
Pail label / preparation date 1:06/24
Hardness of dilution water (mg/L) 135

Antiscalant
Final Concentration in Sample: 5mg/L
Volume of sample: 50mL Volume of antiscalant: 39.50uL

Comments/Observations:
0hr: NOPPT
48hr: Surficial ppt.

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Reviewed By: TP Date Reviewed: JUL 13 2022

APPENDIX C – Chain-of-custody form

Teck

COC ID: EVO NAUTILUS July 4 2022 | TURNAROUND TIME: | RUSH:

PROJECT/CLIENT INFO

Facility Name / Job#	Elkview Operations
Project Manager	Group 1; Brett Mason
Email	Brett.Mason@teck.com
Address	RR1 HWY 3
City	Sparwood
Province	BC
Postal Code	V0B 2G0
Country	Canada
Phone Number	250-425-6179

LABORATORY

Lab Name	Nautilus Environmental - BC
Lab Contact	
Email	jacklyn@nautilusenvironmental.ca
Address	10823 27th Street SE
City	Calgary
Province	AB
Postal Code	T2Z 3V9
Country	Canada
Phone Number	403-253-7121

OTHER INFO

Report Format / Distribution		Excel	PDF	EDD
Email 1:	Cole.Macgregor@teck.com	X	X	X
Email 2:	teckcoal@equisonlinc.com			X
Email 3:	DL-EVO-SRF-LAB@teck.com	X	X	X
Email 4:				
Email 5:				
Email 6:				
Email 7:				
Email 8:				
Email 9:				
Email 10:				
Email 11:				
Email 12:				
Email 13:				

PO number: *VPO00842410*

SAMPLE DETAILS

2022/07/05
09:20
Manitoulin
8 x 10 L carboys, 10 x 1 L bottles
SRS/RM
No S No I
Good Condition

ANALYSIS REQUESTED

Filtered - F: Field, L: Lab, FL: Field & Lab, N: None

Sample ID 2122-2786	Sample Location (sys_loc_code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	48hr Daphnia Magna Single Concentration Acute Toxicity 20C	48hr Daphnia Magna Single Concentration Acute Toxicity 10C	48hr Daphnia Magna Single Concentration Acute Toxicity Anitscalent	96hr Rainbow Trout Single Concentration Acute Toxicity (20 L Bladder)	96hr Rainbow Trout Single Concentration Acute Toxicity (10 L Bladder)	48hr Daphnia Magna Single Concentration Toxicity 15C	
-01 EV_EC1_WS_2022-07-04_N-SRF	EV_EC1	WS		2022-07-04	9:50	G	12	2 ✓	2 ✓			8 ✓	11.8°C	
-02 EV_EC1_WS_2022-07-04_N-SRF-AS	EV_EC1	WS		2022-07-04	9:50	G	1			1 ✓			12.4°C	
-03 EV_ECOUT_WS_2022-07-04_N-SRF	EV_ECOUT	WS		2022-07-04	12:50	G	8	2 ✓	2 ✓		4 ✓		10.9°C	
-04 EV_ECOUT_WS_2022-07-04_N-SRF-AS	EV_ECOUT	WS		2022-07-04	12:50	G	1			1 ✓			10.6°C	

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME
Field Temperatures ECOUT:	AM LAVINGTON - TEK	July 4, 2022 1500		

SERVICE REQUEST (rush - subject to availability)

Regular (default)	X
Priority (2-3 business days) - 50% surcharge	
Emergency (1 Business Day) - 100% surcharge	
For Emergency <1 Day, ASAP or Weekend - Contact ALS	

Sampler's Name	Gurtaj Virk	Mobile #	
Sampler's Signature		Date/Time	July 4, 2022

END OF REPORT

Acute Toxicity Test Results

Samples collected July 4, 2022

Final Report

September 9, 2022

Submitted to: **Teck Coal Ltd.**
Sparwood, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates					
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation	*Daphnia magna* antiscalant test initiation
F2_BPO_WG_2022-07-04_N / 2122-2789-01	4-Jul-22 at 0740h	5-Jul-22 at 0920h	5-Jul-22 at 1450h	5-Jul-22 at 1540h	5-Jul-22 at 1610h	-
F2_BPO_WG_2022-07-04_N-AS / 2122-2789-02	4-Jul-22 at 0741h	5-Jul-22 at 0920h	-	-		5-Jul-22 at 1620h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
F2_BPO_WG_2022-07-04_N	10.3°C	1123	594
F2_BPO_WG_2022-07-04_N-AS	11.3°C	1123	594

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)
- *Daphnia magna* 48-h single concentration screening test (conducted with 20 mg/L antiscalant)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample			
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
F2_BPO_WG_2022-07-04_N	100	100	100	-
F2_BPO_WG_2022-07-04_N-AS	-	-	-	100

Sample ID	Percent Immobility in 100 (% v/v)		
	***Daphnia magna* 10˚C**	***Daphnia magna* 20˚C**	***Daphnia magna* antiscalant**
F2_BPO_WG_2022-07-04_N	0	0	-
F2_BPO_WG_2022-07-04_N-AS	-	-	0

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
F2_BPO_WG_2022-07-04_N	Rainbow trout	None	None
	Daphnia magna	Surficial precipitate and precipitate observed on test vessels in the 20˚C test	None
F2_BPO_WG_2022-07-04_N-AS	*Daphnia magna*	None	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	3.5 (3.1-4.0) g/L KCl[1]	6.5 (6.0-7.0) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.4 (2.6-4.4) g/L KCl	6.4 (5.4-7.4) g/L NaCl
Reference toxicant CV	8.7%	5.4%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, June 20, 2022; [2] Test date, July 5, 2022

LC = Lethal Concentration; CL = Confidence Limit; SD = Standard Deviation; CV = Coefficient of Variation



Report By:
Kiara O'Shea, BSc
Laboratory Biologist



Reviewed By:
Emma Marus, BSc
Biologist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Control/dilution water for antiscalant test	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L), Na_2SeO_4 (2 µg Se/L) and 20 mg/L antiscalant
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent Survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent Survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC164 Reference 2122-2789-01 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022/07/05	1450 *	AM/KO	1	VMM
1	2022/07/06	0840	KMM	-	MAF
2	2022/07/07	0730	ML	-	NA
3	2022/07/08	0800	ML	-	MAF
4	2022/07/09	1045	ML	1	MAF

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 7.6
Initial EC (µS/cm): 1975
Salinity (ppt): 2

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L : yes/no

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	8.8	8.8			
Temp (°C) of 100%	15				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	8.2	7.6						
Day 4	8.1	8.1						
EC (uS/cm)								
Day 0	369	1906						
Day 4	369	1752						
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	8.8	8.8						
Day 4	8.6	8.6						
Temperature (°C) (range: 14-16°C)								
Day 0	15	15						
Day 4	16	16						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.4	0.4
2	3.4	0.4
3	3.5	0.4
4	3.1	0.3
5	3.6	0.5
6	2.9	0.2
7	3.3	0.4
8	3.0	0.3
9	3.1	0.3
10	2.6	0.1

Loading Density (g/L): 0.2 (must be ≤0.5 g/L)
Mean Length (cm): 3.2
Length Range (cm): 2.6-3.6
Mean Weight (g): 0.3 (Must be ≥0.3g)
Weight Range: (g): 0.1-0.5

Test Organism Information

Batch 20220506TR
Source Trout Lodge
Tank # 10
Days Held at 15± 2°C 37 (must be ≥14 days)
Percent stock mortality 0 (7 days prior to test, must be <2%)
Test Volume (L) 18

Comments :
96 hrs: ~~Ppt on sides of tank~~ ML NO ppt

Reviewed By: TP Date Reviewed: JUL 13 2022

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC 164 Reference 2122-2789-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/07/05	1610	DM/AI	3	IC
1	2022/07/06	0855	AI	-	MAF
2	2022/07/07	1000	DM/AI	3	AL

Sample Information

Initial pH: 7.6
Initial EC (µS/cm): 1975
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	7.9	7.9	7.9	8.1	8.1	8.1				
2	8.1	8.1	8.1	8.2	8.2	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	381	397	399	1977	2020	2110				
2	396	406	406	1892	1967	2060				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.7	7.7	7.7	7.9	8.6	8.5				
2	7.7	7.7	7.7	7.7	7.7	7.7				

Temperature (°C) (range: **18-22 °C**)

0	21	21	21	20	20	20				
2	21	21	21	21	21	21				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar Mon DI/E1 Jar(s) mortality 7 days prior to test (must be ≤25%) 5%

QA (previous month)
Days to first brood (≤12 days) DM 7.5-8
Average number of young produced (≥15 young) 38
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0%
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 9.4
DO % of sample prior to aeration: 114
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 2min
Hardness (mg $CaCO_3$/L) of 100% : 1123
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 594

Temperature (°C) of sample prior to aeration: 19
Is aeration required (<40% or >100%)? **Yes or No**
Filtered with 110um screen prior to testing **Yes or (No)**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or (No)**

Dilution Water
Pail label / preparation date 1:06/29
Hardness of dilution water (mg/L) 135

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Comments/Observations:
0 hr: No ppt.
48 hr: Surficial ppt. ppt on jar.

Reviewed By: TP Date Reviewed: JUL 13 2022

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC 164 Reference 2122-2789-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/07/05	1540	DM/AI	3	IC
1	2022/07/06	0905	AI	-	MAF
2	2022/07/07	1030	DM/AI	3	DM

Sample Information

Initial pH: 7.6
Initial EC (µS/cm): 1975
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	8.1	8.0	8.0	7.6	7.6	7.6				
2	8.2	8.2	8.2	8.2	8.3	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	425	403	399	1984	2050	2050				
2	407	405	403	1907	1998	2020				

DO (mg/L) (**40-100% saturation at test temp.**)

0	8.4	8.5	8.5	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	~~12~~	~~12~~	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar MonE2 Jar(s) mortality 7 days prior to test (must be ≤25%) 10%

QA (previous month)
Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 40
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0%

Sample
DO (mg/L) of sample prior to aeration: ~~9.4~~ 9.4 TP
DO % of sample prior to aeration: 100
Duration of aeration (37.5 +/- 12.5 mL/min/L) : -
Hardness (mg $CaCO_3$/L) of 100% : 123
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) -
Alkalinity of 100% sample (mg $CaCO_3$/L): 594

Temperature (°C) of sample prior to aeration: 12
Is aeration required (<40% or >100%)? **Yes or (No)**
Filtered with 110um screen prior to testing **Yes or (No)**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or (No)**

Dilution Water
Pail label / preparation date 1:06/29
Hardness of dilution water (mg/L) 135

DO Levels (40-100% saturation) - corrected for altitude -
4.1 to 10.3 mg/L at 8°C
4.0 to 10.0 mg/L at 9°C
3.9 to 9.8 mg/L at 10°C
3.8 to 9.6 mg/L at 11°C
3.7 to 9.4 mg/L at 12°C

Comments/Observations:
0 hr: Noppt
48 hr: Noppt

Reviewed By: TP Date Reviewed: JUL 13 2022

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS 20 Client TEC 164 Reference 2122-2789-02

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/07/05	1620	DM/AI	3	
1	2022/07/06	0850	AI	-	
2	2022/07/07	1000	DM/AI	3	

Sample Information

Initial pH: 7.6
Initial EC (µS/cm): 1975
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	7.9	7.9	7.9	8.1	8.2	8.2				
2	8.1	8.1	8.0	8.5	8.5	8.5				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	379	403	404	1934	2016	2110				
2	409	413	411	1920	2010	2000				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.9	7.9	7.9				
2	7.7	7.7	7.7	7.7	7.7	7.7				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	20	20	20				
2	21	21	21	21	21	21				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar MON E2 Jar(s) mortality 7 days prior to test (must be ≤25%) 10%

QA (previous month)
Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 40
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0%

Sample
DO (mg/L) of sample prior to aeration: 9.3
DO % of sample prior to aeration: 114
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20min
Hardness (mg $CaCO_3$/L) of 100% : 123
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) -
Alkalinity of 100% sample (mg $CaCO_3$/L): 594

Temperature (°C) of sample prior to aeration: 19
Is aeration required (<40% or >100%)? (Yes) or No
Filtered with 110um screen prior to testing Yes or (No)
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)

Dilution Water
Pail label / preparation date 1:06/24
Hardness of dilution water (mg/L) 135

Antiscalant
Final Concentration in Sample: 20mg/L
Volume of sample: 500mL Volume of antiscalant: ~~20mL~~ 154µL

Comments/Observations:
0hr: no ppt
48hr: No ppt.

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Reviewed By: TP Date Reviewed: JUL 13 2022

APPENDIX C – Chain-of-custody form

Teck

Page 1 of 1

COC ID: F2 NAUTILUS July 4 2022 | **TURNAROUND TIME:** | **RUSH:**

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name / Job#	F2 SRF			Lab Name	Nautilus Environmental - BC			Report Format / Distribution		Excel	PDF	EDD
Project Manager	BRETT MASON			Lab Contact				Email 1:	Cole.Macgregor@teck.com	X	X	X
Email	BRETT.MASON@TECK.COM			Email	jacklyn@nautilusenvironmental.ca			Email 1:	teckcoal@equisonline.com			X
Address	RR1 HWY 3			Address	10823 27th Street SE			Email 2:	DL-EVO-SRF-LAB@teck.com	X	X	X
								Email 3:				
City	Sparwood	Province	BC	City	Calgary	Province	AB	Email 4:				
								Email 5:				
								Email 6:				
								Email 7:				
								Email 8:				
								Email 10:				
								Email 11:				
								Email 12:				
								Email 13:				
Postal Code	V0B 2G0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada					
Phone Number	250-425-6179			Phone Number	403-253-7121			PO number	VPO00842410			

SAMPLE DETAILS | **ANALYSIS REQUESTED** (Filtered - F: Field, L: Lab, FL: Field & Lab, N: None)

2022/07/05
04:20
Manitoulin
4x 20 L carboys, 5x 1 L bottles
SRS/RM
NOS NOI
Good condition

Sample ID 2122-2789	Sample Location (sys loc code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	Filt.	48hr Daphnia Magna Single Concentration Acute Toxicity 20C	48hr Daphnia Magna Single Concentration Acute Toxicity 10C	48hr Daphnia Magna Single Concentration Acute Toxicity Anitscalent	96hr Rainbow Trout Single Concentration Acute Toxicity (20L Bladders)	48hr Daphnia Magna Single Concentration Toxicity 15C						
-01 F2_BPO_WG_2022-07-04_N	F2_BPO	WG		2022-07-04	7:40	G	8 ✓		2	2		4 ✓	10. 3°C						
-02 F2_BPO_WG_2022-07-04_N-AS	F2_BPO	WG		2022-07-04	7:40	G	1				1		M. 3°C						

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME
	ALS Environmental - Teck	July 4, 2022 1500		

SERVICE REQUEST (rush - subject to availability)

Regular (default)	X
Priority (2-3 business days) - 50% surcharge	
Emergency (1 Business Day) - 100% surcharge	
For Emergency <1 Day, ASAP or Weekend - Contact ALS	

Sampler's Name	Gurtaj Virk	Mobile #	
Sampler's Signature		Date/Time	July 4, 2022

END OF REPORT

Acute Toxicity Test Results

Samples collected July 5, 2022

Final Report

August 26, 2022

Submitted to: **Teck Coal Ltd.**
Sparwood, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates						
	Collected	**Received**	**Rainbow trout test initiation**	***Daphnia magna* 10˚C test initiation**	***Daphnia magna* 15˚C test initiation**	***Daphnia magna* 20˚C test initiation**	***Daphnia magna* antiscalant test initiation**
EV_GT1_WS_2022-07-05_N_SRF / 2122-2804-01	5-Jul-22 at 0810h	6-Jul-22 at 0830h	6-Jul-22 at 1525h	6-Jul-22 at 1630h	6-Jul-22 at 1630h	6-Jul-22 at 1600h	-
EV_BC1_WS_2022-07-05_N_SRF / 2122-2804-02	5-Jul-22 at 0850h	6-Jul-22 at 0830h	6-Jul-22 at 1530h	6-Jul-22 at 1545h	6-Jul-22 at 1545h	6-Jul-22 at 1630h	-
EV_BC1_WS_2022-07-05_N_SRF-AS / 2122-2804-03	5-Jul-22 at 0811h	6-Jul-22 at 0830h	-	-	-	-	6-Jul-22 at 1600h
EV_GT1_WS_2022-07-05_N_SRF-AS / 2122-2804-04	5-Jul-22 at 0851h	6-Jul-22 at 0830h	-	-	-	-	6-Jul-22 at 1630h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
EV_GT1_WS_2022-07-05_N_SRF	10.4°C	1158	335
EV_BC1_WS_2022-07-05_N_SRF	13.5°C	1176	313
EV_BC1_WS_2022-07-05_N_SRF-AS	12.9°C	1176	313
EV_GT1_WS_2022-07-05_N_SRF-AS	12.9°C	1158	335

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)
- *Daphnia magna* 48-h single concentration screening test (conducted at 15°C)
- *Daphnia magna* 48-h single concentration screening test (conducted with 5 mg/L antiscalant)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample				
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 15˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
EV_GT1_WS_2022-07-05_N_SRF	100	100	100	100	-
EV_BC1_WS_2022-07-05_N_SRF	100	100	100	100	-
EV_BC1_WS_2022-07-05_N_SRF-AS	-	-	-	-	100
EV_GT1_WS_2022-07-05_N_SRF-AS	-	-	-	-	100

Sample ID	Percent Immobility in 100 (% v/v)			
	Daphnia magna 10˚C	*Daphnia magna* 15˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
EV_GT1_WS_2022-07-05_N_SRF	0	0	0	-
EV_BC1_WS_2022-07-05_N_SRF	0	0	0	-
EV_BC1_WS_2022-07-05_N_SRF-AS	-	-	-	0
EV_GT1_WS_2022-07-05_N_SRF-AS	-	-	-	0

Precipitate observations

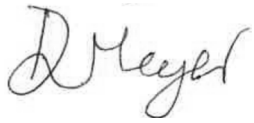
Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
EV_GT1_WS_2022-07-05_N_SRF	Rainbow trout	None	None
	Daphnia magna	Precipitate observed on the test vessel in 20-degree test; surficial precipitate observed in 15- and 20- degree tests	None
EV_BC1_WS_2022-07-05_N_SRF	Rainbow trout	None	None
	Daphnia magna	Surficial precipitate observed in 15- and 20-degree tests	None
EV_BC1_WS_2022-07-05_N_SRF-AS	*Daphnia magna*	None	None
EV_GT1_WS_2022-07-05_N_SRF-AS	*Daphnia magna*	None	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	3.5 (3.1-4.0) g/L KCl[1]	5.7 (5.4-5.9) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.4 (2.6-4.4) g/L KCl	6.4 (5.4-7.6) g/L NaCl
Reference toxicant CV	8.7%	5.6%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, June 20, 2022; [2] Test Date June 28, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation



Report By:
Daisy Meyer, BSc

Laboratory Biologist



Reviewed By:
Ebi Lari, P. Biol., Ph.D.
Laboratory Manager and
Environmental Scientist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	Moderately-hard reconstituted water supplemented with B12 (2 µg/L)
Control/dilution water for antiscalant test	Moderately-hard reconstituted water supplemented with B12 (2 µg/L) and 5 mg/L antiscalant
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	Moderately-hard reconstituted water supplemented with B12 (2 µg/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 4. Summary of test conditions: 48-h *Daphnia magna* survival test at 15˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	Moderately-hard reconstituted water supplemented with B12 (2 µg/L)
Test solution renewal	None
Test temperature	15 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC 164 Reference 2122-2804-01 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022/07/06	1525 *	KO/AM	1	IC
1	2022/07/07	0900	AM	-	NA
2	2022/07/08	0745	ML	-	MAP
3	2022/07/09	0745	ML	-	MAP
4	2022/07/10	1115	ML	1	MAP

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 8.2
Initial EC (µS/cm): 1833
Salinity (ppt): 2

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L : (yes)/no

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	9.7	8.6			
Temp (°C) of 100%	16				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	8.0	8.3						
Day 4	8.2	8.2						
EC (uS/cm)								
Day 0	379	1912						
Day 4	380	1665						
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	8.6	8.6						
Day 4	8.6	8.6						
Temperature (°C) (range: 14-16°C)								
Day 0	16	16						
Day 4	16	16						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.4	0.5
2	3.9	0.8
3	3.4	0.6
4	3.8	0.7
5	3.3	0.5
6	3.7	0.6
7	3.4	0.4
8	3.5	0.6
9	3.4	0.5
10	3.7	0.6

Loading Density (g/L): 0.3 (must be ≤0.5 g/L)
Mean Length (cm): 3.6 mL 0.33~~39~~
Length Range (cm): 3.3-3.9~~-6~~ mL
Mean Weight (g): 0.6 0.4-~~0.8~~ mL (Must be ≥0.3g)
Weight Range: (g): 0.4-0.8

Test Organism Information

Batch 20220506TR
Source Trout Lodge
Tank # 7
Days Held at 15± 2°C 38 (must be ≥14 days)
Percent stock mortality 0 (7 days prior to test, must be <2%)
Test Volume (L) 18

Comments :
96h: NO PPT

Reviewed By: EV Date Reviewed: 2022/07/13

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC 164 Reference 2122-2804-02 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022/07/06	1530 *	KO/AM	1	IC
1	2022/07/07	0800	ML	-	IA
2	2022/07/08	0745	ML	-	MAF
3	2022/07/09	0745	ML	-	MAF
4	2022/07/10	1115	ML	1	WM

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 8.0
Initial EC (µS/cm): 1871
Salinity (ppt): 2

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L : yes/no

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	8.9	8.8			
Temp (°C) of 100%	15				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: **5.5-8.5**)								
Day 0	7.8	8.0						
Day 4	8.2	8.2						
EC (uS/cm)								
Day 0	389	1775						
Day 4	400	1680						
DO (mg/L) (**70-100% saturation at test temp.**)								
Day 0	8.8	8.8						
Day 4	8.6	8.6						
Temperature (°C) (range: **14-16°C**)								
Day 0	15	15						
Day 4	16	16						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.5	0.5
2	3.3	0.4
3	3.1	0.4
4	4.0	0.8
5	3.4	0.4
6	3.0	0.4
7	3.8	0.6
8	3.5	0.5
9	3.3	0.4
10	3.9	0.8

Loading Density (g/L): 0.3 (must be ≤0.5 g/L)
Mean Length (cm): 3.5
Length Range (cm): 3.0-4.0
Mean Weight (g): 0.5 (Must be ≥0.3g)
Weight Range: (g): 0.2-0.8

Test Organism Information

Batch 20220506TR
Source Trout Lodge
Tank # 7
Days Held at 15± 2°C 38 (must be ≥14 days)
Percent stock mortality 0 (7 days prior to test, must be <2%)
Test Volume (L) 17 18 KO

Comments :
96h: No ppt

Reviewed By: EV Date Reviewed: 2022/07/13

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC164 Reference 2122-2804-01

Test Log KO

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/07/06	1600	DM/~~KOA~~	2	CC
1	2022/07/07	0855	Kurm	-	NA
2	2022/07/08	0930	AT	3	NA

Sample Information

Initial pH:	8.2
Initial EC (µS/cm):	1883
Salinity (ppt):	2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	7.6	7.7	7.7	8.0	8.1	8.1				
2	7.7	7.7	7.8	8.1	8.1	8.1				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	298	304	308	1851	1920	1929				
2	307	316	321	1814	1847	1861				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.7	7.7	7.7	7.9	7.9	7.9				
2	7.9	7.9	7.9	7.7	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	21	21	21	20	20	20				
2	20	20	20	21	20	20				

Number Alive (l, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar WedC2 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)

Days to first brood (≤12 days) 7

Average number of young produced (≥15 young) 41

Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 9.1 Temperature (°C) of sample prior to aeration: 18

DO % of sample prior to aeration: 108 Is aeration required (<40% or >100%)? (Yes) or No

Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20min Filtered with 110um screen prior to testing Yes or (No)

Hardness (mg $CaCO_3$/L) of 100% : 1158 Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —

Alkalinity of 100% sample (mg $CaCO_3$/L): 335

Dilution Water

Pail label / preparation date 21.06/21 CMHRW

Hardness of dilution water (mg/L) 80

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Comments/Observations:

0 hr: NoPPT

48 hr: Surficial ppt + ppt on jar

Reviewed By: EV Date Reviewed: 2022/07/13

NAUTILUS ENVIRONMENTAL

Chamber 1

Daphnia 15°C Bench Sheet

Method DAS 15 Client TEC164 Reference 2122-2804-01

Test Log (Ko)

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/07/06	1630	DM/~~KO~~AT	2	CC
1	2022/07/07	0900	AT	-	NA
2	2022/07/08	1000	AT	3	NA

Sample Information

Initial pH:	8.2
Initial EC (µS/cm):	1893
Salinity (ppt):	2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5) (DM)

day										
0	7.6	7.6	7.6	~~8.0~~ 8.1	~~9.1~~ 8.1	~~8.1~~ 8.1				
2	8.0	7.9	7.9	8.1	8.1	8.1				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm) (DM) 42 EV 2 EV

0	~~391~~	304	308	~~1357~~	~~1908~~ EV	~~1978~~				
2	333	320	316	1765	1860	1874				

DO (mg/L) (**40-100% saturation at test temp.**) 8.4 8.4

0	~~7.7~~ ~~8.4~~	~~8.4~~	8.4	8.4	8.4	8.4				
2	8.4	8.4	8.4	8.4	8.4	8.4				

Temperature (°C) (range: **13-17 °C**) (DM) 17

0	~~17~~	~~17~~	17	17	17	17				
2	17	17	17	17	17	17				

	Number Alive (I, immobile)									
0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar Wed C3 Jar(s) mortality 7 days prior to test (must be ≤25%) 0 %

QA (previous month)

Days to first brood (≤12 days) 7

Average number of young produced (≥15 young) 41

Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - (must be ≤10%) 0

Sample

DO (mg/L) of sample prior to aeration: 9.84 (CC)

Temperature (°C) of sample prior to aeration: ~~18~~ 17 (CC)

DO % of sample prior to aeration: 112

Is aeration required (<40% or >100%)? **Yes or No**

Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20min

Filtered with 110um screen prior to testing **Yes or No**

Hardness (mg $CaCO_3$/L) of 100% : 1158

Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —

Alkalinity of 100% sample (mg $CaCO_3$/L): 335

Dilution Water

Pail label / preparation date 2:06/24 (HHRW)

Hardness of dilution water (mg/L) 80

DO Levels (40-100% saturation) - corrected for altitude -

3.7 to 9.1 mg/L at 13°C	3.4 to 8.6 mg/L at 16°C
3.6 to 8.9 mg/L at 14°C	3.4 to 8.4 mg/L at 17°C
3.5 to 8.8 mg/L at 15°C	

Comments/Observations:

0 hr: No ppt

48 hr: ~~No ppt~~ Surficial ppt

Reviewed By: EV Date Reviewed: 2022/07/13

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC164 Reference 2122-2804-01

Test Log KO

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/07/06	1630	DM/~~KO~~	2	CC
1	2022/07/07	830	DM/ML	-	NA
2	2022/07/08	0940	AM	3	NA

Sample Information

Initial pH: 8.2
Initial EC (µS/cm): 1883
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	7.9	7.8	7.7	8.0	8.0	8.1				
2	7.7	7.8	7.8	8.1	8.2	8.2				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	295	307	307	1958	1921	1931				
2	309	317	317	1814	1841	1910				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	DM 12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar wedC1 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 41
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0

Sample
DO (mg/L) of sample prior to aeration: ~~9.1~~ 10.7 (cc)
Temperature (°C) of sample prior to aeration: ~~8~~ 12 (ec)
DO % of sample prior to aeration: 109
Is aeration required (<40% or >100%)? (Yes) or No
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20 min
Filtered with 110um screen prior to testing Yes or (No)
Hardness (mg $CaCO_3$/L) of 100% : 1158
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 335

Dilution Water
Pail label / preparation date 2206/24 CMHRW
Hardness of dilution water (mg/L) 80

DO Levels (40-100% saturation) - corrected for altitude -
4.1 to 10.3 mg/L at 8°C
4.0 to 10.0 mg/L at 9°C
3.9 to 9.8 mg/L at 10°C
3.8 to 9.6 mg/L at 11°C
3.7 to 9.4 mg/L at 12°C

Comments/Observations:
0 hr: NoPpt
48 hr: no ppt

Reviewed By: EV Date Reviewed: 2022/07/13

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS 5 Client TEC164 Reference 2122-2804-04

Test Log KP

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/07/06	1650	DM/KP/AC	2	CC
1	2022/07/07	0930	AI	-	NA
2	2022/07/08	0930	AI	3	NA

Sample Information

Initial pH:	8.2
Initial EC (µS/cm):	1883
Salinity (ppt):	2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				
day	pH (units) (range: 6.0-8.5)									
0	7.7	7.6	7.6	8.0	8.1	8.1				
2	7.9	7.9	7.8	8.4	8.4	8.4				
	The pH of the sample was not adjusted prior to test setting, unless noted in the comments below									
	EC (uS/cm)									
0	303	308	308	1836	1972	1926				
2	318	328	320	1845	1933	1949				
	DO (mg/L) (**40-100% saturation at test temp.**)									
0	7.9	7.9	7.9	7.7	7.9	7.9				
2	7.9	7.9	7.9	7.9	7.9	7.9				
	Temperature (°C) (range: **18-22 °C**)									
0	20	20	20	21	20	20				
2	20	20	20	20	20	20				
	Number Alive (I, immobile)									
0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar Wed Cz — Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 41
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0

Sample
DO (mg/L) of sample prior to aeration: 9.1
Temperature (°C) of sample prior to aeration: 20
DO % of sample prior to aeration: 113
Is aeration required (<40% or >100%)? (Yes) or No
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20min
Filtered with 110um screen prior to testing Yes or (No)
Hardness (mg $CaCO_3$/L) of 100% : 1158
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 335

Dilution Water
Pail label / preparation date 2'.06/24 (MHR)
Hardness of dilution water (mg/L) 80

Antiscalant
Final Concentration in Sample: 5mg/L
Volume of sample: 500mL Volume of antiscalant: 39.5µL

Comments/Observations:
0 hr: No ppt
48 hr: no ppt

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Reviewed By: EV Date Reviewed: 2022/07/13

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC164 Reference 2122-2804-02

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/07/06	1630	DM/~~KO~~AT	2	CC
1	2022/07/07	830	DM/ML	-	NA
2	2022/07/08	0910 AM	AT	3	NA

Sample Information

Initial pH: 8.0
Initial EC (µS/cm): 1871
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	7.6	7.6	7.6	8.0	8.0	8.0				
2	7.7	7.8	7.8	8.0	8.1	8.1				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	294	307	308	1957	1906	1911				
2	324	317	319	1726	1834	1825				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.7	7.7	7.7	7.7	7.9	7.9				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	21	21	21	21	20	20				
2	20	20	20	20	20	20				

Number Alive (l, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar Wed.C2 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)

Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 41
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: ~~8.7~~ 8.7 EV
DO % of sample prior to aeration: ~~DM 95~~ 105
Duration of aeration (37.5 +/- 12.5 mL/min/L) : ~~20min~~
Hardness (mg $CaCO_3$/L) of 100% : 1176
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 313

Temperature (°C) of sample prior to aeration: 18
Is aeration required (<40% or >100%)? (Yes) or No DM
Filtered with 110um screen prior to testing Yes or (No)
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)

Dilution Water

Pail label / preparation date 2:06/24 (MH&W)
Hardness of dilution water (mg/L) 80

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Comments/Observations:

0 hr: ~~No ppt~~
48 hr: Surficial ppt

Reviewed By: EV Date Reviewed: 2022/07/13

NAUTILUS ENVIRONMENTAL

Chamber 1

Daphnia 15°C Bench Sheet

Method DAS 15 Client TEC164 Reference 2122-2804-02

Test Log KO

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/07/06	1545	DM/~~KO~~AT	2	CC
1	2022/07/07	0900	AT	-	NA
2	2022/07/08	1000	AT	3	NA

Sample Information

Initial pH:	8.0
Initial EC (µS/cm):	1871
Salinity (ppt):	2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	7.6	7.6	7.6	7.8	7.8	7.8				
2	8.0	7.9	7.9	8.0	8.1	8.1				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	301	304	308	1852	1908	1918				
2	313	316	315	1770	1832	1862				

DO (mg/L) (**40-100% saturation at test temp.**)

0	8.4	8.4	8.4	8.4	8.4	8.4				
2	8.4	8.4	8.4	8.4	8.4	8.4				

Temperature (°C) (range: **13-17 °C**)

0	17	17	17	17	17	17				
2	17	17	17	17	17	17				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar wed C3 Jar(s) mortality 7 days prior to test (must be ≤25%) 0

QA (previous month)

Days to first brood (≤12 days) 7

Average number of young produced (≥15 young) 41

Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - (must be ≤10%) 0

Sample

DO (mg/L) of sample prior to aeration: CC 8.64

DO % of sample prior to aeration: 100

Duration of aeration (37.5 +/- 12.5 mL/min/L) : —

Hardness (mg $CaCO_3$/L) of 100% : 1176

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —

Alkalinity of 100% sample (mg $CaCO_3$/L): 313

Temperature (°C) of sample prior to aeration: CC 17

Is aeration required (<40% or >100%)? Yes or (No)

Filtered with 110um screen prior to testing Yes or (No)

Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)

Dilution Water

Pail label / preparation date 2:06/24 (MHRW)

Hardness of dilution water (mg/L) 80

DO Levels (40-100% saturation) - corrected for altitude -

3.7 to 9.1 mg/L at 13°C	3.4 to 8.6 mg/L at 16°C
3.6 to 8.9 mg/L at 14°C	3.4 to 8.4 mg/L at 17°C
3.5 to 8.8 mg/L at 15°C	

Comments/Observations:

0 hr: No ppt

48 hr: Surficial ppt

Reviewed By: EV Date Reviewed: 2022/07/13

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC164 Reference 2122-2804-02

Test Log KO **Sample Information**

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/07/06	1545	DM/~~KO~~AT	2	EC
1	2022/07/07	830	DH/AL	-	NA
2	2022/07/08	0930	AI	3	NA

Initial pH: 8.0
Initial EC (µS/cm): 1871
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	7.6	7.6	7.6	7.8	7.8	7.6				
2	8.0	7.9	7.8	8.1	8.1	8.1				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm) EV

0	307	308	308	1912	1905	1918				
2	313	318	318	1823	1890	1910				

DO (mg/L) (**40-100% saturation at test temp.**) DM

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**) DM 2 EV

0	12	12	12	12 EV	12 EV	12				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar MedC3 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 41
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: ~~8.7~~ 9.4 CC
Temperature (°C) of sample prior to aeration: ~~12~~ 12 CC
DO % of sample prior to aeration: 100
Is aeration required (<40% or >100%)? Yes or (No)
Duration of aeration (37.5 +/- 12.5 mL/min/L) : —
Filtered with 110um screen prior to testing Yes or (No)
Hardness (mg $CaCO_3$/L) of 100% : 176
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 313

Dilution Water
Pail label / preparation date 22/06/24 (MHRW)
Hardness of dilution water (mg/L) 80

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

Comments/Observations:
0 hr: NO PPT
48 hr: no ppt

Reviewed By: EV Date Reviewed: 2022/07/13

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS 5 Client TEC164 Reference 2122-~~2805-03~~ 2804-03

Test Log

Day	Date	Time	Technician KO	Chem. Cart	Daily Data Review
0	2022/07/06	1600	DM/~~KO~~ AI	2	CC
1	2022/07/07	0830	M L/DM	-	NA
2	2022/07/08	0910	AI	3	NA

Sample Information

Initial pH:	8.0
Initial EC (µS/cm):	1871
Salinity (ppt):	2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				
day				pH (units) (range: 6.0-8.5)						
0	7.6	7.6	7.6	8.0	8.0	8.0				
2	7.6	7.7	7.7	8.3	8.4	8.4				
				The pH of the sample was not adjusted prior to test setting, unless noted in the comments below						
				EC (uS/cm)						
0	298	304	306	1836	1892	1904				
2	304	318	316	1799	1886	1894				
				DO (mg/L) (**40-100% saturation at test temp.**)						
0	7.7	7.9	7.7	7.9	7.9	7.9				
2	7.9	7.9	7.9	7.9	7.9	7.9				
				Temperature (°C) (range: **18-22 °C**)						
0	21	20	21	20	20	20				
2	20	20	20	20	20	20				
				Number Alive (I, immobile)						
0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar Wed C2 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)

Days to first brood (≤12 days) 7

Average number of young produced (≥15 young) 41

Were test treatments randomized on test tray? Yes / No

Control Validity Criteria

Mean % mortality at 48 hours - (must be ≤10%) 0

Sample

DO (mg/L) of sample prior to aeration: 878.9 DM

DO % of sample prior to aeration: DM HG 108

Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20min

Hardness (mg $CaCO_3$/L) of 100% : 1176

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —

Alkalinity of 100% sample (mg $CaCO_3$/L): 313

Temperature (°C) of sample prior to aeration: 20

Is aeration required (<40% or >100%)? Yes or No

Filtered with 110um screen prior to testing Yes or No

Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or No

Dilution Water

Pail label / preparation date 2:06/24 (MHRW)

Hardness of dilution water (mg/L) 80

Antiscalant

Final Concentration in Sample: 5mg/L

Volume of sample: 500mL Volume of antiscalant: 39.5µL

Comments/Observations:

0 hr: No ppt

48 hr: no ppt

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C

3.2 to 8.1 mg/L at 19°C

3.2 to 7.9 mg/L at 20°C

3.1 to 7.7 mg/L at 21°C

3.0 to 7.6 mg/L at 22°C

Reviewed By: EV Date Reviewed: 2022/07/13

APPENDIX C – Chain-of-custody form

Teck

COC ID: EVO NAUTILUS July 5 2022 | **TURNAROUND TIME:** | **RUSH:**

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name / Job#	Elkview Operations			Lab Name	Nautilus Environmental - BC			Report Format / Distribution		Excel	PDF	EDD
Project Manager	Group 1; Brett Mason			Lab Contact				Email 1:	teckcoal@equisonline.com			X
Email	Brett.Mason@teck.com			Email	jacklyn@nautilusenvironmental.ca			Email 2:	DL-EVO-SRF-LAB@teck.com	X	X	X
Address	RR1 HWY 3			Address	10823 27th Street SE			Email 3:	Cole.Macgregor@teck.com	X	X	X
								Email 4:				
City	Sparwood	Province	BC	City	Calgary	Province	AB	Email 5:				
								Email 6:				
								Email 7:				
								Email 8:				
								Email 9:				
								Email 10:				
								Email 11:				
								Email 12:				
								Email 13:				
Postal Code	V0B 2G0	Country	Canada	Postal Code	T2H 2K1	Country	Canada					
Phone Number	250-425-6179			Phone Number	T2Z 3V9			PO number	VPO0842410			

SAMPLE DETAILS | **ANALYSIS REQUESTED** | Filtered - F: Field, L: Lab, FL: Field & Lab, N: None

2022/07/06
08:30
Manitoulin
8x20 L carboys, 10x 1 L bottles
SRS/RM
Nos No I
Good Condition

Sample ID	Sample Location (sys_loc_code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	FIL	PRESERV.	ANALYSIS: 48hr Daphnia Magna Single Concentration Acute Toxicity 20C	48hr Daphnia Magna Single Concentration Acute Toxicity 10C	48hr Daphnia Magna Single Concentration Acute Toxicity Anitscalent	96hr Rainbow Trout Single Concentration Acute Toxicity (10 L Bladder)	96hr Rainbow Trout Single Concentration Acute Toxicity (20 L Bladder)	48hr Daphnia Magna Single Concentration Toxicity 15C	48hr Daphnia Magna Single Concentration Acute Toxicity 15C					
-01 EV_GT1_WS_2022-07-05_N-SRF	EV_GT1	WS		2022-07-05	8:10	G	8			2	1			4		1	10, 4°C				
-02 EV_BC1_WS_2022-07-05_N-SRF	EV_BC1	WS		2022-07-05	8:50	G	8			2	1			4		1	17.5°C				
-03 EV_BC1_WS_2022-07-05_N-SRF-AS	EV_BC1	WS		2022-07-05	8:11	G	1					1					12.9°C				
-04 EV_GT1_WS_2022-07-05_N-SRF-AS	EV_GT1	WS		2022-07-05	8:51	G	1					1					12.9°C				

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME
Field Temperatures		July 5, 2022		

SERVICE REQUEST (rush - subject to availability)

Regular (default)	X
Priority (2-3 business days) - 50% surcharge	
Emergency (1 Business Day) - 100% surcharge	
For Emergency <1 Day, ASAP or Weekend - Contact ALS	

Sampler's Name		Mobile #	
Sampler's Signature		Date/Time	July 5, 2022

END OF REPORT

Acute Toxicity Test Results

Samples collected July 11, 2022

Final Report

September 5, 2022

Submitted to: **Teck Coal Ltd.**
Sparwood, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates						
	Collected	**Received**	**Rainbow trout test initiation**	***Daphnia magna* 10˚C test initiation**	***Daphnia magna* 15˚C test initiation**	***Daphnia magna* 20˚C test initiation**	***Daphnia magna* 20 mg/L antiscalant test initiation**
F2_BPO_WG_2022-07-11_N / 2122-2869-01	11-Jul-22 at 0800h	12-Jul-22 at 1000h	12-Jul-22 at 1450h	12-Jul-22 at 1610h	12-Jul-22 at 1610h	12-Jul-22 at 1610h	-
F2_BPO_WG_2022-07-11_N-AS / 2122-2869-02	11-Jul-22 at 0801h	12-Jul-22 at 1000h	-	-	-	-	12-Jul-22 at 1610h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
F2_BPO_WG_2022-07-11_N	16.8°C	1211	451
F2_BPO_WG_2022-07-11_N-AS	16.8°C	1211	451

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)
- *Daphnia magna* 48-h single concentration screening test (conducted at 15°C)
- *Daphnia magna* 48-h single concentration screening test (conducted with 20 mg/L antiscalant)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample				
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 15˚C	*Daphnia magna* 20˚C	*Daphnia magna* 20 mg/L antiscalant
F2_BPO_WG_2022-07-11_N	100	100	100	100	-
F2_BPO_WG_2022-07-11_N-AS	-	-	-	-	100

Sample ID	Percent Immobility in 100 (% v/v)			
	Daphnia magna 10˚C	*Daphnia magna 15*˚C	*Daphnia magna* 20˚C	*Daphnia magna 2*0 mg/L antiscalant
F2_BPO_WG_2022-07-11_N	0	0	0	-
F2_BPO_WG_2022-07-11_N-AS	-	-	-	0

Precipitate observations

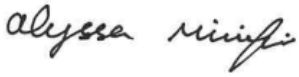
Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
F2_BPO_WG_2022-07-11_N	Rainbow trout	Precipitate observed on the test vessel	None
	Daphnia magna 10˚C	None	None
	Daphnia magna 15˚C and 20˚C	Surficial and test vessel precipitate observed	None
F2_BPO_WG_2022-07-11_N-AS	*Daphnia magna* antiscalant	None	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	3.5 (3.1-4.0) g/L KCl[1]	6.5 (6.0-7.0) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.4 (2.6-4.4) g/L KCl	6.4 (5.4-7.4) g/L NaCl
Reference toxicant CV	8.7%	5.4%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, June 20, 2022; [2] Test date, July 5, 2022

LC = Lethal Concentration; CL = Confidence Limit; SD = Standard Deviation; CV = Coefficient of Variation



Report By:
Alyssa Minifie, BSc
Laboratory Biologist



Reviewed By:
Emma Marus, BSc
Biologist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Control/dilution water for antiscalant test	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L), Na_2SeO_4 (2 µg Se/L) and 15 mg/L antiscalant
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 4. Summary of test conditions: 48-h *Daphnia magna* survival test at 15˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	15 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC 164 Reference 2122-2869-01 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022-07-12	1450 *	KO/AM	1	NA
1	2022-07-13	0950	KO/AM	-	MAF
2	2022-07-14	0945	ML	-	CC
3	2022-07-15	1500	ML	-	MAF
4	2022-07-16	1070	AM/ML	1	NA

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 7.6
Initial EC (µS/cm): 1902
Salinity (ppt): 1

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L : (yes)/no

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	8.6	8.6			
Temp (°C) of 100%	16				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	7.9	7.4						
Day 4	8.1	8.2						
EC (uS/cm)								
Day 0	378	1945						
Day 4	376	1830						
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	8.6	8.6						
Day 4	8.8	8.8						
Temperature (°C) (range: 14-16°C)								
Day 0	16	16						
Day 4	15	15						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.7	0.7
2	3.6	0.5
3	3.8	0.7
4	3.4	0.4
5	3.4	0.5
6	3.5	0.5
7	4.1	0.9
8	3.6	0.5
9	3.4	0.4
10	3.5	0.5

Loading Density (g/L): 0.4 ~~0.3~~ MG. (must be ≤0.5 g/L)
Mean Length (cm): 3.6
Length Range (cm): 3.4-4.1
Mean Weight (g): 0.6 ~~0.5~~ MG. 0.9 MG
(Must be ≥0.3g)
Weight Range: (g): 0.4 ~~0.7~~

Test Organism Information

Batch 20220506TR
Source Trout Lodge
Tank # 8
Days Held at 15± 2°C 44 (must be ≥14 days)
Percent stock mortality 0 (7 days prior to test, must be <2%)
Test Volume (L) ~~18~~ 16 KO

Comments :
96h: ppt on sides & bottom of tank

Reviewed By: _____ Date Reviewed: _____

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC 164 Reference 2122-2869-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/07/12	1610	DM/[redacted]A1	2	CC
1	2022/07/13	830	DM	-	MAF
2	2022/07/14	0930	DM/BS	2	EP

Sample Information

Initial pH: 7.6
Initial EC (µS/cm): 1902
Salinity (ppt): 1

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				
day				pH (units) (range: 6.0-8.5)						
0	8.0	8.0	8.0	7.4	7.4	7.4				
2	8.0	8.0	8.1	8.2	8.2	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

				EC (uS/cm)						
0	361	385	387	1918	1980	1988				
2	373	387	390	1878	1935	1936				

				DO (mg/L) (**40-100% saturation at test temp.**)						
0	7.7	7.7	7.7	7.7	7.7	7.7				
2	7.7	7.9	7.9	7.9	7.9	7.9				

				Temperature (°C) (range: **18-22 °C**)						
0	21	21	21	21	21	21				
2	21	20	20	20	20	20				

				Number Alive (I, immobile)						
0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar Mon Cl Jar(s) mortality 7 days prior to test (must be ≤25%) 5%

QA (previous month)
Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 41
Were test treatments randomized on test tray? Yes / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0

Sample
DO (mg/L) of sample prior to aeration: DM ~~7.8~~ 7.7
Temperature (°C) of sample prior to aeration: 21
DO % of sample prior to aeration: 100
Is aeration required (<40% or >100%)? **Yes or No**
Duration of aeration (37.5 +/- 12.5 mL/min/L) : —
Filtered with 110um screen prior to testing **Yes or No**
Hardness (mg $CaCO_3$/L) of 100% : 1211
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 451

Dilution Water
Pail label / preparation date 1:06/24
Hardness of dilution water (mg/L) 135

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Comments/Observations:
0hr: No ppt
48hr: Surficial ppt. Ppt on jars

Reviewed By: MG Date Reviewed: 2022/07/20

NAUTILUS ENVIRONMENTAL

Daphnia 15°C Bench Sheet

Method DAS 15 Client TEC 164 Reference 2122-2869-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/07/12	1610	DM/AI	2	CC
1	2022/07/13	0930	MI	-	mmf
2	2022/07/14	1030	DM/BS	2	EP

Sample Information

Initial pH:	7.6
Initial EC (µS/cm):	1402
Salinity (ppt):	1

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	8.1	~~8.0~~ 8.1	8.1	7.4	7.4	7.5				
2	8.3	8.3	8.3	8.4	8.4	8.5				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	376	386	384	1924	2060	1996				
2	396	389	390	1852	1940	1945				

DO (mg/L) (**40-100% saturation at test temp.**)

0	8.4	8.4	8.4	8.4	8.4	8.4				
2	8.4	8.4	8.4	8.4	8.4	8.4				

Temperature (°C) (range: **13-17 °C**)

0	17	17	17	17	17	17				
2	DM ~~18~~ 17	17	17	17	17	17				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar Mom D2 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)

Days to first brood (≤12 days) 7

Average number of young produced (≥15 young) 39

Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - (must be ≤10%) 0%

Sample

DO (mg/L) of sample prior to aeration: DM 7.6 ~~7.7~~ CC 8.4

Temperature (°C) of sample prior to aeration: DM 17

DO % of sample prior to aeration: 100

Is aeration required (<40% or >100%)? **Yes or (No)**

Duration of aeration (37.5 +/- 12.5 mL/min/L) : —

Filtered with 110um screen prior to testing **Yes or (No)**

Hardness (mg $CaCO_3$/L) of 100% : 121

Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or (No)**

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —

Alkalinity of 100% sample (mg $CaCO_3$/L): 451

Dilution Water

Pail label / preparation date 1:0629

Hardness of dilution water (mg/L) 135

DO Levels (40-100% saturation) - corrected for altitude -

3.7 to 9.1 mg/L at 13°C	3.4 to 8.6 mg/L at 16°C
3.6 to 8.9 mg/L at 14°C	3.4 to 8.4 mg/L at 17°C
3.5 to 8.8 mg/L at 15°C	

Comments/Observations:

0hr: No ppt

48hr: Surficial ppt. Ppt on jar.

Reviewed By: MG Date Reviewed: 2022/07/20

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC 164 Reference 2122-2869 -01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/07/12	1610	DM/AI	2	CC
1	2022/07/13	0930	AI	-	MAP
2	2022/07/14	1080	DM/BS	2	EP

Sample Information

Initial pH:	7.6
Initial EC (µS/cm):	1902
Salinity (ppt):	1

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	7.9	8.0	8.0	7.4	7.4	7.4				
2	8.3	8.3	8.2	8.4	8.4	8.4				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	368	384	384	1910	1994	1996				
2	387	387	393	1847	1961	1975				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar Mon D2 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)

Days to first brood (≤12 days) 7

Average number of young produced (≥15 young) 33

Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - 0%

(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 7.8 Temperature (°C) of sample prior to aeration: DM 7.12

DO % of sample prior to aeration: 93 Is aeration required (<40% or >100%)? **Yes or (No)**

Duration of aeration (37.5 +/- 12.5 mL/min/L) : — Filtered with 110um screen prior to testing **Yes or (No)**

Hardness (mg $CaCO_3$/L) of 100% : 1211 Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or (No)**

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —

Alkalinity of 100% sample (mg $CaCO_3$/L): 451

Dilution Water

Pail label / preparation date 1:06/29

Hardness of dilution water (mg/L) 135

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

Comments/Observations:

0hr: NOPPT

48hr: NOPPT

Reviewed By: MG Date Reviewed: 2022/07/20

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS 2.0 Client TEC 164 Reference 2122-2869-02

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/07/12	1610	DM/AI	2	CC
1	2022/07/13	0840	AI	-	MAF
2	2022/07/14	0930	DM/BS	2	EP

Sample Information

Initial pH:	7.6
Initial EC (µS/cm):	1902
Salinity (ppt):	1

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	8.1	8.1	8.1	8.2	8.2	8.2				
2	8.0	8.0	8.1	8.4	8.5	8.5				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	383	387	392	1410	1944	1960				
2	375	393	396	1883	1936	1943				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.7	7.7	7.6	7.6	7.6				
2	7.7	7.2	7.7	7.6	7.7	7.7				

Temperature (°C) (range: **18-22 °C**)

0	20	21	21	22	22	22				
2	21	21	21	21	21	21				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	9	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar Mon D1 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%.

QA (previous month)

Days to first brood (≤12 days) 7

Average number of young produced (≥15 young) 33

Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - (must be ≤10%) 3%.

Sample

DO (mg/L) of sample prior to aeration: 7.9 Temperature (°C) of sample prior to aeration: 22

DO % of sample prior to aeration: 106 Is aeration required (<40% or >100%)? **Yes or No**

Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20min Filtered with 110um screen prior to testing **Yes or No**

Hardness (mg $CaCO_3$/L) of 100% : 121 Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —

Alkalinity of 100% sample (mg $CaCO_3$/L): 451

Dilution Water

Pail label / preparation date 1:06/29

Hardness of dilution water (mg/L) 135

Antiscalant

Final Concentration in Sample: 20mg/L

Volume of sample: 500mL Volume of antiscalant: 1584L

Comments/Observations:

0hr: No ppt

48hr: No ppt

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Reviewed By: MG Date Reviewed: 2022/07/20

APPENDIX C – Chain-of-custody form

Teck

COC ID:	F2 NAUTILUS July 11 2022	TURNAROUND TIME:		RUSH:	

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name / Job#	F2 SRF			Lab Name	Nautilus Environmental - BC			Report Format / Distribution		Excel	PDF	EDD
Project Manager	BRETT MASON			Lab Contact				Email 1:	Cole.Macgregor@teck.com	X	X	X
Email	BRETT.MASON@TECK.COM			Email	jacklyn@nautilusenvironmental.ca			Email 1:	teckcoal@equisonline.com			X
Address	RR1 HWY 3			Address	10823 27th Street SE			Email 2:	DL-EVO-SRF-LAB@teck.cor	X	X	X
								Email 3:				
City	Sparwood	Province	BC	City	Calgary	Province	AB	Email 4:				
								Email 5:				
								Email 6:				
								Email 7:				
								Email 8:				
								Email 10:				
								Email 11:				
								Email 12:				
								Email 13:				
Postal Code	V0B 2G0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada					
Phone Number	250-425-6179			Phone Number	403-253-7121			PO number	VPO00842410			

SAMPLE DETAILS

2022/07/12
Manitoulin
10:00
4x 20 l carboys
5x 1 l bottles
SRS/ACINZ
MoS MoI
Good Condition

ANALYSIS REQUESTED

Filtered - F: Field, L: Lab, FL: Field & Lab, N: None

Sample ID 2122-2869	Sample Location (sys_loc_code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	ANALYSIS Filt.	48hr Daphnia Magna Single Concentration Acute Toxicity 20C	48hr Daphnia Magna Single Concentration Acute Toxicity 10C	48hr Daphnia Magna Single Concentration Acute Toxicity Anitscalent	96hr Rainbow Trout Single Concentration Acute Toxicity (20L Bladders)	48hr Daphnia Magna Single Concentration Toxicity 15C
-01 F2_BPO_WG_2022-07-11_N	F2_BPO	WG		2022-07-11	8:00	G	8		2	2		4	16.8°C
-02 F2_BPO_WG_2022-07-11_N-AS	F2_BPO	WG		2022-07-11	8:01	G	1				1		16.8°C

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME
	Humberto Alvarado	July 11, 2022		
	[signature]	11:40		

SERVICE REQUEST (rush - subject to availability)					
Regular (default)	X	Sampler's Name	Ariana Lewis	Mobile #	
Priority (2-3 business days) - 50% surcharge					
Emergency (1 Business Day) - 100% surcharge		Sampler's Signature	[signature]	Date/Time	July 11, 2022
For Emergency <1 Day, ASAP or Weekend - Contact ALS					

END OF REPORT

Acute Toxicity Test Results

Samples collected July 18, 2022

Final Report

September 5, 2022

Submitted to: **Teck Coal Ltd.**
Sparwood, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates					
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation	*Daphnia magna* antiscalant test initiation
EV_EC1_WS_2022-07-18_N-SRF / 2122-2926-01	18-Jul-22 at 0930h	19-Jul-22 at 0830h	19-Jul-22 at 1515h	19-Jul-22 at 1550h	19-Jul-22 at 1550h	-
EV_EC1_WS_2022-07-18_N-SRF-AS / 2122-2926-02	18-Jul-22 at 0931h	19-Jul-22 at 0830h	-	-	-	19-Jul-22 at 1600h
EV_ECOUT_WS_2022-07-18_N-SRF / 2122-2926-03	18-Jul-22 at 1040h	19-Jul-22 at 0830h	19-Jul-22 at 1510h	19-Jul-22 at 1600h	19-Jul-22 at 1600h	-
EV_ECOUT_WS_2022-07-18_N-SRF-AS / 2122-2926-04	18-Jul-22 at 1041h	19-Jul-22 at 0830h	-	-	-	19-Jul-22 at 1610h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
EV_EC1_WS_2022-07-18_N-SRF	7.9°C	1031	376
EV_EC1_WS_2022-07-18_N-SRF-AS	7.9°C	1031	376
EV_ECOUT_WS_2022-07-18_N-SRF	9.1°C	1137	456
EV_ECOUT_WS_2022-07-18_N-SRF-AS	9.1°C	1137	456

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)
- *Daphnia magna* 48-h single concentration screening test (conducted with 5 mg/L antiscalant)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample			
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
EV_EC1_WS_2022-07-18_N-SRF	100	100	97	-
EV_EC1_WS_2022-07-18_N-SRF-AS	-	-	-	100
EV_ECOUT_WS_2022-07-18_N-SRF	100	100	93	-
EV_ECOUT_WS_2022-07-18_N-SRF-AS	-	-	-	100

Sample ID	Percent Immobility in 100 (% v/v)		
	Daphnia magna 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
EV_EC1_WS_2022-07-18_N-SRF	0	33	
EV_EC1_WS_2022-07-18_N-SRF-AS			0
EV_ECOUT_WS_2022-07-18_N-SRF	0	43	
EV_ECOUT_WS_2022-07-18_N-SRF-AS			0

Precipitate observations

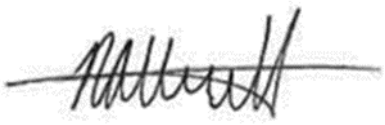
Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
EV_EC1_WS_2022-07-18_N-SRF	Rainbow trout	Precipitate on the test vessel	None
	Daphnia magna	Precipitate on water surface (10°C, 20°C)	None
EV_EC1_WS_2022-07-18_N-SRF-AS	*Daphnia magna*	None	None
EV_ECOUT_WS_2022-07-18_N-SRF	Rainbow trout	Precipitate on the test vessel	None
	Daphnia magna	Precipitate on the test vessel (20°C) and water surface (10°C, 20°C)	None
EV_ECOUT_WS_2022-07-18_N-SRF-AS	*Daphnia magna*	None	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	4.2 (3.9 - 4.6) g/L KCl[1]	5.4 (5.2 - 5.6) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.4 (2.6 - 4.5) g/L KCl	6.3 (5.3 - 7.5) g/L NaCl
Reference toxicant CV	8.9%	5.9%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, July 18, 2022; [2] Test date, July 13, 2022

LC = Lethal Concentration; CL = Confidence Limit; SD = Standard Deviation; CV = Coefficient of Variation



Report By:
Naomi Attrill
Biologist



Reviewed By:
Emma Marus, BSc
Biologist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	Deionized reverse osmosis water amended with 96 mg/L $NaHCO_3$, 60 mg/L $CaSO_4 \cdot 2H_2O$, 60 mg/L $MgSO_4$, 4.5 mg/L KCl, and with 4 mg/L B12 (2 µg/L) and 23.9 mg/L Na_2SeO_4 (2 µg Se/L)
Control/dilution water for antiscalant test	Deionized reverse osmosis water amended with 96 mg/L $NaHCO_3$, 60 mg/L $CaSO_4 \cdot 2H_2O$, 60 mg/L $MgSO_4$, 4.5 mg/L KCl, and with 4 mg/L B12 (2 µg/L) and 23.9 mg/L Na_2SeO_4 (2 µg Se/L) and 5 mg/L antiscalant
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	Deionized reverse osmosis water amended with 96 mg/L $NaHCO_3$, 60 mg/L $CaSO_4 \cdot 2H_2O$, 60 mg/L $MgSO_4$, 4.5 mg/L KCl, and with 4 mg/L B12 (2 µg/L) and 23.9 mg/L Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC164 Reference 2122-2926-03 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022/07/19	1513 *	AM/KO	1	IC
1	2022/07/20	0845	AM	-	IC
2	2022/07/21	0745	ML	-	IC
3	2022/07/22	0915	ML	-	IC
4	2022/07/23	1045	KO/ML	1	IC

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 7.3
Initial EC (µS/cm): 1705
Salinity (ppt): 0

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L : **yes/no**

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	9.6	8.6			
Temp (°C) of 100%	15				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	8.0	7.9						
Day 4	8.03	8.02						
EC (uS/cm)								
Day 0	355	1690						
Day 4	372	1436						
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	8.6	8.6						
Day 4	8.6	8.6						
Temperature (°C) (range: 14-16°C)								
Day 0	16	16						
Day 4	16	16						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.5	0.6
2	3.7	0.6
3	3.9	0.7
4	3.6	0.6
5	3.4	0.6
6	4.1	0.9
7	3.2	0.4
8	3.2	0.4
9	3.9	0.8
10	3.1	0.3

Loading Density (g/L): 0.3 (must be ≤0.5 g/L)
Mean Length (cm): 3.6
Length Range (cm): 3.1-4.1
Mean Weight (g): 0.6 (Must be ≥0.3g)
Weight Range: (g): 0.3-0.9

Test Organism Information

Batch 20220621TR
Source LSL
Tank # 1
Days Held at 15± 2°C 28 (must be ≥14 days)
Percent stock mortality 0.07 (7 days prior to test, must be <2%)
Test Volume (L) 18

Comments :
96 hrs: ppt on sides/bottom of tank

Reviewed By: CW Date Reviewed: 2022 07 26

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC164 Reference 2122-2926-01 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022/07/19	1515 *	AM/KO	1	LC
1	2022/07/20	0845	AM	-	EP
2	2022/07/21	0745	ML	-	LC
3	2022/07/22	0915	ML	-	LC
4	2022/07/23	1040	KO/ML	1	EP

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 7.7
Initial EC (µS/cm): 1621
Salinity (ppt): 0

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L : yes/no

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	9.4	8.8			
Temp (°C) of 100%	15				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	7.7	8.1						
Day 4	8.3	8.3						
EC (uS/cm)								
Day 0	352	1594						
Day 4	386	1476						
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	8.6	8.8						
Day 4	8.6	8.6						
Temperature (°C) (range: 14-16°C)								
Day 0	16	15						
Day 4	16	16						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.8	0.6
2	3.6	0.7
3	3.5	0.6
4	4.7	1.4
5	4.1	0.9
6	3.5	0.5
7	3.5	0.5
8	3.5	0.6
9	3.7	0.7
10	3.8	0.8

Loading Density (g/L): 0.4 (must be ≤0.5 g/L)
Mean Length (cm): 3.8
Length Range (cm): 3.5 - 4.7
Mean Weight (g): 0.7 (Must be ≥0.3g)
Weight Range: (g): 0.5 - 1.4

Test Organism Information

Batch 20220621TR
Source LSL
Tank # 1
Days Held at 15± 2°C 28 (must be ≥14 days)
Percent stock mortality 0.07 (7 days prior to test, must be <2%)
Test Volume (L) 18

Comments :
96 hrs: ppt on sides/bottom of tank

Reviewed By: [signature] Date Reviewed: 20221071 26

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC 164 Reference 2122-2926-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/07/19	1550	LC/DM	3	NA
1	2022/07/20	0800	AH	-	EP
2	2022/07/21	0900	DM	2	NA

Sample Information

Initial pH: 7.7
Initial EC (µS/cm): 1621
Salinity (ppt): 8

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	7.6	7.6	7.6	7.9	7.9	7.9				
2	8.0	7.9	7.8	8.1	8.2	8.2				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	288	290	290	1592	1670	1649				
2	294	294	289	1573	1669	1673				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (l, immobile)

0	10	10	10	10	10 AH	10 AH				
1	10	10	10	10	10 (8)	10 (8)				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar MedC4 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 42
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0%
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 9.7
DO % of sample prior to aeration: 114
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20 min
Hardness (mg $CaCO_3$/L) of 100% : 1031
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 376

Temperature (°C) of sample prior to aeration: 12
Is aeration required (<40% or >100%)? (Yes) or No
Filtered with 110um screen prior to testing Yes or (No)
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)

Dilution Water
Pail label / preparation date 2:07/10
Hardness of dilution water (mg/L) 80

DO Levels (40-100% saturation) - corrected for altitude -
4.1 to 10.3 mg/L at 8°C
4.0 to 10.0 mg/L at 9°C
3.9 to 9.8 mg/L at 10°C
3.8 to 9.6 mg/L at 11°C
3.7 to 9.4 mg/L at 12°C

Comments/Observations:
0hr: No ppt
48hr: Superficial ppt.

Reviewed By: CW Date Reviewed: 2022/07/26

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC 164 Reference 2122-2926-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/07/19	1550	LC/DM	3	NA
1	2022/07/20	0740	EP	-	~~ER~~ LC
2	2022/07/21	1000	AJ	2	CC

Sample Information

Initial pH: 7.7
Initial EC (µS/cm): 1621
Salinity (ppt): 0

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	7.5	7.5	7.5	7.9	7.9	7.9				
2	7.8	7.7	7.7	7.8	7.9	7.9				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	277	289	290	1647	1687	1692				
2	290	293	292	1576	1634	1648				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.9	7.9	7.9				
2	7.7	7.7	7.7	7.7	7.7	7.7				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	20	20	20				
2	21	21	21	21	21	21				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10(4I)	10(3I)	10(6I)				
2	10	10	10	9(6i)	10(3i)	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar Mod C2 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 42
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 9.5
Temperature (°C) of sample prior to aeration: 20
DO % of sample prior to aeration: 119
Is aeration required (<40% or >100%)? (Yes) or No
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20min
Filtered with 110um screen prior to testing Yes or (No)
Hardness (mg $CaCO_3$/L) of 100% : 1031
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 376

Dilution Water
Pail label / preparation date 22/07/10
Hardness of dilution water (mg/L) 80

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Comments/Observations:
0hr: No ppt
48hr: Surficial ppt

Reviewed By: CW Date Reviewed: 20221071 26

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS 5 Client TEC 164 Reference 2122-2926-02

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/07/19	1600	LC/DM	3	NA
1	2022/07/20	0800	AM	-	EP
2	2022/07/21	0950	AM	3	CC

Sample Information

Initial pH: 7.7
Initial EC (µS/cm): 1621
Salinity (ppt): 0

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	7.6	7.6	7.5	7.9	7.9	7.9				
2	7.6	7.6	7.6	7.2	8.3	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	297	306	301	1644	1687	1693				
2	304	305	313	1612	1675	1689				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.7	7.7	7.7	7.7	7.9	7.9				
2	7.7	7.7	7.9	7.7	7.7	7.7				

Temperature (°C) (range: **18-22 °C**)

0	21	21	21	21	20	20				
2	21	21	20	21	21	21				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar WED E2
Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 34
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0

Sample
DO (mg/L) of sample prior to aeration: 9.6
DO % of sample prior to aeration: 120
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20min
Hardness (mg $CaCO_3$/L) of 100% : 1031
Temperature (°C) of sample prior to aeration: 20
Is aeration required (<40% or >100%)? (Yes or No)
Filtered with 110um screen prior to testing Yes or (No)
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 376

Dilution Water
Pail label / preparation date 2:0710
Hardness of dilution water (mg/L) 80

Antiscalant
Final Concentration in Sample: 5mg/L
Volume of sample: 500 ml Volume of antiscalant: 31.5ml

Comments/Observations:
0hr: NO ppt
48hr: no ppt

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Reviewed By: CW Date Reviewed: 20220721 26

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC 164 Reference 2122-2926-03

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/07/19	1600	LC/DM	3	NA
1	2022/07/20	0900	DM	-	EP
2	2022/07/21	1130	AI	2	CC

Sample Information

Initial pH: 7.3
Initial EC (µS/cm): 1705
Salinity (ppt): 0

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	7.6	7.5	7.5	7.9	7.9	7.9				
2	7.8	7.8	7.8	7.8	7.8	7.8				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	283	289	296	1703	1762	1775				
2	311	300	297	1597	1674	1694				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar med C4 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 42
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0

Sample
DO (mg/L) of sample prior to aeration: 9.6
DO % of sample prior to aeration: 107
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20min
Hardness (mg $CaCO_3$/L) of 100% : 1137
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 456

Temperature (°C) of sample prior to aeration: 12
Is aeration required (<40% or >100%)? (Yes) or No
Filtered with 110um screen prior to testing Yes or (No)
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)

Dilution Water
Pail label / preparation date 2'07/10
Hardness of dilution water (mg/L) 80

DO Levels (40-100% saturation) - corrected for altitude -
4.1 to 10.3 mg/L at 8°C
4.0 to 10.0 mg/L at 9°C
3.9 to 9.8 mg/L at 10°C
3.8 to 9.6 mg/L at 11°C
3.7 to 9.4 mg/L at 12°C

Comments/Observations:
0hr: NOPPI.
48hr: surficial pot

Reviewed By: CW Date Reviewed: 20221 07/26

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC 164 Reference 2122-2926-03

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/07/19	1600	LC/DM	3	NA
1	2022/07/20	0730	DM	-	EP
2	2022/07/21	1030	AI	2	CC

Sample Information

Initial pH: 7.3
Initial EC (µS/cm): 1705
Salinity (ppt): 0

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	7.7	7.6	7.6	7.9	7.9	7.9				
2	7.7	7.7	7.7	7.7	7.7	7.7				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	282	289	290	1691	1757	1772				
2	315	298	295	1575	1693	1643				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.7	7.7	7.7	7.7	7.9	7.9				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	21	21	21	21	20	20				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10(2i)	10(5i)	8(4i)				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar Wed C2 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 42
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0%

Sample
DO (mg/L) of sample prior to aeration: 9.7
DO % of sample prior to aeration: 121
Duration of aeration (37.5 +/- 12.5 mL/min/L): 20min
Hardness (mg $CaCO_3$/L) of 100% : 1137
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 456

Temperature (°C) of sample prior to aeration: 20
Is aeration required (<40% or >100%)? (Yes) or No
Filtered with 110um screen prior to testing Yes or (No)
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)

Dilution Water
Pail label / preparation date 2.07/10
Hardness of dilution water (mg/L) 80

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Comments/Observations:
0hr: No ppt
48hr: Survival + ppt on jar

Reviewed By: CW Date Reviewed: 2022 07/26

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS 5 Client TEC 164 Reference 2122-2926-04

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/07/19	1610	LC/DM	3	NA
1	2022/07/20	0730	DM	-	EP
2	2022/07/21	1030	AI	2	EC

Sample Information

Initial pH:	7.3
Initial EC (µS/cm):	1705
Salinity (ppt):	0

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	7.6	7.5	7.5	8.0	8.0	8.0				
2	7.5	7.6	7.6	8.3	8.3	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	308	313	313	1688	1758	1771				
2	310	312	313	1695	1721	1738				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.9	7.9	7.9				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	20	20	20				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar Wed C4 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)

Days to first brood (≤12 days) 7

Average number of young produced (≥15 young) 42

Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - (must be ≤10%) 0

Sample

DO (mg/L) of sample prior to aeration: 9.14

DO % of sample prior to aeration: 118

Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20min

Hardness (mg $CaCO_3$/L) of 100% : 1137

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —

Alkalinity of 100% sample (mg $CaCO_3$/L): 456

Temperature (°C) of sample prior to aeration: 20

Is aeration required (<40% or >100%)? (Yes) or No

Filtered with 110um screen prior to testing Yes or (No)

Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)

Dilution Water

Pail label / preparation date 21.07/10

Hardness of dilution water (mg/L) 80

Antiscalant

Final Concentration in Sample: 5 mg/L

Volume of sample: 500ml Volume of antiscalant: 31.5ml

Comments/Observations:

0hr: No ppt

48hr: no ppt

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Reviewed By: CW Date Reviewed: 20221071 26

APPENDIX C – Chain-of-custody form

Teck

COC ID: EVO NAUTILUS July 18 2022 | **TURNAROUND TIME:** | **RUSH:**

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO			
Facility Name / Job#	Elkview Operations			Lab Name	Nautilus Environmental - BC			Report Format / Distribution		Excel	PDF	EDD
Project Manager	Group 1; Brett Mason			Lab Contact				Email 1:	Cole.Macgregor@teck.com	X	X	X
Email	Brett.Mason@teck.com			Email	jacklyn@nautilusenvironmental.ca			Email 2:	teckcoal@equisonline.com			X
Address	RR1 HWY 3			Address	10823 27th Street SE			Email 3:	DL-EVO-SRF-LAB@teck.com	X	X	X
								Email 4:				
City	Sparwood	Province	BC	City	Calgary	Province	AB	Email 5:				
								Email 6:				
								Email 7:				
								Email 8:				
								Email 9:				
								Email 10:				
								Email 11:				
								Email 12:				
								Email 13:				
Postal Code	V0B 2G0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada					
Phone Number	250-425-6179			Phone Number	403-253-7121			PO number	VPO00842410			

SAMPLE DETAILS | **ANALYSIS REQUESTED** (Filtered - F: Field, L: Lab, FL: Field & Lab, N: None)

2022/07/19
08:20
Manitoulin
DC/SRS/AC/ST
8x10L carboys, 4x 20L carboys, 5x1L bottles
NOS/NOT
Good Condition

Sample ID	Sample Location (sys_loc_code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	FIL	PRESERV.	ANALYSIS: 48hr Daphnia Magna Single Concentration Acute Toxicity 20C	48hr Daphnia Magna Single Concentration Acute Toxicity 10C	48hr Daphnia Magna Single Concentration Acute Toxicity Anitscalent	96hr Rainbow Trout Single Concentration Acute Toxicity (20 L Bladder)	96hr Rainbow Trout Single Concentration Acute Toxicity (10 L Bladder)	48hr Daphnia Magna Single Concentration Toxicity 15C						
EV_EC1_WS_2022-07-18_N-SRF -01	EV_EC1	WS		2022-07-18	9:30	G	12			2	2			8		7.9°C					
EV_EC1_WS_2022-07-18_N-SRF-AS -02	EV_EC1	WS		2022-07-18	9:31	G	1					1				↓					
EV_ECOUT_WS_2022-07-18_N-SRF -03	EV_ECOUT	WS		2022-07-18	10:40	G	8			2	2		4			9.1°C					
EV_ECOUT_WS_2022-07-18_N-SRF-AS -04	EV_ECOUT	WS		2022-07-18	10:41	G	1					1				↓					

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME
Field Temperatures ECOUT:		July 18, 2022		

SERVICE REQUEST (rush - subject to availability)					
Regular (default)	X	Sampler's Name		Mobile #	
Priority (2-3 business days) - 50% surcharge					
Emergency (1 Business Day) - 100% surcharge		Sampler's Signature		Date/Time	July 18, 2022
For Emergency <1 Day, ASAP or Weekend - Contact ALS					

END OF REPORT

Acute Toxicity Test Results

Samples collected July 18, 2022

Final Report

September 7, 2022

Submitted to: **Teck Coal Ltd.**
Sparwood, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates					
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation	*Daphnia magna* antiscalant test initiation
F2_BPO_WG_2022-07-18_N/ 2122-2927-01	18-Jul-22 at 0750h	19-Jul-22 at 0830h	19-Jul-22 at 1505h	19-Jul-22 at 1510h	19-Jul-22 at 1510h	-
F2_BPO_WG_2022-07-18_N-AS / 2122-2927-02	18-Jul-22 at 0751h	19-Jul-22 at 0830h	-	-	-	19-Jul-22 at 1515h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
F2_BPO_WG_2022-07-18_N	13.6°C	1168	412
F2_BPO_WG_2022-07-18_N-AS	13.6°C	1168	412

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)
- *Daphnia magna* 48-h single concentration screening test (conducted with 20 mg/L antiscalant)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample			
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
F2_BPO_WG_2022-07-18_N	100	100	100	-
F2_BPO_WG_2022-07-18_N-AS	-	-	-	100

Sample ID	Percent Immobility in 100 (% v/v)		
	***Daphnia magna* 10˚C**	***Daphnia magna* 20˚C**	***Daphnia magna* antiscalant**
F2_BPO_WG_2022-07-18_N	0	0	-
F2_BPO_WG_2022-07-18_N-AS	-	-	0

Precipitate observations

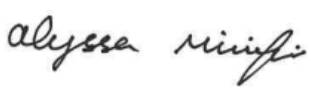
Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
F2_BPO_WG_2022-07-18_N	Rainbow trout	None	None
	Daphnia magna	Surficial precipitate observed in the 20˚C test; Precipitate observed on test vessel in the 20˚C and 10˚C tests	None
F2_BPO_WG_2022-07-18_N-AS	*Daphnia magna* antiscalant	None	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	4.2 (3.9-4.6) g/L KCl[1]	5.9 (5.6-6.2) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.4 (2.6-4.5) g/L KCl	6.3 (5.3-7.5) g/L NaCl
Reference toxicant CV	8.9%	5.8%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, July 18, 2022; [2] Test date, July 18, 2022

LC = Lethal Concentration; CL = Confidence Limit; SD = Standard Deviation; CV = Coefficient of Variation



Report By:
Alyssa Minifie, BSc
Laboratory Biologist



Reviewed By:
Emma Marus, BSc
Biologist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory contro
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Control/dilution water for antiscalant test	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L), Na_2SeO_4 (2 µg Se/L) and 20 mg/L antiscalant
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC164 Reference 2122-2927-01 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022/07/19	1505 *	AM/KO	1	IC
1	2022/07/20	0845	AM	-	EP
2	2022/07/21	0745	ML	-	LC
3	2022/07/22	0915	ML	-	IC
4	2022/07/23	1045	KO/ML	1	EP

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 7.3
Initial EC (µS/cm): 1836
Salinity (ppt): 0

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L: **yes/no**

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	8.6	8.6			
Temp (°C) of 100%	16				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	8.0	7.6						
Day 4	8.0	8.3						
EC (uS/cm)								
Day 0	350	1829						
Day 4	382	1651						
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	8.6	8.6						
Day 4	8.6	8.6						
Temperature (°C) (range: 14-16°C)								
Day 0	16	16						
Day 4	16	16						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.6	0.5
2	4.0	0.8
3	3.8	0.8
4	3.6	0.6
5	3.5	0.6
6	3.7	0.6
7	3.5	0.5
8	3.5	0.6
9	4.0	0.9
10	3.2	0.4

Loading Density (g/L): 0.4 (must be ≤0.5 g/L)
Mean Length (cm): 3.6
Length Range (cm): 3.2-4.0
Mean Weight (g): 0.6 (Must be ≥0.3g)
Weight Range: (g): 0.4-0.9

Test Organism Information

Batch 20220621TR
Source LSL
Tank # 1
Days Held at 15± 2°C 28 (must be ≥14 days)
Percent stock mortality 0.07 (7 days prior to test, must be <2%)
Test Volume (L) 17 18 AM

Comments :
96 hrs: no ppt

Reviewed By: CW Date Reviewed: 20221071 29

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC 164 Reference 2122-2927-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/07/19	1510	CC/AI	3	km
1	2022/07/20	0800	AI	-	EP
2	2022/07/21	1400	DM	2	NA

Sample Information

Initial pH:	7.3
Initial EC (µS/cm):	1836
Salinity (ppt):	0

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	8.1	8.0	8.0	7.4	7.4	7.4				
2	7.9	8.0	8.0	8.0	8.1	8.1				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	411	411 383 AI	380	1858	1937	1946				
2	363	376	380	1795	1859	1858				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.9	7.9	7.9				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	20	20	20				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar Hon C1 Jar(s) mortality 7 days prior to test (must be ≤25%) 0

QA (previous month)

Days to first brood (≤12 days) 7

Average number of young produced (≥15 young) 28

Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - 0%

(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 8.1 Temperature (°C) of sample prior to aeration: 19 cc 18°

DO % of sample prior to aeration: 100% Is aeration required (<40% or >100%)? **Yes or (No)**

Duration of aeration (37.5 +/- 12.5 mL/min/L) : — Filtered with 110um screen prior to testing **Yes or (No)**

Hardness (mg $CaCO_3$/L) of 100% : 1168 Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or (No)**

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —

Alkalinity of 100% sample (mg $CaCO_3$/L): 412

Dilution Water

Pail label / preparation date 1:87/12

Hardness of dilution water (mg/L) 180

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Comments/Observations:

0hr: No ppt

48hr: Surficial ppt. ppt on jar

Reviewed By: CW Date Reviewed: 20221107129

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC 164 Reference 2122-2927-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/07/19	1510	CC/AI	3	LTM
1	2022/07/20	0800	DM	-	EP
2	2022/07/21	0900	DM	2	NA

Sample Information

Initial pH:	7.3
Initial EC (µS/cm):	1836
Salinity (ppt):	0

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	8.1	8.1	8.1	7.4	7.3	7.3				
2	8.2	8.1	8.1	8.1	8.2	8.2				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	396	377	374	1818	1958	1888				
2	382	383	385	1814	1909	1927				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar MohC1 Jar(s) mortality 7 days prior to test (must be ≤25%) 0

QA (previous month)

Days to first brood (≤12 days) 7

Average number of young produced (≥15 young) 28

Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - 0 % (must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 9.4 ~~8.1~~ cc

DO % of sample prior to aeration: 100%

Duration of aeration (37.5 +/- 12.5 mL/min/L) : —

Hardness (mg $CaCO_3$/L) of 100% : 1165

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —

Alkalinity of 100% sample (mg $CaCO_3$/L): 412

Temperature (°C) of sample prior to aeration: 12° ~~19°~~ cc

Is aeration required (<40% or >100%)? **Yes or No**

Filtered with 110um screen prior to testing **Yes or No**

Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Dilution Water

Pail label / preparation date 1:07/12

Hardness of dilution water (mg/L) 180

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

Comments/Observations:

0hr: No ppt

48hr: ~~No ppt~~ DM ppt on jar

Reviewed By: CW Date Reviewed: 20220729

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS 20 Client TEC 164 Reference 2122-2927-02

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/07/19	1515	CC/AI	3	WM
1	2022/07/20	0800	DM	-	EP
2	2022/07/21	0930	DM	2	NA

Sample Information

Initial pH: 7.3
Initial EC (µS/cm): 1836
Salinity (ppt): 0

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	8.0	8.0	8.0	7.4	7.4	7.4				
2	7.9	8.0	8.0	8.2	8.2	~~8.2~~ DM 8.2				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	383	381	381	1865	1925	1938				
2	359	382	383	1802	1873	1886				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.9	7.9	7.9				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	20	20	20				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar Mon D1 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 35
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0%

Sample
DO (mg/L) of sample prior to aeration: 8.1 Temperature (°C) of sample prior to aeration: 19°
DO % of sample prior to aeration: 100% Is aeration required (<40% or >100%)? **Yes or (No)**
Duration of aeration (37.5 +/- 12.5 mL/min/L) : - Filtered with 110um screen prior to testing **Yes or (No)**
Hardness (mg $CaCO_3$/L) of 100% : 1164 Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or (No)**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) -
Alkalinity of 100% sample (mg $CaCO_3$/L): 412

Dilution Water
Pail label / preparation date 1:07/12
Hardness of dilution water (mg/L) 180

Antiscalant
Final Concentration in Sample: 20 mg/L
Volume of sample: 500mL Volume of antiscalant: 158 ~~µL~~ mL EW

Comments/Observations:
0hr: No ppt
48hr: No ppt.

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Reviewed By: CW Date Reviewed: 20221071 29

APPENDIX C – Chain-of-custody form

Teck

COC ID: F2 NAUTILUS July 18 2022 | **TURNAROUND TIME:** | **RUSH:**

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO			
Facility Name / Job#	F2 SRF			Lab Name	Nautilus Environmental - BC			Report Format / Distribution		Excel	PDF	EDD
Project Manager	BRETT MASON			Lab Contact				Email 1:	Cole.Macgregor@teck.com	X	X	X
Email	BRETT.MASON@TECK.COM			Email	jacklyn@nautilusenvironmental.ca			Email 1:	teckcoal@equisonline.com			X
Address	RR1 HWY 3			Address	10823 27th Street SE			Email 2:	DL-EVO-SRF-LAB@teck.com	X	X	X
								Email 3:				
City	Sparwood	Province	BC	City	Calgary	Province	AB	Email 4:				
								Email 5:				
								Email 6:				
								Email 7:				
								Email 8:				
								Email 10:				
								Email 11:				
								Email 12:				
								Email 13:				
Postal Code	V0B 2G0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada					
Phone Number	250-425-6179			Phone Number	403-253-7121			PO number	VPO00842410			

SAMPLE DETAILS | **ANALYSIS REQUESTED** | Filtered - F: Field, L: Lab, FL: Field & Lab, N: None

2022/07/19
0830
Manitoulin
DC/SRS/AC/ST
4x20L carboys, 5x 1L bottles
NaS/NaI
Good Cond.

Sample ID 2122-2927	Sample Location (sys loc code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	Filt.	48hr Daphnia Magna Single Concentration Acute Toxicity 20C	48hr Daphnia Magna Single Concentration Acute Toxicity 10C	48hr Daphnia Magna Single Concentration Acute Toxicity Anitscalent	96hr Rainbow Trout Single Concentration Acute Toxicity (20L Bladders)	48hr Daphnia Magna Single Concentration Toxicity 15C		
F2_BPO_WG_2022-07-18_N -01	F2_BPO	WG		2022-07-18	7:50	G	8		2	2		4		13.6°C	
F2_BPO_WG_2022-07-18_N-AS -02	F2_BPO	WG		2022-07-18	7:51	G	1				1			↓	

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME
		July 18, 2022		

SERVICE REQUEST (rush - subject to availability)					
Regular (default)	X	Sampler's Name		Mobile #	
Priority (2-3 business days) - 50% surcharge					
Emergency (1 Business Day) - 100% surcharge		Sampler's Signature		Date/Time	July 18, 2022
For Emergency <1 Day, ASAP or Weekend - Contact ALS					

END OF REPORT

Acute Toxicity Test Results

Samples collected July 19, 2022

Final Report

September 7, 2022

Submitted to: **Teck Coal Ltd.**
Sparwood, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates						
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 15˚C test initiation	*Daphnia magna* 20˚C test initiation	*Daphnia magna* antiscalant test initiation
EV_GT1_WS_2022-07-19_N_SRF / 2122-2942-01	19-Jul-22 at 0830h	20-Jul-22 at 0845h	20-Jul-22 at 1355h	20-Jul-22 at 1425h	20-Jul-22 at 1535h	20-Jul-22 at 1425h	-
EV_BC1_WS_2022-07-19_N_SRF / 2122-2942-02	19-Jul-22 at 0930h	20-Jul-22 at 0845h	20-Jul-22 at 1405h	20-Jul-22 at 1430h	20-Jul-22 at 1540h	20-Jul-22 at 1430h	-
EV_BC1_WS_2022-07-19_N_SRF-AS / 2122-2942-03	19-Jul-22 at 0931h	20-Jul-22 at 0845h	-	-	-	-	20-Jul-22 at 1430h
EV_GT1_WS_2022-07-05_N_SRF-AS / 2122-2942-04	19-Jul-22 at 0831h	20-Jul-22 at 0845h	-	-	-	-	20-Jul-22 at 1435h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
EV_GT1_WS_2022-07-19_N_SRF	16.9°C	1162	364
EV_BC1_WS_2022-07-19_N_SRF	17.4°C	1162	325
EV_BC1_WS_2022-07-19_N_SRF-AS	16.9°C	1162	325
EV_GT1_WS_2022-07-19_N_SRF-AS	17.4°C	1162	364

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)
- *Daphnia magna* 48-h single concentration screening test (conducted at 15°C)
- *Daphnia magna* 48-h single concentration screening test (conducted with 5 mg/L antiscalant)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample				
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 15˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
EV_GT1_WS_2022-07-19_N_SRF	100	100	100	100	-
EV_BC1_WS_2022-07-19_N_SRF	100	100	100	100	-
EV_BC1_WS_2022-07-19_N_SRF-AS	-	-	-	-	100
EV_GT1_WS_2022-07-19_N_SRF-AS	-	-	-	-	100

Sample ID	Percent Immobility in 100 (% v/v)			
	Daphnia magna 10˚C	*Daphnia magna* 15˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
EV_GT1_WS_2022-07-19_N_SRF	0	0	0	-
EV_BC1_WS_2022-07-19_N_SRF	0	0	13	-
EV_BC1_WS_2022-07-19_N_SRF-AS	-	-	-	0
EV_GT1_WS_2022-07-19_N_SRF-AS	-	-	-	0

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
EV_GT1_WS_2022-07-19_N_SRF	Rainbow trout	Precipitate observed on the bottom and sides of test vessel	None
	Daphnia magna	Surficial precipitate observed in 10 ˚C, 15 ˚C and 20 ˚C tests	None
EV_BC1_WS_2022-07-19_N_SRF	Rainbow trout	Precipitate observed on the bottom and sides of test vessel	None
	Daphnia magna	Surficial precipitate observed in 10 ˚C, 15 ˚C and 20 ˚C tests; Precipitate observed on test vessels in 20 ˚C test	None
EV_BC1_WS_2022-07-19_N_SRF-AS	*Daphnia magna*	None	None
EV_GT1_WS_2022-07-19_N_SRF-AS	*Daphnia magna*	None	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	4.8 (4.3 - 5.2) g/L KCl[1]	5.3 (4.8 - 5.7) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.5 (2.6 - 4.7) g/L KCl	6.2 (5.2 - 7.4) g/L NaCl
Reference toxicant CV	9.6%	5.9%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, July 22, 2022; [2] Test date, July 27, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation

The LC50 result of the reference toxicant test using rainbow trout, initiated on July 22, 2022 fell outside of two standard deviations of the historical mean; this is expected to happen 5% of the time. An investigation occurred and all testing and culturing procedures were followed appropriately.



Report By:
Aishah Iqbal, BSc
Laboratory Biologist



Reviewed By:
Emma Marus, BSc
Biologist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	Moderately hard reconstituted water supplemented with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Control/dilution water for antiscalant test	Moderately hard reconstituted water supplemented with B12 (2 µg/L), Na_2SeO_4 (2 µg Se/L) and 5 mg/L antiscalant
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	Moderately hard reconstituted water supplemented with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 4. Summary of test conditions: 48-h *Daphnia magna* survival test at 15˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	Moderately hard reconstituted water supplemented with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	15 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC164 Reference 2122-2942-01 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022/07/20	1355 *	AM/KO	1	EP
1	2022/07/21	0730	ML	-	LC
2	2022/07/22	0900	ML	-	LC
3	2022/07/23	0830	ML	-	MF
4	2022/07/24	1000	KC/MM/ML	1	CC

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 8.0
Initial EC (µS/cm): 1767
Salinity (ppt): 0

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L: yes/no

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	9.4	8.6			
Temp (°C) of 100%	16				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: **5.5-8.5**)								
Day 0	7.8	8.1						
Day 4	8.1	8.0						
EC (uS/cm)								
Day 0	367	1765						
Day 4	374	1643						
DO (mg/L) (**70-100% saturation at test temp.**)								
Day 0	8.6	8.6						
Day 4	8.6	8.6						
Temperature (°C) (range: **14-16°C**)								
Day 0	16	16						
Day 4	16	16						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.4	0.5
2	3.9	0.7
3	3.9	0.7
4	3.5	0.5
5	4.5	1.0
6	3.9	0.7
7	3.6	0.5
8	3.9	0.7
9	4.0	0.8
10	3.7	0.6

Loading Density (g/L): 0.4 (must be ≤0.5 g/L)
Mean Length (cm): 3.8
Length Range (cm): 3.4-4.5
Mean Weight (g): 0.7 (Must be ≥0.3g)
Weight Range: (g): 0.5-1.0

Test Organism Information

Batch 20220621TR
Source LSL
Tank # 1
Days Held at 15± 2°C 29 (must be ≥14 days)
Percent stock mortality 0.07 (7 days prior to test, must be <2%)
Test Volume (L) ~~18~~ 17.5 KO

Comments :
96 hrs: ppt sides & bottom

Reviewed By: CW Date Reviewed: 20221 07129

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC164 Reference 2122-2942-02 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022/07/20	1405 *	AM/KO	1	GP
1	2022/07/21	0730	ML	-	LC
2	2022/07/22	0900	ML	-	LC
3	2022/07/23	0830	ML	-	MAF
4	2022/07/24	0955	KAM/ML	1	CC

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 7.8
Initial EC (µS/cm): 1673
Salinity (ppt): 0

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L (yes/no)

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	8.6	8.6			
Temp (°C) of 100%	16				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	7.7	7.9						
Day 4	8.1	8.1						
EC (uS/cm)								
Day 0	365	1657						
Day 4	384	1566						
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	8.6	8.6						
Day 4	8.6	8.6						
Temperature (°C) (range: 14-16°C)								
Day 0	16	16						
Day 4	16	16						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.7	0.6
2	4.8	1.4
3	3.7	0.6
4	4.0	0.7
5	3.4	0.5
6	3.8	0.6
7	4.0	0.8
8	4.1	0.9
9	3.7	0.5
10	3.5	0.5

Loading Density (g/L): 0.4 (must be ≤0.5 g/L)
Mean Length (cm): 3.9
Length Range (cm): 3.4-4.8
Mean Weight (g): 0.7 (Must be ≥0.3g)
Weight Range: (g): 0.5-1.4

Test Organism Information

Batch 20220621TR
Source LSL
Tank # 1
Days Held at 15± 2°C 29 (must be ≥14 days)
Percent stock mortality 0.07 (7 days prior to test, must be <2%)
Test Volume (L) 16.5 18 AM

Comments :
96 hrs: PPT sides & bottom

Reviewed By: CW Date Reviewed: 20220711 29

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC 164 Reference 2122-2942-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022-07-20	1423	DM/AI	3	EP
1	2022-07-21	0840	NA	-	LC
2	2022-07-22	0920	NA	2	LC

Sample Information

Initial pH: 8.0
Initial EC (µS/cm): 1767
Salinity (ppt): 0

Lab Code	CTL A	CTL B	CTL C	100 A	100 B	100 C

pH (units) (range: 6.0-8.5)

day										
0	7.9	7.9	7.8	8.2	8.2	8.2				
2	7.9	7.9	7.9	8.1	8.1	8.1				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	294	289	286	1788	1881	1814				
2	296	295	292	1726	1773	1795				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.7	7.7	7.7	7.7	7.7	7.7				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	21	21	21	21	21	21				
2	20	20	20	20	20	20				

Number Alive (l, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar: Wed C1 — Jar(s) mortality 7 days prior to test (must be ≤25%): 0 %

QA (previous month)

Days to first brood (≤12 days): AI 8
Average number of young produced (≥15 young): 42
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - (must be ≤10%): 0 %

Sample

DO (mg/L) of sample prior to aeration: ~~7.9~~ AI 8.8 — Temperature (°C) of sample prior to aeration: 20
DO % of sample prior to aeration: ~~100~~ AI 110% — Is aeration required (<40% or >100%)? (Yes) or No AI
Duration of aeration (37.5 +/- 12.5 mL/min/L): CW ~20 min — Filtered with 110um screen prior to testing (Yes) or No
Hardness (mg $CaCO_3$/L) of 100% : 1162 — Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L): —
Alkalinity of 100% sample (mg $CaCO_3$/L): 364

Dilution Water

Pail label / preparation date: 2:07/10 (MHRW)
Hardness of dilution water (mg/L): 80

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Comments/Observations:

0hr: no ppt
48hr: surficial ppt.

Reviewed By: CW Date Reviewed: 20221071 29

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC 164 Reference 2122-2942-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022-07-20	1425	DM/Al	3	EP
1	2022-07-21	0840	NA	-	LC
2	2022-07-22	0915	NA	2	LC

Sample Information

Initial pH:	8.0
Initial EC (µS/cm):	1767
Salinity (ppt):	0

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	7.8	7.8	7.8	8.1	8.1	8.1				
2	7.7	7.7	7.7	8.2	8.2	8.2				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	282	285	285	1773	1821	1829				
2	286	293	294	1831	1842	1847				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar Wed C2 Jar(s) mortality 7 days prior to test (must be ≤25%) 0 %

QA (previous month)

Days to first brood (≤12 days) 8

Average number of young produced (≥15 young) 42

Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - (must be ≤10%) 0 %

Sample

DO (mg/L) of sample prior to aeration: ~~8.8~~ 9.4 AI

Temperature (°C) of sample prior to aeration: 12.0 AI

DO % of sample prior to aeration: 100 %

Is aeration required (<40% or >100%)? Yes or (No)

Duration of aeration (37.5 +/- 12.5 mL/min/L): ~~20~~ - AI

Filtered with 110um screen prior to testing Yes or (No)

Hardness (mg $CaCO_3$/L) of 100% : 1162

Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —

Alkalinity of 100% sample (mg $CaCO_3$/L): 364

Dilution Water

Pail label / preparation date 2: 07/10 (MHRW)

Hardness of dilution water (mg/L) 260

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

Comments/Observations:

0hr: no ppt

48hr: slight surficial ppt.

Reviewed By: CW Date Reviewed: 2022/07/29

NAUTILUS ENVIRONMENTAL

Daphnia 15°C Bench Sheet

Method DAS 15 Client TEC 164 Reference 2122-2942-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/07/20	1535	NA/LC	32	EC
1	2022/07/21	0840	NA	-	LC
2	2022/07/22	0915	NA	2	LC

Sample Information

Initial pH:	8.0
Initial EC (µS/cm):	1767
Salinity (ppt):	0

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	7.7	7.7	7.7	8.1	8.1	8.1				
2	8.0	7.9	7.9	8.1	8.1	8.1				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	290	292	293	1834	1841	1849				
2	287	289	291	1767	1789	1794				

DO (mg/L) (**40-100% saturation at test temp.**)

0	8.4	8.4	8.4	8.4	8.4	8.4				
2	8.4	8.4	8.4	8.4	8.4	8.4				

Temperature (°C) (range: **13-17 °C**)

0	17	17	17	17	17	17				
2	17	17	17	17	17	17				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar WED D1 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)

Days to first brood (≤12 days) 7

Average number of young produced (≥15 young) 42

Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - (must be ≤10%) 0%

Sample

DO (mg/L) of sample prior to aeration: 9.2

Temperature (°C) of sample prior to aeration: 17

DO % of sample prior to aeration: 110%

Is aeration required (<40% or >100%)? (Yes) or No

Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20min

Filtered with 110um screen prior to testing Yes or (No)

Hardness (mg $CaCO_3$/L) of 100% : 1162

Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —

Alkalinity of 100% sample (mg $CaCO_3$/L): 364

Dilution Water

Pail label / preparation date 2:07/10

Hardness of dilution water (mg/L) 80

DO Levels (40-100% saturation) - corrected for altitude -

3.7 to 9.1 mg/L at 13°C
3.6 to 8.9 mg/L at 14°C
3.5 to 8.8 mg/L at 15°C
3.4 to 8.6 mg/L at 16°C
3.4 to 8.4 mg/L at 17°C

Comments/Observations:

0hr: No ppt.

48hr: surficial ppt.

Reviewed By: CW Date Reviewed: 2022/07/29

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS 5 Client TEC 164 Reference 2122-2942-03

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022-07-20	1930	DM/AI	3	LC
1	2022-07-21	0850	NA	-	LC
2	2022-07-22	0930	NA	2	LC

Sample Information

Initial pH: 7.8
Initial EC (µS/cm): DM ~~1675~~ 1642
Salinity (ppt): 0

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	7.8	7.7	7.7	7.8	7.9	7.9				
2	8.0	7.9	7.9	8.4	8.4	8.4				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (µS/cm)

0	288	287	288	1679	1710	1717				
2	290	293	294	1730	1744	1736				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.7	7.7	7.7	7.7	7.7	7.7				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	21	21	21	21	21	21				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar Wed C2 Jar(s) mortality 7 days prior to test (must be ≤25%) 0

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 42
Were test treatments randomized on test tray? Yes / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0.1

Sample
DO (mg/L) of sample prior to aeration: 7.9
Temperature (°C) of sample prior to aeration: 20
DO % of sample prior to aeration: 100
Is aeration required (<40% or >100%)? **Yes or No**
Duration of aeration (37.5 +/- 12.5 mL/min/L) : —
Filtered with 110um screen prior to testing **Yes or No**
Hardness (mg $CaCO_3$/L) of 100% : 1162
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 325

Dilution Water
Pail label / preparation date 2:07/10 (MHBW)
Hardness of dilution water (mg/L) 80

Antiscalant
Final Concentration in Sample: 5mg/L
Volume of sample: 500mL Volume of antiscalant: 39.54L

Comments/Observations:
0hr no ppt
48hr: No ppt.

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Reviewed By: CW Date Reviewed: 20220107129

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC 164 Reference 2122-2942-02

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022-07-20	1430	DM/AI	3	IC
1	2022-07-21	0845	NA	-	IC
2	2022-07-22	0930	NA	2	IC

Sample Information

Initial pH: 7.8
Initial EC (µS/cm): ~~1073~~ 1642
Salinity (ppt): 0

Lab Code	CTL A	CTL B	CTL C	100 A	100 B	100 C				
day				pH (units) (range: 6.0-8.5)						
0	7.8	7.8	7.8	7.8	7.8	7.8				
2	8.0	8.0	8.0	8.0	8.0	8.0				
				The pH of the sample was not adjusted prior to test setting, unless noted in the comments below						
				EC (uS/cm)						
0	282	286	286	1687	1716	1718				
2	290	291	293	1660	1685	1690				
				DO (mg/L) (**40-100% saturation at test temp.**)						
0	7.9	7.9	7.7	7.7	7.7	7.7				
2	7.9	7.9	7.9	7.9	7.9	7.9				
				Temperature (°C) (range: **18-22 °C**)						
0	20	20	21	21	21	21				
2	20	20	20	20	20	20				
				Number Alive (I, immobile)						
0	10	10	10	10	10	10				
1	10	10	10	10 (1i)	10 (1i)	10				
2	10	10	10	10 (3i)	10 (1i)	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar Wed C2 Jar(s) mortality 7 days prior to test (must be ≤25%) 0

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 42
Were test treatments randomized on test tray? Yes / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0%

Sample
DO (mg/L) of sample prior to aeration: 7.9 Temperature (°C) of sample prior to aeration: 20
DO % of sample prior to aeration: 100 Is aeration required (<40% or >100%)? **Yes or No**
Duration of aeration (37.5 +/- 12.5 mL/min/L) : — Filtered with 110um screen prior to testing **Yes or No**
Hardness (mg $CaCO_3$/L) of 100% : 1162 Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 325

Dilution Water
Pail label / preparation date 2: 07/10 (MHRW)
Hardness of dilution water (mg/L) 80

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Comments/Observations:
0hr: no ppt
48hr: surficial ppt. 1 ppt. on jar

Reviewed By: CW Date Reviewed: 2022/07/29

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC 164 Reference 2122-2942-02

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022-07-20	1430	DM/AI	3	IC
1	2022-07-21	0845	NA	-	IC
2	2022-07-22	0920	NA	2	IC

Sample Information

Initial pH: 7.8
Initial EC (µS/cm): ~~DM 1073~~ 1642
Salinity (ppt): 0

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				
day				pH (units) (range: 6.0-8.5)						
0	7.9	7.8	7.8	7.8	7.8	7.8				
2	7.9	7.9	7.9	8.2	8.2	8.2				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

				EC (uS/cm)						
0	284	287	287	1658	1716	1724				
2	298	294	293	1719	1745	1793				

				DO (mg/L) (**40-100% saturation at test temp.**)						
0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

				Temperature (°C) (range: **8-12 °C**)						
0	~~2~~ 12 AI	~~2~~ 12 AI	~~2~~ 12 AI	~~20~~ 12 AI	12	12				
2	12	12	12	12	12	12				

				Number Alive (I, immobile)						
0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar Wed C1 Jar(s) mortality 7 days prior to test (must be ≤25%) 0 %

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 42
Were test treatments randomized on test tray? Yes / No

Control Validity Criteria
Mean % mortality at 48 hours - 0 %
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: ~~7.9~~ 8.5 AI
Temperature (°C) of sample prior to aeration: 12 AI
DO % of sample prior to aeration: ~~100~~ 90
Is aeration required (<40% or >100%)? Yes or No
Duration of aeration (37.5 +/- 12.5 mL/min/L) : — cw
Filtered with 110um screen prior to testing Yes or No
Hardness (mg $CaCO_3$/L) of 100% : 1162
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or No
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 325

Dilution Water
Pail label / preparation date 2: 07/10 (MHRW)
Hardness of dilution water (mg/L) 80

DO Levels (40-100% saturation) - corrected for altitude -
4.1 to 10.3 mg/L at 8°C
4.0 to 10.0 mg/L at 9°C
3.9 to 9.8 mg/L at 10°C
3.8 to 9.6 mg/L at 11°C
3.7 to 9.4 mg/L at 12°C

Comments/Observations:
0hr: no ppt
48hr: slight surficial ppt.

Reviewed By: CW Date Reviewed: 2022/07/29

NAUTILUS ENVIRONMENTAL

Daphnia 15°C Bench Sheet

Method DAS 15 Client TEC 164 Reference 2122-2942-02

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/07/20	1540	NA/LC	~~3~~2	CC
1	2022/07/21	0845	NA	-	LC
2	2022/07/22	0930	NA	2	LC

Sample Information

Initial pH:	7.8
Initial EC (µS/cm):	~~1073~~ 1642 NA
Salinity (ppt):	0

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	7.7	7.7	7.7	7.8	7.8	7.8				
2	7.9	7.9	7.9	8.1	8.1	8.1				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

	285	289	291							
0 NA	~~1720~~	~~1734~~	~~1741~~	1720	1734	1741				
2	294	293	297	1707	1724	1714				

DO (mg/L) (**40-100% saturation at test temp.**)

0	8.4	8.4	8.4	8.4	8.4	8.4				
2	8.4	8.4	8.4	8.4	8.4	8.4				

Temperature (°C) (range: **13-17 °C**)

0	17	17	17	17	17	17				
2	17	17	17	17	17	17				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar WED D1 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)

Days to first brood (≤12 days) 7

Average number of young produced (≥15 young) 42

Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - (must be ≤10%) 0%

Sample

DO (mg/L) of sample prior to aeration: 8.4

Temperature (°C) of sample prior to aeration: 17

DO % of sample prior to aeration: 100%

Is aeration required (<40% or >100%)? **Yes or (No)**

Duration of aeration (37.5 +/- 12.5 mL/min/L) : —

Filtered with 110um screen prior to testing **Yes or (No)**

Hardness (mg $CaCO_3$/L) of 100% : 1162

Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or (No)**

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —

Alkalinity of 100% sample (mg $CaCO_3$/L): 325

Dilution Water

Pail label / preparation date 22107/10

Hardness of dilution water (mg/L) 80

DO Levels (40-100% saturation) - corrected for altitude -

3.7 to 9.1 mg/L at 13°C	3.4 to 8.6 mg/L at 16°C
3.6 to 8.9 mg/L at 14°C	3.4 to 8.4 mg/L at 17°C
3.5 to 8.8 mg/L at 15°C	

Comments/Observations:

0hr: No ppt.

48hr: surficial ppt.

Reviewed By: CW Date Reviewed: 2022/07/29

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS 5 Client TEC 164 Reference 2122-2942-04

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022-07-20	1435	DM/AI	3	EP
1	2022-07-21	0855	NA	-	LC
2	2022-07-22	0935	NA	2	LC

Sample Information

Initial pH: 8.0
Initial EC (µS/cm): 1767
Salinity (ppt): 0

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	7.8	7.8	7.7	8.2	8.2	8.2				
2	8.0	8.0	8.0	8.5	8.5	8.5				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	313	291	288	1700	1792	1681				
2	299	296	295	1827	1839	1838				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.7	7.7	7.9	7.9				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	21	21	20	20				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar Wed C1 Jar(s) mortality 7 days prior to test (must be ≤25%) 0

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 42
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0%

Sample
DO (mg/L) of sample prior to aeration: 8.9 Temperature (°C) of sample prior to aeration: 19
DO % of sample prior to aeration: 105 Is aeration required (<40% or >100%)? **Yes or No**
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20 min. Filtered with 110um screen prior to testing **Yes or No**
Hardness (mg $CaCO_3$/L) of 100% : 1162 Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 364

Dilution Water
Pail label / preparation date 2:07/10 (MHRW)
Hardness of dilution water (mg/L) 80

Antiscalant
Final Concentration in Sample: 5mg/L
Volume of sample: 500mL Volume of antiscalant: 39.54L

Comments/Observations:
0hr no ppt
48hr: No ppt.

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Reviewed By: CW Date Reviewed: 2022 / 07 / 29

APPENDIX C – Chain-of-custody form

Teck

COC ID: EVO NAUTILUS July 19 2022 | **TURNAROUND TIME:** | **RUSH:**

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO			
Facility Name / Job#	Elkview Operations			Lab Name	Nautilus Environmental - BC			Report Format / Distribution		Excel	PDF	EDD
Project Manager	Group 1; Brett Mason			Lab Contact				Email 1:	teckcoal@equisonline.com			X
Email	Brett.Mason@teck.com			Email	jacklyn@nautilusenvironmental.ca			Email 2:	DL-EVO-SRF-LAB@teck.com	X	X	X
Address	RR1 HWY 3			Address	10823 27th Street SE			Email 3:	Cole.Macgregor@teck.com	X	X	X
								Email 4:				
City	Sparwood	Province	BC	City	Calgary	Province	AB	Email 5:				
								Email 6:				
								Email 7:				
								Email 8:				
								Email 9:				
								Email 10:				
								Email 11:				
								Email 12:				
								Email 13:				
Postal Code	V0B 2G0	Country	Canada	Postal Code	T2H 2K1	Country	Canada					
Phone Number	250-425-6179			Phone Number	T2Z 3V9			PO number	VPO00842410			

SAMPLE DETAILS — **ANALYSIS REQUESTED** (Filtered - F: Field, L: Lab, FL: Field & Lab, N: None)

2022/07/20
08:45
Manitoulin
DC/SRS/AC
4x 8x20L carboys, 12x1L bottles
N6S/N6T
Good Condition

Sample ID 2122-2942	Sample Location (sys_loc_code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	FIL	PRESERV.	ANALYSIS: 48hr Daphnia Magna Single Concentration Acute Toxicity 20C	48hr Daphnia Magna Single Concentration Acute Toxicity 10C	48hr Daphnia Magna Single Concentration Acute Toxicity Anitscalent	96hr Rainbow Trout Single Concentration Acute Toxicity (10 L Bladder)	96hr Rainbow Trout Single Concentration Acute Toxicity (20 L Bladder)	48hr Daphnia Magna Single Concentration Toxicity 15C	48hr Daphnia Magna Single Concentration Acute Toxicity 15C					
EV_GT1_WS_2022-07-19_N-SRF -01	EV_GT1	WS		2022-07-19	8:30	G	9			2	2			4		1	16.9°C				
EV_BC1_WS_2022-07-19_N-SRF -02	EV_BC1	WS		2022-07-19	9:30	G	9			2	2			4		1	17.4°C				
EV_BC1_WS_2022-07-19_N-SRF-AS -03	EV_BC1	WS		2022-07-19	9:31	G	1					1					16.9°C				
EV_GT1_WS_2022-07-19_N-SRF-AS -04	EV_GT1	WS		2022-07-19	8:31	G	1					1					17.4°C				

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME
Field Temperatures		July 19, 2022		

SERVICE REQUEST (rush - subject to availability)	
Regular (default)	X
Priority (2-3 business days) - 50% surcharge	
Emergency (1 Business Day) - 100% surcharge	
For Emergency <1 Day, ASAP or Weekend - Contact ALS	

Sampler's Name		Mobile #	
Sampler's Signature		Date/Time	July 19, 2022

END OF REPORT

Acute Toxicity Test Results

Samples collected July 25, 2022

Final Report

September 19, 2022

Submitted to: **Teck Coal Ltd.**
Sparwood, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates					
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation	*Daphnia magna* antiscalant test initiation
F2_BPO_WG_2022-07-25_N / 2122-2994-01	25-Jul-22 at 0850h	26-Jul-22 at 1315h	26-Jul-22 at 1550h	27-Jul-22 at 1530h	27-Jul-22 at 1530h	-
F2_BPO_WG_2022-07-25_N-AS / 2122-2994-02	25-Jul-22 at 0851h	26-Jul-22 at 1315h	-	-	-	27-Jul-22 at 1535h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
F2_BPO_WG_2022-07-25_N	17.5°C	1200	398
F2_BPO_WG_2022-07-25_N-AS	17.5°C	1200	398

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)
- *Daphnia magna* 48-h single concentration screening test (conducted with 20 mg/L antiscalant)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample			
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
F2_BPO_WG_2022-07-25_N	100	100	100	-
F2_BPO_WG_2022-07-25_N-AS	-	-	-	100

Sample ID	Percent Immobility in 100 (% v/v)		
	***Daphnia magna* 10˚C**	***Daphnia magna* 20˚C**	***Daphnia magna* antiscalant**
F2_BPO_WG_2022-07-25_N	10	0	-
F2_BPO_WG_2022-07-25_N-AS	-	-	0

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
F2_BPO_WG_2022-07-25_N	Rainbow trout	Precipitate observed on the test vessel	None
	Daphnia magna 10˚C	None	None
	Daphnia magna 20˚C	Surficial precipitate observed	None
F2_BPO_WG_2022-07-25_N-AS	*Daphnia magna*	None	None

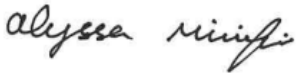
QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	4.8 (4.3-5.2) g/L KCl[1]	5.3 (4.8-5.7) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.5 (2.6-4.7) g/L KCl	6.2 (5.2-7.4) g/L NaCl
Reference toxicant CV	9.6%	5.9%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, July 22, 2022; [2] Test date, July 27, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation

The LC50 result of the reference toxicant test initiated on July 22, 2022, fell outside of two standard deviations of the historical mean; this is expected to happen 5% of the time. An investigation occurred and all testing and culturing procedures were followed appropriately.



Report By:
Alyssa Minifie, BSc
Laboratory Biologist



Reviewed By:
Emma Marus, BSc
Biologist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Control/dilution water for antiscalant test	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L), Na_2SeO_4 (2 µg Se/L) and 20 mg/L antiscalant
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC164 Reference 2122-2994-01 Chamber 3 ~~2~~ Kcrm

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022/07/26	1550 *	KCRM/AM	1	IC
1	2022/07/27	0855	AM	-	CL
2	2022/07/28	0800	ML	-	KAM
3	2022/07/29	0830	ML	-	EP
4	2022/07/30	1115	MLIKO	1	MAF

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 7.2
Initial EC (µS/cm): 1846
Salinity (ppt): 0

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L: **yes/no**

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	7.8	8.6			
Temp (°C) of 100%	16				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: **5.5-8.5**)								
Day 0	7.8	7.4						
Day 4	8.2	8.3						
EC (uS/cm)								
Day 0	354	1833						
Day 4	369	1768						
DO (mg/L) (**70-100% saturation at test temp.**)								
Day 0	8.6	8.6						
Day 4	8.6	8.6						
Temperature (°C) (range: **14-16°C**)								
Day 0	16	16						
Day 4	16	16						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.4	0.4
2	3.4	0.5
3	3.7	0.6
4	3.1	0.3
5	3.6	0.5
6	3.4	0.5
7	3.4	0.5
8	3.8	0.5
9	3.2	0.4
10	3.3	0.4

Loading Density (g/L): 0.3 (must be ≤0.5 g/L)
Mean Length (cm): 3.4
Length Range (cm): 3.1-3.8
Mean Weight (g): 0.5 (Must be ≥0.3g)
Weight Range: (g): 0.3-0.6

Test Organism Information

Batch 20220706TR
Source LSL
Tank # 10
Days Held at 15± 2°C (must be ≥14 days) 20
Percent stock mortality (7 days prior to test, must be <2%) 0.11
Test Volume (L) 18

Comments :
96 Hrs: ppt on sides & bottom of tank

Reviewed By: TP Date Reviewed: SEP 16 2022

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC 164 Reference 2122-2994-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/07/27	1530	LC/NA	3	CC
1	2022/07/28	0920	NA	-	vrm
2	2022/07/29	1000	BS/AH	2	NA

Sample Information

Initial pH:	7.2
Initial EC (µS/cm):	1846
Salinity (ppt):	0

Lab Code	CTL A	CTL B	CTL C	100 A	100 B	100 C				

pH (units) (range: 6.0-8.5)

day										
0	8.0	8.1	8.1	7.5	7.5	7.4				
2	8.1	8.1	8.1	8.4	8.4	8.4				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	357	368	370	1858	1956	1882				
2	361	373	378	1833	1867	1878				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.7	7.7	7.7	7.7	7.7	7.7				
2	7.7	7.7	7.7	7.7	7.7	7.7				

Temperature (°C) (range: **18-22 °C**)

0	21	21	21	21	21	21				
2	21	21	21	21	21	21				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar WED D3 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)

Days to first brood (≤12 days) 8

Average number of young produced (≥15 young) 34

Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - 0

(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 8.5 Temperature (°C) of sample prior to aeration: 21°C

DO % of sample prior to aeration: 107% Is aeration required (<40% or >100%)? (Yes) or No

Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20 mins Filtered with 110um screen prior to testing Yes or (No)

Hardness (mg $CaCO_3$/L) of 100% : 1200 Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —

Alkalinity of 100% sample (mg $CaCO_3$/L): 398

Dilution Water

Pail label / preparation date 1:07/21

Hardness of dilution water (mg/L) 165

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Comments/Observations:

0hr: No ppt

48hr: surficial ppt

Reviewed By: TP Date Reviewed: SEP 16 2022

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC 164 Reference 2122-2994-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/07/27	1530	LC/NA	3	CC
1	2022/07/28	0915	NA	-	[illegible] 4mm
2	2022/07/29	1050	BSIAI	2	NA

Sample Information

Initial pH: 7.2
Initial EC (µS/cm): 1846
Salinity (ppt): 0

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				
day	pH (units) (range: 6.0-8.5)									
0	7.9	8.0	8.1	7.3	7.3	7.3				
2	8.3	8.3	8.3	8.4	8.4	8.4				
	EC (uS/cm)									
0	358	369	371	1881	1916	1912				
2	370	377	378	1820	1849	1909				
	DO (mg/L) (**40-100% saturation at test temp.**)									
0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.3	9.3	9.4				
	Temperature (°C) (range: **8-12 °C**)									
0	12	12	12	12	12	12				
2	12	12	12	12	12	12				
	Number Alive (I, immobile)									
0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10(3:)	10				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar WED D3 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 34
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 9.4
DO % of sample prior to aeration: 100%
Duration of aeration (37.5 +/- 12.5 mL/min/L) : —
Hardness (mg $CaCO_3$/L) of 100% : 1200
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 398

Temperature (°C) of sample prior to aeration: 12.0C
Is aeration required (<40% or >100%)? **Yes or (No)**
Filtered with 110um screen prior to testing **Yes or (No)**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or (No)**

Dilution Water
Pail label / preparation date 1:07/21
Hardness of dilution water (mg/L) 165

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

Comments/Observations:
0hr: no ppt
48hr: no ppt

Reviewed By: TP Date Reviewed: SEP 16 2022

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS 20 Client TEC 164 Reference 2122-2994-02

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/07/27	1535	LC/NA	3	CC
1	2022/07/28	0920	NA	-	kmm
2	2022/07/29	0950	BS/PA	2	NA

Sample Information

Initial pH: 7.2
Initial EC (µS/cm): 1846
Salinity (ppt): 0

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	8.0	8.1	8.1	7.5	7.5	7.5				
2	8.2	8.2	8.2	8.5	8.5	8.5				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	351	349	370	1907	1871	1877				
2	370	379	377	1847	1880	1885				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.7	7.7	7.7	7.7	7.7	7.7				
2	7.7	7.7	7.7	7.7	7.7	7.7				

Temperature (°C) (range: **18-22 °C**)

0	21	21	21	21	21	21				
2	21	21	21	21	21	21				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar WED E2/E3/D1 Jar(s) mortality 7 days prior to test (must be ≤25%) ~~5%/5%/5%~~ cc 5%

QA (previous month)

Days to first brood (≤12 days) ~~8/8~~ cc ~~7/7/8~~ 7 cc
Average number of young produced (≥15 young) ~~34/34~~ cc ~~29/29/34~~ 27 cc
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 8.6
DO % of sample prior to aeration: 108%
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20 mins
Hardness (mg $CaCO_3$/L) of 100% : 1200
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 398

Temperature (°C) of sample prior to aeration: 21°C
Is aeration required (<40% or >100%)? **Yes or No**
Filtered with 110um screen prior to testing **Yes or No**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Dilution Water

Pail label / preparation date 1:07/21
Hardness of dilution water (mg/L) 165

Antiscalant

Final Concentration in Sample: 20mg/L
Volume of sample: 500mL Volume of antiscalant: 158µL

Comments/Observations:

0hr: NO ppt
48hr: no ppt

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Reviewed By: TP Date Reviewed: SEP 16 2022

APPENDIX C – Chain-of-custody form

Teck

COC ID:	F2 NAUTILUS July 25 2022	TURNAROUND TIME:		RUSH:	

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name / Job#	F2 SRF			Lab Name	Nautilus Environmental - BC			Report Format / Distribution		Excel	PDF	EDD
Project Manager	BRETT MASON			Lab Contact				Email 1:	Cole.Macgregor@teck.com	X	X	X
Email	BRETT.MASON@TECK.COM			Email	jacklyn@nautilusenvironmental.ca			Email 1:	teckcoal@equisonline.com			X
Address	RR1 HWY 3			Address	10823 27th Street SE			Email 2:	DL-EVO-SRF-LAB@teck.cor	X	X	X
								Email 3:				
City	Sparwood	Province	BC	City	Calgary	Province	AB	Email 4:				
								Email 5:				
								Email 6:				
								Email 7:				
								Email 8:				
								Email 10:				
								Email 11:				
								Email 12:				
								Email 13:				
Postal Code	V0B 2G0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada					
Phone Number	250-425-6179			Phone Number	403-253-7121			PO number	VPO00842410			

SAMPLE DETAILS / **ANALYSIS REQUESTED** — Filtered - F: Field, L: Lab, FL: Field & Lab, N: None

2022/07/26
13:15
Manitoulin
4x 20L carboys, 5x 1.L bottles
SRG / AC / SK
NOS NOI
Good condition

	Sample ID 2122-2994	Sample Location (sys_loc_code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	Filt. / ANALYSIS	48hr Daphnia Magna Single Concentration Acute Toxicity 20C	48hr Daphnia Magna Single Concentration Acute Toxicity 10C	48hr Daphnia Magna Single Concentration Acute Toxicity Anilscalent	96hr Rainbow Trout Single Concentration Acute Toxicity (20L Bladders)	48hr Daphnia Magna Single Concentration Toxicity 15C							
-01	F2_BPO_WG_2022-07-25_N	F2_BPO	WG		2022-07-25	8:50	G	8		2	2		4		17.5°C						
-02	F2_BPO_WG_2022-07-25_N-AS	F2_BPO	WG		2022-07-25	8:51	G	1				1			↓						

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME
		July 25, 2022		

SERVICE REQUEST (rush - subject to availability)					
Regular (default)	X	Sampler's Name	Ariana Lewis	Mobile #	
Priority (2-3 business days) - 50% surcharge					
Emergency (1 Business Day) - 100% surcharge		Sampler's Signature		Date/Time	July 25, 2022
For Emergency <1 Day, ASAP or Weekend - Contact ALS					

END OF REPORT

Acute Toxicity Test Results

Samples collected August 1, 2022

Final Report

September 18, 2022

Submitted to: **Teck Coal Ltd.**
Sparwood, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates					
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation	*Daphnia magna* antiscalant test initiation
EV_EC1_WS_2022-08-01_N-SRF/ 2122-3054-01	1-Aug-22 at 1000h	2-Aug-22 at 1230h	4-Aug-22 at 1535h	4-Aug-22 at 1500h	4-Aug-22 at 1440h	-
EV_EC1_WS_2022-08-01_N-SRF-AS/ 2122-3054-02	1-Aug-22 at 1001h	2-Aug-22 at 1230h	-	-	-	4-Aug-22 at 1455h
EV_ECOUT_WS_2022-08-01_N-SRF/ 2122-3054-03	1-Aug-22 at 1230h	2-Aug-22 at 1230h	4-Aug-22 at 1530h	4-Aug-22 at 1445h	4-Aug-22 at 1435h	-
EV_ ECOUT _WS_2022-08-01_N-SRF-AS/ 2122-3054-04	1-Aug-22 at 1231h	2-Aug-22 at 1230h	-	-	-	4-Aug-22 at 1440h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
EV_EC1_WS_2022-08-01_N-SRF	14.7°C	972	334
EV_EC1_WS_2022-08-01_N-SRF-AS	14.7°C	972	334
EV_ECOUT_WS_2022-08-01_N-SRF	14.1°C	1077	424
EV_ ECOUT _WS_2022-08-01_N-SRF-AS	14.1°C	1077	424

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)
- *Daphnia magna* 48-h single concentration screening test (conducted with 5 mg/L antiscalant)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample			
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
EV_EC1_WS_2022-08-01_N-SRF	100	100	87	-
EV_EC1_WS_2022-08-01_N-SRF-AS	-	-	-	100
EV_ECOUT_WS_2022-08-01_N-SRF	100	100	97	-
EV_ ECOUT _WS_2022-08-01_N-SRF-AS	-	-	-	100

Sample ID	Percent Immobility in 100 (% v/v)		
	Daphnia magna 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
EV_EC1_WS_2022-08-01_N-SRF	0	40	-
EV_EC1_WS_2022-08-01_N-SRF-AS	-	-	0
EV_ECOUT_WS_2022-08-01_N-SRF	0	7	-
EV_ ECOUT _WS_2022-08-01_N-SRF-AS	-	-	0

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
EV_EC1_WS_2022-08-01_N-SRF	Rainbow trout	Precipitate observed on the bottom of test vessel	None
	Daphnia magna	Precipitate observed on the bottom of test vessel	Precipitate observed on carapace in the 10°C test vessels
EV_EC1_WS_2022-08-01_N-SRF-AS	*Daphnia magna*	None	None
EV_ECOUT_WS_2022-08-01_N-SRF	Rainbow trout	Precipitate observed on the bottom of test vessel	None
	Daphnia magna	Precipitate observed on the bottom of test vessel	None
EV_ ECOUT _WS_2022-08-01_N-SRF-AS	*Daphnia magna*	Precipitate observed on the bottom of test vessel	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	3.5 (3.3 - 3.7) g/L KCl[1]	5.3 (4.8 - 5.7) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.5 (2.6 - 4.7) g/L KCl	6.2 (5.2 - 7.4) g/L NaCl
Reference toxicant CV	9.6%	5.9%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, August 4, 2022; [2] Test date, July 27, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation



Report By:
Kristin McKenzie
Biologist



Reviewed By:
Emma Marus, BSc
Biologist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Control/dilution water for antiscalant test	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L), Na_2SeO_4 (2 µg Se/L) and 5 mg/L antiscalant
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC 164 Reference 2122-3054-01 Chamber 3 THL

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022/08/04	1535 *	AM/KO	1	EP
1	2022/08/05	0800	ML	-	EP
2	2022/08/06	0800	ML	-	MAF
3	2022/08/07	0800	ML	-	MAF
4	2022/08/08	1045	ML	1	leTm

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 7.9
Initial EC (µS/cm): 1730
Salinity (ppt): 0

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L (yes/no)

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	8.6	8.6			
Temp (°C) of 100%	16				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	7.9	7.8						
Day 4	8.1	8.2						
EC (uS/cm)								
Day 0	384	1721						
Day 4	391	1548						
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	8.6	8.6						
Day 4	8.6	8.6						
Temperature (°C) (range: 14-16°C)								
Day 0	16	16						
Day 4	16	16						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10(1) ML						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.4	0.5
2	3.3	0.4
3	3.5	0.5
4	3.2	0.4
5	3.6	0.5
6	3.2 SML	0.4
7	3.5 3ML	0.5
8	3.3 2ML	0.4
9	3.2	0.4
10	3.0	0.3

Loading Density (g/L): 0.2 (must be ≤0.5 g/L)
Mean Length (cm): 3.3
Length Range (cm): 3.0-3.6
Mean Weight (g): 0.4 (Must be ≥0.3g)
Weight Range: (g): 0.3-0.5

Test Organism Information

Batch 20220623TR
Source Trout Lodge
Tank # 7
Days Held at 15± 2°C 23 (must be ≥14 days)
Percent stock mortality 0.6 (7 days prior to test, must be <2%)
Test Volume (L) 18

Comments :
96h: ppt on sides & bottom of tank

Reviewed By: CW Date Reviewed: 2022/08/10

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC 164 Reference 2122-3054-03 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022/08/04	1530 *	AM/KO	1	EP
1	2022/08/05	0745	ML	-	EP
2	2022/08/06	0800	ML	-	MAP
3	2022/08/07	0800	ML	-	MAP
4	2022/08/08	1045	ML	1	letm

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 7.6
Initial EC (µS/cm): 1834
Salinity (ppt): 0

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L (yes/no)

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	8.6	8.6			
Temp (°C) of 100%	16				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: **5.5-8.5**)								
Day 0	8.0	7.8						
Day 4	8.2	8.1						
EC (uS/cm)								
Day 0	383	1749						
Day 4	386	1537						
DO (mg/L) (**70-100% saturation at test temp.**)								
Day 0	8.6	8.6						
Day 4	8.6	8.6						
Temperature (°C) (range: **14-16°C**)								
Day 0	16	16						
Day 4	16	16						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.5	0.4
2	3.4	0.4
3	3.3	0.4
4	3.4	0.4
5	3.4	0.4
6	3.1	0.3
7	3.3	0.3
8	3.0	0.3
9	2.5	0.2
10	3.3	0.4

Loading Density (g/L): 0.2 (must be ≤0.5 g/L)
Mean Length (cm): 3.2
Length Range (cm): 2.5-3.5
Mean Weight (g): 0.4 (Must be ≥0.3g)
Weight Range (g): 0.2-0.4

Test Organism Information

Batch: 20220623TR
Source: Trout Lodge
Tank #: 7
Days Held at 15± 2°C: 23 (must be ≥14 days)
Percent stock mortality: 0.6 (7 days prior to test, must be <2%)
Test Volume (L): 17 ~~18~~ AM

Comments :
96 hrs: ppt on sides & bottom of tank

Reviewed By: CW Date Reviewed: 2022/08/10

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC 164 Reference AI 3054-01 2122-~~3074-02~~

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/08/04	1440	EP/AI	2	MAP
1	2022/08/05	0840	BS	-	EP
2	2022/08/06	0915	AI	2	EP

Sample Information

Initial pH: 7.9
Initial EC (µS/cm): 1730
Salinity (ppt): 0

Lab Code	CTL A	CTL B	CTL C	100 A	100 B	100 C

pH (units) (range: 6.0-8.5)

day										
0	8.2	8.2	8.2	8.3	8.3	8.4				
2	7.8	7.9	7.9	7.8	7.9	7.8				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	379	390	390	1625	1695	1712				
2	389	392	393	1610	1630	1627				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.7	7.7	7.7	7.7	7.7	7.7				
2	7.7	7.7	7.7	7.7	7.7	7.7				

Temperature (°C) (range: **18-22 °C**)

0	21	21	21	21	21	21				
2	21	21	21	21	21	21				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10(6i)				
2	10	10	10	9(3i)	~~7~~ 10	7(5i)				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar Wed DS — Jar(s) mortality 7 days prior to test (must be ≤25%) 5

QA (previous month)

Days to first brood (≤12 days) 7

Average number of young produced (≥15 young) 36

Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 7.7 — Temperature (°C) of sample prior to aeration: 21

DO % of sample prior to aeration: 100 — Is aeration required (<40% or >100%)? **Yes or (No)**

Duration of aeration (37.5 +/- 12.5 mL/min/L) : - — Filtered with 110um screen prior to testing **Yes or (No)**

Hardness (mg $CaCO_3$/L) of 100% : 972 — Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or (No)**

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) -

Alkalinity of 100% sample (mg $CaCO_3$/L): 334

Dilution Water

Pail label / preparation date 1: 07/30

Hardness of dilution water (mg/L) 170

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Comments/Observations:

0 hr No ppt

48 hr surficial ppt + ppt on test vessel and carapace

Reviewed By: CW Date Reviewed: 20220810

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method: DAS 10 | Client: TEC 164 | Reference: AI ~~3674-02~~ 2122-~~3054-01~~ 3054-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/08/04	1500	EP/AI	2	MAF
1	2022/08/05	0855	BS	-	EP
2	2022/08/06	1050	AI	2	EP

Sample Information

Initial pH:	7.9
Initial EC (µS/cm):	1730
Salinity (ppt):	0

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	8.2	8.2	8.2	7.9	7.9	7.9				
2	8.1	8.1	8.1	8.2	8.2	8.2				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	384	389	391	1696	1731	1747				
2	387	394	396	1697	1718	1720				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar: Wed 42 — Jar(s) mortality 7 days prior to test (must be ≤25%): 0

QA (previous month)

Days to first brood (≤12 days): 8

Average number of young produced (≥15 young): 45

Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - (must be ≤10%): 0

Sample

DO (mg/L) of sample prior to aeration: 9.4

Temperature (°C) of sample prior to aeration: 12

DO % of sample prior to aeration: 100

Is aeration required (<40% or >100%)? **Yes or (No)**

Duration of aeration (37.5 +/- 12.5 mL/min/L) : -

Filtered with 110um screen prior to testing **Yes or (No)**

Hardness (mg $CaCO_3$/L) of 100% : 972

Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or (No)**

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L): -

Alkalinity of 100% sample (mg $CaCO_3$/L): 334

Dilution Water

Pail label / preparation date: 1107130

Hardness of dilution water (mg/L): 170

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

Comments/Observations:

0hr: No ppt

48hr: surficial ppt

Reviewed By: CW — Date Reviewed: 2022/08/12

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS 5 Client TEC 164 Reference 2122-3054-02

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/08/04	1455	EP/MI	2	MAP
1	2022/08/05	0805	BS	-	EP
2	2022/08/06	0915	AI	2	EP

Sample Information

Initial pH: 7.9
Initial EC (µS/cm): 1730
Salinity (ppt): 0

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	8.2	8.2	8.2	8.3	8.3	8.4				
2	8.0	8.0	8.0	8.3	8.3	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	375	389	390	1623	1695	1711				
2	389	393	393	1621	1696	1706				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.7	7.7	7.7	7.7	7.7	7.7				
2	7.7	7.7	7.7	7.7	7.7	7.7				

Temperature (°C) (range: **18-22 °C**)

0	21	21	21	21	21	21				
2	21	21	21	21	21	21				

Number Alive (l, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar Wed E2 Jar(s) mortality 7 days prior to test (must be ≤25%) 0

QA (previous month)

Days to first brood (≤12 days) 8

Average number of young produced (≥15 young) 45

Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - (must be ≤10%) 0

Sample

DO (mg/L) of sample prior to aeration: 8.5 Temperature (°C) of sample prior to aeration: 21

DO % of sample prior to aeration: 109 Is aeration required (<40% or >100%)? **Yes or No**

Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20 Filtered with 110um screen prior to testing **Yes or No**

Hardness (mg $CaCO_3$/L) of 100% : 972 Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —

Alkalinity of 100% sample (mg $CaCO_3$/L): 334

Dilution Water

Pail label / preparation date 1:07150

Hardness of dilution water (mg/L) 170

Antiscalant

Final Concentration in Sample: 5mg/L

Volume of sample: 500mL Volume of antiscalant: 39.5 uL

Comments/Observations:

0hr: No ppt

48hr: No ppt

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Reviewed By: CW Date Reviewed: 20221108/10

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC 164 Reference 2122-3054-03

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/08/04	1435	EP/AI	2	MAF
1	2022/08/05	0815	BS	-	EP
2	2022/08/06	0930	AI	2	EP

Sample Information

Initial pH: 7.6
Initial EC (µS/cm): 1834
Salinity (ppt): 0

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	8.2	8.2	8.2	8.0	8.0	8.0				
2	8.1	8.1	8.1	7.9	7.9	7.9				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	395	391	391	1728	1807	1824				
2	407	405	399	1642	1708	1712				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.7	7.7	7.7	7.7	7.7	7.7				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	21	21	21	21	21	21				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10 (1 I)	10	10				
2	10	10	10	9	10	10 (1 I)				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar: Wed D5 — Jar(s) mortality 7 days prior to test (must be ≤25%): 5

QA (previous month)

Days to first brood (≤12 days): 7

Average number of young produced (≥15 young): 36

Were test treatments randomized on test tray? (Yes) No

Control Validity Criteria

Mean % mortality at 48 hours - (must be ≤10%): 0

Sample

DO (mg/L) of sample prior to aeration: 8.3

DO % of sample prior to aeration: 107

Duration of aeration (37.5 +/- 12.5 mL/min/L): 20

Hardness (mg $CaCO_3$/L) of 100% : 1077

Temperature (°C) of sample prior to aeration: 21

Is aeration required (<40% or >100%)? (Yes) or No

Filtered with 110um screen prior to testing Yes or (No)

Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L): —

Alkalinity of 100% sample (mg $CaCO_3$/L): 424

Dilution Water

Pail label / preparation date: 1: 07/30

Hardness of dilution water (mg/L): 170

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Comments/Observations:

0hr: No ppt.

48hr: precipitate on test vessel + surficial ppt

Reviewed By: CW Date Reviewed: 2022/09/10

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method: DAS 10 | Client: TEC 164 | Reference: 2122-3054-03

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/08/04	1445	EP/AI	2	MAF
1	2022/08/05	0905	BS	-	EP
2	2022/08/06	1050	AI	2	EP

Sample Information

Initial pH: 7.6
Initial EC (µS/cm): 1834
Salinity (ppt): 0

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	8.2	8.2	8.2	7.6	7.6	7.6				
2	8.2	8.2	8.2	8.1	8.1	8.1				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	390	390	390	1819	1845	1852				
2	389	393	394	1731	1792	1802				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar: Wed D5
Jar(s) mortality 7 days prior to test (must be ≤25%): 5

QA (previous month)
Days to first brood (≤12 days): 7
Average number of young produced (≥15 young): 36
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%): 0

Sample
DO (mg/L) of sample prior to aeration: 9.4
DO % of sample prior to aeration: 100
Duration of aeration (37.5 +/- 12.5 mL/min/L): -
Hardness (mg $CaCO_3$/L) of 100%: 1077
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L): -
Alkalinity of 100% sample (mg $CaCO_3$/L): 424

Temperature (°C) of sample prior to aeration: 12
Is aeration required (<40% or >100%)? **Yes or (No)**
Filtered with 110um screen prior to testing **Yes or (No)**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or (No)**

Dilution Water
Pail label / preparation date: 1:7/30
Hardness of dilution water (mg/L): 170

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

Comments/Observations:
0hr: No ppt
48hr: Survival ppt

Reviewed By: EW
Date Reviewed: 2022/08/10

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS 5 Client TEC 164 Reference 2122-3054-04

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/08/04	1440	GP/MF	2	MAF
1	2022/08/05	0820	BS	-	EP
2	2022/08/06	0930	AI	2	EP

Sample Information

Initial pH: 7.6
Initial EC (µS/cm): 1834
Salinity (ppt): 0

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	8.3	8.2	8.2	8.0	8.1	8.1				
2	8.1	8.1	8.1	8.4	8.4	8.4				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	389	391	390	1716	1798	1815				
2	387	394	394	1741	1799	1793				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.7	7.7	7.7	7.7	7.7	7.7				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	21	21	21	21	21	21				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar Wed D5 Jar(s) mortality 7 days prior to test (must be ≤25%) 5

QA (previous month)
Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 36
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0

Sample
DO (mg/L) of sample prior to aeration: 8.3
Temperature (°C) of sample prior to aeration: 21
DO % of sample prior to aeration: 106
Is aeration required (<40% or >100%)? (Yes or No)
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20
Filtered with 110um screen prior to testing (Yes or No)
Hardness (mg $CaCO_3$/L) of 100% : 1077
Is hardness adjustment required (<25 mg $CaCO_3$/L)? (Yes or No)
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) –
Alkalinity of 100% sample (mg $CaCO_3$/L): 424

Dilution Water
Pail label / preparation date 1:07/30
Hardness of dilution water (mg/L) 170

Antiscalant
Final Concentration in Sample: 5mg/L
Volume of sample: 500 mL Volume of antiscalant: 39.5uL

Comments/Observations:
0hr: No ppt
48hr: surficial ppt

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Reviewed By: CW Date Reviewed: 20221 08110

APPENDIX C – Chain-of-custody form

Teck

COC ID: EVO NAUTILUS 2022-08-01 | TURNAROUND TIME: | RUSH:

PROJECT/CLIENT INFO				LABORATORY			
Facility Name / Job#	Elkview Operations			Lab Name	Nautilus Environmental - BC		
Project Manager	Group 1; Brett Mason			Lab Contact			
Email	Brett.Mason@teck.com			Email	jacklyn@nautilusenvironmental.ca		
Address	RR1 HWY 3			Address	10823 27th Street SE		
City	Sparwood	Province	BC	City	Calgary	Province	AB
Postal Code	V0B 2G0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada
Phone Number	250-425-6179			Phone Number	403-253-7121		

OTHER INFO				
Report Format / Distribution		Excel	PDF	EDD
Email 1:	Cole.Macgregor@teck.com	X	X	X
Email 2:	teckcoal@equisonline.com			X
Email 3:	DL-EVO-SRF-LAB@teck.com	X	X	X
Email 4:				
Email 5:				
Email 6:				
Email 7:				
Email 8:				
Email 9:				
Email 10:				
Email 11:				
Email 12:				
Email 13:				
PO number	VPO00842410			

SAMPLE DETAILS — **ANALYSIS REQUESTED** (Filtered - F: Field, L: Lab, FL: Field & Lab, N: None)

2022/08/02
OC 12:30
Manitoulin
OC 1SRS1AC
8x10L carboys, 4x20L carboys, 10x1L bottles
NoS/NoI
Good Condition

Sample ID	Sample Location (sys_loc_code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	Filt.	Preserv.	ANALYSIS: 48hr Daphnia Magna Single Concentration Acute Toxicity 20C	48hr Daphnia Magna Single Concentration Acute Toxicity 10C	48hr Daphnia Magna Single Concentration Acute Toxicity Anitscalent	96hr Rainbow Trout Single Concentration Acute Toxicity (20 L Bladder)	96hr Rainbow Trout Single Concentration Acute Toxicity (10 L Bladder)	48hr Daphnia Magna Single Concentration Toxicity 15C
EV_EC1_WS_2022-08-01_N-SRF -01	EV_EC1	WS		2022-08-01	10:00	G	12			2	2			8	14.7°C
EV_EC1_WS_2022-08-01_N-SRF-AS -02	EV_EC1	WS		2022-08-01	10:01	G	1					1			↓
EV_ECOUT_WS_2022-08-01_N-SRF -03	EV_ECOUT	WS		2022-08-01	12:30	G	8			2	2		4		14.1°C
EV_ECOUT_WS_2022-08-01_N-SRF-AS -04	EV_ECOUT	WS		2022-08-01	12:31	G	1					1			↓

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME
Field Temperatures ECOUT:		August 1, 2022		

SERVICE REQUEST (rush - subject to availability)	
Regular (default)	X
Priority (2-3 business days) - 50% surcharge	
Emergency (1 Business Day) - 100% surcharge	
For Emergency <1 Day, ASAP or Weekend - Contact ALS	

Sampler's Name		Mobile #	
Sampler's Signature		Date/Time	August 1, 2022

END OF REPORT

Acute Toxicity Test Results

Samples collected August 1, 2022

Final Report

September 20, 2022

Submitted to: **Teck Coal Ltd.**
Sparwood, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates					
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation	*Daphnia magna* antiscalant test initiation
F2_BPO_WG_2022-08-01_N / 2122-3055-01	1-Aug-22 at 0740h	2-Aug-22 at 1230h	4-Aug-22 at 1520h	4-Aug-22 at 1450h	4-Aug-22 at 1420h	-
F2_BPO_WG_2022-08-01_N-AS / 2122-3055-02	1-Aug-22 at 0741h	2-Aug-22 at 1230h	-	-	-	4-Aug-22 at 1501h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
F2_BPO_WG_2022-08-01_N	17.0 °C	1153	474
F2_BPO_WG_2022-08-01_N-AS	17.0 °C	1153	474

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)
- *Daphnia magna* 48-h single concentration screening test (conducted with 20 mg/L antiscalant)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample			
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
F2_BPO_WG_2022-08-01_N	100	100	87	-
F2_BPO_WG_2022-08-01_N-AS	-	-	-	100

Sample ID	Percent Immobility in 100 (% v/v)		
	***Daphnia magna* 10˚C**	***Daphnia magna* 20˚C**	***Daphnia magna* antiscalant**
F2_BPO_WG_2022-08-01_N	13	60	-
F2_BPO_WG_2022-08-01_N-AS	-	-	0

Precipitate observations

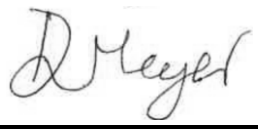
Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
F2_BPO_WG_2022-08-01_N	Rainbow trout	Precipitate observed on the bottom and the sides of test vessel	None
	Daphnia magna	Surficial precipitate and precipitate on the test vessel observed	Precipitate observed on carapace in 20˚C test
F2_BPO_WG_2022-08-01_N-AS	*Daphnia magna*	None	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	3.5 (3.3-3.7) g/L KCl[1]	5.9 (5.6-6.2) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.5 (2.6-4.7) g/L KCl	6.2 (5.2-7.4) g/L NaCl
Reference toxicant CV	9.6%	6.0%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, August 4, 2022; [2] Test date, August 10, 2022

LC = Lethal Concentration; CL = Confidence Limit; SD = Standard Deviation; CV = Coefficient of Variation



Report By:
Daisy Meyer, BSc
Laboratory Biologist



Reviewed By:
Emma Marus, BSc
Biologist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Control/dilution water for antiscalant test	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L), Na_2SeO_4 (2 µg Se/L) and 20 mg/L antiscalant
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC 164 Reference 2122-3055-01 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022/08/04	1520 *	AM/KO	1	EP
1	2022/08/05	0745	ML	-	EP
2	2022/08/06	0800	ML	-	MAF
3	2022/08/07	0800	ML	-	MAF
4	2022/08/08	1045	ML	1	DTM

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 7.5
Initial EC (µS/cm): 1971
Salinity (ppt): 0

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L: yes/no

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	8.0	8.6			
Temp (°C) of 100%	16				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: **5.5-8.5**)								
Day 0	8.0	7.7						
Day 4	8.2	8.1						
EC (uS/cm)								
Day 0	356	1926						
Day 4	398	1668						
DO (mg/L) (**70-100% saturation at test temp.**)								
Day 0	8.6	8.6						
Day 4	8.6	8.6						
Temperature (°C) (range: **14-16°C**)								
Day 0	16	16						
Day 4	16	16						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.6	0.5
2	3.2	0.4
3	3.2	0.3
4	3.3	0.4
5	3.3	0.5
6	3.3	0.3
7	3.0	0.3
8	3.4	0.5
9	3.5	0.5
10	2.6	0.2

Loading Density (g/L): 0.2 (must be ≤0.5 g/L)
Mean Length (cm): 3.2
Length Range (cm): 2.6-3.6
Mean Weight (g): 0.4 (Must be ≥0.3g)
Weight Range: (g): 0.2-0.5

Test Organism Information

Batch 20220623TR
Source Trout Lodge
Tank # 7
Days Held at 15± 2°C 23 (must be ≥14 days)
Percent stock mortality 0.6 (7 days prior to test, must be <2%)
Test Volume (L) 18

Comments :
96 hrs: ppt on sides & bottom of tank

Reviewed By: CW Date Reviewed: 20221 08109

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC 164 Reference 2122-3055-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/08/04	1420	GP/AI	2	mmf
1	2022/08/05	0930	BS	-	EP
2	2022/08/06	0950	AI	2	EP

Sample Information

Initial pH:	7.5
Initial EC (µS/cm):	1971
Salinity (ppt):	0

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	8.2	8.2	8.2	7.5	7.5	7.5				
2	8.0	8.0	8.0	7.7	7.7	7.7				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	350	389	384	1866	1962	1981				
2	388	392	394	1805	1852	1868				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.7	7.7	7.7				
2	7.7	7.7	7.7	7.7	7.7	7.7				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	21	21	21				
2	21	21	21	21	21	21				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10(8i)	10				
2	10	10	10	8(2i)	9(8i)	9(4i)				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar Wed D5 Jar(s) mortality 7 days prior to test (must be ≤25%) 5

QA (previous month)

Days to first brood (≤12 days) 7

Average number of young produced (≥15 young) 36

Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 7.7 Temperature (°C) of sample prior to aeration: 21

DO % of sample prior to aeration: 100 Is aeration required (<40% or >100%)? **Yes or (No)**

Duration of aeration (37.5 +/- 12.5 mL/min/L) : - Filtered with 110um screen prior to testing **Yes or (No)**

Hardness (mg $CaCO_3$/L) of 100% : 1153 Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or (No)**

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —

Alkalinity of 100% sample (mg $CaCO_3$/L): 474

Dilution Water

Pail label / preparation date 1:0H30

Hardness of dilution water (mg/L) 170

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Comments/Observations:

0hr: No ppt

48hr: surficial + ppt on test vessel and carapace

Reviewed By: CW Date Reviewed: 2022/08/09

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method: DAS 10 | Client: TEC 164 | Reference: 2122-3055-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/08/04	1450	SD/AI	2	MMF
1	2022/08/05	0900	AI	-	EP
2	2022/08/06	1055	AI	2	EP

Sample Information

Initial pH: 7.5
Initial EC (µS/cm): 1971
Salinity (ppt): 0

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	8.1	8.1	8.1	7.5	7.5	7.5				
2	8.2	8.2	8.2	8.0	8.0	8.0				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	373	387	384	1926	1982	2070				
2	393	400	398	1864	1922	1933				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	8.7	8.7	8.7				
2	9.4	9.4	9.4	8.7	8.7	8.7				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10(2I)	10(1i)	10(1i)				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar: Wed C1
Jar(s) mortality 7 days prior to test (must be ≤25%): 0

QA (previous month)
Days to first brood (≤12 days): 8
Average number of young produced (≥15 young): 45
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%): 0

Sample
DO (mg/L) of sample prior to aeration: 8.7
Temperature (°C) of sample prior to aeration: 12
DO % of sample prior to aeration: 93
Is aeration required (<40% or >100%)? Yes or (No)
Duration of aeration (37.5 +/- 12.5 mL/min/L) : —
Filtered with 110um screen prior to testing Yes or (No)
Hardness (mg $CaCO_3$/L) of 100% : 1153
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L): —
Alkalinity of 100% sample (mg $CaCO_3$/L): 474

Dilution Water
Pail label / preparation date: 1:07130
Hardness of dilution water (mg/L): 170

DO Levels (40-100% saturation) - corrected for altitude -
4.1 to 10.3 mg/L at 8°C
4.0 to 10.0 mg/L at 9°C
3.9 to 9.8 mg/L at 10°C
3.8 to 9.6 mg/L at 11°C
3.7 to 9.4 mg/L at 12°C

Comments/Observations:
0hr: No ppt
48hr: surficial ppt + ppt on test vessel

Reviewed By: CW | Date Reviewed: 2022/08/09

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method: DAS AS 20 | Client: TEC 164 | Reference: 2122-3055-02

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/08/04	1501	EP/AI	2	MAF
1	2022/08/05	1630	BS	-	EP
2	2022/08/06	0950	AI	2	EP

Sample Information

Initial pH:	7.5
Initial EC (µS/cm):	1971
Salinity (ppt):	0

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	8.2	8.2	8.2	7.6	7.6	7.6				
2	8.1	8.1	8.1	8.3	8.3	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	402	394	393	1915	1974	1980				
2	397	395	395	1852	1923	1934				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.7	7.7	7.7				
2	7.7	7.7	7.7	7.7	7.7	7.7				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	21	21	21				
2	21	21	21	21	21	21				

Number Alive (l, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar: Wed A1 B D3 — Jar(s) mortality 7 days prior to test (must be ≤25%): 0

QA (previous month)

Days to first brood (≤12 days): 7

Average number of young produced (≥15 young): 36

Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - (must be ≤10%): 0

Sample

DO (mg/L) of sample prior to aeration: 7.7 — Temperature (°C) of sample prior to aeration: 21

DO % of sample prior to aeration: 100 — Is aeration required (<40% or >100%)? **Yes or (No)**

Duration of aeration (37.5 +/- 12.5 mL/min/L) : — — Filtered with 110um screen prior to testing **Yes or (No)**

Hardness (mg $CaCO_3$/L) of 100% : 1153 — Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or (No)**

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L): —

Alkalinity of 100% sample (mg $CaCO_3$/L): 474

Dilution Water

Pail label / preparation date: 1:07/30

Hardness of dilution water (mg/L): 170

Antiscalant

Final Concentration in Sample: 20 mg/L

Volume of sample: 500 mL — Volume of antiscalant: 158 mL

Comments/Observations:

0hr: No ppt

48hr: No ppt

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Reviewed By: CW — Date Reviewed: 2022/08/09

APPENDIX C – Chain-of-custody form

Teck

COC ID: F2 NAUTILUS 2022-08-01 **TURNAROUND TIME:** **RUSH:**

PROJECT/CLIENT INFO

Facility Name / Job#	F2 SRF
Project Manager	BRETT MASON
Email	BRETT.MASON@TECK.COM
Address	RR1 HWY 3
City	Sparwood
Province	BC
Postal Code	V0B 2G0
Country	Canada
Phone Number	250-425-6179

LABORATORY

Lab Name	Nautilus Environmental - BC
Lab Contact	
Email	jacklyn@nautilusenvironmental.ca
Address	10823 27th Street SE
City	Calgary
Province	AB
Postal Code	T2Z 3V9
Country	Canada
Phone Number	403-253-7121

OTHER INFO

Report Format / Distribution		Excel	PDF	EDD
Email 1:	Cole.Macgregor@teck.com	X	X	X
Email 1:	teckcoal@equisonline.com			X
Email 2:	DL-EVO-SRF-LAB@teck.cor	X	X	X
Email 3:				
Email 4:				
Email 5:				
Email 6:				
Email 7:				
Email 8:				
Email 10:				
Email 11:				
Email 12:				
Email 13:				

PO number: VPO00842410

SAMPLE DETAILS

2022/08/02
12:30
Manitoulin
JC/SRS/AC
4x20L carboys, 5x1L bottles
NoS/NoB
Good Condition

ANALYSIS REQUESTED

Filtered - F: Field, L: Lab, FL: Field & Lab, N: None

Sample ID 2122-8055	Sample Location (sys_loc_code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	48hr Daphnia Magna Single Concentration Acute Toxicity 20C	48hr Daphnia Magna Single Concentration Acute Toxicity 10C	48hr Daphnia Magna Single Concentration Acute Toxicity Anitscalent	96hr Rainbow Trout Single Concentration Acute Toxicity (20L Bladders)	48hr Daphnia Magna Single Concentration Toxicity 15C
F2_BPO_WG_2022-08-01_N -01	F2_BPO	WG		2022-08-01	7:40	G	8	2	2		4	17.0°C
F2_BPO_WG_2022-08-01_N-AS -02	F2_BPO	WG		2022-08-01	7:41	G	1			1		↓

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS

RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME
	August 1, 2022		

SERVICE REQUEST (rush - subject to availability)

Regular (default)	X
Priority (2-3 business days) - 50% surcharge	
Emergency (1 Business Day) - 100% surcharge	
For Emergency <1 Day, ASAP or Weekend - Contact ALS	

Sampler's Name		Mobile #	
Sampler's Signature		Date/Time	August 1, 2022

END OF REPORT

Acute Toxicity Test Results

Samples collected August 2, 2022

Final Report

September 28, 2022

Submitted to: **Teck Coal Ltd.**
Sparwood, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates						
	Collected	**Received**	**Rainbow trout test initiation**	***Daphnia magna* 10˚C test initiation**	***Daphnia magna* 15˚C test initiation**	***Daphnia magna* 20˚C test initiation**	***Daphnia magna* 5 mg/L antiscalant test initiation**
EV_GT1_WS_2022-08-02_N-SRF / 2122-3075-01	2-Aug-22 at 1000h	3-Aug-22 at 1230h	4-Aug-22 at 1520h	5-Aug-22 at 1500h	5-Aug-22 at 1440h	5-Aug-22 at 1440h	-
EV_BC1_WS_2022-08-02_N-SRF / 2122-3075-02	2-Aug-22 at 1100h	3-Aug-22 at 1230h	4-Aug-22 at 1520h	5-Aug-22 at 1435h	5-Aug-22 at 1510h	5-Aug-22 at 1455h	-
EV_BC1_WS_2022-08-02_N-SRF-AS / 2122-3075-03	2-Aug-22 at 1101h	3-Aug-22 at 1230h	-	-	-	-	5-Aug-22 at 1430h
EV_GT1_WS_2022-08-02_N-SRF-AS / 2122-3075-04	2-Aug-22 at 1001h	3-Aug-22 at 1230h	-	-	-	-	5-Aug-22 at 1450h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
EV_GT1_WS_2022-08-02_N-SRF	17.9°C	1070	260
EV_BC1_WS_2022-08-02_N-SRF	20.7°C	1219	299
EV_BC1_WS_2022-08-02_N-SRF-AS	20.7°C	1219	299
EV_GT1_WS_2022-08-02_N-SRF-AS	17.9°C	1070	260

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)
- *Daphnia magna* 48-h single concentration screening test (conducted at 15°C)
- *Daphnia magna* 48-h single concentration screening test (conducted with 5 mg/L antiscalant)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample				
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 15˚C	*Daphnia magna* 20˚C	*Daphnia magna* 5 mg/L antiscalant
EV_GT1_WS_2022-08-02_N-SRF	100	100	100	100	-
EV_BC1_WS_2022-08-02_N-SRF	100	100	100	100	-
EV_BC1_WS_2022-08-02_N-SRF-AS	-	-	-	-	100
EV_GT1_WS_2022-08-02_N-SRF-AS	-	-	-	-	100

Sample ID	Percent Immobility in 100 (% v/v)			
	Daphnia magna 10˚C	*Daphnia magna* 15˚C	*Daphnia magna* 20˚C	*Daphnia magna* 5 mg/L antiscalant
EV_GT1_WS_2022-08-02_N-SRF	0	0	0	-
EV_BC1_WS_2022-08-02_N-SRF	0	0	0	-
EV_BC1_WS_2022-08-02_N-SRF-AS	-	-	-	0
EV_GT1_WS_2022-08-02_N-SRF-AS	-	-	-	0

Precipitate observations

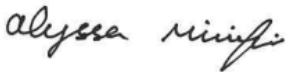
Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
EV_GT1_WS_2022-08-02_N-SRF	Rainbow trout	None	None
	Daphnia magna	Surficial precipitate observed in the 20˚C and 15˚C tests	None
EV_BC1_WS_2022-08-02_N-SRF	Rainbow trout	None	None
	Daphnia magna	Surficial and test vessel precipitate observed in the 20˚C and 15˚C tests	None
EV_BC1_WS_2022-08-02_N-SRF-AS	*Daphnia magna*	None	None
EV_GT1_WS_2022-08-02_N-SRF-AS	*Daphnia magna*	None	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	3.5 (3.3-3.7) g/L KCl[1]	5.9 (5.6-6.2) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.5 (2.6-4.7) g/L KCl	6.2 (5.2-7.4) g/L NaCl
Reference toxicant CV	9.6%	6.0%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, August 4, 2022; [2] Test date, August 10, 2022

LC = Lethal Concentration; CL = Confidence Limit; SD = Standard Deviation; CV = Coefficient of Variation



Report By:
Alyssa Minifie, BSc
Laboratory Biologist



Reviewed By:
Emma Marus, BSc
Biologist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Control/dilution water for antiscalant test	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L), Na_2SeO_4 (2 µg Se/L) and 5 mg/L antiscalant
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 4. Summary of test conditions: 48-h *Daphnia magna* survival test at 15˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	15 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC 164 Reference 2122-3075-01 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022/08/04	1520 *	AM/KO	1	EP
1	2022/08/05	0745	ML	-	EP
2	2022/08/06	0800	ML	-	map
3	2022/08/07	0802	ML	-	map
4	2022/08/08	1100	ML	1	um

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 8.0
Initial EC (µS/cm): 1846
Salinity (ppt): 0

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L: **yes/no**

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	9.4	8.6			
Temp (°C) of 100%	16				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	8.0	8.1						
Day 4	8.1	8.2						
EC (uS/cm)								
Day 0	380	1810						
Day 4	387	1762						
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	8.6	8.6						
Day 4	8.6	8.6						
Temperature (°C) (range: 14-16°C)								
Day 0	16	16						
Day 4	16	16						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.1	0.3
2	3.3	0.4
3	2.8	0.2
4	3.3	0.4
5	2.8	0.2
6	3.0 SML	0.3
7	~~3.8 ML~~ 2.8	0.3
8	3.2	0.4
9	3.1	0.5
10	3.5	0.3

Loading Density (g/L): 0.2 (must be ≤0.5 g/L)
Mean Length (cm): 3.1
Length Range (cm): 2.8-3.5
Mean Weight (g): 0.3 (Must be ≥0.3g)
Weight Range: (g): 0.2-0.5

Test Organism Information

Batch: 20220623TR
Source: Trout Lodge
Tank #: 7
Days Held at 15± 2°C: 23 (must be ≥14 days)
Percent stock mortality: 0.6 (7 days prior to test, must be <2%)
Test Volume (L): 18

Comments :
96 hrs: ~~ppt on bottom of tank~~ ML No ppt

Reviewed By: ML Date Reviewed: 2022/08/12

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC 164 Reference 2122-3075-02 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022/08/04	1520 *	AM/KO	1	EP
1	2022/08/05	0745	ML	-	EP
2	2022/08/06	0800	ML	-	MAF
3	2022/08/07	0800	ML	-	MAF
4	2022/08/08	1100	ML	1	MAF

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 1824 KO
Initial EC (µS/cm): 7.92
Salinity (ppt): 0

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L: **yes/no**

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	8.6	8.6			
Temp (°C) of 100%	16				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: **5.5-8.5**)								
Day 0	7.9	7.8						
Day 4	8.3	8.2						
EC (uS/cm)								
Day 0	369	1515						
Day 4	347	1756						
DO (mg/L) (**70-100% saturation at test temp.**)								
Day 0	8.6	8.6						
Day 4	8.6	8.6						
Temperature (°C) (range: **14-16°C**)								
Day 0	16	16						
Day 4	16	16						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.2	0.4
2	2.8	0.2
3	3.6	0.6
4	2.6	0.2
5	2.8	0.2
6	3.2	0.4
7	3.0	0.3
8	3.2	0.3
9	3.0	0.3
10	3.0	0.2

Loading Density (g/L): 0.2 (must be ≤0.5 g/L)
Mean Length (cm): 3.0
Length Range (cm): 2.6-3.6
Mean Weight (g): 0.3 (Must be ≥0.3g)
Weight Range: (g): 0.2-0.6

Test Organism Information

Batch 20220623TR
Source Trout Lodge
Tank # 7
Days Held at 15± 2°C 23 (must be ≥14 days)
Percent stock mortality 0.6 (7 days prior to test, must be <2%)
Test Volume (L) 18

Comments :
96 hrs: No ppt

Reviewed By: ML Date Reviewed: 2022/08/12

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC 164 Reference 2122-3075-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/08/05	1440	EP/AI	2	NA
1	2022/08/06	0830	BS	-	mmf
2	2022/08/07	0815	DM	2	tm

Sample Information

Initial pH:	8.0
Initial EC (µS/cm):	1846
Salinity (ppt):	0

Lab Code	CTL A	CTL B	CTL C	100 A	100 B	100 C				

pH (units) (range: 6.0-8.5)

day										
0	8.2	8.1	8.1	8.2	8.2	8.3				
2	8.2	8.2	8.2	8.1	8.2	8.2				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	392	394	391	1754	1810	1834				
2	380	392	392	1685	1751	1795				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.9	7.9	7.9				
2	7.9	7.9	7.9	7.7	7.7	7.7				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	20	20	20				
2	20	20	20	21	21	21				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar wed 02 Jar(s) mortality 7 days prior to test (must be ≤25%) 5 %.

QA (previous month)

Days to first brood (≤12 days) 7

Average number of young produced (≥15 young) 37

Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - 0 %.
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 9.7 Temperature (°C) of sample prior to aeration: 19

DO % of sample prior to aeration: 116 % Is aeration required (<40% or >100%)? (Yes) or No

Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20 min Filtered with 110um screen prior to testing Yes or (No)

Hardness (mg $CaCO_3$/L) of 100% : 1070 Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —

Alkalinity of 100% sample (mg $CaCO_3$/L): 260

Dilution Water

Pail label / preparation date 1:07130

Hardness of dilution water (mg/L) 170

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Comments/Observations:

0h: no ppt

48h: Slight surficial ppt.

Reviewed By: ML Date Reviewed: 2022/08/12

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC 164 Reference 2122-3075-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/08/05	1500	EP/IAI	2	NA
1	2022/08/06	0855	BS	-	MAF
2	2022/08/07	0915	DM	2	KTM

Sample Information

Initial pH:	8.0
Initial EC (µS/cm):	1846
Salinity (ppt):	0

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	8.1	8.1	8.1	8.1	8.1	8.1				
2	7.9	8.0	8.0	8.0	8.2	8.2				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	385	389	391	1690	1820	1842				
2	395	393	396	1736	1821	1845				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar wed #1 Jar(s) mortality 7 days prior to test (must be ≤25%) 11%

QA (previous month)

Days to first brood (≤12 days) 8

Average number of young produced (≥15 young) 39

Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - 0%
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 11.4 Temperature (°C) of sample prior to aeration: 12

DO % of sample prior to aeration: 120 % Is aeration required (<40% or >100%)? (Yes) or No

Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20 min Filtered with 110um screen prior to testing Yes or (No)

Hardness (mg $CaCO_3$/L) of 100% : 1070 Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —

Alkalinity of 100% sample (mg $CaCO_3$/L): 260

Dilution Water

Pail label / preparation date 1:07/30

Hardness of dilution water (mg/L) 170

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

Comments/Observations:

0h: no ppt

48h: No ppt

Reviewed By: MM Date Reviewed: 2022/08/12

NAUTILUS ENVIRONMENTAL

Daphnia 15°C Bench Sheet

Method DAS 15 Client TEC 164 Reference 2122-3075-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/08/05	1440	EP/AI	2	NA
1	2022/08/06	0905	BS	-	MAF
2	2022/08/07	0915	DM	2	MM

Sample Information

Initial pH:	8.0
Initial EC (µS/cm):	1846
Salinity (ppt):	0

Lab Code	CTL A	CTL B	CTL C	100 A	100 B	10 C				

pH (units) (range: 6.0-8.5)

day										
0	8.1	8.0	8.0	8.2	8.3	8.3				
2	8.3	8.2	8.2	8.1	8.2	8.2				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	390	392	393	1740	1804	1808				
2	386	393	393	1704	1779	1795				

DO (mg/L) (**40-100% saturation at test temp.**)

0	8.4	8.4	8.4	8.4	8.4	8.4				
2	8.6	8.6	8.6	8.4	8.4	8.4				

Temperature (°C) (range: **13-17 °C**)

0	17	17	17	17	17	17				
2	16	16	16	17	17	17				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	9	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar Wed D2 Jar(s) mortality 7 days prior to test (must be ≤25%) 5%

QA (previous month)

Days to first brood (≤12 days) 7

Average number of young produced (≥15 young) 37

Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - (must be ≤10%) 3%

Sample

DO (mg/L) of sample prior to aeration: 9.7

Temperature (°C) of sample prior to aeration: 17 ~~19~~ EP

DO % of sample prior to aeration: 112% ~~116%~~ EP

Is aeration required (<40% or >100%)? (Yes) or No

Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20 min

Filtered with 110um screen prior to testing Yes or (No)

Hardness (mg $CaCO_3$/L) of 100% : 1070

Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —

Alkalinity of 100% sample (mg $CaCO_3$/L): 260

Dilution Water

Pail label / preparation date 1:07/30

Hardness of dilution water (mg/L) 170

DO Levels (40-100% saturation) - corrected for altitude -

3.7 to 9.1 mg/L at 13°C	3.4 to 8.6 mg/L at 16°C
3.6 to 8.9 mg/L at 14°C	3.4 to 8.4 mg/L at 17°C
3.5 to 8.8 mg/L at 15°C	

Comments/Observations:

0h: no ppt

48h: Slight surficial ppt.

Reviewed By: MM Date Reviewed: 2022/08/12

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC 164 Reference 2122-3075-02

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/08/05	1455	EP/AI	2	NA
1	2022/08/06	0840	BS	-	MAP
2	2022/08/07	0905	DM	2	km

Sample Information

Initial pH: 7.9
Initial EC (µS/cm): 1824
Salinity (ppt): 0

Lab Code	CTL A	CTL B	CTL C	100 A	100 B	100 C				
day	pH (units) (range: 6.0-8.5)									
0	7.9	8.0	8.1	7.8	7.8	7.8				
2	8.2	8.2	8.2	8.1	8.1	8.1				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

	EC (uS/cm)									
0	387	389	391	1760	~~1831~~	1835		* 1831		
2	380	389	392	1732	1744	1776				
	DO (mg/L) (**40-100% saturation at test temp.**)									
0	7.9	7.9	7.9	7.7	7.7	7.7				
2	7.7	7.7	7.7	7.7	7.7	7.7				
	Temperature (°C) (range: **18-22 °C**)									
0	20	20	20	21	21	21				
2	21	21	21	21	21	21				
	Number Alive (I, immobile)									
0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar wed D3 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 37
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0%
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 7.9 Temperature (°C) of sample prior to aeration: 20
DO % of sample prior to aeration: 100% Is aeration required (<40% or >100%)? Yes or (No)
Duration of aeration (37.5 +/- 12.5 mL/min/L) : — Filtered with 110um screen prior to testing Yes or (No)
Hardness (mg $CaCO_3$/L) of 100% : 1219 Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 299

Dilution Water
Pail label / preparation date 1:07/30
Hardness of dilution water (mg/L) 170

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Comments/Observations:
0h: no ppt
48h: surficial ppt. ppt on jar.

Reviewed By: ML Date Reviewed: 2022/08/12

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC 164 Reference 2122-3075-02

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/08/05	1435	EP/AI	2	NA
1	2022/08/06	0900	BS	-	MAP
2	2022/08/07	0915	DM	2	UTM

Sample Information

Initial pH:	7.9
Initial EC (µS/cm):	1824
Salinity (ppt):	0

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	8.0	8.0	8.0	7.7	7.8	7.8				
2	8.2	8.2	8.2	8.2	8.2	8.2				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	375	389	396	1727	1841	1829				
2	389	395	396	1765	1826	1840				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (l, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar used D1 Jar(s) mortality 7 days prior to test (must be ≤25%) 0 %

QA (previous month)

Days to first brood (≤12 days) 7

Average number of young produced (≥15 young) 37

Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - 0%
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 9.4 Temperature (°C) of sample prior to aeration: 12

DO % of sample prior to aeration: 100% Is aeration required (<40% or >100%)? **Yes or (No)**

Duration of aeration (37.5 +/- 12.5 mL/min/L) : - Filtered with 110um screen prior to testing **Yes or (No)**

Hardness (mg $CaCO_3$/L) of 100% : 1219 Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or (No)**

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —

Alkalinity of 100% sample (mg $CaCO_3$/L): 299

Dilution Water

Pail label / preparation date 1:07/30

Hardness of dilution water (mg/L) 170

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

Comments/Observations:

0h: no ppt

48h: No ppt

Reviewed By: MG Date Reviewed: 2022/08/12

NAUTILUS ENVIRONMENTAL

Daphnia 15°C Bench Sheet

Method DAS 15 Client TEC 164 Reference 2122-3075-02

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/08/05	1510	EP/AI	2	NA
1	2022/08/06	0910	RS	-	MAP
2	2022/08/07	0915	DM	2	KTM

Sample Information

Initial pH: 7.9
Initial EC (µS/cm): 1824
Salinity (ppt): 0

Lab Code	CTL A	CTL B	CTL C	100 A	100 B	10 C				

pH (units) (range: 6.0-8.5)

day										
0	8.0	8.0	8.1	7.8	7.8	7.8				
2	8.3	8.3	8.2	8.1	8.2	8.2				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	425	402	402	1771	1825	1846				
2	383	391	391	1707	1760	1794				

DO (mg/L) (**40-100% saturation at test temp.**)

0	8.4	8.4	8.4	8.4	8.4	8.4				
2	8.4	8.4	8.4	8.4	8.4	8.4				

Temperature (°C) (range: **13-17 °C**)

0	17	17	17	17	17	17				
2	17	17	17	~~18~~ 17	~~18~~ 17	~~18~~ DM 17				

Number Alive (l, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar Wed D4 Jar(s) mortality 7 days prior to test (must be ≤25%) 5%.

QA (previous month)
Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 37
Were test treatments randomized on test tray? Yes / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0%.

Sample
DO (mg/L) of sample prior to aeration: 8.4 EP 7.9
DO % of sample prior to aeration: 100%.
Duration of aeration (37.5 +/- 12.5 mL/min/L): -
Hardness (mg $CaCO_3$/L) of 100% : 1219
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) -
Alkalinity of 100% sample (mg $CaCO_3$/L): 299

Temperature (°C) of sample prior to aeration: 17 ~~20~~ EP
Is aeration required (<40% or >100%)? Yes or No
Filtered with 110um screen prior to testing Yes or No
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or No

Dilution Water
Pail label / preparation date 1:07130
Hardness of dilution water (mg/L) 170

DO Levels (40-100% saturation) - corrected for altitude -
3.7 to 9.1 mg/L at 13°C
3.6 to 8.9 mg/L at 14°C
3.5 to 8.8 mg/L at 15°C
3.4 to 8.6 mg/L at 16°C
3.4 to 8.4 mg/L at 17°C

Comments/Observations:
0h: no ppt
48h: surficial ppt. ppt on jar.

Reviewed By: MH Date Reviewed: 2022/08/12

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS 5 Client TEC 164 Reference 2122-3075-03

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/08/05	1430	EP/AI	2	NA
1	2022/08/06	0840	BS	-	MAP
2	2022/08/07	0905	DM	2	vm

Sample Information

Initial pH: 7.9
Initial EC (µS/cm): 1824
Salinity (ppt): 0

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	8.0	8.0	8.0	7.8	7.8	7.8				
2	8.2	8.2	8.2	8.3	8.4	8.4				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	374	387	390	1759	1827	1840				
2	384	392	392	1699	1782	1798				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.7	7.7	7.7				
2	7.7	7.7	7.7	7.5	7.7	7.7				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	21	21	21				
2	21	21	21	21	21	21				

Number Alive (l, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar wed 01 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 37
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0%

Sample
DO (mg/L) of sample prior to aeration: 7.7
DO % of sample prior to aeration: 100%
Duration of aeration (37.5 +/- 12.5 mL/min/L) : -
Hardness (mg $CaCO_3$/L) of 100% : 1219
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) -
Alkalinity of 100% sample (mg $CaCO_3$/L): 299

Temperature (°C) of sample prior to aeration: 21
Is aeration required (<40% or >100%)? **Yes or (No)**
Filtered with 110um screen prior to testing **Yes or (No)**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or (No)**

Dilution Water
Pail label / preparation date 1:07/30
Hardness of dilution water (mg/L) 170

Antiscalant
Final Concentration in Sample: 5mg/L
Volume of sample: 500mL Volume of antiscalant: 39.5µL

Comments/Observations:
0h: no ppt
48h: No ppt.

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Reviewed By: MG Date Reviewed: 2022/08/12

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS 5 Client TEC 164 Reference 2122-3075-04

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/08/05	1450	EP/AI	2	NA
1	2022/08/06	0845	BS	-	MAF
2	2022/08/07	0805	PM	2	um

Sample Information

Initial pH: 8.0
Initial EC (µS/cm): 1846
Salinity (ppt): 0

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	8.0	8.0	8.0	7.9	7.9	7.9				
2	8.3	8.2	8.2	8.3	8.3	8.4				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	354	385	389	1766	1817	1828				
2	376	392	391	1748	1806	1804				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.7	7.7	7.7	7.7	7.7	7.7				
2	7.7	7.7	7.7	7.7	7.7	7.7	EP			

Temperature (°C) (range: **18-22 °C**)

0	21	21	21	21	21	21				
2	21	21	21	21	21	21				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	*10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar Wed D2 Jar(s) mortality 7 days prior to test (must be ≤25%) 5%

QA (previous month)
Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 37
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0%

Sample
DO (mg/L) of sample prior to aeration: 10.1
DO % of sample prior to aeration: 128%
Duration of aeration (37.5 +/- 12.5 mL/min/L): 20 min
Hardness (mg $CaCO_3$/L) of 100% : 1070
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 260

Temperature (°C) of sample prior to aeration: 21
Is aeration required (<40% or >100%)? (Yes) or No
Filtered with 110um screen prior to testing Yes or (No)
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)

Dilution Water
Pail label / preparation date 1:27130
Hardness of dilution water (mg/L) 170

Antiscalant
Final Concentration in Sample: 5mg/L
Volume of sample: 500 mL Volume of antiscalant: 39.5 mL

Comments/Observations:
0h: NO ppt
48h: No ppt.
*1 stuck on debris.

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Reviewed By: MG Date Reviewed: 2022/08/12

APPENDIX C – Chain-of-custody form

Teck

COC ID:	EVO NAUTILUS 2022-09-17	TURNAROUND TIME:		RUSH:	

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name / Job#	Elkview Operations			Lab Name	Nautilus Environmental - BC			Report Format / Distribution		Excel	PDF	EDD
Project Manager	Group 1; Brett Mason			Lab Contact				Email 1:	teckcoal@equisonline.com			X
Email	Brett.Mason@teck.com			Email	jacklyn@nautilusenvironmental.ca			Email 2:	DL-EVO-SRF-LAB@teck.com	X	X	X
Address	RR1 HWY 3			Address	10823 27th Street SE			Email 3:	Cole.Macgregor@teck.com	X	X	X
								Email 4:				
City	Sparwood	Province	BC	City	Calgary	Province	AB	Email 5:				
								Email 6:				
								Email 7:				
								Email 8:				
								Email 9:				
								Email 10:				
								Email 11:				
								Email 12:				
								Email 13:				
Postal Code	V0B 2G0	Country	Canada	Postal Code	T2H 2K1	Country	Canada					
Phone Number	250-425-6179			Phone Number	T2Z 3V9			PO number	VPO00842410			

SAMPLE DETAILS / **ANALYSIS REQUESTED** — Filtered - F: Field, L: Lab, FL: Field & Lab, N: None

2022/08/03
12:30
Manitoulin
JC/SRS/AC
~~4x2~~ 8x20L carboys, 12x1L bottles
NoS/NoL
Good Condition

Sample ID 2122-3075	Sample Location (sys_loc_code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	48hr Daphnia Magna Single Concentration Acute Toxicity 20C	48hr Daphnia Magna Single Concentration Acute Toxicity 10C	48hr Daphnia Magna Single Concentration Acute Toxicity Anitscalent	96hr Rainbow Trout Single Concentration Acute Toxicity (10 L Bladder)	96hr Rainbow Trout Single Concentration Acute Toxicity (20 L Bladder)	48hr Daphnia Magna Single Concentration Toxicity 15C	48hr Daphnia Magna Single Concentration Acute Toxicity 15C					
EV_GT1_WS_2022-08-02_N-SRF -01	EV_GT1	WS		2022-08-02	10:00	G	9	2	2			4		1	17.9°C				
EV_BC1_WS_2022-08-02_N-SRF -02	EV_BC1	WS		2022-08-02	11:00	G	9	2	2			4		1	20.7°C				
EV_BC1_WS_2022-08-02_N-SRF-AS -03	EV_BC1	WS		2022-08-02	11:01	G	1			1					↓				
EV_GT1_WS_2022-08-02_N-SRF-AS -04	EV_GT1	WS		2022-08-02	10:01	G	1			1					17.9°C				

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME
Field Temperatures	[illegible] - TEUC	August 2, 2022		
	[illegible]	1230		

SERVICE REQUEST (rush - subject to availability)					
Regular (default)	X	Sampler's Name	Gurtaj Virk	Mobile #	
Priority (2-3 business days) - 50% surcharge					
Emergency (1 Business Day) - 100% surcharge		Sampler's Signature	[signature]	Date/Time	August 2, 2022
For Emergency <1 Day, ASAP or Weekend - Contact ALS					

END OF REPORT

Acute Toxicity Test Results

Samples collected August 8, 2022

Final Report

September 21, 2022

Submitted to: **Teck Coal Ltd.**
Sparwood, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates					
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation	*Daphnia magna* antiscalant test initiation
F2_BPO_WG_2022-08-08_N / 2122-3119-01	8-Aug-22 at 0830h	9-Aug-22 at 0845h	9-Aug-22 at 1527h	9-Aug-22 at 1510h	9-Aug-22 at 1505h	-
F2_BPO_WG_2022-08-08_N-AS / 2122-3119-02	8-Aug-22 at 0831h	9-Aug-22 at 0845h	-	-	-	9-Aug-22 at 1445h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
F2_BPO_WG_2022-08-08_N	15.3°C	1167	422
F2_BPO_WG_2022-08-08_N-AS	15.3°C	1167	422

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)
- *Daphnia magna* 48-h single concentration screening test (conducted with 20 mg/L antiscalant)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample			
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
F2_BPO_WG_2022-08-08_N	100	100	100	-
F2_BPO_WG_2022-08-08_N-AS	-	-	-	100

Sample ID	Percent Immobility in 100 (% v/v)		
	***Daphnia magna* 10˚C**	***Daphnia magna* 20˚C**	***Daphnia magna* antiscalant**
F2_BPO_WG_2022-08-08_N	0	0	-
F2_BPO_WG_2022-08-08_N-AS	-	-	0

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
F2_BPO_WG_2022-08-08_N	Rainbow trout	None	None
	Daphnia magna	None	None
F2_BPO_WG_2022-08-08_N-AS	*Daphnia magna*	None	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	3.5 (3.3-3.7) g/L KCl[1]	5.9 (5.6-6.2) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.5 (2.6-4.7) g/L KCl	6.2 (5.2-7.4) g/L NaCl
Reference toxicant CV	9.6%	6.0%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date August 4, 2022; [2] Test date August 10, 2022

LC = Lethal Concentration; CL = Confidence Limit; SD = Standard Deviation; CV = Coefficient of Variation

Report By:
Kiara O'Shea, BSc
Laboratory Biologist

Reviewed By:
Emma Marus, BSc
Biologist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Control/dilution water for antiscalant test	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L), Na_2SeO_4 (2 µg Se/L) and 20 mg/L antiscalant
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS ~~96~~ KO Client TEC 164 Reference 2122-3119-01 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022-08-09	15:27 *	KO/AM/CD	1	NA
1	2022-08-10	0730	KO	-	EP
2	2022-08-11	0745	ML	-	MAP
3	2022-08-12	0745	ML	-	MAP
4	2022-08-13	1030	ML/KO	1	MAP

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 7.8
Initial EC (µS/cm): 2000
Salinity (ppt): 0

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L: **yes/no**

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	8.6	8.6			
Temp (°C) of 100%	16				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	8.3	7.5						
Day 4	8.0	8.1						
EC (uS/cm)								
Day 0	376	1873						
Day 4	389	1836						
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	8.6	8.6						
Day 4	8.6	8.6						
Temperature (°C) (range: 14-16°C)								
Day 0	16	16						
Day 4	16	16						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10 ML						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.1	0.4
2	2.8	0.3
3	2.8	0.3
4	2.8	0.3
5	3.0	0.3
6	3.3	0.4
7	3.0	0.4
8	3.4	0.5
9	3.9	0.8
10	3.4	0.5

Loading Density (g/L): 0.2 (must be ≤0.5 g/L)
Mean Length (cm): 3.2
Length Range (cm): 2.8-3.9
Mean Weight (g): 0.4 (Must be ≥0.3g)
Weight Range: (g): 0.3-0.8

Test Organism Information

Batch 20220623TR
Source Trout Lodge
Tank # 8
Days Held at 15± 2°C 28 (must be ≥14 days)
Percent stock mortality 0.23 (7 days prior to test, must be <2%)
Test Volume (L) 18

Comments:
96h: No ppt

Reviewed By: MG Date Reviewed: 2022/08/16

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC 164 Reference 2122-3119-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/08/09	1505	DW/AI/BS	2	NA
1	2022/08/10	0940	BS	-	EP
2	2022/08/11	0935	AG	2	WM

Sample Information

Initial pH: 7.8
Initial EC (µS/cm): 2000
Salinity (ppt): 0

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	7.9	8.0	8.0	7.4	7.4	7.4				
2	8.1	8.1	8.1	8.4	8.5	8.5				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	394	407	404	2150	2220	2230				
2	425	418	414	2090	2190	2190				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.7	7.7	7.7	7.7	7.7	7.7				
2	7.7	7.7	7.7	7.7	7.7	7.7				

Temperature (°C) (range: **18-22 °C**)

0	21	21	21	21	21	21				
2	21	21	21	21	21	21				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar: wed C1 — Jar(s) mortality 7 days prior to test (must be ≤25%): 50%

QA (previous month)
Days to first brood (≤12 days): 8
Average number of young produced (≥15 young): 45
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%): 0

Sample

DO (mg/L) of sample prior to aeration: BS 7.9 ~~8.2~~
Temperature (°C) of sample prior to aeration: 20
DO % of sample prior to aeration: BS ~~103~~ 100
Is aeration required (<40% or >100%)? **Yes or (No)**
Duration of aeration (37.5 +/- 12.5 mL/min/L) : —
Filtered with 110um screen prior to testing **Yes or (No)**
Hardness (mg $CaCO_3$/L) of 100% : 1167
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or (No)**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 422

Dilution Water
Pail label / preparation date: Temp 1
Hardness of dilution water (mg/L): 159

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Comments/Observations:
0 hr NO ppt
48 hr no ppt

Reviewed By: MG Date Reviewed: 2022/08/16

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC 164 Reference 2122-3119-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/08/09	1510	DM/AI/BS	2	NA
1	2022/08/10	0905	AG	-	EP
2	2022/08/11	0900	DM	2	WM

Sample Information

Initial pH: 7-8
Initial EC (µS/cm): 2000
Salinity (ppt): 0

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	8.0	8.0	8.0	7.4	7.4	7.5				
2	8.2	8.2	8.2	8.3	8.4	8.4				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	392	401	405	2150	2220	2240				
2	409	410	408	2050	2180	2200				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar Wed C1 Jar(s) mortality 7 days prior to test (must be ≤25%) 5%

QA (previous month)

Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 45
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - (must be ≤10%) 0%

Sample

DO (mg/L) of sample prior to aeration: 9.4
Temperature (°C) of sample prior to aeration: 12
DO % of sample prior to aeration: 100
Is aeration required (<40% or >100%)? **Yes or (No)**
Duration of aeration (37.5 +/- 12.5 mL/min/L) : —
Filtered with 110um screen prior to testing **Yes or (No)**
Hardness (mg $CaCO_3$/L) of 100% : 1167
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or (No)**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 422

Dilution Water

Pail label / preparation date Temp 1
Hardness of dilution water (mg/L) 159

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

Comments/Observations:

0 hr: NO PPT
48 hr: NO PPT

Reviewed By: MG Date Reviewed: 2022/08/16

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS 20 Client TEC 164 Reference 2122-3119-02

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/08/09	1445	DM/AH/BS	2	NA
1	2022/08/10	0845	BS	-	EP
2	2022/08/11	0920	~~AH~~	2	WM

Sample Information

Initial pH:	7.8
Initial EC (µS/cm):	2000
Salinity (ppt):	0

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

day

pH (units) (range: 6.0-8.5) 7.6 7.6 7.6

day										
0	7.9	7.9	7.9	~~7.6~~ BS	~~7.7~~ BS	~~7.7~~ BS				
2	8.2	8.1	8.1	8.5	8.5	8.5				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm) 2150 2220

0	387	403	400	~~399~~ BS	~~863~~ BS	~~863~~ BS				
2	418	414	415	2182	2180	2190				

7.7 7.7 7.7

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.7	7.7	7.7	~~7.9~~ BS	~~7.9~~ BS	~~7.9~~ BS				
2	7.9	7.9	7.9	7.9	7.9	7.9				

21 21 21

Temperature (°C) (range: **18-22 °C**)

0	21	21	21	~~20~~ BS	~~20~~ BS	~~20~~ BS				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar Wed a1 Jar(s) mortality 7 days prior to test (must be ≤25%) 0% BS

QA (previous month)

Days to first brood (≤12 days) 8

Average number of young produced (≥15 young) 45

Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - (must be ≤10%) 0

Sample

DO (mg/L) of sample prior to aeration: BS 7.9 ~~8.26~~

DO % of sample prior to aeration: BS ~~103.5~~ 100

Duration of aeration (37.5 +/- 12.5 mL/min/L): —

Hardness (mg $CaCO_3$/L) of 100%: 1167

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —

Alkalinity of 100% sample (mg $CaCO_3$/L): 422

Temperature (°C) of sample prior to aeration: BS ~~20.5~~ 20

Is aeration required (<40% or >100%)? **Yes or (No)**

Filtered with 110um screen prior to testing **Yes or (No)**

Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or (No)**

Dilution Water

Pail label / preparation date Temp 1

Hardness of dilution water (mg/L) 139

Antiscalant

Final Concentration in Sample: 20 mg/L

Volume of sample: 500 Volume of antiscalant: ~~20~~ mg/L 158 ul

Comments/Observations:

0 hr no ppt

48 hr no ppt

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Reviewed By: MG Date Reviewed: 2022/08/16

APPENDIX C – Chain-of-custody form

Teck

Page 1 of 1

COC ID:	F2 NAUTILUS August 8 2022	TURNAROUND TIME:		RUSH:

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name / Job#	F2 SRF			Lab Name	Nautilus Environmental - BC			Report Format / Distribution		Excel	PDF	EDD
Project Manager	BRETT MASON			Lab Contact				Email 1:	Cole.Macgregor@teck.com	\	\	\
Email	BRETT.MASON@TECK.COM			Email	jacklyn@nautilusenvironmental.ca			Email 1:	teckcoal@equisonline.com			\
Address	RR1 HWY 3			Address	10823 27th Street SE			Email 2:	DL-EVO-SRF-LAB@teck.com	\	\	\
								Email 3:				
City	Sparwood	Province	BC	City	Calgary	Province	AB	Email 4:				
								Email 5:				
								Email 6:				
								Email 7:				
								Email 8:				
								Email 10:				
								Email 11:				
								Email 12:				
								Email 13:				
Postal Code	V0B 2G0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada					
Phone Number	250-425-6179			Phone Number	403-253-7121			PO number	VPO00842410			

SAMPLE DETAILS — **ANALYSIS REQUESTED** — Filtered - F: Field, L: Lab, FL: Field & Lab, N: None

2022/08/09
8:45am 15.3°C
Manitoulin
JC/SRS/AC
4x 20L carboys, 5x 1L bottles
NoS/NoL
Good Condition

Sample ID	Sample Location (sys loc code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	Fil.	ANALYSIS: 48hr Daphnia Magna Single Concentration Acute Toxicity 20C	48hr Daphnia Magna Single Concentration Acute Toxicity 10C	48hr Daphnia Magna Single Concentration Acute Toxicity Anitscalent	96hr Rainbow Trout Single Concentration Acute Toxicity (20L Bladders)	48hr Daphnia Magna Single Concentration Toxicity 15C
F2_BPO_WG_2022-08-08_N -01	F2_BPO	WG		2022-08-08	8:30	G	8		2	2		4	
F2_BPO_WG_2022-08-08_N-AS -02	F2_BPO	WG		2022-08-08	8:31	G	1				1		

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME
		August 8, 2022		

SERVICE REQUEST (rush - subject to availability)

Regular (default)	X
Priority (2-3 business days) - 50% surcharge	
Emergency (1 Business Day) - 100% surcharge	
For Emergency <1 Day, ASAP or Weekend - Contact ALS	

Sampler's Name		Mobile #	
Sampler's Signature		Date/Time	August 8, 2022

END OF REPORT

Acute Toxicity Test Results

Samples collected August 15, 2022

Final Report

October 5, 2022

Submitted to: **Teck Coal Ltd.**
Sparwood, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates					
	Collected	**Received**	**Rainbow trout test initiation**	***Daphnia magna* 10˚C test initiation**	***Daphnia magna* 20˚C test initiation**	***Daphnia magna* 5 mg/L antiscalant test initiation**
EV_EC1_WS_2022-08-15_N-SRF / 2122-3226-01	15-Aug-22 at 1040h	16-Aug-22 at 0900h	16-Aug-22 at 1500h	16-Aug-22 at 1525h	16-Aug-22 at 1610h	-
EV_EC1_WS_2022-08-15_N-SRF-AS / 2122-3226-02	15-Aug-22 at 1041h	16-Aug-22 at 0900h	-	-	-	16-Aug-22 at 1615h
EV_ECOUT_WS_2022-08-15_N-SRF / 2122-3226-03	15-Aug-22 at 1320h	16-Aug-22 at 0900h	16-Aug-22 at 1510h	16-Aug-22 at 1530h	16-Aug-22 at 1610h	-
EV_ECOUT_WS_2022-08-15_N-SRF-AS / 2122-3226-04	15-Aug-22 at 1321h	16-Aug-22 at 0900h	-	-	-	16-Aug-22 at 1620h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
EV_EC1_WS_2022-08-15_N-SRF	15.2°C	945	325
EV_EC1_WS_2022-08-15_N-SRF-AS	15.2°C	945	325
EV_ECOUT_WS_2022-08-15_N-SRF	16.6°C	934	349
EV_ECOUT_WS_2022-08-15_N-SRF-AS	16.6°C	934	349

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)
- *Daphnia magna* 48-h single concentration screening test (conducted with 5 mg/L antiscalant)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample			
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* 5 mg/L antiscalant
EV_EC1_WS_2022-08-15_N-SRF	100	100	100	-
EV_EC1_WS_2022-08-15_N-SRF-AS	-	-	-	100
EV_ECOUT_WS_2022-08-15_N-SRF	100	100	100	-
EV_ECOUT_WS_2022-08-15_N-SRF-AS	-	-	-	100

Sample ID	Percent Immobility in 100 (% v/v)		
	Daphnia magna 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* 5 mg/L antiscalant
EV_EC1_WS_2022-08-15_N-SRF	0	0	-
EV_EC1_WS_2022-08-15_N-SRF-AS	-	-	0
EV_ECOUT_WS_2022-08-15_N-SRF	0	0	-
EV_ECOUT_WS_2022-08-15_N-SRF-AS	-	-	0

Precipitate observations

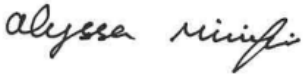
Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
EV_EC1_WS_2022-08-15_N-SRF	Rainbow trout	Precipitate observed on sides and bottom of test vessel	None
	Daphnia magna	Surficial precipitate observed; precipitate observed on test vessels in the 20˚C test	None
EV_EC1_WS_2022-08-15_N-SRF-AS	*Daphnia magna*	None	None
EV_ECOUT_WS_2022-08-15_N-SRF	Rainbow trout	Precipitate observed on sides and bottom of test vessel	None
	Daphnia magna	Surficial precipitate observed; precipitate observed on test vessels in the 20˚C test	None
EV_ECOUT_WS_2022-08-15_N-SRF-AS	*Daphnia magna*	None	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	3.5 (3.3-3.7) g/L KCl[1]	5.6 (5.4-5.8) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.5 (2.6-4.7) g/L KCl	6.1 (5.2-7.3) g/L NaCl
Reference toxicant CV	9.6%	5.6%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, August 4, 2022; [2] Test date, August 24, 2022

LC = Lethal Concentration; CL = Confidence Limit; SD = Standard Deviation; CV = Coefficient of Variation



Report By:
Alyssa Minifie, BSc
Laboratory Biologist



Reviewed By:
Emma Marus, BSc
Biologist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Control/dilution water for antiscalant test	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L), Na_2SeO_4 (2 µg Se/L) and 5 mg/L antiscalant
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS ENVIRONMENTAL

Trout Bench Sheet

Method TRS Client TEC 164 Reference 2122-3226-01 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022/08/16	1500 *	KO/KCRM/CD	1	MAF
1	2022/08/17	0930	KO	-	MAF
2	2022/08/18	0740	CD/ML	-	MAF
3	2022/08/19	0800	CD/ML	-	eE
4	2022/08/20	1050	ML	1	MAF

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 7.9
Initial EC (µS/cm): 1770
Salinity (ppt): 0

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L: **yes/no**

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	9.3	8.6			
Temp (°C) of 100%	16				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100	100 AS					
pH (units) (range: **5.5-8.5**)								
Day 0	7.6	7.8						
Day 4	8.0	7.9						
EC (uS/cm)								
Day 0	296	1727						
Day 4	412	1629						
DO (mg/L) (**70-100% saturation at test temp.**)								
Day 0	8.6	8.6						
Day 4	8.6	8.6						
Temperature (°C) (range: **14-16°C**)								
Day 0	16	16						
Day 4	16	16						
Number Alive (In brackets number stressed)								
Day 0	10	10	10					
Day 1	10	10						
Day 2	10	10						
Day 3	10	10 (2)						
Day 4	10	10 (2)						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.2	0.4
2	3.6	0.5
3	3.5	0.5
4	3.2	0.4
5	2.9	0.2
6	3.6	0.5
7	3.1	0.3
8	3.0	0.3
9	3.0	0.3
10	3.0	0.3

Loading Density (g/L): 0.2 (must be ≤0.5 g/L)
Mean Length (cm): 3.2
Length Range (cm): 2.9-3.6
Mean Weight (g): 0.4 (Must be ≥0.3g)
Weight Range: (g): 0.2-0.5

Test Organism Information

Batch 20220623TR
Source Trout Lodge
Tank # 4
Days Held at 15± 2°C 35 (must be ≥14 days)
Percent stock mortality 0.12 (7 days prior to test, must be <2%)
Test Volume (L) 18

Comments :
96 hrs: ppt on sides & bottom of tank

Reviewed By: TP Date Reviewed: SEP 01 2022

NAUTILUS ENVIRONMENTAL

Trout Bench Sheet

Method TRS Client TEC 164 Reference 2122-3226-03 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022/08/16	1510 *	KO/KCRM/CD	1	[illegible]
1	2022/08/17	0830	KO	-	MAF
2	2022/08/18	0740	CD/ML	-	MF
3	2022/08/19	0800	CD/ML	-	CC
4	2022/08/20	1050	ML	1	MAF

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 7.6
Initial EC (µS/cm): 1820
Salinity (ppt): 0

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L ? yes/no

	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
Preaeration time					
DO(mg/L) of 100%	9.4	8.6			
Temp (°C) of 100%	18				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100	100 AS					
pH (units) (range: **5.5-8.5**)								
Day 0	7.5	7.5						
Day 4	8.0	7.8						
EC (uS/cm)								
Day 0	413	1916						
Day 4	442	1737						
DO (mg/L) (**70-100% saturation at test temp.**)								
Day 0	8.6	8.6						
Day 4	8.6	8.6						
Temperature (°C) (range: **14-16°C**)								
Day 0	16	16						
Day 4	16	16						
Number Alive (In brackets number stressed)								
Day 0	10	10	10					
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.2	0.3
2	2.9	0.2
3	3.5	0.5
4	3.3	0.4
5	3.3	0.4
6	3.2	0.3
7	3.4	0.4
8	3.0	0.3
9	2.9	0.3
10	2.8	0.2

Loading Density (g/L): 0.2 (must be ≤0.5 g/L)
Mean Length (cm): 3.2
Length Range (cm): 2.8-3.5
Mean Weight (g): 0.3 (Must be ≥0.3g)
Weight Range: (g): 0.2-0.5

Test Organism Information

Batch 20220623TR
Source Trout Lodge
Tank # 4
Days Held at 15± 2°C 35 (must be ≥14 days)
Percent stock mortality 0.12 (7 days prior to test, must be <2%)
Test Volume (L) 16

Comments :
96 hrs: ppt on sides & bottom of tank

Reviewed By: TP Date Reviewed: SEP 01 2022

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS20 Client TEC 1104 Reference 2122-3226-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/08/16	1610	LCDA	2	VTM
1	2022/08/17	1030	AH	-	MAF
2	2022/08/18	0820	NA	2	VTM

Sample Information

Initial pH: 7.9
Initial EC (µS/cm): 1720
Salinity (ppt): 0

Lab Code										

pH (units) (range: 6.0-8.5)

day										
0	7.9	7.9	7.9	8.1	8.1	8.1				
2	8.0	8.0	8.1	8.1	8.1	8.1				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	415	417	417	1770	1808	1813				
2	413	415	415	1751	1749	1745				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.7	7.7	7.7	7.9	7.9	7.9				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	21	21	21	20	20	20				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar Med E3 Jar(s) mortality 7 days prior to test (must be ≤25%) 18%

QA (previous month)
Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 25
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0%

Sample
DO (mg/L) of sample prior to aeration: 8.6
DO % of sample prior to aeration: 107%
Duration of aeration (37.5 +/- 12.5 mL/min/L): 20 min
Hardness (mg $CaCO_3$/L) of 100% : 94
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 325

Temperature (°C) of sample prior to aeration: 20°C
Is aeration required (<40% or >100%)? (Yes) or No
Filtered with 110um screen prior to testing Yes or (No)
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)

Dilution Water
Pail label / preparation date pail 4 top
Hardness of dilution water (mg/L) 151

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Comments/Observations:
0hr: no ppt
48hr: surficial ppt / ppt on jar

Reviewed By: TP Date Reviewed: SEP 01 2022

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC164 Reference 2122-3226-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/08/16	1525	LC/AI	2	lcm
1	2022/08/17	1130	AI	-	MAF
2	2022/08/18	0820	NA	2	lcm

Sample Information

Initial pH:	7.9
Initial EC (µS/cm):	1720
Salinity (ppt):	0

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	7.8	7.9	7.9	7.7	7.8	7.8				
2	8.0	8.0	8.0	8.1	8.1	8.1				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	411	413	415	1797	1831	1838				
2	409	414	413	1727	1828	1830				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar WPdE4 Jar(s) mortality 7 days prior to test (must be ≤25%) 5%

QA (previous month)

Days to first brood (≤12 days) 7

Average number of young produced (≥15 young) 25

Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - (must be ≤10%) 0%

Sample

DO (mg/L) of sample prior to aeration: 9.4

DO % of sample prior to aeration: 100%

Duration of aeration (37.5 +/- 12.5 mL/min/L) : —

Hardness (mg $CaCO_3$/L) of 100% : AMS

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —

Alkalinity of 100% sample (mg $CaCO_3$/L): 325

Temperature (°C) of sample prior to aeration: 12°C

Is aeration required (<40% or >100%)? **Yes or (No)**

Filtered with 110um screen prior to testing **Yes or (No)**

Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or (No)**

Dilution Water

Pail label / preparation date pail 4 tap

Hardness of dilution water (mg/L) 151

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

Comments/Observations:

0 hr: no ppt

48 hr: surficial ppt.

Reviewed By: TP Date Reviewed: SEP 01 2022

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS 5 Client TEC164 Reference 2122-3226-02

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/08/16	1615	LC/AI	2	WM
1	2022/08/17	1030	AI	-	MAP
2	2022/08/18	0820	NA	2	WM

Sample Information

Initial pH: 7.01
Initial EC (µS/cm): 1720
Salinity (ppt): 0

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	7.7	7.8	7.8	7.9	7.9	7.9				
2	7.8	7.8	7.8	8.4	8.4	8.4				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	406	421	423	1766	1818	1822				
2	416	414	417	1737	1778	1781				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.7	7.7	7.7	7.9	7.9	7.9				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	21	21	21	20	20	20				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar WedE4/ES Jar(s) mortality 7 days prior to test (must be ≤25%) 6%/5%

QA (previous month)

Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 25
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - (must be ≤10%) 0%

Sample

DO (mg/L) of sample prior to aeration: 9.6
DO % of sample prior to aeration: 118%
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20 min
Hardness (mg $CaCO_3$/L) of 100% : 945
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 375

Temperature (°C) of sample prior to aeration: 20 °C
Is aeration required (<40% or >100%)? (Yes) or No
Filtered with 110um screen prior to testing Yes or (No)
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)

Dilution Water

Pail label / preparation date pail 4 tap
Hardness of dilution water (mg/L) 151

Antiscalant

Final Concentration in Sample: 5 mg/L
Volume of sample: 500 mL Volume of antiscalant: 39.5µL

Comments/Observations:

0 hr: No ppt
48 hr: No ppt.

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Reviewed By: TP Date Reviewed: SEP 01 2022

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC164 Reference 2122-3226-03

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/08/16	1610	LC/AI	2	KTM
1	2022/08/17	1020	AI	-	MAP
2	2022/08/18	0820	NA	2	KTM

Sample Information

Initial pH: 7.8
Initial EC (µS/cm): 1820
Salinity (ppt): 0

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	7.8	7.9	7.9	7.5	7.5	7.5				
2	8.0	8.0	8.0	8.1	8.1	8.1				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	409	415	417	1901	1942	1947				
2	411	415	416	1879	1904	1917				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.7	7.7	7.7	8.3	8.3	8.3				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	21	21	21	21	21	21				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar: wedES — Jar(s) mortality 7 days prior to test (must be ≤25%): 5%

QA (previous month)

Days to first brood (≤12 days): 7
Average number of young produced (≥15 young): 25
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - 0%
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 9.1 — Temperature (°C) of sample prior to aeration: 21°C
DO % of sample prior to aeration: 113% — Is aeration required (<40% or >100%)? (Yes) or No
Duration of aeration (37.5 +/- 12.5 mL/min/L): 20 mins — Filtered with 110um screen prior to testing Yes or (No)
Hardness (mg $CaCO_3$/L) of 100% : 334 — Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L): —
Alkalinity of 100% sample (mg $CaCO_3$/L): 349

Dilution Water

Pail label / preparation date: pail 4 top
Hardness of dilution water (mg/L): 151

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Comments/Observations:

0 hr: no ppt
48 hr: surficial ppt. / ppt. on jar

Reviewed By: TP Date Reviewed: SEP 01 2022

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC164 Reference 2122-3226-03

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/08/16	1530	LC/AI	2	[illegible]
1	2022/08/17	1100	AI	-	MAF
2	2022/08/18	0820	NA	2	[illegible]

Sample Information

Initial pH: 7.10
Initial EC (µS/cm): 1820
Salinity (ppt): 0

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				
day				pH (units) (range: 6.0-8.5)						
0	7.8	7.8	7.9	7.4	7.4	7.4				
2	8.0	8.0	8.0	8.1	8.1	8.1				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

				EC (uS/cm)						
0	406	414	417	1939	1958	1959				
2	411	412	413	1881	1891	1879				

				DO (mg/L) (**40-100% saturation at test temp.**)						
0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

				Temperature (°C) (range: **8-12 °C**)						
0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

				Number Alive (I, immobile)						
0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar Wed C1 Jar(s) mortality 7 days prior to test (must be ≤25%) 5%

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 38
Were test treatments randomized on test tray? Yes / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0%

Sample
DO (mg/L) of sample prior to aeration: 9.4
DO % of sample prior to aeration: 100%
Duration of aeration (37.5 +/- 12.5 mL/min/L) : —
Hardness (mg $CaCO_3$/L) of 100% : 934
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 349

Temperature (°C) of sample prior to aeration: 12°C
Is aeration required (<40% or >100%)? **Yes or No**
Filtered with 110um screen prior to testing **Yes or No**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Dilution Water
Pail label / preparation date pail 4 tap
Hardness of dilution water (mg/L) 151

DO Levels (40-100% saturation) - corrected for altitude -
4.1 to 10.3 mg/L at 8°C
4.0 to 10.0 mg/L at 9°C
3.9 to 9.8 mg/L at 10°C
3.8 to 9.6 mg/L at 11°C
3.7 to 9.4 mg/L at 12°C

Comments/Observations:
0 hr: no ppt
48 hr: surficial ppt.

Reviewed By: TP Date Reviewed: SEP 01 2022

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS 5 Client TEC164 Reference 2122-3226-04

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/08/16	1620	LC/AI	2	YM
1	2022/08/17	~~1030~~	AI	-	MAF
2	2022/08/18	0820	NA	2	MM

Sample Information

Initial pH: 7.6
Initial EC (µS/cm): 1820
Salinity (ppt): 6

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	7.9	7.8	7.8	8.0	8.0	8.1				
2	8.0	8.0	8.0	8.3	8.3	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	415	420	422	1889	1915	1920				
2	417	417	419	1814	1851	1862				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.7	7.7	7.7	7.7	7.7	7.7				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	21	21	21	21	21	21				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar WedES Jar(s) mortality 7 days prior to test (must be ≤25%) 5%

QA (previous month)
Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 25
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0%

Sample
DO (mg/L) of sample prior to aeration: 8.8
DO % of sample prior to aeration: 110.1%
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20min
Hardness (mg $CaCO_3$/L) of 100% : 934
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 349

Temperature (°C) of sample prior to aeration: 21°C
Is aeration required (<40% or >100%)? **Yes or No**
Filtered with 110um screen prior to testing **Yes or No**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Dilution Water
Pail label / preparation date Pail 4 tap
Hardness of dilution water (mg/L) 151

Antiscalant
Final Concentration in Sample: 5 mg/L
Volume of sample: 500 mL Volume of antiscalant: 39.5µL

Comments/Observations:
0 hr: No ppt
48 hr: No ppt.

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Reviewed By: TP Date Reviewed: SEP 01 2022

APPENDIX C – Chain-of-custody form

Teck

Page 1 of 1

COC ID: EVO NAUTILUS 2022-08-15 | TURNAROUND TIME: | RUSH:

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name / Job#	Elkview Operations			Lab Name	Nautilus Environmental - BC			Report Format / Distribution		Excel	PDF	EDD
Project Manager	Group 1; Brett Mason			Lab Contact				Email 1:	Cole.Macgregor@teck.com	X	X	X
Email	Brett.Mason@teck.com			Email	jacklyn@nautilusenvironmental.ca			Email 2:	teckcoal@equisonline.com			X
Address	RR1 HWY 3			Address	10823 27th Street SE			Email 3:	DL-EVO-SRF-LAB@teck.com	X	X	X
City	Sparwood	Province	BC	City	Calgary	Province	AB	Email 4:				
Postal Code	V0B 2G0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada	Email 5:				
Phone Number	250-425-6179			Phone Number	403-253-7121			Email 6:				
								Email 7:				
								Email 8:				
								Email 9:				
								Email 10:				
								Email 11:				
								Email 12:				
								Email 13:				
								PO number	VPO00842410			

2022/08/16
09:00
Manitoulin
8 x 10 L carboys, 4 x 20 L carboys,
10 x 1 L bottles
SRS/AC/SK
Nos NOI
Good Condition

SAMPLE DETAILS								ANALYSIS REQUESTED													
Sample ID 2122-3226	Location (oc_code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	Filt.	Preserv.	48hr Daphnia Magna Single Concentration Acute Toxicity 20C	48hr Daphnia Magna Single Concentration Acute Toxicity 10C	48hr Daphnia Magna Single Concentration Acute Toxicity Anitscalent	96hr Rainbow Trout Single Concentration Acute Toxicity (20 L Bladder)	96hr Rainbow Trout Single Concentration Acute Toxicity (10 L Bladder)	48hr Daphnia Magna Single Concentration Toxicity 15C						
EV_EC1_WS_2022-08-15_N-SRF -01	EV_EC1	WS		2022-08-15	10:40	G	12			2	2			8	15.2°C						
EV_EC1_WS_2022-08-15_N-SRF-AS -02	EV_EC1	WS		2022-08-15	10:41	G	1					1			↓						
EV_ECOUT_WS_2022-08-15_N-SRF -03	EV_ECOUT	WS		2022-08-15	13:20	G	8			2	2		4		16.6°C						
EV_ECOUT_WS_2022-08-15_N-SRF-AS -04	EV_ECOUT	WS		2022-08-15	13:21	G	1					1			↓						

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME
Field Temperatures ECOUT:		August 15, 2022		

SERVICE REQUEST (rush - subject to availability)	
Regular (default)	X
Priority (2-3 business days) - 50% surcharge	
Emergency (1 Business Day) - 100% surcharge	
For Emergency <1 Day, ASAP or Weekend - Contact ALS	

Sampler's Name		Mobile #	
Sampler's Signature		Date/Time	August 15, 2022

END OF REPORT

Acute Toxicity Test Results

Samples collected August 15, 2022

Final Report

October 5, 2022

Submitted to: **Teck Coal Ltd.**
Sparwood, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates					
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation	*Daphnia magna* antiscalant test initiation
F2_BPO_WG_2022-08-15_N / 2122-3227-01	15-Aug-22 at 0800h	16-Aug-22 at 0900h	16-Aug-22 at 1510h	16-Aug-22 at 1535h	16-Aug-22 at 1540h	-
F2_BPO_WG_2022-08-15_N-AS / 2122-3227-02	15-Aug-22 at 0801h	16-Aug-22 at 0900h	-	-	-	16-Aug-22 at 1620h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
F2_BPO_WG_2022-08-15_N	18.8°C	1114	410
F2_BPO_WG_2022-08-15_N-AS	18.8°C	1114	410

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)
- *Daphnia magna* 48-h single concentration screening test (conducted with 20 mg/L antiscalant)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample			
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
F2_BPO_WG_2022-08-15_N	100	100	100	-
F2_BPO_WG_2022-08-15_N-AS	-	-	-	100

Sample ID	Percent Immobility in 100 (% v/v)		
	***Daphnia magna* 10˚C**	***Daphnia magna* 20˚C**	***Daphnia magna* antiscalant**
F2_BPO_WG_2022-08-15_N	0	0	-
F2_BPO_WG_2022-08-15_N-AS	-	-	0

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
F2_BPO_WG_2022-08-15_N	Rainbow trout	None	None
	Daphnia magna	Surficial precipitate observed in the 20˚C test	None
F2_BPO_WG_2022-08-15_N-AS	*Daphnia magna*	None	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	3.5 (3.3-3.7) g/L KCl[1]	5.6 (5.4 - 5.8) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.5 (2.6-4.7) g/L KCl	6.1 (5.2 - 7.3) g/L NaCl
Reference toxicant CV	9.6%	5.6%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	See below
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date August 4, 2022; [2] Test date August 24, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation

For sample F2_BPO_WG_2022-08-15_N using *Daphnia magna*, the pH of all replicates in the 100% (v/v) test concentration was not measured during test termination.





Report By:
Aishah Iqbal, BSc
Laboratory Biologist

Reviewed By:
Emma Marus, BSc
Biologist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Control/dilution water for antiscalant test	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L), Na_2SeO_4 (2 µg Se/L) and 20 mg/L antiscalant
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS ENVIRONMENTAL

Trout Bench Sheet

Method TRS Client TEC 164 Reference 2122-3227-01 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022/08/16	1510 *	KO/KCRM/CD	1	KM
1	2022/08/17	0930	KO	-	MAF
2	2022/08/18	0740	CD/ML	-	MAF
3	2022/08/19	0800	CD/ML	-	EC
4	2022/08/20	1055	ML	1	MAF

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 7.5
Initial EC (µS/cm): 1950
Salinity (ppt): 0

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L **yes/no**

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	8.6	8.6			
Temp (°C) of 100%	16				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100	100 AS					
pH (units) (range: **5.5-8.5**)								
Day 0	7.6	7.85						
Day 4	8.0	8.2						
EC (uS/cm)								
Day 0	411	2010						
Day 4	444	1928						
DO (mg/L) (**70-100% saturation at test temp.**)								
Day 0	8.6	8.6						
Day 4	8.6	8.6						
Temperature (°C) (range: **14-16°C**)								
Day 0	16	16						
Day 4	16	16						
Number Alive (In brackets number stressed)								
Day 0	10	10	10					
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.1	0.3
2	3.9	0.6
3	3.1	0.3
4	3.6	0.2
5	3.2	0.3
6	2.8	0.3
7	3.4	0.4
8	3.1	0.3
9	3.3	0.4
10	2.9	0.3

Loading Density (g/L): 0.2 (must be ≤0.5 g/L)
Mean Length (cm): 3.2
Length Range (cm): 2.8-3.9
Mean Weight (g): 0.4 (Must be ≥0.3g)
Weight Range (g): 0.2-0.6

Test Organism Information

Batch 20220623TR
Source Trout Lodge
Tank # 4
Days Held at 15± 2°C 35 (must be ≥14 days)
Percent stock mortality 0.12 (7 days prior to test, must be <2%)
Test Volume (L) 18

Comments :
96 hrs: No ppt

Reviewed By: CW Date Reviewed: 20221081125

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC164 Reference 2122-3227-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/08/16	1540	LC/AI	2	LM
1	2022/08/17	1030	AI	-	MAF
2	2022/08/18	0840	NA	2	LM

Sample Information

Initial pH:	7.5
Initial EC (µS/cm):	1956
Salinity (ppt):	0

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	7.8	7.9	7.9	7.4	7.4	7.4				
2	8.1	8.1	8.1							

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	407	416	418	2120	2150	2160				
2	410	413	414	2080	2150	2150				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.7	7.7	7.7	7.9	7.9	7.9				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	21	21	21	20	20	20				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar WedES Jar(s) mortality 7 days prior to test (must be ≤25%) 5%

QA (previous month)

Days to first brood (≤12 days) 7

Average number of young produced (≥15 young) 25

Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - 0%
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 7.9 Temperature (°C) of sample prior to aeration: 20°C

DO % of sample prior to aeration: 100% Is aeration required (<40% or >100%)? Yes or (No)

Duration of aeration (37.5 +/- 12.5 mL/min/L) : — Filtered with 110um screen prior to testing Yes or (No)

Hardness (mg $CaCO_3$/L) of 100% : 114 Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —

Alkalinity of 100% sample (mg $CaCO_3$/L): 140

Dilution Water

Pail label / preparation date pail 4 tap

Hardness of dilution water (mg/L) 151

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Comments/Observations:

0 hr: no ppt

48 hr: surficial ppt.

Reviewed By: CW Date Reviewed: 20221 08/25

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC164 Reference 2122-3227-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/08/16	1535	LC/AI	2	KM
1	2022/08/17	1115	AI	-	MAF
2	2022/08/18	0840	NA	2	KM

Sample Information

Initial pH: 7.5
Initial EC (µS/cm): 1950
Salinity (ppt): 0

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				
day				pH (units) (range: 6.0-8.5)						
0	7.8	7.8	7.9	7.4	7.4	7.4				
2	8.0	8.0	8.1	8.1	8.1	8.1				
				The pH of the sample was not adjusted prior to test setting, unless noted in the comments below						
				EC (uS/cm)						
0	410	417	416	2100	2150	2160				
2	412	415	417	2080	2130	2140				
				DO (mg/L) (**40-100% saturation at test temp.**)						
0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				
				Temperature (°C) (range: **8-12 °C**)						
0	12	12	12	12	12	12				
2	12	12	12	12	12	12				
				Number Alive (I, immobile)						
0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar WedC3 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 38
Were test treatments randomized on test tray? Yes / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0%

Sample
DO (mg/L) of sample prior to aeration: 9.4
Temperature (°C) of sample prior to aeration: 12°C
DO % of sample prior to aeration: 100%
Is aeration required (<40% or >100%)? **Yes or No**
Duration of aeration (37.5 +/- 12.5 mL/min/L) : —
Filtered with 110um screen prior to testing **Yes or No**
Hardness (mg $CaCO_3$/L) of 100% : 1114
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 410 KM

Dilution Water
Pail label / preparation date pail 4 tap
Hardness of dilution water (mg/L) 151

DO Levels (40-100% saturation) - corrected for altitude -
4.1 to 10.3 mg/L at 8°C
4.0 to 10.0 mg/L at 9°C
3.9 to 9.8 mg/L at 10°C
3.8 to 9.6 mg/L at 11°C
3.7 to 9.4 mg/L at 12°C

Comments/Observations:
0 hr: no ppt
48 hr: No ppt.

Reviewed By: CW Date Reviewed: 2022/08/25

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS 20 Client TEC164 Reference 2122-3227-02

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/08/16	1620	LC/AI	2	VTM
1	2022/08/17	1020	M	-	mat
2	2022/08/18	0840	NA	2	VTM

Sample Information

Initial pH: 7.5
Initial EC (µS/cm): 1950
Salinity (ppt): 0

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	7.9	7.9	7.9	7.5	7.5	7.5				
2	8.1	8.1	8.1	8.4	8.4	8.4				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	415	421	420	2090	2150	2150				
2	417	418	417	2110	2140	2160				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.7	7.7	7.7	7.7	7.7	7.7				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	21	21	21	21	21	21				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar WedE3|E4 Jar(s) mortality 7 days prior to test (must be ≤25%) 18%/16%

QA (previous month)
Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 25
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0%

Sample
DO (mg/L) of sample prior to aeration: 7.7 Temperature (°C) of sample prior to aeration: 21°C
DO % of sample prior to aeration: 100% Is aeration required (<40% or >100%)? **Yes or (No)**
Duration of aeration (37.5 +/- 12.5 mL/min/L) : — Filtered with 110um screen prior to testing **Yes or (No)**
Hardness (mg $CaCO_3$/L) of 100% : 1114 Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or (No)**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 410

Dilution Water
Pail label / preparation date pail 4 tap
Hardness of dilution water (mg/L) 151

Antiscalant
Final Concentration in Sample: 20 mg/L
Volume of sample: 500 mL Volume of antiscalant: 158µL

Comments/Observations:
0 hr: no ppt
48 hr: No ppt.

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Reviewed By: CW Date Reviewed: 20221018|25

APPENDIX C – Chain-of-custody form

Teck

COC ID:	F2 NAUTILUS 2022-08-15	TURNAROUND TIME:		RUSH:	

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name / Job#	F2 SRF			Lab Name	Nautilus Environmental - BC			Report Format / Distribution		Excel	PDF	EDD
Project Manager	BRETT MASON			Lab Contact				Email 1:	Cole.Macgregor@teck.com	X	X	X
Email	BRETT.MASON@TECK.COM			Email	jacklyn@nautilusenvironmental.ca			Email 1:	teckcoal@equisonline.com			X
Address	RR1 HWY 3			Address	10823 27th Street SE			Email 2:	DL-EVO-SRF-LAB@teck.com	X	X	X
								Email 3:				
City	Sparwood	Province	BC	City	Calgary	Province	AB	Email 4:				
								Email 5:				
								Email 6:				
								Email 7:				
								Email 8:				
								Email 10:				
								Email 11:				
								Email 12:				
								Email 13:				
Postal Code	V0B 2G0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada					
Phone Number	250-425-6179			Phone Number	403-253-7121			PO number	VPO00842410			

SAMPLE DETAILS — **ANALYSIS REQUESTED** — Filtered - F: Field, L: Lab, FL: Field & Lab, N: None

2022/08/16 0900
2122-3227
Manitoulin
4X20 L carboys, ~~3~~ 3 x 1 L bottles
SRS/AC/SK
NoS NoI
Good Condition

Sample ID 2122-3227	Location (c code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	ANALYSIS: 48hr Daphnia Magna Single Concentration Acute Toxicity 20C	48hr Daphnia Magna Single Concentration Acute Toxicity 10C	48hr Daphnia Magna Single Concentration Acute Toxicity Anitscalent	96hr Rainbow Trout Single Concentration Acute Toxicity (20L Bladders)	48hr Daphnia Magna Single Concentration Toxicity 15C							
F2_BPO_WG_2022-08-15_N -01	F2_BPO	WG		2022-08-15	8:00	G	8	2	2		4	18.8°C							
F2_BPO_WG_2022-08-15_N-AS -02	F2_BPO	WG		2022-08-15	8:01	G	1			1									

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME
		August 15, 2022		

SERVICE REQUEST (rush - subject to availability)					
Regular (default)	X	Sampler's Name		Mobile #	
Priority (2-3 business days) - 50% surcharge					
Emergency (1 Business Day) - 100% surcharge		Sampler's Signature		Date/Time	August 15, 2022
For Emergency <1 Day, ASAP or Weekend - Contact ALS					

END OF REPORT

Acute Toxicity Test Results

Samples collected August 16, 2022

Final Report

September 28, 2022

Submitted to: **Teck Coal Ltd.**
Sparwood, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates						
	Collected	**Received**	**Rainbow trout test initiation**	***Daphnia magna* 10˚C test initiation**	***Daphnia magna* 15˚C test initiation**	***Daphnia magna* 20˚C test initiation**	***Daphnia magna* 5 mg/L antiscalant test initiation**
EV_GT1_WS_2022-08-16_N-SRF / 2122-3243-01	16-Aug-22 at 0705h	17-Aug-22 at 0845h	17-Aug-22 at 1440h	17-Aug-22 at 1420h	17-Aug-22 at 1415h	17-Aug-22 at 1425h	-
EV_BC1_WS_2022-08-16_N-SRF / 2122-3243-02	16-Aug-22 at 0930h	17-Aug-22 at 0845h	17-Aug-22 at 1440h	17-Aug-22 at 1350h	17-Aug-22 at 1425h	17-Aug-22 at 1420h	-
EV_BC1_WS_2022-08-16_N-SRF-AS / 2122-3243-03	16-Aug-22 at 0931h	17-Aug-22 at 0845h	-	-	-	-	17-Aug-22 at 1415h
EV_GT1_WS_2022-08-16_N-SRF-AS / 2122-3243-04	16-Aug-22 at 0706h	17-Aug-22 at 0845h	-	-	-	-	17-Aug-22 at 1430h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
EV_GT1_WS_2022-08-16_N-SRF	18.0°C	1204	308
EV_BC1_WS_2022-08-16_N-SRF	18.0°C	1204	270
EV_BC1_WS_2022-08-16_N-SRF-AS	19.3°C	1204	270
EV_GT1_WS_2022-08-16_N-SRF-AS	15.7°C	1204	308

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)
- *Daphnia magna* 48-h single concentration screening test (conducted at 15°C)
- *Daphnia magna* 48-h single concentration screening test (conducted with 5 mg/L antiscalant)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample				
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 15˚C	*Daphnia magna* 20˚C	*Daphnia magna* 5 mg/L antiscalant
EV_GT1_WS_2022-08-16_N-SRF	100	100	100	100	-
EV_BC1_WS_2022-08-16_N-SRF	100	100	100	100	-
EV_BC1_WS_2022-08-16_N-SRF-AS	-	-	-	-	100
EV_GT1_WS_2022-08-16_N-SRF-AS	-	-	-	-	100

Sample ID	Percent Immobility in 100 (% v/v)			
	Daphnia magna 10˚C	*Daphnia magna* *15*˚C	*Daphnia magna* 20˚C	*Daphnia magna* *5* mg/L antiscalant
EV_GT1_WS_2022-08-16_N-SRF	0	7	0	-
EV_BC1_WS_2022-08-16_N-SRF	0	0	0	-
EV_BC1_WS_2022-08-16_N-SRF-AS	-	-	-	0
EV_GT1_WS_2022-08-16_N-SRF-AS	-	-	-	0

Precipitate observations

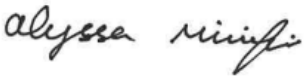
Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
EV_GT1_WS_2022-08-16_N-SRF	Rainbow trout	None	None
	Daphnia magna	Surficial precipitate observed in the 15˚C and 20˚C tests	None
EV_BC1_WS_2022-08-16_N-SRF	Rainbow trout	None	None
	Daphnia magna	Surficial precipitate observed in the 15˚C and 20˚C tests	None
EV_BC1_WS_2022-08-16_N-SRF-AS	*Daphnia magna*	None	None
EV_GT1_WS_2022-08-16_N-SRF-AS	*Daphnia magna*	None	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	3.5 (3.3-3.7) g/L KCl[1]	5.6 (5.4-5.8) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.5 (2.6-4.7) g/L KCl	6.1 (5.2-7.3) g/L NaCl
Reference toxicant CV	9.6%	5.6%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, August 4, 2022; [2] Test date, August 24, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation



Report By:
Alyssa Minifie, BSc
Laboratory Biologist



Reviewed By:
Emma Marus, BSc
Biologist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Control/dilution water for antiscalant test	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L), Na_2SeO_4 (2 µg Se/L) and 5 mg/L antiscalant
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 4. Summary of test conditions: 48-h *Daphnia magna* survival test at 15˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	15 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS ENVIRONMENTAL

Trout Bench Sheet

Method TRS Client TEC 164 Reference 2122-3243-01 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022/08/17	1340 *	KO/KCRM/CD	1	NA
1	2022/08/18	0730	CD/ML	-	MF
2	2022/08/19	0750	CD/ML	-	CC
3	2022/08/20	0745	ML	-	MF
4	2022/08/21	0955	ML	1	NA

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 8.1
Initial EC (µS/cm): 1890
Salinity (ppt): 0

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L (yes/no)

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	8.6	8.6			
Temp (°C) of 100%	16				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	7.8	8.1						
Day 4	7.9	8.1						
EC (uS/cm)								
Day 0	423	2100						
Day 4	409	1886						
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	8.6	8.6						
Day 4	8.6	8.6						
Temperature (°C) (range: 14-16°C)								
Day 0	16	16						
Day 4	16	16						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.4	0.5
2	3.0	0.3
3	3.1	0.3
4	3.6	0.6
5	3.7	0.6
6	2.6	0.2
7	3.2	0.3
8	3.0	0.2
9	2.6	0.2
10	3.0	0.3

Loading Density (g/L): 0.2 (must be ≤0.5 g/L)
Mean Length (cm): 3.1
Length Range (cm): 2.6-3.7
Mean Weight (g): CW 0.4 ~~0.3~~ (Must be ≥0.3g)
Weight Range: (g): 0.2-0.6

Test Organism Information

Batch 20220623TR
Source Trout Lodge
Tank # 4
Days Held at 15± 2°C 36 (must be ≥14 days)
Percent stock mortality 0.09 (7 days prior to test, must be <2%)
Test Volume (L) 18

Comments :
96h: No ppt

Reviewed By: CW Date Reviewed: 20221108129

NAUTILUS ENVIRONMENTAL

Trout Bench Sheet

Method TRS Client TEC 164 Reference 2122-3243-02 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022/08/17	1440 *	KO/KCRM/CD	1	NA
1	2022/08/18	0730	CD/ML	-	MAF
2	2022/08/19	0900	CD/ML	-	EC
3	2022/08/20	0740	CD	-	MAF
4	2022/08/21	1000	ML	1	NA

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 7.8
Initial EC (µS/cm): 1880
Salinity (ppt): 0

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L : (yes)/no

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	8.6	8.6			
Temp (°C) of 100%	16				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

	Conc.	CTL	100						
pH (units) (range: **5.5-8.5**)									
	Day 0	7.9	8.0						
	Day 4	8.2	8.2						
EC (uS/cm)									
	Day 0	410	1991						
	Day 4	445	1859						
DO (mg/L) (**70-100% saturation at test temp.**)									
	Day 0	8.6	8.6						
	Day 4	8.6	8.6						
Temperature (°C) (range: **14-16°C**)									
	Day 0	16	16						
	Day 4	16	16						
Number Alive (In brackets number stressed)									
	Day 0	10	10						
	Day 1	10	10						
	Day 2	10	10						
	Day 3	10	10						
	Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.8	0.6
2	3.7	0.5
3	3.5	0.4
4	3.2	0.3
5	3.0	0.3
6	3.3	0.4
7	3.0	0.3
8	3.1	0.3
9	3.4	0.4
10	3.3	0.4

Loading Density (g/L): 0.2 (must be ≤0.5 g/L)
Mean Length (cm): 3.3
Length Range (cm): 3.0-3.8
Mean Weight (g): 0.4 (Must be ≥0.3g)
Weight Range: (g): 0.3-0.6

Test Organism Information

Batch 20220623TR
Source Trout Lodge
Tank # 4
Days Held at 15± 2°C 36 (must be ≥14 days)
Percent stock mortality 0.09 (7 days prior to test, must be <2%)
Test Volume (L) 18 IGL KO

Comments :
96h: No ppt

Reviewed By: CW Date Reviewed: 20220829

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC 164 Reference 2122-3243-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/08/17	1425	EP/LC	2	NA
1	2022/08/18	0845	BS	-	NA
2	2022/08/19	1110	AH	5	EP

Sample Information

Initial pH: 8.1
Initial EC (µS/cm): 1890
Salinity (ppt): 0

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	8.0 AH	7.9	7.9	8.1	8.1	8.1				
2	8.10	8.1	8.1	8.0	8.0	8.0				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	417	417	418	1973	2110	2130				
2	397	403	415	1880	1913	1984				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.7	7.7	7.7				
2	7.7	7.7	7.7	7.7	7.7	7.7				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	21	21	21				
2	21	21	21	21	21	21				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar: wed C4 — Jar(s) mortality 7 days prior to test (must be ≤25%): 0%

QA (previous month)
Days to first brood (≤12 days): 8
Average number of young produced (≥15 young): 35
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%): 10

Sample

DO (mg/L) of sample prior to aeration: 8.7
Temperature (°C) of sample prior to aeration: 21
DO % of sample prior to aeration: 108 %
Is aeration required (<40% or >100%)? **Yes or No**
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20 min
Filtered with 110um screen prior to testing **Yes or No**
Hardness (mg $CaCO_3$/L) of 100% : 1204
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 308

Dilution Water
Pail label / preparation date: Pail 2:08/13
Hardness of dilution water (mg/L): 129

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Comments/Observations:
0 hrs: NO ppt
48 hrs: surficial ppt

Reviewed By: CW Date Reviewed: 20221081229

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC 164 Reference 2122-3243-02 01 EP

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/08/17	1420	EP/LC	2	NA
1	2022/08/18	0810	BS	-	NA
2	2022/08/19	1130	PM	3	EP

Sample Information

Initial pH: 8.1
Initial EC (µS/cm): 1890
Salinity (ppt): 0

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	7.8	7.8	7.8	8.0	8.0	8.0				
2	8.1	8.2	8.2	8.2	8.2	8.2				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	400	415	417	2070	2130	2140				
2	398	406	416	1925	1966	1981				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar wed C5 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%.

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 35
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 9.4
DO % of sample prior to aeration: 100%
Duration of aeration (37.5 +/- 12.5 mL/min/L) : —
Hardness (mg $CaCO_3$/L) of 100% : 1204
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 308

Temperature (°C) of sample prior to aeration: 12
Is aeration required (<40% or >100%)? Yes or (No)
Filtered with 110um screen prior to testing Yes or (No)
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)

Dilution Water
Pail label / preparation date Pail 2 : 08/13
Hardness of dilution water (mg/L) 129

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

Comments/Observations:
0 hrs: no ppt
48 hrs: No ppt

Reviewed By: CW Date Reviewed: 20220829

NAUTILUS ENVIRONMENTAL

Daphnia 15°C Bench Sheet

Method DAS 15 Client TEC 164 Reference 2122-3243-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/08/17	1415	EP/LC	2	NA
1	2022/08/18	0815	BS	-	NA
2	2022/08/19	1045	41	3	EP

Sample Information

Initial pH: 8.1
Initial EC (µS/cm): 1890
Salinity (ppt): 0

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	7.9	7.9	7.9	8.0	8.0	8.0				
2	8.2	8.2	8.2	8.1	8.1	8.1				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	397	413	416	1983	2120 EP	2130				
2	405	403	412	1947	1910	1905				

DO (mg/L) (**40-100% saturation at test temp.**)

0	8.4	8.4	8.4	8.4	8.4	8.4				
2	8.4	8.4	8.4	8.4	8.4	8.4				

Temperature (°C) (range: **13-17 °C**)

0	17	17	17	17	17	17				
2	17	17	17	17	17	17				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10(1i)	10	10(1i)				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar wed C5 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 35
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 8.8 9.5 EP
DO % of sample prior to aeration: 100 %
Duration of aeration (37.5 +/- 12.5 mL/min/L) : —
Hardness (mg $CaCO_3$/L) of 100% : 1204
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 308

Temperature (°C) of sample prior to aeration: 15
Is aeration required (<40% or >100%)? Yes or (No)
Filtered with 110um screen prior to testing Yes or (No)
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)

Dilution Water
Pail label / preparation date Pail 2 :08/13
Hardness of dilution water (mg/L) 129

DO Levels (40-100% saturation) - corrected for altitude -
3.7 to 9.1 mg/L at 13°C
3.6 to 8.9 mg/L at 14°C
3.5 to 8.8 mg/L at 15°C
3.4 to 8.6 mg/L at 16°C
3.4 to 8.4 mg/L at 17°C

Comments/Observations:
0 hrs: NO PPT
48 hrs: Surficial PPT

Reviewed By: CW Date Reviewed: 2022/08/29

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS 5 Client TEC 164 Reference 2122-3243-04

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/08/17	1430	EP/LC	2	NA
1	2022/08/18	0850	BS	-	NA
2	2022/08/19	1110	AH	3	EP

Sample Information

Initial pH: 8.1
Initial EC (µS/cm): 1890
Salinity (ppt): 0

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	7.9	7.9	7.9	8.1	8.1	8.1				
2	8.1	8.1	8.1	8.3	8.3	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	425	419	417	1976	2120	2130				
2	404	393	403	1976	1929	1941				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.7	7.7	7.7				
2	7.7	7.7	7.7	7.7	7.7	7.7				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	21	21	21				
2	21	21	21	21	21	21				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar wed C5 Jar(s) mortality 7 days prior to test (must be ≤25%) 0 %

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 35
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0

Sample

DO (mg/L) of sample prior to aeration: 8.7
DO % of sample prior to aeration: 110 %
Duration of aeration (37.5 +/- 12.5 mL/min/L): 20 min
Hardness (mg $CaCO_3$/L) of 100% : 1204
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 308

Temperature (°C) of sample prior to aeration: 21
Is aeration required (<40% or >100%)? **Yes or No**
Filtered with 110um screen prior to testing **Yes or No**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Dilution Water
Pail label / preparation date Pail 2: 08/13
Hardness of dilution water (mg/L) 129

Antiscalant
Final Concentration in Sample: 5mg/L
Volume of sample: 500mL Volume of antiscalant: 39.5mL

Comments/Observations:
0 hrs: no ppt
48 hrs: no ppt

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Reviewed By: CW Date Reviewed: 2022/08/29

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC 164 Reference 2122-3243-02

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/08/17	1420	EP/LC	2	NA
1	2022/08/18	0850	BS	-	NA
2	2022/08/19	1040	AL	3	EP

Sample Information

Initial pH: 7.8
Initial EC (µS/cm): 1880
Salinity (ppt): 0

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	8.0	7.9	7.9	7.8	7.8	7.9				
2	8.1	8.1	8.1	8.1	8.1	8.1				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	420	416	416	1933	1999	2080				
2	400	409	415	1863	1915	1964				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.7	7.7	7.7				
2	7.7	7.7	7.7	7.7	7.7	7.7				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	21	21	21				
2	21	21	21	21	21	21				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar wed C4 Jar(s) mortality 7 days prior to test (must be ≤25%) 0 %

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 35
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 7.7
DO % of sample prior to aeration: 100 %
Duration of aeration (37.5 +/- 12.5 mL/min/L) : -
Hardness (mg $CaCO_3$/L) of 100% : 1804
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) -
Alkalinity of 100% sample (mg $CaCO_3$/L): 270

Temperature (°C) of sample prior to aeration: 21
Is aeration required (<40% or >100%)? Yes or (No)
Filtered with 110um screen prior to testing Yes or (No)
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)

Dilution Water
Pail label / preparation date Pail 2: 08/13
Hardness of dilution water (mg/L) 129

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Comments/Observations:
0 hrs: no ppt
48 hrs: ~~No~~ Surficial ppt

Reviewed By: CW Date Reviewed: 20220829

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC 164 Reference 2122-3243-01 02 EP

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/08/17	1350	EP/LC	2	NA
1	2022/08/18	0810	BS	-	NA
2	2022/08/19	1130	AI	3	EP

Sample Information

Initial pH: 7.8
Initial EC (µS/cm): 1880
Salinity (ppt): 0

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	7.9	7.9	7.9	7.7	7.8	7.8				
2	8.2	8.2	8.2	8.3	8.3	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	415	425	417	1947	2070	2090				
2	463	410	415	1916	1897	1972				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar Wed C1 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%.

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 35
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 9.4
DO % of sample prior to aeration: 100%
Duration of aeration (37.5 +/- 12.5 mL/min/L) : —
Hardness (mg $CaCO_3$/L) of 100% : 1204
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 270

Temperature (°C) of sample prior to aeration: 12
Is aeration required (<40% or >100%)? Yes or (No)
Filtered with 110um screen prior to testing Yes or (No)
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)

Dilution Water
Pail label / preparation date Pail 2 : 08/13
Hardness of dilution water (mg/L) 129

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

Comments/Observations:
0 hrs: no ppt
48 hrs: No ppt

Reviewed By: CW Date Reviewed: 2022 08 29

NAUTILUS ENVIRONMENTAL

Daphnia 15°C Bench Sheet

Method DAS 15 Client TEC 164 Reference 2122-3243-02

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/08/17	1425	EP/LC	2	NA
1	2022/08/18	0810	BS	-	NA
2	2022/08/19	1045	AT	3	EP

Sample Information

Initial pH: 7.8
Initial EC (µS/cm): 1880
Salinity (ppt): 0

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	8.0	7.9	7.9	7.8	7.8	7.8				
2	8.2	8.2	8.2	8.2	8.2	8.2				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	426	419	416	1954	2080	2090				
2	381	399	402	1556	1893	1914				

DO (mg/L) (**40-100% saturation at test temp.**)

0	8.4	8.4	8.4	8.4	8.4	8.4				
2	8.4	8.4	8.4	8.4	8.4	8.4				

Temperature (°C) (range: **13-17 °C**)

0	17	17	17	17	17	17				
2	17	17	17	17	17	17				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar Wed C5 Jar(s) mortality 7 days prior to test (must be ≤25%) 0 %

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 35
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 8.4
DO % of sample prior to aeration: 100 %
Duration of aeration (37.5 +/- 12.5 mL/min/L) : —
Hardness (mg $CaCO_3$/L) of 100% : 1204
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 270

Temperature (°C) of sample prior to aeration: 18 21 17
Is aeration required (<40% or >100%)? Yes or (No)
Filtered with 110um screen prior to testing Yes or (No)
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)

Dilution Water
Pail label / preparation date Pail 2: 08/13
Hardness of dilution water (mg/L) 129

DO Levels (40-100% saturation) - corrected for altitude -

3.7 to 9.1 mg/L at 13°C	3.4 to 8.6 mg/L at 16°C
3.6 to 8.9 mg/L at 14°C	3.4 to 8.4 mg/L at 17°C
3.5 to 8.8 mg/L at 15°C	

Comments/Observations:
0 hrs: no ppt artificial ppt
48 hrs:

Reviewed By: CW Date Reviewed: 2022/08/29

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS 5 Client TEC 164 Reference 2122-3243-03

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/08/17	1415	EB/LC	2	NA
1	2022/08/18	0840	BS	-	NA
2	2022/08/19	1110	AI	3	EP

Sample Information

Initial pH: 7.8
Initial EC (µS/cm): 1880
Salinity (ppt): 0

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	8.0	7.9	7.9	7.8	7.8	7.8				
2	8.1	8.1	8.1	8.3	8.2	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	423	428	431	1919	2070	2070				
2	432	403	398	1874	1968	1983				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.9	7.9	7.9				
2	7.7	7.7	7.7	7.7	7.7	7.7				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	21	21	21				
2	21	21	21	21	21	21				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar wed C1 Jar(s) mortality 7 days prior to test (must be ≤25%) 0 %

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 35
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0

Sample

DO (mg/L) of sample prior to aeration: 7.7
DO % of sample prior to aeration: 100 %
Duration of aeration (37.5 +/- 12.5 mL/min/L) : —
Hardness (mg $CaCO_3$/L) of 100% : 1204
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 270

Temperature (°C) of sample prior to aeration: 21
Is aeration required (<40% or >100%)? Yes or (No)
Filtered with 110um screen prior to testing Yes or (No)
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)

Dilution Water
Pail label / preparation date Pail 2: 08/13
Hardness of dilution water (mg/L) 129

Antiscalant
Final Concentration in Sample: 5mg/L
Volume of sample: 500mL Volume of antiscalant: 39.5 mL

Comments/Observations:
0 hrs: no ppt
48 hrs: No ppt

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Reviewed By: CW Date Reviewed: 20221108129

APPENDIX C – Chain-of-custody form

Teck

Page 1 of 1

COC ID:	EVO NAUTILUS 2022-08-16	TURNAROUND TIME:		RUSH:	

PROJECT/CLIENT INFO

Facility Name / Job#	Elkview Operations		
Project Manager	Group 1; Brett Mason		
Email	Brett.Mason@teck.com		
Address	RR1 HWY 3		
City	Sparwood	Province	BC
Postal Code	V0B 2G0	Country	Canada
Phone Number	250-425-6179		

LABORATORY

Lab Name	Nautilus Environmental - BC		
Lab Contact			
Email	jacklyn@nautilusenvironmental.ca		
Address	10823 27th Street SE		
City	Calgary	Province	AB
Postal Code	T2H 2K1	Country	Canada
Phone Number	T2Z 3V9		

OTHER INFO

Report Format / Distribution		Excel	PDF	EDD
Email 1:	teckcoal@equisonline.com			X
Email 2:	DL-EVO-SRF-LAB@teck.com	X	X	X
Email 3:	[redacted]	X	X	X
Email 4:				
Email 5:				
Email 6:				
Email 7:				
Email 8:				
Email 9:				
Email 10:				
Email 11:				
Email 12:				
Email 13:				
PO number	VPO00842410			

SAMPLE DETAILS / **ANALYSIS REQUESTED**

2022/08/17
08:45
Manitou Vn
8 x 10 L carboys, 12 x 1 L bottles
SRS
Nos No I
Good Condition

Filtered - F: Field, L: Lab, FL: Field & Lab, N: None

Sample ID	Sample Location (sys_loc_code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	FIL	PRESERV.	48hr Daphnia Magna Single Concentration Acute Toxicity 20C	48hr Daphnia Magna Single Concentration Acute Toxicity 10C	48hr Daphnia Magna Single Concentration Acute Toxicity Antiscalent	96hr Rainbow Trout Single Concentration Acute Toxicity (10 L Bladder)	96hr Rainbow Trout Single Concentration Acute Toxicity (20 L Bladder)	48hr Daphnia Magna Single Concentration Toxicity 15C	48hr Daphnia Magna Single Concentration Acute Toxicity 15C	
									ANALYSIS								aw
EV_GT1_WS_2022-08-16_N-SRF -01	EV_GT1	WS		2022-08-16	7:05	G	10			2	2			4	1	1	18.0°C
EV_BC1_WS_2022-08-16_N-SRF -02	EV_BC1	WS		2022-08-16	9:30	G	10			2	2			4	1	1	18.0°C
EV_BC1_WS_2022-08-16_N-SRF-AS -03	EV_BC1	WS		2022-08-16	9:31	G	1					1					19.3°C
EV_GT1_WS_2022-08-16_N-SRF-AS -04	EV_GT1	WS		2022-08-16	7:06	G	1					1					15.7°C

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME
Field Temperatures	Nick Lagarde - Teck	August 16, 2022 1435		

SERVICE REQUEST (rush - subject to availability)

Regular (default)	X
Priority (2-3 business days) - 50% surcharge	
Emergency (1 Business Day) - 100% surcharge	
For Emergency <1 Day, ASAP or Weekend - Contact ALS	

Sampler's Name	Carter Phillips	Mobile #	
Sampler's Signature	Carter Phillips	Date/Time	August 16, 2022

END OF REPORT

Acute Toxicity Test Results

Samples collected August 22, 2022

Final Report

October 12, 2022

Submitted to: **Teck Coal Ltd.**
Sparwood, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates					
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation	*Daphnia magna* antiscalant test initiation
F2_BPO_WG_2022-08-22_N / 2122-3300-01	22-Aug-22 at 0830h	23-Aug-22 at 0900h	23-Aug-22 at 1510h	23-Aug-22 at 1440h	23-Aug-22 at 1450h	-
F2_BPO_WG_2022-08-22_N-AS / 2122-3300-02	22-Aug-22 at 0831h	23-Aug-22 at 0900h	-	-	-	23-Aug-22 at 1455h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
F2_BPO_WG_2022-08-22_N	16.6°C	1174	407
F2_BPO_WG_2022-08-22_N-AS	16.6°C	1174	407

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)
- *Daphnia magna* 48-h single concentration screening test (conducted with 20 mg/L antiscalant)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample			
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
F2_BPO_WG_2022-08-22_N	80	100	100	-
F2_BPO_WG_2022-08-22_N-AS	-	-	-	100

Sample ID	Percent Immobility in 100 (% v/v)		
	Daphnia magna 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
F2_BPO_WG_2022-08-22_N	0	0	-
F2_BPO_WG_2022-08-22_N-AS	-	-	0

Precipitate observations

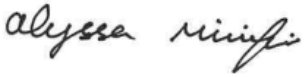
Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
F2_BPO_WG_2022-08-22_N	Rainbow trout	Precipitate observed on the test vessel	None
	Daphnia magna	Surficial precipitate observed in the 20˚C test	None
F2_BPO_WG_2022-08-22_N-AS	*Daphnia magna*	None	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	3.5 (3.3-3.7) g/L KCl[1]	5.6 (5.4-5.8) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.5 (2.6-4.7) g/L KCl	6.1 (5.2-7.3) g/L NaCl
Reference toxicant CV	9.6%	5.6%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, August 4, 2022; [2] Test date, August 24, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation



Report By:
Alyssa Minifie, BSc
Laboratory Biologist



Reviewed By:
Emma Marus, BSc
Biologist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Control/dilution water for antiscalant test	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L), Na_2SeO_4 (2 µg Se/L) and 20 mg/L antiscalant
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC 164 Reference 2122-3300-01 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022/08/23	1510 *	AM/CD	1	KD
1	2022/08/24	0945	AM	-	CC
2	2022/08/25	0945	ML	-	NA
3	2022/08/26	0915	ML	-	MAP
4	2022/08/27	0910	ML/CD	1	CC

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 7.6
Initial EC (µS/cm): 1940
Salinity (ppt): 0

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L : **yes/no**

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	8.1	8.6			
Temp (°C) of 100%	16				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100					
pH (units) (range: 5.5-8.5)							
Day 0	7.6	7.3					
Day 4	7.7	7.9					
EC (uS/cm)							
Day 0	395	1867					
Day 4	350	1536					
DO (mg/L) (70-100% saturation at test temp.)							
Day 0	8.6	8.6					
Day 4	8.6	8.6					
Temperature (°C) (range: 14-16°C)							
Day 0	16	16					
Day 4	16	16					
Number Alive (In brackets number stressed)							
Day 0	10	10					
Day 1	10	10					
Day 2	10	10					
Day 3	10	9					
Day 4	10	8					

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.0	0.3
2	2.9	0.3
3	3.0	0.4
4	3.0	0.3
5	3.2	0.4
6	3.8	0.6
7	3.1	0.4
8	3.4	0.3
9	3.0	0.3
10	3.0	0.3

Loading Density (g/L): 0.2 (must be ≤0.5 g/L)
Mean Length (cm): 3.1
Length Range (cm): 2.9-3.8
Mean Weight (g): 0.4 (Must be ≥0.3g)
Weight Range (g): 0.3-0.6

Test Organism Information

Batch 20220623TR
Source Trout Lodge
Tank # 3
Days Held at 15± 2°C 42 (must be ≥14 days)
Percent stock mortality 0.19 (7 days prior to test, must be <2%)
Test Volume (L) 17 ~~18~~ AM

Comments :
96 hrs: ppt on sides & bottom of tank

Reviewed By: CV Date Reviewed: 2022/08/29

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC 164 Reference 2122-3300-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/08/23	1450	EC/NA	2	WM
1	2022/08/24	0830	BS	-	CC
2	2022/08/25	0920	AI	3	NA

Sample Information

Initial pH: 7.6
Initial EC (µS/cm): 1940
Salinity (ppt): 0

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	7.9	7.9	7.9	7.5	7.5	7.5				
2	8.2	8.2	8.2	8.5	8.5	8.5				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	485	482	482	1926 cc	2080	2100				
2	467	468	467	1899	1923	1993				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.9	7.9	7.9				
2	7.7	7.7	7.7	7.7	7.7	7.7				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	20	20	20				
2	21	21	21	21	21	21				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar wed C4 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 42
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0

Sample
DO (mg/L) of sample prior to aeration: 8.1
DO % of sample prior to aeration: 100%
Duration of aeration (37.5 +/- 12.5 mL/min/L) : —
Hardness (mg $CaCO_3$/L) of 100% : 1174
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 407

Temperature (°C) of sample prior to aeration: 19°
Is aeration required (<40% or >100%)? Yes or (No)
Filtered with 110um screen prior to testing Yes or (No)
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)

Dilution Water
Pail label / preparation date P1:08/20
Hardness of dilution water (mg/L) 159

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Comments/Observations:
0 hr No ppt
48 hr surficial ppt

Reviewed By: [illegible] Date Reviewed: 2022/08/29

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC 164 Reference 2122-3300-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/08/23	1440	CC/NA	2	WM
1	2022/08/24	0820	BS	-	CC
2	2022/08/25	0955	CC	3	NA

Sample Information

Initial pH: 7.6
Initial EC (µS/cm): 1940
Salinity (ppt): 0

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	8.0	8.0	8.0	7.6	7.6	7.6				
2	8.2	8.2	8.2	8.4	8.4	8.4				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	501	490	487	1924	1995	2090				
2	476	475	481	1822	1913	1991				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar wed C4 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 42
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 9.4
DO % of sample prior to aeration: 100%
Duration of aeration (37.5 +/- 12.5 mL/min/L) : -
Hardness (mg $CaCO_3$/L) of 100% : 1174
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) -
Alkalinity of 100% sample (mg $CaCO_3$/L): 407

Temperature (°C) of sample prior to aeration: 12°
Is aeration required (<40% or >100%)? **Yes or (No)**
Filtered with 110um screen prior to testing **Yes or (No)**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or (No)**

Dilution Water
Pail label / preparation date P1: 08/20
Hardness of dilution water (mg/L) 159

DO Levels (40-100% saturation) - corrected for altitude -
4.1 to 10.3 mg/L at 8°C
4.0 to 10.0 mg/L at 9°C
3.9 to 9.8 mg/L at 10°C
3.8 to 9.6 mg/L at 11°C
3.7 to 9.4 mg/L at 12°C

Comments/Observations:
0 hr No ppt
48 hr no ppt

Reviewed By: DP Date Reviewed: 2022/08/29

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS 20 Client TEC 164 Reference 2122-3300-02

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/08/23	1455	CL/NA	2	lm
1	2022/08/24	0820	PS	-	CC
2	2022/08/25	0915	AI	3	NA

Sample Information

Initial pH: 7.6
Initial EC (µS/cm): 1940
Salinity (ppt): 0

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	7.9	7.9	8.0	7.5	7.5	7.5				
2	8.2	8.2	8.2	8.4	8.4	8.4				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	486	488	487	1950	2080	2110				
2	474	483	481	1815	2030	2040				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.9	7.9	7.9				
2	7.7	7.7	7.7	7.7	7.7	7.7				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	20	20	20				
2	21	21	21	21	21	21				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10(1)	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar Wed C4 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 42
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0

Sample
DO (mg/L) of sample prior to aeration: 8.1
DO % of sample prior to aeration: 100%
Duration of aeration (37.5 +/- 12.5 mL/min/L): —
Hardness (mg $CaCO_3$/L) of 100%: 1174
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 407

Temperature (°C) of sample prior to aeration: 19
Is aeration required (<40% or >100%)? Yes or (No)
Filtered with 110um screen prior to testing Yes or (No)
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)

Dilution Water
Pail label / preparation date P1:08/20
Hardness of dilution water (mg/L) 159

Antiscalant
Final Concentration in Sample: 20mg/L cc
Volume of sample: 500mL Volume of antiscalant: ~~mg/L~~ 158.0uL

Comments/Observations:
0 hr No ppt
48 hr No ppt

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Reviewed By: JP Date Reviewed: 2022/10/12.

APPENDIX C – Chain-of-custody form

Teck

COC ID: F2 NAUTILUS - 2022-08-22 | TURNAROUND TIME: | RUSH:

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name / Job#	F2 SRF			Lab Name	Nautilus Environmental - BC			Report Format / Distribution		Excel	PDF	EDD
Project Manager	BRETT MASON			Lab Contact				Email 1:	Cole.Macgregor@teck.com	X	X	X
Email	BRETT.MASON@TECK.COM			Email	jacklyn@nautilusenvironmental.ca			Email 1:	teckcoal@equisonline.com			X
Address	RR1 HWY 3			Address	10823 27th Street SE			Email 2:	DL-EVO-SRF-LAB@teck.com	X	X	X
								Email 3:				
City	Sparwood	Province	BC	City	Calgary	Province	AB	Email 4:				
								Email 5:				
								Email 6:				
								Email 7:				
								Email 8:				
								Email 10:				
								Email 11:				
								Email 12:				
								Email 13:				
Postal Code	V0B 2G0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada					
Phone Number	250-425-6179			Phone Number	403-253-7121			PO number	PO00842410			

2022/08/23
09:00
Manitoulin
JC/SRS/AC
4x20L carboys, 5x1L bottles
NoS/NoT
Good Condition

SAMPLE DETAILS								ANALYSIS REQUESTED												
Sample ID 2122-3500	Sample Location (sys_loc_code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	Filt. / ANALYSIS	48hr Daphnia Magna Single Concentration Acute Toxicity 20C	48hr Daphnia Magna Single Concentration Acute Toxicity 10C	48hr Daphnia Magna Single Concentration Acute Toxicity Anitscalent	96hr Rainbow Trout Single Concentration Acute Toxicity (20L Bladders)	48hr Daphnia Magna Single Concentration Toxicity 15C							
F2_BPO_WG_2022-08-22_N -01	F2_BPO	WG		2022-08-22	8:30	G	8		2	2		4								
F2_BPO_WG_2022-08-22_N-AS -02	F2_BPO	WG		2022-08-22	8:31	G	1				1									

16.6°C

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME
		August 22, 2022		

SERVICE REQUEST (rush - subject to availability)	
Regular (default)	X
Priority (2-3 business days) - 50% surcharge	
Emergency (1 Business Day) - 100% surcharge	
For Emergency <1 Day, ASAP or Weekend - Contact ALS	

Sampler's Name		Mobile #	
Sampler's Signature		Date/Time	August 22, 2022

END OF REPORT

Acute Toxicity Test Results

Samples collected August 28, 2022

Final Report

October 6, 2022

Submitted to: **Teck Coal Ltd.**
Sparwood, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates					
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation	*Daphnia magna* antiscalant test initiation
F2_BPO_WG_2022-08-28_N / 2122-3378-01	28-Aug-22 at 1710h	29-Aug-22 at 1330h	30-Aug-22 at 1450h	30-Aug-22 at 1445h	30-Aug-22 at 1450h	-
F2_BPO_WG_2022-08-28_N-AS/ 2122-3378-02	28-Aug-22 at 1711h	29-Aug-22 at 1330h	-	-	-	30-Aug-22 at 1450h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
F2_BPO_WG_2022-08-28_N	11.0°C	1125	375
F2_BPO_WG_2022-08-28_N-AS	11.0°C	1125	375

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)
- *Daphnia magna* 48-h single concentration screening test (conducted with 20 mg/L antiscalant)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample			
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
F2_BPO_WG_2022-08-28_N	100	100	100	-
F2_BPO_WG_2022-08-28_N-AS	-	-	-	100

Sample ID	Percent Immobility in 100 (% v/v)		
	***Daphnia magna* 10˚C**	***Daphnia magna* 20˚C**	***Daphnia magna* antiscalant**
F2_BPO_WG_2022-08-28_N	0	0	-
F2_BPO_WG_2022-08-28_N-AS	-	-	0

Precipitate observations

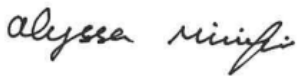
Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
F2_BPO_WG_2022-08-28_N	Rainbow trout	None	None
	Daphnia magna	None	None
F2_BPO_WG_2022-08-28_N-AS	*Daphnia magna*	None	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	4.0 (3.5-4.4) g/L KCl[1]	5.6 (5.4-5.8) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.6 (2.7-4.8) g/L KCl	6.1 (5.2-7.3) g/L NaCl
Reference toxicant CV	9.4%	5.6%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, August 30, 2022; [2] Test date, August 24, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation



Report By:
Alyssa Minifie, BSc
Laboratory Biologist



Reviewed By:
Emma Marus, BSc
Biologist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Control/dilution water for antiscalant test	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L), Na_2SeO_4 (2 µg Se/L) and 20 mg/L antiscalant
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS ENVIRONMENTAL

Trout Bench Sheet

Method TRS Client TEC 164 Reference 2122-3378-01 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022/08/30	1450 *	KO/KCRM/CD	1	CC
1	2022/08/31	0740	CD	-	CC
2	2022/09/01	0800	CD	-	KO
3	2022/09/02	0500	ML	-	MAP
4	2022/09/03	1000	CD/MW	i	MMF

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 7.7
Initial EC (µS/cm): 1908
Salinity (ppt): 3

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L : yes/no

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	8.6	8.6			
Temp (°C) of 100%	16				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: **5.5-8.5**)								
Day 0	7.8	7.9						
Day 4	8.0	8.4						
EC (uS/cm)								
Day 0	398	1805						
Day 4	367	1732						
DO (mg/L) (**70-100% saturation at test temp.**)								
Day 0	8.6	8.6						
Day 4	8.3	8.6						
Temperature (°C) (range: **14-16°C**)								
Day 0	16	16						
Day 4	16	16						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.2	0.4
2	3.1	0.3
3	3.2	0.4
4	3.3	0.5
5	3.5	0.5
6	3.2	0.3
7	3.5	0.5
8	3.3	0.3
9	3.1	0.4
10	3.4	0.5

Loading Density (g/L): 0.2 (must be ≤0.5 g/L)
Mean Length (cm): 3.3
Length Range (cm): 3.1-3.5
Mean Weight (g): 0.4 (Must be ≥0.3g)
Weight Range: (g): 0.3-0.5

Test Organism Information

Batch 20220708TR
Source Trout Lodge
Tank # 2
Days Held at 15± 2°C 35 (must be ≥14 days)
Percent stock mortality 0.05 (7 days prior to test, must be <2%)
Test Volume (L) 18

Comments :
96h: no PPT

Reviewed By: CW Date Reviewed: SEP 09 2022

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC 164 Reference 2122-3378-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/08/30	1450	DM/AG	2	EP
1	2022/08/31	0747	AG	-	CC
2	2022/09/01	0946	BS	2	MM

Sample Information

Initial pH: 7.7
Initial EC (µS/cm): 1908
Salinity (ppt): 3

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	8.0	8.0	8.0	7.7	7.7	7.6				
2	8.2	8.1	8.1	8.3	8.3	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	460	468	465	1825	1917	1922				
2	435	462	463	1786	1846	1869				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.9	7.9	7.9				
2	7.7	7.7	7.7	7.7	7.7	7.7				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	20	20	20				
2	21	21	21	21	21	21				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar WED C3 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 34
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0%
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 7.9
Temperature (°C) of sample prior to aeration: 20
DO % of sample prior to aeration: 100
Is aeration required (<40% or >100%)? **Yes or (No)**
Duration of aeration (37.5 +/- 12.5 mL/min/L) : —
Filtered with 110um screen prior to testing **Yes or (No)**
Hardness (mg $CaCO_3$/L) of 100% : 1125
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or (No)**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 375

Dilution Water
Pail label / preparation date P4: 04/26
Hardness of dilution water (mg/L) 170

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Comments/Observations:
0 hr No ppt
48 hr No ppt

Reviewed By: CW Date Reviewed: 20221109/07

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC 164 Reference 2122-3378-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/08/30	1445	DM/AG	2	EP
1	2022/08/31	0745	AG	-	CC
2	2022/09/01	1000	AG	2	CC

Sample Information

Initial pH:	7.7
Initial EC (µS/cm):	1908
Salinity (ppt):	3

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	8.0	8.1	8.1	7.7	7.7	7.7				
2	8.2	8.2	8.2	8.4	8.4	8.4				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	503	468	459	1799	1897	1873				
2	465	456	459	1802	1861	1823				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	~~7.7~~ 9.4 AG	~~7.9~~ 9.4 AG	~~7.9~~ 9.4 AG	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (l, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar WED D2 Jar(s) mortality 7 days prior to test (must be ≤25%) 5%

QA (previous month)

Days to first brood (≤12 days) 8

Average number of young produced (≥15 young) 34

Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 9.8

DO % of sample prior to aeration: 100

Duration of aeration (37.5 +/- 12.5 mL/min/L) : —

Hardness (mg $CaCO_3$/L) of 100% : 1125

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —

Alkalinity of 100% sample (mg $CaCO_3$/L): 375

Temperature (°C) of sample prior to aeration: 12

Is aeration required (<40% or >100%)? **Yes or (No)**

Filtered with 110um screen prior to testing **Yes or (No)**

Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or (No)**

Dilution Water

Pail label / preparation date PH: 08/26

Hardness of dilution water (mg/L) 170

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

Comments/Observations:

0 hr NO ppt

48 hr NO ppt

Reviewed By: CW Date Reviewed: AUG 0 9 2022 scpt. CW

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS 20 Client TEC 164 Reference 2122-3378-02

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/08/30	1450	DM/AG	26	EP
1	2022/08/31	0747	AG	-	CC
2	2022/09/01	0930	BS	2	VM

Sample Information

Initial pH: 7.7
Initial EC (µS/cm): 1900
Salinity (ppt): 3

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	8.0	8.0	8.0	7.1	8.0	8.0				
2	8.3	8.2	8.2	8.4	8.4	8.4				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	506	470	378	1639	1967	1909				
2	446	463	454	1798	1857	1860				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.9	7.9	7.9				
2	7.7	7.7	7.7	7.7	7.7	7.7				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	20	20	20				
2	21	21	21	21	21	21				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar WED 02 Jar(s) mortality 7 days prior to test (must be ≤25%) 5%

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 34
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0%

Sample
DO (mg/L) of sample prior to aeration: 8.7
DO % of sample prior to aeration: 107
Duration of aeration (37.5 +/- 12.5 mL/min/L): 20min
Hardness (mg $CaCO_3$/L) of 100%: 1125
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 375
Temperature (°C) of sample prior to aeration: 20
Is aeration required (<40% or >100%)? **Yes or No**
Filtered with 110um screen prior to testing **Yes or (No)**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or (No)**

Dilution Water
Pail label / preparation date PA:08/26
Hardness of dilution water (mg/L) 170

Antiscalant
Final Concentration in Sample: 20 mg/L EP
Volume of sample: 500mL Volume of antiscalant: ~~20 mg/L~~ 158 µL

Comments/Observations:
0 hr No ppt
48 hr No ppt

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Reviewed By: CW Date Reviewed: 2022/09/07

APPENDIX C – Chain-of-custody form

Teck

COC ID: F2 NAUTILUS | **TURNAROUND TIME:** | **RUSH:**

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name / Job#	F2 SRF			Lab Name	Nautilus Environmental - BC			Report Format / Distribution		Excel	PDF	EDD
Project Manager	BRETT MASON			Lab Contact				Email 1:	Cole.Macgregor@teck.com	X	X	X
Email	BRETT.MASON@TECK.COM			Email	jacklyn@nautilusenvironmental.ca			Email 1:	teckcoal@equisonline.com			X
Address	RR1 HWY 3			Address	10823 27th Street SE			Email 2:	DL-EVO-SRF-LAB@teck.com	X	X	X
								Email 3:				
City	Sparwood	Province	BC	City	Calgary	Province	AB	Email 4:				
								Email 5:				
								Email 6:				
								Email 7:				
								Email 8:				
								Email 10:				
								Email 11:				
								Email 12:				
								Email 13:				
Postal Code	V0B 2G0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada					
Phone Number	250-425-6179			Phone Number	403-253-7121			PO number	822027			

SAMPLE DETAILS | **ANALYSIS REQUESTED** | Filtered - F: Field, L: Lab, FL: Field & Lab, N: None

2022/08/29
13:30
Hotshot
QC
~~1x20L car~~ QC
3x20L carboys,
N&S/N&L QC
~~Good Cond.~~ 2122-3378
missing 1x20L carboys, 5x1L bottles

Sample ID	Sample Location (sys loc code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	FIL	ANALYSIS	48hr Daphnia Magna Single Concentration Acute Toxicity 20C	48hr Daphnia Magna Single Concentration Acute Toxicity 10C	48hr Daphnia Magna Single Concentration Acute Toxicity Anitscelent	96hr Rainbow Trout Single Concentration Acute Toxicity (20L Bladders)	48hr Daphnia Magna Single Concentration Toxicity 15C
F2_BPO_WG_2022-08-28_N ~01	F2_BPO	WG		28/8/22	17:10	G	8			2	2		4	11.0°C
F2_BPO_WG_2022-08-28_N-AS ~02	F2_BPO	WG		28/8/22	17:11	G	1					1		↓

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME

SERVICE REQUEST (rush - subject to availability)

Regular (default)	X
Priority (2-3 business days) - 50% surcharge	
Emergency (1 Business Day) - 100% surcharge	
For Emergency <1 Day, ASAP or Weekend - Contact ALS	

Sampler's Name	Ali Livingston	Mobile #	
Sampler's Signature		Date/Time	28-08-22

END OF REPORT

Acute Toxicity Test Results

Samples collected August 29, 2022

Final Report

October 8, 2022

Submitted to: **Teck Coal Ltd.**
Sparwood, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates					
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation	*Daphnia magna* antiscalant test initiation
EV_EC1_WS_2022-08-29_N-SRF/ 2122-3380-01	29-Aug-22 at 1040h	30-Aug-22 at 0900h	30-Aug-22 at 1510h	30-Aug-22 at 1530h	30-Aug-22 at 1530h	-
EV_EC1_WS_2022-08-29_N-SRF-AS/ 2122-3380-02	29-Aug-22 at 1041h	30-Aug-22 at 0900h	-	-	-	30-Aug-22 at 1535h
EV_ECOUT_WS_2022-08-29_N-SRF/ 2122-3380-03	29-Aug-22 at 1230h	30-Aug-22 at 0900h	30-Aug-22 at 1500h	30-Aug-22 at 1535h	30-Aug-22 at 1540h	-
EV_ECOUT_WS_2022-08-29_N-SRF-AS/ 2122-3380-04	29-Aug-22 at 1231h	30-Aug-22 at 0900h	-	-	-	30-Aug-22 at 1540h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
EV_EC1_WS_2022-08-29_N-SRF	14.6°C	946	332
EV_EC1_WS_2022-08-29_N-SRF-AS	14.6°C	946	332
EV_ECOUT_WS_2022-08-29_N-SRF	12.4°C	1110	364
EV_ECOUT_WS_2022-08-29_N-SRF-AS	12.4°C	1110	364

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)
- *Daphnia magna* 48-h single concentration screening test (conducted with 5 mg/L antiscalant)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample			
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
EV_EC1_WS_2022-08-29_N-SRF	100	100	100	-
EV_EC1_WS_2022-08-29_N-SRF-AS	-	-	-	100
EV_ECOUT_WS_2022-08-29_N-SRF	100	100	100	-
EV_ECOUT_WS_2022-08-29_N-SRF-AS	-	-	-	100

Sample ID	Percent Immobility in 100 (% v/v)		
	Daphnia magna 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
EV_EC1_WS_2022-08-29_N-SRF	0	0	-
EV_EC1_WS_2022-08-29_N-SRF-AS	-	-	0
EV_ECOUT_WS_2022-08-29_N-SRF	0	3	-
EV_ECOUT_WS_2022-08-29_N-SRF-AS	-	-	0

Precipitate observations

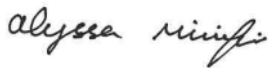
Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
EV_EC1_WS_2022-08-29_N-SRF	Rainbow trout	None	None
	Daphnia magna	Surficial precipitate observed	None
EV_EC1_WS_2022-08-29_N-SRF-AS	*Daphnia magna*	None	None
EV_ECOUT_WS_2022-08-29_N-SRF	Rainbow trout	Precipitate observed on the test vessel	None
	Daphnia magna	Surficial precipitate observed in the 10˚C and 20˚C tests; test vessel precipitate observed in the 10˚C test	None
EV_ECOUT_WS_2022-08-29_N-SRF-AS	*Daphnia magna*	Surficial precipitate observed	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	4.0 (3.5-4.4) g/L KCl[1]	5.6 (5.4-5.8) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.6 (2.7-4.8) g/L KCl	6.1 (5.2-7.3) g/L NaCl
Reference toxicant CV	9.4%	5.6%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, August 31, 2022; [2] Test date, August 24, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation



Report By:
Alyssa Minifie, BSc
Laboratory Biologist



Reviewed By:
Emma Marus, BSc
Biologist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Control/dilution water for antiscalant test	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L), Na_2SeO_4 (2 µg Se/L) and 5 mg/L antiscalant
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS ENVIRONMENTAL

Trout Bench Sheet

Method TRS Client TEC 164 Reference 2122-3380-01 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022/08/30	1510 *	KO/KCRM/CD	1	ZC
1	2022/08/31	0730	CM	-	CC
2	2022/09/01	0826	CM	-	KO
3	2022/09/02	0900	ML	-	MAF
4	2022/09/03	1000	CD/ML	1	MAF

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 7.9
Initial EC (µS/cm): 1646
Salinity (ppt): 1

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L : yes/no

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	10.1	8.9			
Temp (°C) of 100%	14				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: **5.5-8.5**)								
Day 0	7.7	8.0 ~~7.9~~						
Day 4	8.2	8.2						
EC (uS/cm)								
Day 0	380	1584						
Day 4	371	1469						
DO (mg/L) (**70-100% saturation at test temp.**)								
Day 0	8.6	8.9						
Day 4	8.2	8.1						
Temperature (°C) (range: **14-16°C**)								
Day 0	16	14						
Day 4	16	16						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.4	0.5
2	3.5	0.5
3	3.5	0.5
4	3.7	0.7
5	3.8	0.7
6	3.4	0.4
7	3.4	0.4
8	3.9	0.4
9	3.4	0.4
10	3.7	0.6

Loading Density (g/L): 0.3 (must be ≤0.5 g/L)
Mean Length (cm): 3.5
Length Range (cm): 3.2-3.8
Mean Weight (g): 0.5 (Must be ≥0.3g)
Weight Range: (g): 0.4-0.7

Test Organism Information

Batch 20220708TR
Source Trout Lodge
Tank # 2
Days Held at 15± 2°C 35 (must be ≥14 days)
Percent stock mortality 0.05 (7 days prior to test, must be <2%)
Test Volume (L) 18

Comments :
96h: NO PPT

Reviewed By: CW Date Reviewed: 20221109107

NAUTILUS ENVIRONMENTAL

Trout Bench Sheet

Method TRS Client TEC 164 Reference 2122-3380-03 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022/08/30	1500 *	KO/KCRM/CD	1	ZC
1	2022/08/31	0900	CD	-	CC
2	2022/09/01	0800	CD	-	MC
3	2022/09/02	0800	ML	-	[illegible]
4	2022/09/03	1000	CM/ML	1	[illegible]

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 7.6
Initial EC (µS/cm): 1796
Salinity (ppt): 1

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L : yes/no

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	9.3	8.6			
Temp (°C) of 100%	16				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: **5.5-8.5**)								
Day 0	7.7	7.7						
Day 4	8.2	8.1						
EC (uS/cm)								
Day 0	379	1738						
Day 4	370	1484						
DO (mg/L) (**70-100% saturation at test temp.**)								
Day 0	8.6	8.6						
Day 4	8.6	8.6						
Temperature (°C) (range: **14-16°C**)								
Day 0	16	16						
Day 4	16	16						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.5	0.6
2	3.5	0.4
3	3.6	0.6
4	3.5	0.5
5	3.0	0.3 ML
6	3.6	0.4
7	3.7	0.5
8	3.4	0.4
9	3.9	0.3
10	3.4	0.4

Loading Density (g/L): 0.3 (must be ≤0.5 g/L)
Mean Length (cm): 3.4
Length Range (cm): 3.0-3.7
Mean Weight (g): 0.4 (Must be ≥0.3g)
Weight Range: (g): 0.3-0.6

Test Organism Information

Batch 20220708TR
Source Trout Lodge
Tank # 2
Days Held at 15± 2°C 35 (must be ≥14 days)
Percent stock mortality 0.05 (7 days prior to test, must be <2%)
Test Volume (L) 17 ~~16~~ KCRM

Comments :
96h: PPT sides and bottom

Reviewed By: CW

Date Reviewed: ~~AUG~~ 19 ~~2022~~ CW
Sept. 2022

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC 164 Reference 2122-3380-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/08/30	1520	KTM/AI	2	EF
1	2022/08/31	0800	AG	-	CC
2	2022/09/01	0950	BS	2	KTM

Sample Information

Initial pH: ~~7.4~~
Initial EC (µS/cm): ~~946~~ 1696 CW
Salinity (ppt): 1

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	8.0	8.0	8.0	7.9	7.9	8.0				
2	8.2	8.2	8.2	8.0	8.1	8.2				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	483	460	464	1637	1709	1722				
2	463	464	469	1562	1647	1668				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.7	7.7	7.7	7.9	7.9	7.9				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	21	21	21	20	20	20				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar Wed D4 Jar(s) mortality 7 days prior to test (must be ≤25%) 10

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 34
Were test treatments randomized on test tray? (Yes) No

Control Validity Criteria
Mean % mortality at 48 hours - 02
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 9.1
DO % of sample prior to aeration: 111
Duration of aeration (37.5 +/- 12.5 mL/min/L): 20min
Hardness (mg $CaCO_3$/L) of 100% : 946
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 332

Temperature (°C) of sample prior to aeration: 19
Is aeration required (<40% or >100%)? (Yes) or No
Filtered with 110um screen prior to testing Yes or (No)
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)

Dilution Water
Pail label / preparation date Pail 4: 08/26
Hardness of dilution water (mg/L) 170

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Comments/Observations:
0 hr No ppt
48 hr surficial ppt.

Reviewed By: CW Date Reviewed: 20221091107

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC 164 Reference 2122-3380-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/08/30	1030	KTM/AI	2	EP
1	2022/08/31	0942	AG	-	CO
2	2022/09/01	1000	AI	2	CC

Sample Information

Initial pH: 7.9
Initial EC (µS/cm): 1606
Salinity (ppt): 1

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	7.9	7.9	7.9	7.9	7.9	8.0				
2	8.3	8.3	8.3	8.2	8.2	8.2				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	515	464	465	1651	1715	1717				
2	498	474	470	1620	1682	1707				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar Wed D4 Jar(s) mortality 7 days prior to test (must be ≤25%) 10

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 34
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 10.4 9.7 AI
DO % of sample prior to aeration: 111
Duration of aeration (37.5 +/- 12.5 mL/min/L): 20min
Hardness (mg $CaCO_3$/L) of 100% : 946
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 332

Temperature (°C) of sample prior to aeration: AI 19 12
Is aeration required (<40% or >100%)? **Yes or No**
Filtered with 110um screen prior to testing **Yes or No**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or (No)**

Dilution Water
Pail label / preparation date Pail 4 : 9/26
Hardness of dilution water (mg/L) 170

DO Levels (40-100% saturation) - corrected for altitude -
4.1 to 10.3 mg/L at 8°C
4.0 to 10.0 mg/L at 9°C
3.9 to 9.8 mg/L at 10°C
3.8 to 9.6 mg/L at 11°C
3.7 to 9.4 mg/L at 12°C

Comments/Observations:
0 hr No ppt
48 hr survival ppt

Reviewed By: CW Date Reviewed: 20221004 07

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS 5 Client TEC 164 Reference 2122-3380-02

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/08/30	1535	KTM/AI	2	EP
1	2022/08/31	0800	AG	-	CC
2	2022/09/01	0950	BS	2	KTM

Sample Information

Initial pH: 7.9
Initial EC (µS/cm): 1696
Salinity (ppt): 1

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				
day				pH (units) (range: 6.0-8.5)						
0	8.0	8.0	7.9	7.9	7.9	7.9				
2	8.1	8.1	8.1	8.2	8.3	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

				EC (uS/cm)						
0	500	471	468	1650	1711	1717				
2	454	464	465	1612	1669	1685				

				DO (mg/L) (**40-100% saturation at test temp.**)						
0	7.7	7.7	7.7	7.9	7.9	7.9				
2	7.9	7.9	7.9	7.9	7.9	7.9				

				Temperature (°C) (range: **18-22 °C**)						
0	21	21	21	20	20	20				
2	20	20	20	20	20	20				

				Number Alive (I, immobile)						
0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar Wed D1 Jar(s) mortality 7 days prior to test (must be ≤25%) 0

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 34
Were test treatments randomized on test tray? Yes / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0%

Sample
DO (mg/L) of sample prior to aeration: 9.3
Temperature (°C) of sample prior to aeration: 19
DO % of sample prior to aeration: 113
Is aeration required (<40% or >100%)? Yes or No
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20
Filtered with 110um screen prior to testing Yes or No
Hardness (mg $CaCO_3$/L) of 100% : 946
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or No
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 332

Dilution Water
Pail label / preparation date Pail 4: 8/26
Hardness of dilution water (mg/L) 170

Antiscalant
Final Concentration in Sample: 5 mg/L
Volume of sample: 500 mL Volume of antiscalant: ~~5 mg/L~~ 39.5 mL KTM

Comments/Observations:
0 hr No ppt
48 hr No ppt

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Reviewed By: CW Date Reviewed: 2022/09/07

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC 164 Reference 2122-3380-03

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/08/30	1540	KTM/AI	2	EP
1	2022/08/31	0759	AG	-	EC
2	2022/09/01	0800	AG	2	NA

Sample Information

Initial pH: 7.6
Initial EC (µS/cm): 1796
Salinity (ppt): 1

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	8.10	8.0	7.9	8.0	8.0	7.0				
2	8.4	8.3	8.2	7.9	8.0	8.0				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	478	464	461	1733	1811	1822				
2	475	468	473	1636	1699	1700				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.7	7.7	7.7	7.9	7.9	7.9				
2	7.7	7.7	7.7	7.6	7.6	7.6				

Temperature (°C) (range: **18-22 °C**)

0	21	21	21	20	20	20				
2	21	21	21	21	21	21				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10(1i)	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar Wed 62 Jar(s) mortality 7 days prior to test (must be ≤25%) 5

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 23
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 9.7
DO % of sample prior to aeration: 118
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 2min
Hardness (mg $CaCO_3$/L) of 100% : 1110
Temperature (°C) of sample prior to aeration: 19
Is aeration required (<40% or >100%)? **(Yes) or No**
Filtered with 110um screen prior to testing **Yes or (No)**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or (No)**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 364

Dilution Water
Pail label / preparation date Pail 4 : 05/26
Hardness of dilution water (mg/L) 170

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Comments/Observations:
0 hr No ppt
48 hr Surface ppt.

Reviewed By: CW Date Reviewed: 2022/09/07

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC 164 Reference 2122-3380-03

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/08/30	1535	KTM/AI	2	EP
1	2022/08/31	0742	AG	-	CC
2	2022/09/01	0800	AG	2	NA

Sample Information

Initial pH:	7.6
Initial EC (µS/cm):	1746
Salinity (ppt):	1

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	AI 7.9	7.9	7.9	8.0	8.1	8.1				
2	8.4	8.3	8.2	8.0	8.0	8.0				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	455	463	463	1752	1815	1821				
2	463	467	466	1682	1750	1755				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	8.9	8.9	8.9	9.0	9.0	9.0				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar Wed C2 Jar(s) mortality 7 days prior to test (must be ≤25%) 5

QA (previous month)

Days to first brood (≤12 days) 7

Average number of young produced (≥15 young) 38

Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - 0

(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 11.1 Temperature (°C) of sample prior to aeration: 12

DO % of sample prior to aeration: 118 Is aeration required (<40% or >100%)? (Yes) or No

Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20 min Filtered with 110um screen prior to testing Yes or (No)

Hardness (mg $CaCO_3$/L) of 100% : 1110 Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) -

Alkalinity of 100% sample (mg $CaCO_3$/L): 364

Dilution Water

Pail label / preparation date Pail 14: 8/26

Hardness of dilution water (mg/L) 170

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

Comments/Observations:

0 hr No ppt

48 hr Surface ppt, ppt on side of glass

Reviewed By: CC Date Reviewed: 2022/09/07

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS 5 Client TEC 164 Reference 2122-3380-04

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/08/30	1946	KTM/AI	2	EP
1	2022/08/31	0754	AG	-	CL
2	2022/09/01	0600	AG	2	NA

Sample Information

Initial pH: 7.6
Initial EC (µS/cm): 1706
Salinity (ppt): 1

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	8.0	7.9	7.9	7.9	8.0	8.0				
2	8.4	8.3	8.2	8.2	8.3	8.8				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	510	468	465	1767	1825	1329				
2	481	472	468	1691	1759	~~16~~ A4 1760				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.7	7.7	7.7	7.9	7.9	7.9				
2	7.7	7.7	7.7	7.4	7.6	7.6				

Temperature (°C) (range: **18-22 °C**)

0	21	21	21	20	20	20				
2	21	21	21	21	21	21				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar Wed D1 Jar(s) mortality 7 days prior to test (must be ≤25%) 0

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 34
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0

Sample
DO (mg/L) of sample prior to aeration: 9.7
DO % of sample prior to aeration: 118
Duration of aeration (37.5 +/- 12.5 mL/min/L): 20min
Hardness (mg $CaCO_3$/L) of 100% : 1110
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) -
Alkalinity of 100% sample (mg $CaCO_3$/L): 364

Temperature (°C) of sample prior to aeration: 19
Is aeration required (<40% or >100%)? **Yes or No**
Filtered with 110um screen prior to testing **Yes or No**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Dilution Water
Pail label / preparation date Pail 4: 08/26
Hardness of dilution water (mg/L) 170

Antiscalant
Final Concentration in Sample: 5mg/L
Volume of sample: 500mL Volume of antiscalant: 5 mg/L A1 39.5 uL

Comments/Observations:
0 hr No ppt
48 hr Surficial ppt,

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Reviewed By: CW Date Reviewed: 20221019 07

APPENDIX C – Chain-of-custody form

Teck

COC ID: EVO NAUTILUS 2022-08-29 | TURNAROUND TIME: | RUSH:

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO			
Facility Name / Job#	Elkview Operations			Lab Name	Nautilus Environmental - BC			Report Format / Distribution		Excel	PDF	EDD
Project Manager	Group 1; Brett Mason			Lab Contact				Email 1:	Cole.Macgregor@teck.com	X	X	X
Email	Brett.Mason@teck.com			Email	jacklyn@nautilusenvironmental.ca			Email 2:	teckcoal@equisonline.com			X
Address	RR1 HWY 3			Address	10823 27th Street SE			Email 3:	DL-EVO-SRF-LAB@teck.com	X	X	X
								Email 4:				
City	Sparwood	Province	BC	City	Calgary	Province	AB	Email 5:				
								Email 6:				
								Email 7:				
								Email 8:				
								Email 9:				
								Email 10:				
								Email 11:				
								Email 12:				
								Email 13:				
Postal Code	V0B 2G0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada					
Phone Number	250-425-6179			Phone Number	403-253-7121			PO number	VPO00842410			

SAMPLE DETAILS | **ANALYSIS REQUESTED** | Filtered - F: Field, L: Lab, FL: Field & Lab, N: None

2022/08/30
09:00
Manitoulin
IC/AC
8x20L carboys, 10x1L bottles
NaS/NaT
Good Condition

Sample ID 2122-3380	Sample Location (sys loc code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	Filt.	Preserv.	ANALYSIS: 48hr Daphnia Magna Single Concentration Acute Toxicity 20C	48hr Daphnia Magna Single Concentration Acute Toxicity 10C	48hr Daphnia Magna Single Concentration Acute Toxicity Anitscalent	96hr Rainbow Trout Single Concentration Acute Toxicity (20 L Bladder)	96hr Rainbow Trout Single Concentration Acute Toxicity (10 L Bladder)	48hr Daphnia Magna Single Concentration Toxicity 15C						
EV_EC1_WS_2022-08-29_N-SRF -01	EV_EC1	WS		2022-08-29	10:40	G	8			2	2		4	14.6°C							
EV_EC1_WS_2022-08-29_N-SRF-AS -02	EV_EC1	WS		2022-08-29	10:41	G	1					1		↓							
EV_ECOUT_WS_2022-08-29_N-SRF -03	EV_ECOUT	WS		2022-08-29	12:30	G	8			2	2		4	12.4°C							
EV_ECOUT_WS_2022-08-29_N-SRF-AS -04	EV_ECOUT	WS		2022-08-29	12:31	G	1					1		↓							

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME
Field Temperatures ECOUT:		August 29, 2022		

SERVICE REQUEST (rush - subject to availability)

Regular (default) X	Sampler's Name		Mobile #	
Priority (2-3 business days) - 50% surcharge				
Emergency (1 Business Day) - 100% surcharge	Sampler's Signature		Date/Time	August 29, 2022
For Emergency <1 Day, ASAP or Weekend - Contact ALS				

END OF REPORT

Acute Toxicity Test Results

Samples collected August 29, 2022

Final Report

October 8, 2022

Submitted to: **Teck Coal Ltd.**
Sparwood, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates					
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation	*Daphnia magna* antiscalant test initiation
F2_BPO_WG_2022-08-29_N / 2122-3381-01	29-Aug-22 at 0840h	30-Aug-22 at 0900h	01-Sep-22 at 1420h	30-Aug-22 at 1545h	30-Aug-22 at 1545h	-
F2_BPO_WG_2022-08-29_N-AS / 2122-3381-02	29-Aug-22 at 0841h	30-Aug-22 at 0900h	-	-	-	30-Aug-22 at 1550h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
F2_BPO_WG_2022-08-29_N	15.8°C	1099	369
F2_BPO_WG_2022-08-29_N-AS	15.8°C	1099	369

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)
- *Daphnia magna* 48-h single concentration screening test (conducted with 20 mg/L antiscalant)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample			
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
F2_BPO_WG_2022-08-29_N	100	100	100	-
F2_BPO_WG_2022-08-29_N-AS	-	-	-	100

Sample ID	Percent Immobility in 100 (% v/v)		
	Daphnia magna 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
F2_BPO_WG_2022-08-29_N	0	0	-
F2_BPO_WG_2022-08-29_N-AS	-	-	0

Precipitate observations

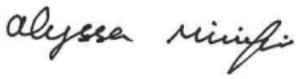
Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
F2_BPO_WG_2022-08-29_N	Rainbow trout	Precipitate observed on the test vessel	None
	Daphnia magna	None	None
F2_BPO_WG_2022-08-29_N-AS	*Daphnia magna*	None	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	4.0 (3.5-4.4) g/L KCl[1]	5.6 (5.4-5.8) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.6 (2.7-4.8) g/L KCl	6.1 (5.2-7.3) g/L NaCl
Reference toxicant CV	9.4%	5.%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, August 30, 2022; [2] Test date, August 24, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation



Report By:
Alyssa Minifie, BSc
Laboratory Biologist



Reviewed By:
Emma Marus, BSc
Biologist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Control/dilution water for antiscalant test	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L), Na_2SeO_4 (2 µg Se/L) and 20 mg/L antiscalant
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS ENVIRONMENTAL

Trout Bench Sheet

Method TRS Client TEC164 Reference 2122-3381-01 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022-09-01	1420 *	CD/AM/KO	1	EV
1	2022-09-02	0815	ML	-	MAE
2	2022-09-03	0830	ML	-	MAE
3	2022-09-04	0745	ML	-	KO
4	2022-09-05	1015	ML	1	KMM

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 7.8
Initial EC (µS/cm): 1956
Salinity (ppt): 2

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L (yes/no)

	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
Preaeration time					
DO(mg/L) of 100%	8.6	8.1			
Temp (°C) of 100%	16				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100					
pH (units) (range: 5.5-8.5)							
Day 0	7.4	7.7					
Day 4	7.9	8.2					
EC (uS/cm)							
Day 0	357	1785					
Day 4	336	1542					
DO (mg/L) (70-100% saturation at test temp.)							
Day 0	8.6	CD 8.1					
Day 4	8.6	8.6					
Temperature (°C) (range: 14-16°C)							
Day 0	16	16					
Day 4	16	16					
Number Alive (In brackets number stressed)							
Day 0	10	10					
Day 1	10	10					
Day 2	10	10					
Day 3	10	10					
Day 4	10	10					

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	4.1	0.9
2	2.8	0.2
3	3.4	0.4
4	4.0	0.9
5	3.3	0.5
6	2.9	0.3
7	3.3	0.5
8	3.2	0.4
9	3.3	0.5
10	3.2	0.4

Loading Density (g/L): 0.3 (must be ≤0.5 g/L)
Mean Length (cm): 3.4
Length Range (cm): 2.8-4.1
Mean Weight (g): 0.5 (Must be ≥0.3g)
Weight Range: (g): 0.2-0.9

Test Organism Information

Batch 20220708TR
Source Trout Lodge
Tank # 2
Days Held at 15± 2°C 37 (must be ≥14 days)
Percent stock mortality 0.05 (7 days prior to test, must be <2%)
Test Volume (L) 18

Comments : 96Hr

ppt on sides & bottom of tank

Reviewed By: EV Date Reviewed: 2022/09/07

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC 164 Reference 2122-3381-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/08/30	1545	KTM/AI	2	EP
1	2022/08/31	1215	AG	-	CC
2	2022/09/01	0810	AG	2	NA

Sample Information

Initial pH: 7.8
Initial EC (µS/cm): 1856
Salinity (ppt): 1

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	7.0	8.0	8.0	7.9	7.9	7.9				
2	8.0	8.0	8.0	8.2	8.3	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	465	464	464	1844	1892	1905				
2	475	479	466	1785	1855	1869				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.7	7.7	7.7	7.7	7.7	7.7				
2	7.7	7.7	7.7	7.7	7.7	7.7				

Temperature (°C) (range: **18-22 °C**)

0	21	21	21	21	21	21				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar Wed D1 Jar(s) mortality 7 days prior to test (must be ≤25%) 0

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 34
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 8.3
Temperature (°C) of sample prior to aeration: 20
DO % of sample prior to aeration: 106
Is aeration required (<40% or >100%)? **Yes or No**
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20
Filtered with 110um screen prior to testing **Yes or No**
Hardness (mg $CaCO_3$/L) of 100% : 1090
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) -
Alkalinity of 100% sample (mg $CaCO_3$/L): 369

Dilution Water
Pail label / preparation date Pail 4 : 08/26
Hardness of dilution water (mg/L) 170

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Comments/Observations:
0 hr no ppt
48 hr no ppt

Reviewed By: EV Date Reviewed: 2022/09/07

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC 164 Reference 2122-3381-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/08/30	1545	KTM/AI	2	ED
1	2022/08/31	0947	AG	-	EC
2	2022/09/01	0801	AG	2	NA

Sample Information

Initial pH: 7.8
Initial EC (µS/cm): 1956
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	8.0	8.0	7.9	7.9	7.9	7.9				
2	8.3	8.2	8.2	8.3	8.3	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	477	467	466	1853	1903	1907				
2	472	466	470	1765	1874	1880				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar Wed ≤5 Jar(s) mortality 7 days prior to test (must be ≤25%) 0

QA (previous month)
Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 23
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 10.1
Temperature (°C) of sample prior to aeration: 12
DO % of sample prior to aeration: 106
Is aeration required (<40% or >100%)? **Yes or No**
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20
Filtered with 110um screen prior to testing **Yes or No**
Hardness (mg $CaCO_3$/L) of 100% : 1699
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 369

Dilution Water
Pail label / preparation date Pail4: 08/26
Hardness of dilution water (mg/L) 170

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

Comments/Observations:
0 hr No ppt
48 hr no ppt

Reviewed By: EV Date Reviewed: 2022/09/07

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS ~~5~~ 20 wm Client TEC 164 Reference 2122-3381-02

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/08/30	1550	KTM/AI	2	EP
1	2022/08/31	0754	AG	-	CC
2	2022/09/01	0806	AG	2	NA

Sample Information

Initial pH:	7.8
Initial EC (µS/cm):	1856
Salinity (ppt):	2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				
day				pH (units) (range: 6.0-8.5)						
0	7.9	7.9	7.9	7.8	7.8	7.8				
2	8.2	8.1	8.1	8.1	8.2	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

				EC (uS/cm)						
0	461	461	466	1879	1913	1916				
2	472	471	469	1800	1841	1855				
				DO (mg/L) (**40-100% saturation at test temp.**)						
0	7.7	7.7	7.7	7.7	7.9	7.9				
2	7.6	7.6	7.6	7.6	7.6	7.6				
				Temperature (°C) (range: **18-22 °C**)						
0	21	21	21	20	20	20				
2	21	21	21	21	21	21				
				Number Alive (I, immobile)						
0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar Wed D1 Jar(s) mortality 7 days prior to test (must be ≤25%) 0

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 34
Were test treatments randomized on test tray? Yes / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0

Sample
DO (mg/L) of sample prior to aeration: 8.8 Temperature (°C) of sample prior to aeration: 19
DO % of sample prior to aeration: 108 Is aeration required (<40% or >100%)? **Yes or No**
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20 Filtered with 110um screen prior to testing **Yes or No**
Hardness (mg $CaCO_3$/L) of 100% : 1099 Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 369

Dilution Water
Pail label / preparation date Pail 4: 8/26
Hardness of dilution water (mg/L) 170

Antiscalant
Final Concentration in Sample: ~~5~~ 20 mg/L
Volume of sample: 500 mL Volume of antiscalant: ~~5 mg/L~~ AI ~~39.5 uL~~ 158 mL

Comments/Observations:
0 hr No ppt
48 hr no ppt

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C 3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C 3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C

Reviewed By: EV Date Reviewed: 2022/09/07

APPENDIX C – Chain-of-custody form

Teck

COC ID: F2 NAUTILUS 2022-08-29 **TURNAROUND TIME:** **RUSH:**

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO			
Facility Name / Job#	F2 SRF			Lab Name	Nautilus Environmental - BC			Report Format / Distribution		Excel	PDF	EDD
Project Manager	BRETT MASON			Lab Contact				Email 1:	Cole.Macgregor@teck.com	X	X	X
Email	BRETT.MASON@TECK.COM			Email	jacklyn@nautilusenvironmental.ca			Email 1:	teckcoal@equisonline.com			X
Address	RR1 HWY 3			Address	10823 27th Street SE			Email 2:	DL-EVO-SRF-LAB@teck.com	X	X	X
								Email 3:				
City	Sparwood	Province	BC	City	Calgary	Province	AB	Email 4:				
								Email 5:				
								Email 6:				
								Email 7:				
								Email 8:				
								Email 10:				
								Email 11:				
								Email 12:				
								Email 13:				
Postal Code	V0B 2G0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada					
Phone Number	250-425-6179			Phone Number	403-253-7121			PO number	VPO00842410			

SAMPLE DETAILS — **ANALYSIS REQUESTED** — Filtered - F: Field, L: Lab, FL: Field & Lab, N: None

2022/08/30
09:00
Manitoulin
3C/4C
4x20L carboys, 5x1L bottles
N6S/N6S
Good Condition

Sample ID 2122-8361	Sample Location (sys_loc_code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	FIL	48hr Daphnia Magna Single Concentration Acute Toxicity 20C	48hr Daphnia Magna Single Concentration Acute Toxicity 10C	48hr Daphnia Magna Single Concentration Acute Toxicity Antiscalent	96hr Rainbow Trout Single Concentration Acute Toxicity (20L Bladders)	48hr Daphnia Magna Single Concentration Toxicity 15C
								ANALYSIS					
F2_BPO_WG_2022-08-29_N -01	F2_BPO	WG		2022-08-29	8:40	G	8		2	2		4	15.8°C
F2_BPO_WG_2022-08-29_N-AS -02	F2_BPO	WG		2022-08-29	8:41	G	1				1		✓

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME
		August 29, 2022		

SERVICE REQUEST (rush - subject to availability)

Regular (default)	X
Priority (2-3 business days) - 50% surcharge	
Emergency (1 Business Day) - 100% surcharge	
For Emergency <1 Day, ASAP or Weekend - Contact ALS	

Sampler's Name		Mobile #	
Sampler's Signature		Date/Time	August 29, 2022

END OF REPORT

Acute Toxicity Test Results

Samples collected August 30, 2022

Final Report

October 9, 2022

Submitted to: **Teck Coal Ltd.**
Sparwood, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates						
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna 15˚C test initiation*	*Daphnia magna* 20˚C test initiation	*Daphnia magna* antiscalant test initiation
EV_GT1_WS_2022-08-30_N-SRF / 2122-3397-01	30-Aug-22 at 0950h	31-Aug-22 at 0850h	31-Aug-22 at 1420h	31-Aug-22 at 1520h	31-Aug-22 at 1515h	31-Aug-22 at 1530h	-
EV_BC1_WS_2022-08-30_N-SRF / 2122-3397-02	30-Aug-22 at 1100h	31-Aug-22 at 0850h	31-Aug-22 at 1420h	31-Aug-22 at 1525h	31-Aug-22 at 1510h	31-Aug-22 at 1530h	-
EV_BC1_WS_2022-08-30_N-SRF-AS / 2122-3397-03	30-Aug-22 at 1101h	31-Aug-22 at 0850h	-	-	-	-	31-Aug-22 at 1520h
EV_GT1_WS_2022-08-30_N-SRF-AS / 2122-3397-04	30-Aug-22 at 0951h	31-Aug-22 at 0850h	-	-	-	-	31-Aug-22 at 1505h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
EV_GT1_WS_2022-08-30_N-SRF	15.5°C	970	212
EV_BC1_WS_2022-08-30_N-SRF	18.5°C	912	220
EV_BC1_WS_2022-08-30_N-SRF-AS	18.5°C	912	220
EV_GT1_WS_2022-08-30_N-SRF-AS	15.5°C	970	212

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)
- *Daphnia magna* 48-h single concentration screening test (conducted at 15°C)
- *Daphnia magna* 48-h single concentration screening test (conducted with 5 mg/L antiscalant)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample				
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 15˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
EV_GT1_WS_2022-08-30_N-SRF	100	100	100	100	-
EV_BC1_WS_2022-08-30_N-SRF	100	100	100	100	-
EV_BC1_WS_2022-08-30_N-SRF-AS	-	-	-	-	100
EV_GT1_WS_2022-08-30_N-SRF-AS	-	-	-	-	100

Sample ID	Percent Immobility in 100 (% v/v)			
	Daphnia magna 10˚C	*Daphnia magna* 15˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
EV_GT1_WS_2022-08-30_N-SRF	0	0	0	-
EV_BC1_WS_2022-08-30_N-SRF	0	0	0	-
EV_BC1_WS_2022-08-30_N-SRF-AS	-	-	-	0
EV_GT1_WS_2022-08-30_N-SRF-AS	-	-	-	0

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
EV_GT1_WS_2022-08-30_N-SRF	Rainbow trout	Precipitate observed on the bottom of the test vessel	None
	Daphnia magna	Precipitate observed on the bottom of test vessels in the 15˚C and 20˚C tests; surficial precipitate observed in the 20˚C test	None
EV_BC1_WS_2022-08-30_N-SRF	Rainbow trout	Precipitate observed on the bottom of the test vessel	None
	Daphnia magna	Precipitate observed on the bottom and surface of test vessels in the 20˚C test	None
EV_BC1_WS_2022-08-30_N-SRF-AS	*Daphnia magna*	None	None
EV_GT1_WS_2022-08-30_N-SRF-AS	*Daphnia magna*	None	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	4.0 (3.5-4.4) g/L KCl[1]	5.6 (5.4-5.8) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.6 (2.7-4.8) g/L KCl	6.1 (5.2-7.3) g/L NaCl
Reference toxicant CV	9.4%	5.6%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, August 30, 2022; [2] Test date, August 24, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation



Report By:
Lily Cole, B.Sc.
Laboratory Biologist



Reviewed By:
Emma Marus, BSc
Biologist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Control/dilution water for antiscalant test	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L), Na_2SeO_4 (2 µg Se/L) and 5 mg/L antiscalant
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 4. Summary of test conditions: 48-h *Daphnia magna* survival test at 15˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	15 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS ENVIRONMENTAL

Trout Bench Sheet

Method TRS Client TEC 164 Reference 2122-3397-01 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022/08/31	1420 *	KO/AM/CD	1	Kgm
1	2022/09/01	0820	CD	-	KO
2	2022/09/02	0830	ML	-	MAF
3	2022/09/03	0830	ML	-	MAF
4	2022/09/04	1035	ML	1	KO

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 8.2
Initial EC (µS/cm): 1860
Salinity (ppt): 0

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L : **yes/no**

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	8.9	8.6			
Temp (°C) of 100%	16				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: **5.5-8.5**)								
Day 0	7.8	8.2						
Day 4	8.1	8.1						
EC (uS/cm)								
Day 0	371	1786						
Day 4	382	1559						
DO (mg/L) (**70-100% saturation at test temp.**)								
Day 0	8.0	8.6						
Day 4	8.6	8.6						
Temperature (°C) (range: **14-16°C**)								
Day 0	16	16						
Day 4	16	16						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.4	0.4
2	3.5	0.5
3	3.2	0.3
4	3.3	0.3
5	2.6	0.2
6	2.6	0.2
7	2.6	0.2
8	2.5	0.2
9	2.9	0.2
10	2.7	0.2

Loading Density (g/L): 0.2 (must be ≤0.5 g/L)
Mean Length (cm): 2.9
Length Range (cm): 2.5-3.5
Mean Weight (g): 0.3 (Must be ≥0.3g)
Weight Range: (g): 0.2-0.5

Test Organism Information

Batch 20220708TR
Source Trout Lodge
Tank # 2
Days Held at 15± 2°C 36 (must be ≥14 days)
Percent stock mortality 0.05 (7 days prior to test, must be <2%)
Test Volume (L) 18

Comments :
96h: pp + at the bottom of the tank

Reviewed By: CW Date Reviewed: SEP 16 2022

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC 164 Reference 2122-3397-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/08/31	1530	EPIAI	7	XC
1	2022/09/01	0749	AG	-	XC
2	2022/09/02	0950	AM	7	WM

Sample Information

Initial pH:	8.2
Initial EC (µS/cm):	1860
Salinity (ppt):	0

Lab Code	CTL A	CTL B	CTL C	100 A	100 B	100 C				

pH (units) (range: 6.0-8.5)

day										
0	7.9	7.9	7.9	8.1	8.1	8.2				
2	8.2	8.2	8.2	8.1	8.1	8.1				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	394	393	393	1826	1906	1921				
2	389	407	410	1779	1860	1892				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.9	7.9	7.9				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	20	20	20				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar Wed C2 Jar(s) mortality 7 days prior to test (must be ≤25%) 0

QA (previous month)

Days to first brood (≤12 days) 9

Average number of young produced (≥15 young) 31

Were test treatments randomized on test tray? (Yes) No

Control Validity Criteria

Mean % mortality at 48 hours - 0% (must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 8.8 Temperature (°C) of sample prior to aeration: 20

DO % of sample prior to aeration: 111 Is aeration required (<40% or >100%)? **Yes or No**

Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20min Filtered with 110um screen prior to testing **Yes or No**

Hardness (mg $CaCO_3$/L) of 100% : 970 Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —

Alkalinity of 100% sample (mg $CaCO_3$/L): 259

Dilution Water

Pail label / preparation date Pail 3:06130

Hardness of dilution water (mg/L) 154

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Comments/Observations:

0h: No ppt

48h: Surficial ppt. ppt on jars

Reviewed By: CW Date Reviewed: SEP 16 2022

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC 164 Reference 2122-3397-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/08/31	1520	EP/AH	2	~~KC~~
1	2022/09/01	0943	AG	-	~~KC~~
2	2022/09/02	1000	DM	2	WM

Sample Information

Initial pH:	8.2
Initial EC (µS/cm):	1960
Salinity (ppt):	0

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	8.0	7.9	7.9	8.1	8.1	8.1				
2	8.3	8.3	8.3	8.2	8.3	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	394	394	392	1902	1903	1927				
2	384	409	403	1843	1894	1924				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (l, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar Wed D3 Jar(s) mortality 7 days prior to test (must be ≤25%) 0

QA (previous month)

Days to first brood (≤12 days) 7

Average number of young produced (≥15 young) 37

Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - (must be ≤10%) 0

Sample

DO (mg/L) of sample prior to aeration: 9.4

Temperature (°C) of sample prior to aeration: 12

DO % of sample prior to aeration: 100

Is aeration required (<40% or >100%)? **Yes or (No)**

Duration of aeration (37.5 +/- 12.5 mL/min/L) : —

Filtered with 110um screen prior to testing **Yes or (No)**

Hardness (mg $CaCO_3$/L) of 100% : 970

Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or (No)**

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —

Alkalinity of 100% sample (mg $CaCO_3$/L): 259

Dilution Water

Pail label / preparation date Pail 4: 08/30

Hardness of dilution water (mg/L) 154

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

Comments/Observations:

0h: No ppt

48h: No ppt

Reviewed By: CM Date Reviewed: SEP 16 2022

NAUTILUS ENVIRONMENTAL

Daphnia 15°C Bench Sheet

Method DAS 15 Client TEC 164 Reference 2122-3397-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/08/31	1515	SPIAT	2	
1	2022/09/01	0745	AG	-	
2	2022/09/02	1005	DM	2	

Sample Information

Initial pH: 8.2
Initial EC (µS/cm): 1860
Salinity (ppt): 0

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	8.1	8.1	8.0	8.2	8.2	8.2				
2	8.2	8.2	8.2	8.0	8.1	8.1				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	407	392	393	1846	1899	1913				
2	374	391	392	1767	1840	1858				

DO (mg/L) (**40-100% saturation at test temp.**)

0	8.4	8.4	8.4	8.4	8.4	8.4				
2	8.4	8.4	8.4	8.4	8.4	8.4				

Temperature (°C) (range: **13-17 °C**)

0	17	17	17	17	17	17				
2	17	17	17	17	17	17				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar Wed D2 Jar(s) mortality 7 days prior to test (must be ≤25%) 5

QA (previous month)
Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 37
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0%
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 10.3
DO % of sample prior to aeration: 111
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20min
Hardness (mg $CaCO_3$/L) of 100% : 970
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 259

Temperature (°C) of sample prior to aeration: 17
Is aeration required (<40% or >100%)? **Yes or No**
Filtered with 110um screen prior to testing **Yes or No**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Dilution Water
Pail label / preparation date Pail 3: 08150
Hardness of dilution water (mg/L) 154

DO Levels (40-100% saturation) - corrected for altitude -
3.7 to 9.1 mg/L at 13°C
3.6 to 8.9 mg/L at 14°C
3.5 to 8.8 mg/L at 15°C
3.4 to 8.6 mg/L at 16°C
3.4 to 8.4 mg/L at 17°C

Comments/Observations:
0h: No ppt
48h: Slight ppt on jars

Reviewed By: CW Date Reviewed: SEP 16 2022

NAUTILUS ENVIRONMENTAL

Trout Bench Sheet

Method TRS Client TEC 164 Reference 2122-3397-02 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022/08/31	1420 *	KO/AM/CD	1	Form
1	2022/09/01	0820	CD	-	KO
2	2022/09/02	0830	ML	-	MAF
3	2022/09/03	0830	ML	-	MAF
4	2022/09/04	1040	ML	1	KO

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 8.0
Initial EC (µS/cm): 1750
Salinity (ppt): 2

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L (yes/no)

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	8.6	8.6			
Temp (°C) of 100%	16				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	7.6	7.9						
Day 4	8.1	8.1						
EC (uS/cm)								
Day 0	346	1663						
Day 4	350	1552						
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	8.0	8.6						
Day 4	8.6	8.6						
Temperature (°C) (range: 14-16°C)								
Day 0	16	16						
Day 4	16	16						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	2.9	0.3
2	2.5	0.2
3	3.5	0.5
4	3.4	0.4
5	3.0	0.3
6	3.3	0.4
7	3.5	0.5
8	3.6	0.6
9	3.9	0.6
10	3.7	0.6

Loading Density (g/L): 0.2 (must be ≤0.5 g/L)
Mean Length (cm): 3.3
Length Range (cm): 2.5-3.9
Mean Weight (g): 0.4 (Must be ≥0.3g)
Weight Range: (g): 0.2-0.6

Test Organism Information

Batch 20220708TR
Source Trout Lodge
Tank # 2
Days Held at 15± 2°C 36 (must be ≥14 days)
Percent stock mortality 0.05 (7 days prior to test, must be <2%)
Test Volume (L) 18

Comments :
96h: ppt on the bottom of tank

Reviewed By: CW Date Reviewed: SEP 16 2022

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC 164 Reference 2122-3397-02

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/08/31	1530	SP/AM	2	AC
1	2022/09/01	0749	AG	-	AC
2	2022/09/02	0950	DM	2	DM

Sample Information

Initial pH: 8.0
Initial EC (µS/cm): 1750
Salinity (ppt): 2

Lab Code	CTL A	CTL B	CTL C	100 A	100 B	100 C				

pH (units) (range: 6.0-8.5)

day										
0	8.0	7.9	7.9	7.8	7.9	7.9				
2	8.3	8.3	8.3	8.1	8.2	8.2				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	388	389	390	1742	1789	1810				
2	401	406	412	1718	1778	1799				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.9	7.9	7.9				
2	7.9	7.9	7.9	7.9	7.9	7.6				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	20	20	20				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar Wed (2 Jar(s) mortality 7 days prior to test (must be ≤25%) 0

QA (previous month)
Days to first brood (≤12 days) 9
Average number of young produced (≥15 young) 31
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0%
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 7.9
Temperature (°C) of sample prior to aeration: 20
DO % of sample prior to aeration: 100
Is aeration required (<40% or >100%)? Yes or (No)
Duration of aeration (37.5 +/- 12.5 mL/min/L) : -
Filtered with 110um screen prior to testing Yes or (No)
Hardness (mg $CaCO_3$/L) of 100% : 912
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) -
Alkalinity of 100% sample (mg $CaCO_3$/L): 220

Dilution Water
Pail label / preparation date Pail 3: 08/30
Hardness of dilution water (mg/L) 154

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Comments/Observations:
0h: No ppt
48h: Slight surficial ppt. ppt on jar.

Reviewed By: CW Date Reviewed: SEP 16 2022

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC 164 Reference 2122-3397-02

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/08/31	1525	EB/AI	2	ZC
1	2022/09/01	0744	AG	-	ZC
2	2022/09/02	1006	DM	2	KAM

Sample Information

Initial pH: 8.0
Initial EC (µS/cm): 1750
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	8.1	8.0	8.0	7.8	7.9	7.9				
2	8.2	8.2	8.2	8.1	8.3	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	410	392	393	1781	1800	1813				
2	374	389	397	1749	1792	1808				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar Wed D1 Jar(s) mortality 7 days prior to test (must be ≤25%) 5

QA (previous month)
Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 37
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0%
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 9.4 Temperature (°C) of sample prior to aeration: 12
DO % of sample prior to aeration: 100 Is aeration required (<40% or >100%)? Yes or (No)
Duration of aeration (37.5 +/- 12.5 mL/min/L) : - Filtered with 110um screen prior to testing Yes or (No)
Hardness (mg $CaCO_3$/L) of 100% : 912 Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) -
Alkalinity of 100% sample (mg $CaCO_3$/L): 220

Dilution Water
Pail label / preparation date Pail 3; 08/30
Hardness of dilution water (mg/L) 154

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

Comments/Observations:
0h: no ppt
48h: no ppt.

Reviewed By: CW Date Reviewed: SEP 16 2022

NAUTILUS ENVIRONMENTAL

Daphnia 15°C Bench Sheet

Method DAS 15 Client TEC 164 Reference 2122-3397-02

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/08/31	1510	CD/AT	2	ZC
1	2022/09/01	0944	AG	-	ZC
2	2022/09/02	1005	DM	2	DM

Sample Information

Initial pH: 8.0
Initial EC (µS/cm): 1750
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	8.2	8.1	8.1	7.8	7.9	7.9				
2	7.6	7.8	7.8	8.0	8.1	8.1				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	418	400	391	1734	1790	1605				
2	380	399	396	1735	1773	1787				

DO (mg/L) (**40-100% saturation at test temp.**)

0	8.4	8.4	8.4	8.4	8.4	8.4				
2	8.4	8.4	8.4	8.4	8.4	8.4				

Temperature (°C) (range: **13-17 °C**)

0	17	17	17	17	17	17				
2	17	17	17	17	17	17				

Number Alive (l, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar Med D4 Jar(s) mortality 7 days prior to test (must be ≤25%) 15

QA (previous month)
Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 37
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0%

Sample
DO (mg/L) of sample prior to aeration: 8.4
DO % of sample prior to aeration: 100
Duration of aeration (37.5 +/- 12.5 mL/min/L) : —
Hardness (mg $CaCO_3$/L) of 100% : 912
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 220

Temperature (°C) of sample prior to aeration: 17
Is aeration required (<40% or >100%)? **Yes or No**
Filtered with 110um screen prior to testing **Yes or No**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Dilution Water
Pail label / preparation date Pail 4: 08130
Hardness of dilution water (mg/L) 154

DO Levels (40-100% saturation) - corrected for altitude -
3.7 to 9.1 mg/L at 13°C
3.6 to 8.9 mg/L at 14°C
3.5 to 8.8 mg/L at 15°C
3.4 to 8.6 mg/L at 16°C
3.4 to 8.4 mg/L at 17°C

Comments/Observations:
0h: NO ppt
48h: NO ppt.

Reviewed By: CW Date Reviewed: SEP 16 2022

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS 5 Client TEC 164 Reference 2122-3397-03

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/08/31	1520	CP/AA	2	AC
1	2022/09/01	0750	AG	-	AC
2	2022/09/02	0950	DM	2	AC/DM

Sample Information

Initial pH: 8.0
Initial EC (µS/cm): 1750
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	7.7	7.8	7.8	7.7	7.8	7.8				
2	8.2	8.2	8.2	8.2	8.3	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	396	393	396	1722	1796	1805				
2	371	373	399	1707	1756	1792				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.7	7.7	7.7	7.9	7.9	7.9				
2	7.9	7.9	7.9	8.1 7.9 DM	7.4	7.9				

Temperature (°C) (range: **18-22 °C**)

0	21	21	21	20	20	20				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar Wed D3 Jar(s) mortality 7 days prior to test (must be ≤25%) 0

QA (previous month)
Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 37
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0%

Sample
DO (mg/L) of sample prior to aeration: 7.9
Temperature (°C) of sample prior to aeration: 20
DO % of sample prior to aeration: 100
Is aeration required (<40% or >100%)? **Yes or (No)**
Duration of aeration (37.5 +/- 12.5 mL/min/L) : —
Filtered with 110um screen prior to testing **Yes or (No)**
Hardness (mg $CaCO_3$/L) of 100% : 412
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or (No)**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 220

Dilution Water
Pail label / preparation date Pail 5: 08/30
Hardness of dilution water (mg/L) 154

Antiscalant
Final Concentration in Sample: 5mg/L
Volume of sample: 500mL Volume of antiscalant: 39.5uL

Comments/Observations:
0h: NO ppt
48h: No ppt.

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Reviewed By: CW Date Reviewed: SEP 16 2022

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS 5 Client TEC 164 Reference 2122-3397-04

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/08/31	1505	GP/AH	2	ZC
1	2022/09/01	0950	AG	-	ZC
2	2022/09/02	0950	DM	2	KM

Sample Information

Initial pH: ~~8.2~~ 8.0 cw
Initial EC (µS/cm): ~~1860~~ 1750
Salinity (ppt): ~~0~~ 2 cw

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	7.9	7.9	7.9	8.2	8.2	8.2				
2	8.3	8.3	8.3	8.2	8.3	8.4				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	380	391	396	1856	1902	1914				
2	385	399	404	1837	1899	1925				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.9	7.9	7.9				
2	7.7	7.7	7.7	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	20	20	20				
2	21	21	21	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar Wed C2 Jar(s) mortality 7 days prior to test (must be ≤25%) 0

QA (previous month)
Days to first brood (≤12 days) 9
Average number of young produced (≥15 young) 31
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0%

Sample
DO (mg/L) of sample prior to aeration: 9.2
Temperature (°C) of sample prior to aeration: 20
DO % of sample prior to aeration: 115
Is aeration required (<40% or >100%)? **Yes or No**
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20 min
Filtered with 110um screen prior to testing **Yes or No**
Hardness (mg $CaCO_3$/L) of 100% : ~~970~~ 912 cw
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): ~~259~~ 220 cw

Dilution Water
Pail label / preparation date Pail 3: 08/30
Hardness of dilution water (mg/L) 154

Antiscalant
Final Concentration in Sample: 5mg/L
Volume of sample: 500mL Volume of antiscalant: 39.5uL

Comments/Observations:
0h: No ppt
48h: No ppt.

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Reviewed By: cw Date Reviewed: SEP 16 2022

APPENDIX C – Chain-of-custody form

Teck

COC ID:	EVO NAUTILUS 2022-08-30	TURNAROUND TIME:		RUSH:	

PROJECT/CLIENT INFO

Facility Name / Job#	Elkview Operations		
Project Manager	Group 1; Brett Mason		
Email	Brett.Mason@teck.com		
Address	RR1 HWY 3		
City	Sparwood	Province	BC
Postal Code	V0B 2G0	Country	Canada
Phone Number	250-425-6179		

LABORATORY

Lab Name	Nautilus Environmental - BC		
Lab Contact			
Email	jacklyn@nautilusenvironmental.ca		
Address	10823 27th Street SE		
City	Calgary	Province	AB
Postal Code	T2H 2K1	Country	Canada
Phone Number	T2Z 3V9		

OTHER INFO

Report Format / Distribution		Excel	PDF	EDD
Email 1:	teckcoal@equisonline.com			X
Email 2:	DL-EVO-SRF-LAB@teck.com	X	X	X
Email 3:	[illegible]	X	X	X
Email 4:				
Email 5:				
Email 6:				
Email 7:				
Email 8:				
Email 9:				
Email 10:				
Email 11:				
Email 12:				
Email 13:				
PO number	VPO00842410			

SAMPLE DETAILS

2022/08/31
08:50
~~4x2~~ 8x20L carboys, 14x1L bottles
Manitoulin
JC/SRS/AC
NoS/NoI
Good Condition

ANALYSIS REQUESTED

Filtered - F: Field, L: Lab, FL: Field & Lab, N: None

Sample ID 2122-3397	Sample Location (sys_loc_code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	48hr Daphnia Magna Single Concentration Acute Toxicity 20C	48hr Daphnia Magna Single Concentration Acute Toxicity 10C	48hr Daphnia Magna Single Concentration Acute Toxicity Anitscalent	96hr Rainbow Trout Single Concentration Acute Toxicity (10 L Bladder)	96hr Rainbow Trout Single Concentration Acute Toxicity (20 L Bladder)	48hr Daphnia Magna Single Concentration Toxicity 15C	~~48hr Daphnia Magna Single Concentration Acute Toxicity 15C~~	CW
EV_GT1_WS_2022-08-30_N-SRF -01	EV_GT1	WS		2022-08-30	9:50	G	10	2	2		15.5°C	4	1	1	
EV_BC1_WS_2022-08-30_N-SRF -02	EV_BC1	WS		2022-08-30	11:00	G	10	2	2		18.5°C	4	1	1	
EV_BC1_WS_2022-08-30_N-SRF-AS -03	EV_BC1	WS		2022-08-30	11:01	G	1			1	18.5°C				
EV_GT1_WS_2022-08-30_N-SRF-AS -04	EV_GT1	WS		2022-08-30	9:51	G	1			1	15.5°C				

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME
Field Temperatures	AN LIVINGSTON - TEK	August 30, 2022		
	[signature]	1300		

SERVICE REQUEST (rush - subject to availability)

Regular (default)	X
Priority (2-3 business days) - 50% surcharge	
Emergency (1 Business Day) - 100% surcharge	
For Emergency <1 Day, ASAP or Weekend - Contact ALS	

Sampler's Name	Carter Phillips	Mobile #	
Sampler's Signature	Carter Phillips	Date/Time	August 30, 2022

Confirmation Email
Sept. 7, 2022 only one
15 degree Daphnia test.
(DAS15)

END OF REPORT

Acute Toxicity Test Results

Samples collected September 5, 2022

Final Report

October 12, 2022

Submitted to: **Teck Coal Ltd.**
Sparwood, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates					
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation	*Daphnia magna* antiscalant test initiation
F2_BPO_WG_2022-09-05_N / 2223-0047-01	5-Sept-22 at 0800h	6-Sept-22 at 1530h	7-Sept-22 at 1420h	7-Sept-22 at 1415h	7-Sept-22 at 1425h	-
F2_BPO_WG_2022-09-05_N-AS / 2223-0047-02	5-Sept-22 at 0801h	6-Sept-22 at 1530h	-	-	-	7-Sept-22 at 1445h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
F2_BPO_WG_2022-09-05_N	11.3°C	1124	331
F2_BPO_WG_2022-09-05_N-AS	11.3°C	1124	331

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)
- *Daphnia magna* 48-h single concentration screening test (conducted with 20 mg/L antiscalant)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample			
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
F2_BPO_WG_2022-09-05_N	100	100	100	-
F2_BPO_WG_2022-09-05_N-AS	-	-	-	100

Sample ID	Percent Immobility in 100 (% v/v)		
	Daphnia magna 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
F2_BPO_WG_2022-09-05_N	0	10	-
F2_BPO_WG_2022-09-05_N-AS	-	-	0

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
F2_BPO_WG_2022-09-05_N	Rainbow trout	Precipitate observed on the test vessel	None
	Daphnia magna	Surficial precipitate observed: Precipitate observed on test vessels in the 20°C test	None
F2_BPO_WG_2022-09-05_N-AS	*Daphnia magna*	None	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	4.0 (3.5-4.4) g/L KCl[1]	6.9 (6.6 - 7.2) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.6 (2.7-4.8) g/L KCl	6.1 (5.2 - 7.2) g/L NaCl
Reference toxicant CV	9.4%	5.5%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, August 30, 2022; [2] Test date, September 21, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation



Report By:
Aishah Iqbal, BSc
Laboratory Biologist



Reviewed By:
Emma Marus, BSc
Biologist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Control/dilution water for antiscalant test	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L), Na_2SeO_4 (2 µg Se/L) and 20 mg/L antiscalant
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS ENVIRONMENTAL

Trout Bench Sheet

Method TRS Client TEC 164 Reference 2223-0047-01 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022/09/07	1420 *	ML/KO/CD	1/7 MB	MM
1	2022/09/08	0750	CD	-	JC
2	2022/09/09	0730	CD	-	JC
3	2022/09/10	0730	CD	-	JC
4	2022/09/11	0800	AI/KM/ML	1/7	NA

Sample Information

Initial pH: 7.8
Initial EC (µS/cm): 1557
Salinity (ppt): 2

Note: * ; time when the test was loaded with fish

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L **yes/no**

	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
Preaeration time					
DO(mg/L) of 100%	8.4	8.6			
Temp (°C) of 100%	16				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: **5.5-8.5**)								
Day 0	8.1	7.5						
Day 4	8.1	8.4						
EC (uS/cm)								
Day 0	387	1953						
Day 4	397	1881						
DO (mg/L) (**70-100% saturation at test temp.**)								
Day 0	8.6	8.6						
Day 4	8.6	8.6						
Temperature (°C) (range: **14-16°C**)								
Day 0	16	16						
Day 4	16	16						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10(1)	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.1	0.3
2	2.8	0.2
3	3.3	0.4
4	3.2	0.3
5	3.0	0.3
6	3.2	0.3
7	3.1	0.3
8	3.1	0.3
9	3.4	0.4
10	3.4	0.6

Loading Density (g/L): 0.2 (must be ≤0.5 g/L)
Mean Length (cm): 3.2
Length Range (cm): 2.8-3.4
Mean Weight (g): 0.3 (Must be ≥0.3g)
Weight Range: (g): 0.2-0.6

Test Organism Information

Batch 20220708TR
Source Trout Lodge
Tank # 1
Days Held at 15± 2°C 43 (must be ≥14 days)
Percent stock mortality 0.05 (7 days prior to test, must be <2%)
Test Volume (L) 16 ~~18~~ mL

Comments :
96 hrs ppt on the bottom of tank

Reviewed By: ML Date Reviewed: 2022/09/19

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC164 Reference 2223-0047-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/09/07	1425	AI/BS	2	EP
1	2022/09/08	0930	DM	-	AC
2	2022/09/09	0930	DM	2	NA

Sample Information

Initial pH: 7.8
Initial EC (µS/cm): 1887
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	7.7	7.8	7.8	7.6	7.6	7.6				
2	8.4	8.4	8.4	8.6	8.6	8.5				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	398	398	401	1912	1949	1969				
2	400	401	402	1875	1881	1901				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.9	7.9	7.9				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	20	20	20				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10(2i)	10(1i)				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar Bed C5 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 35
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0%
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 7.9
DO % of sample prior to aeration: 100
Duration of aeration (37.5 +/- 12.5 mL/min/L): -
Hardness (mg $CaCO_3$/L) of 100% : 1124
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) -
Alkalinity of 100% sample (mg $CaCO_3$/L): 331

Temperature (°C) of sample prior to aeration: 20
Is aeration required (<40% or >100%)? **Yes or No**
Filtered with 110um screen prior to testing **Yes or No**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Dilution Water
Pail label / preparation date Pail 2:09/05
Hardness of dilution water (mg/L) 165

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Comments/Observations:
0 hr: No ppt
48 hr: Surficial ppt - ppt on jar.

Reviewed By: MM Date Reviewed: 2022/09/19

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC164 Reference 2223-0047-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/09/07	1415	AI/BS	2	EP
1	2022/09/08	0900	D.-I	-	JC
2	2022/09/09	0930	DM	2	NA

Sample Information

Initial pH: 7.8
Initial EC (µS/cm): 1887
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	7.6	7.6	7.6	7.5	7.5	7.5				
2	8.5	8.4	8.4	8.5	8.5	8.5				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	399	394	399	1935	1967	1964				
2	419	402	404	1843	1934	1941				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar Wed C5 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 35
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0%
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 9.4
Temperature (°C) of sample prior to aeration: 12
DO % of sample prior to aeration: 100
Is aeration required (<40% or >100%)? Yes or (No)
Duration of aeration (37.5 +/- 12.5 mL/min/L) : —
Filtered with 110um screen prior to testing Yes or (No)
Hardness (mg $CaCO_3$/L) of 100% : 1124
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 331

Dilution Water
Pail label / preparation date Pail 2: 09/05
Hardness of dilution water (mg/L) 165

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

Comments/Observations:
0 hr: No ppt
48 hr: NO ppt.

Reviewed By: WG Date Reviewed: 2022/09/14

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS 20 Client TEC164 Reference 2223-0047-02

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/09/07	1445	AI/BS	2	EP
1	2022/09/08	0900	DM	-	JC
2	2022/09/09	0830	DM	2	NA

Sample Information

Initial pH: 7.8
Initial EC (µS/cm): 1887
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	8.0	8.0	8.0	7.7	7.7	7.7				
2	8.2	8.3	8.3	8.6	8.6	8.6				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	395	401	401	1879	1956	1928				
2	390	402	401	1821	1883	1871				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.9	7.9	7.9				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	20	20	20				
2	20	20	20	20	20	20				

Number Alive (l, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar wed D3 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 9
Average number of young produced (≥15 young) 39
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0%

Sample

DO (mg/L) of sample prior to aeration: 7.9
DO % of sample prior to aeration: 100
Duration of aeration (37.5 +/- 12.5 mL/min/L) : -
Hardness (mg $CaCO_3$/L) of 100% : 1124
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) -
Alkalinity of 100% sample (mg $CaCO_3$/L): 331

Temperature (°C) of sample prior to aeration: 20
Is aeration required (<40% or >100%)? Yes or (No)
Filtered with 110um screen prior to testing Yes or (No)
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)

Dilution Water
Pail label / preparation date Pail2:09/05
Hardness of dilution water (mg/L) 165

Antiscalant
Final Concentration in Sample: 20 mg/L
Volume of sample: 500mL Volume of antiscalant: 158uL

Comments/Observations:
0 hr: No ppt
48 hr: No ppt.

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Reviewed By: ML Date Reviewed: 2022/09/19

APPENDIX C – Chain-of-custody form

Teck

COC ID: F2 NAUTILUS - 2022-09-05 | **TURNAROUND TIME:** | **RUSH:**

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO			
Facility Name / Job#	F2 SRF			Lab Name	Nautilus Environmental - BC			Report Format / Distribution		Excel	PDF	EDD
Project Manager	BRETT MASON			Lab Contact				Email 1:	Cole.Macgregor@teck.com	X	X	X
Email	BRETT.MASON@TECK.COM			Email	jacklyn@nautilusenvironmental.ca			Email 1:	teckcoal@equisonline.com			X
Address	RR1 HWY 3			Address	10823 27th Street SE			Email 2:	DL-EVO-SRF-LAB@teck.com	X	X	X
								Email 3:				
City	Sparwood	Province	BC	City	Calgary	Province	AB	Email 4:				
								Email 5:				
								Email 6:				
								Email 7:				
								Email 8:				
								Email 10:				
								Email 11:				
								Email 12:				
								Email 13:				
Postal Code	V0B 2G0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada					
Phone Number	250-425-6179			Phone Number	403-253-7121			PO number	VPO00842410			

SAMPLE DETAILS | **ANALYSIS REQUESTED** | Filtered - F: Field, L: Lab, FL: Field & Lab, N: None

2022/09/08
15:30
Manitou Lin
SC
4x20L Jugs, 5x1L bottles
NoS/NoI
Good Condition
11.3°C

Sample ID	Sample Location (sys loc code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	Fil.	J	48hr Daphnia Magna Single Concentration Acute Toxicity 20C	48hr Daphnia Magna Single Concentration Acute Toxicity 10C	48hr Daphnia Magna Single Concentration Acute Toxicity Antiscalent	96hr Rainbow Trout Single Concentration Acute Toxicity (20L Bladders)	48hr Daphnia Magna Single Concentration Toxicity 15C
								ANALYSIS						
F2_BPO_WG_2022-09-05_N - 01	F2_BPO	WG		2022-09-05	8:00	G	8			2	2		4	
F2_BPO_WG_2022-09-05_N-AS - 02	F2_BPO	WG		2022-09-05	8:01	G	1					1		

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME
		September 5, 2022		

SERVICE REQUEST (rush - subject to availability)

Regular (default)	X
Priority (2-3 business days) - 50% surcharge	
Emergency (1 Business Day) - 100% surcharge	
For Emergency <1 Day, ASAP or Weekend - Contact ALS	

Sampler's Name		Mobile #	
Sampler's Signature		Date/Time	September 5, 2022

END OF REPORT

Acute Toxicity Test Results

Samples collected September 12, 2022

Final Report

October 15, 2022

Submitted to: **Teck Coal Ltd.**
Sparwood, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates					
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation	*Daphnia magna* antiscalant test initiation
EV_EC1_WS_2022-09-12_N-SRF / 2223-0122-01	12-Sep-22 at 1020h	13-Sep-22 at 0900h	13-Sep-22 at 1435h	13-Sep-22 at 1500h	13-Sep-22 at 1500h	
EV_EC1_WS_2022-09-12_N-SRF-AS / 2223-0122-02	12-Sep-22 at 1021h	13-Sep-22 at 0900h				13-Sep-22 at 1505h
EV_ECOUT_WS_2022-09-12_N-SRF / 2223-0122-03	12-Sep-22 at 1310h	13-Sep-22 at 0900h	13-Sep-22 at 1540h	13-Sep-22 at 1510h	13-Sep-22 at 1505h	
EV_ECOUT_WS_2022-09-12_N-SRF-AS / 2223-0122-04	12-Sep-22 at 1311h	13-Sep-22 at 0900h				13-Sep-22 at 1510h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
EV_EC1_WS_2022-09-12_N-SRF	13.3°C	1047	301
EV_EC1_WS_2022-09-12_N-SRF-AS	13.3°C	1047	301
EV_ECOUT_WS_2022-09-12_N-SRF	12.1°C	1114	423
EV_ECOUT_WS_2022-09-12_N-SRF-AS	12.1°C	1114	423

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)
- *Daphnia magna* 48-h single concentration screening test (conducted with 5 mg/L antiscalant)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample			
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
EV_EC1_WS_2022-09-12_N-SRF	100	100	100	
EV_EC1_WS_2022-09-12_N-SRF-AS				100
EV_ECOUT_WS_2022-09-12_N-SRF	90	93	100	
EV_ECOUT_WS_2022-09-12_N-SRF-AS				100

Sample ID	Percent Immobility in 100 (% v/v)		
	Daphnia magna 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
EV_EC1_WS_2022-09-12_N-SRF	0	0	
EV_EC1_WS_2022-09-12_N-SRF-AS			0
EV_ECOUT_WS_2022-09-12_N-SRF	10	0	
EV_ECOUT_WS_2022-09-12_N-SRF-AS			0

Precipitate observations

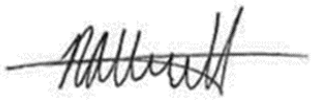
Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
EV_EC1_WS_2022-09-12_N-SRF	Rainbow trout	Precipitate observed on the test vessel	None
	Daphnia magna	Surficial precipitate observed in the 20°C test	None
EV_EC1_WS_2022-09-12_N-SRF-AS	*Daphnia magna*	None	None
EV_ECOUT_WS_2022-09-12_N-SRF	Rainbow trout	Precipitate observed on the test vessel	None
	Daphnia magna	Surficial precipitate observed	None
EV_ECOUT_WS_2022-09-12_N-SRF-AS	*Daphnia magna*	Surficial precipitate observed	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	4.0 (3.5-4.4) g/L KCl[1]	6.5 (6.0 - 7.0) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.6 (2.7-4.8) g/L KCl	6.1 (5.2 - 7.2) g/L NaCl
Reference toxicant CV	9.4%	5.3%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, August 30, 2022; [2] Test Date, September 7, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation



Report By:
Naomi Attrill
Biologist



Reviewed By:
Emma Marus, BSc
Biologist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Control/dilution water for antiscalant test	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L), Na_2SeO_4 (2 µg Se/L) and 5 mg/L antiscalant
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC 164 Reference 2223-0122-01 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022-09-13	1435 *	ML/CD/KO	117 ~~07-Jan~~	ML YC
1	2022-09-14	0900	AL	-	MAF
2	2022-09-15	0830	CD	-	YC
3	2022-09-16	0900	CD	-	YC
4	2022-09-17	0920	CD/AM	117	NA

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 7.9
Initial EC (µS/cm): ~~1760~~ 1745 MF
Salinity (ppt): 3

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L : **yes/no**

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	8.8	8.8			
Temp (°C) of 100%	15				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: **5.5-8.5**)								
Day 0	7.7	8.0						
Day 4	8.3	8.4						
EC (uS/cm)								
Day 0	414	1760						
Day 4	405	1689						
DO (mg/L) (**70-100% saturation at test temp.**)								
Day 0	8.6	8.8						
Day 4	8.6	8.6						
Temperature (°C) (range: **14-16°C**)								
Day 0	16	15						
Day 4	16	16						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10 (1)						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.1	0.3
2	3.3	0.5
3	3.1	0.4
4	3.0	0.3
5	3.2	0.4
6	2.4	0.3
7	3.0	0.3
8	2.9	0.2
9	2.8	0.2
10	2.3	0.2

Loading Density (g/L): 0.2 (must be ≤0.5 g/L)
Mean Length (cm): 3.0
Length Range (cm): 2.3-3.3
Mean Weight (g): 0.3 (Must be ≥0.3g)
Weight Range: (g): 0.2 - 0.5

Test Organism Information

Batch 20220708TR
Source Trout Lodge
Tank # 1
Days Held at 15± 2°C 49 (must be ≥14 days)
Percent stock mortality 0.31 (7 days prior to test, must be <2%)
Test Volume (L) 18

Comments :
96 hrs PPT on tank

Reviewed By: AF for LO Date Reviewed: 2022/09/25

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC 164 Reference 2223-0122-03 ML Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022-09-13	1540 *	ML/CD/KO	117 07-Jan	ML YC
1	2022-09-14	0900	AL	-	MAC
2	2022-09-15	0830	CD	-	YC
3	2022-09-16	0900	CD	-	YC
4	2022-09-17	0920	CD/AM	117	NA

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 7.6
Initial EC (µS/cm): 1872
Salinity (ppt): 2

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L (yes/no)

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	8.8	8.8			
Temp (°C) of 100%	15				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: **5.5-8.5**)								
Day 0	7.8	7.8						
Day 4	8.3	8.1						
EC (uS/cm)								
Day 0	405	1891						
Day 4	403	1852						
DO (mg/L) (**70-100% saturation at test temp.**)								
Day 0	8.6	8.8						
Day 4	8.6	8.2						
Temperature (°C) (range: **14-16°C**)								
Day 0	16	15						
Day 4	16	16						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10(1)	9						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.1	0.4
2	2.8	0.2
3	2.8	0.2
4	3.0	0.3
5	3.0	0.4
6	3.0	0.3
7	3.1	0.4
8	3.3	0.4
9	2.9	0.3
10	2.7	0.2

Loading Density (g/L): 0.2 (must be ≤0.5 g/L)
Mean Length (cm): 3.0
Length Range (cm): 2.7-3.3
Mean Weight (g): 0.3 (Must be ≥0.3g)
Weight Range: (g): 0.2-0.4

Test Organism Information

Batch 20220708TR
Source Trout Lodge
Tank # 1
Days Held at 15± 2°C 49 (must be ≥14 days)
Percent stock mortality 0.31 (7 days prior to test, must be <2%)
Test Volume (L) 18

Comments :
96 hrs PPT on tank

Reviewed By: AF for LO Date Reviewed: 2022/09/25

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC164 Reference 2223-0122-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/09/13	1500	AG/KTM	2	DM
1	2022/09/14	0820	BS	-	MAP
2	2022/09/15	0950	BS	2	DM

Sample Information

Initial pH: 7.9
Initial EC (µS/cm): 1745
Salinity (ppt): 3

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5) 8.0

day										
0	8.3	8.2	8.2	~~8.3~~ AG	~~8.2~~ MA	8.0				
2	8.4	8.4	8.3	8.0	8.0	8.0				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm) 1742 / 1754

0	394	405	404	~~399~~ AG	~~405~~ MA	1751				
2	414	414	410	1593	1673	1696				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.7	7.7	7.7	7.7	7.7	7.7				
2	7.5	7.5	7.5	7.5	7.5	7.5				

Temperature (°C) (range: **18-22 °C**)

0	21	21	21	21	21	21				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar Wed D2 Jar(s) mortality 7 days prior to test (must be ≤25%) 0

QA (previous month)
Days to first brood (≤12 days) 9
Average number of young produced (≥15 young) 41
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0%
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 9.7 Temperature (°C) of sample prior to aeration: 19°C
DO % of sample prior to aeration: 119 % Is aeration required (<40% or >100%)? (Yes) or No AG
Duration of aeration (37.5 +/- 12.5 mL/min/L): ~~1047~~ Filtered with 110um screen prior to testing Yes or (No)
Hardness (mg $CaCO_3$/L) of 100% : 1047 um 20 mm Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 201

Dilution Water
Pail label / preparation date 2:09/09
Hardness of dilution water (mg/L) 175

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Comments/Observations:
0 hr: nppt
48 hr: Surficial ppt

Reviewed By: AF for LO Date Reviewed: 2022/09/25

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC164 Reference 2223-0122-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/09/13	1500	AG/KTM	2	DM
1	2022/09/14	0750	BS	-	DM
2	2022/09/15	0830	BS	2	DM

Sample Information

Initial pH: 7.9
Initial EC (µS/cm): 1745
Salinity (ppt): 3

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	8.2	8.2 ~~407~~	8.2	8.0	8.0	8.0				
2	7.7	7.7	7.6	8.0	8.0	8.0				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	407	408	408	1455	1745	1746				
2	402	410	410	1636	1699	1713				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.3	~~8.35~~ 9.4	9.4	9.2	9.2	9.2				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (l, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar WED C4 Jar(s) mortality 7 days prior to test (must be ≤25%) 10

QA (previous month)
Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 54
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0%
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 10.3
DO % of sample prior to aeration: 113
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20mm
Hardness (mg $CaCO_3$/L) of 100% : 1047
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) ~
Alkalinity of 100% sample (mg $CaCO_3$/L): 381

Temperature (°C) of sample prior to aeration: 12
Is aeration required (<40% or >100%)? **Yes or No**
Filtered with 110um screen prior to testing **Yes or (No)**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or (No)**

Dilution Water
Pail label / preparation date 2:09/09
Hardness of dilution water (mg/L) 175

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

Comments/Observations:
0 hr: 1ppt
48 hr: No ppt

Reviewed By: AF for LO Date Reviewed: 2022/09/25

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS 5 Client TEC164 Reference 2223-0122-02

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/09/13	1505	AG/KTM	2	DM
1	2022/09/14	0820	BS	-	MAF
2	2022/09/15	0950	BS	2	DM

Sample Information

Initial pH: 7.9
Initial EC (µS/cm): 1745
Salinity (ppt): 3

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	8.0	8.0	8.0	8.0	8.1	8.2				
2	8.2	8.1	8.1	8.0	8.2	8.2				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	418	411	410	1682	1741	1739				
2	403	409	410	1624	1715	1705				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.7	7.7	7.7	7.9	7.9	7.9				
2	7.5	7.5	7.5	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	21	21	21	20	20	20				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar Wed D2 Jar(s) mortality 7 days prior to test (must be ≤25%) 0

QA (previous month)
Days to first brood (≤12 days) 9
Average number of young produced (≥15 young) 41
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0%

Sample

DO (mg/L) of sample prior to aeration: 9.94 AF
DO % of sample prior to aeration: 119
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20mm
Hardness (mg $CaCO_3$/L) of 100% : 1647
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 301

Temperature (°C) of sample prior to aeration: 18
Is aeration required (<40% or >100%)? Yes or (No) AA
Filtered with 110um screen prior to testing Yes or (No)
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)

Dilution Water
Pail label / preparation date 2:09/09
Hardness of dilution water (mg/L) 175

Antiscalant
Final Concentration in Sample: 5 mg/L
Volume of sample: 500ml Volume of antiscalant: 39.5ml

Comments/Observations:
0 hr: no ppt
48 hr: no ppt

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Reviewed By: AF for LO Date Reviewed: 2022/09/25

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC164 Reference 2223-0122-03

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/09/13	1505	AG/KTM	2	DM
1	2022/09/14	0810	BS	-	MAF
2	2022/09/15	0955	BS	2	DM

Sample Information

Initial pH: 7.6
Initial EC (µS/cm): 1872
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	8.2	8.1	8.1	7.9	7.9	8.0				
2	8.4	8.3	8.2	7.9	7.9	7.9				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	413	408	407	1817	1867	1872				
2	403	407	408	1679	1751	1767				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.7	7.7	7.7	7.9	7.9	7.9				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	21	21	21	20	20	20				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar WedCS1DS Jar(s) mortality 7 days prior to test (must be ≤25%) 3/.

QA (previous month)

Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 40
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - 0%
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 9.8
Temperature (°C) of sample prior to aeration: 18
DO % of sample prior to aeration: 117
Is aeration required (<40% or >100%)? (Yes or No) AF
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20mm
Filtered with 110um screen prior to testing (Yes or No)
Hardness (mg $CaCO_3$/L) of 100% : 1114
Is hardness adjustment required (<25 mg $CaCO_3$/L)? (Yes or No)
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 423

Dilution Water

Pail label / preparation date 2:09/09
Hardness of dilution water (mg/L) 175

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Comments/Observations:

0 hr: repot
48 hr: Survival ppt

Reviewed By: AF for LO Date Reviewed: 2022/09/25

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC164 Reference 2223-0122-03

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/09/13	1510	AG/KTM	2	DM
1	2022/09/14	0745	BS	-	MAF
2	2022/09/15	0830	BS	2	DM

Sample Information

Initial pH: 7.6
Initial EC (µS/cm): 1872
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	8.3	8.2	8.2	8.2	8.3	8.4				
2	8.2	8.1	8.1	7.8	7.8	7.8				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	407	408	408	1790	1845	1857				
2	420	412	415	1686	1773	1767				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.2	9.2	9.3	9.5	9.5	9.5				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	9	9	10(1↓)				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar IWCD D2 Jar(s) mortality 7 days prior to test (must be ≤25%) 0

QA (previous month)

Days to first brood (≤12 days) 9
Average number of young produced (≥15 young) 41
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - 0%
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 10.0
DO % of sample prior to aeration: 110
Duration of aeration (37.5 +/- 12.5 mL/min/L): 20mm
Hardness (mg $CaCO_3$/L) of 100% : 1114
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 423

Temperature (°C) of sample prior to aeration: 12
Is aeration required (<40% or >100%)? (Yes) or No
Filtered with 110um screen prior to testing Yes or (No)
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)

Dilution Water

Pail label / preparation date 2:09/09
Hardness of dilution water (mg/L) 175

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

Comments/Observations:

0 hr: Normal
48 hr: Surficial ppt.

Reviewed By: AF for LO Date Reviewed: 2022/09/25

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS 5 Client TEC164 Reference 2223-0122-04

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/09/13	1510	AG/KTM	2	DM
1	2022/09/14	0810	BS	-	MMF
2	2022/09/15	1000	BS	2	DM

Sample Information

Initial pH:	7.6
Initial EC (µS/cm):	1872
Salinity (ppt):	2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	8.3	8.3	8.2	8.0	8.0	8.1				
2	8.2	8.2	8.1	8.0	8.1	8.1				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	411	411	410	1781	1767	1866				
2	414	412	414	1709	1787	1791				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.7	7.7	7.7	7.9	7.9	7.9				
2	7.4	7.4	7.4	7.3	7.3	7.3				

Temperature (°C) (range: **18-22 °C**)

0	21	21	21	20	20	20				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar Week D2 Jar(s) mortality 7 days prior to test (must be ≤25%) 0

QA (previous month)

Days to first brood (≤12 days) 9

Average number of young produced (≥15 young) 41

Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - (must be ≤10%) 0%

Sample

DO (mg/L) of sample prior to aeration: 9.68 Temperature (°C) of sample prior to aeration: 18

DO % of sample prior to aeration: 115 Is aeration required (<40% or >100%)? (Yes) or No

Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20mm Filtered with 110um screen prior to testing (Yes) or No

Hardness (mg $CaCO_3$/L) of 100% : 114 Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —

Alkalinity of 100% sample (mg $CaCO_3$/L): 423

Dilution Water

Pail label / preparation date 2:09/09

Hardness of dilution water (mg/L) 175

Antiscalant

Final Concentration in Sample: 5 mg/L

Volume of sample: 500mL Volume of antiscalant: 39.5mL

Comments/Observations:

0 hr: hoppt

48 hr: Surficial ppt-

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Reviewed By: AF for LO Date Reviewed: 2022/09/25

APPENDIX C – Chain-of-custody form

Teck

COC ID: EVO NAUTILUS 2022-09-12 | TURNAROUND TIME: | RUSH:

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name / Job#	Elkview Operations			Lab Name	Nautilus Environmental - BC			Report Format / Distribution		Excel	PDF	EDD
Project Manager	Group 1; Brett Mason			Lab Contact				Email 1:	Cole.Macgregor@teck.com	X	X	X
Email	Brett.Mason@teck.com			Email	jacklyn@nautilusenvironmental.ca			Email 2:	teckcoal@equisonline.com			X
Address	RR1 HWY 3			Address	10823 27th Street SE			Email 3:	DL-EVO-SRF-LAB@teck.com	X	X	X
								Email 4:				
City	Sparwood	Province	BC	City	Calgary	Province	AB	Email 5:				
								Email 6:				
								Email 7:				
								Email 8:				
								Email 9:				
								Email 10:				
								Email 11:				
								Email 12:				
								Email 13:				
Postal Code	V0B 2G0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada					
Phone Number	250-425-6179			Phone Number	403-253-7121			PO number	VPO00842410			

2022/09/13
09:00
Manitoulin
3C/5RS
8x10L carboys, 4x20L carboys
10x1L bottles
NoS/NoG
Good Condition

SAMPLE DETAILS / **ANALYSIS REQUESTED** (Filtered - F: Field, L: Lab, FL: Field & Lab, N: None)

Sample ID 2223-0122	Sample Location (sys_loc_code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	FIL.	PRESERV.	ANALYSIS: 48hr Daphnia Magna Single Concentration Acute Toxicity 20C	48hr Daphnia Magna Single Concentration Acute Toxicity 10C	48hr Daphnia Magna Single Concentration Acute Toxicity Antiscalent	96hr Rainbow Trout Single Concentration Acute Toxicity (20 L Bladder)	96hr Rainbow Trout Single Concentration Acute Toxicity (10 L Bladder)	48hr Daphnia Magna Single Concentration Toxicity 15C					
EV_EC1_WS_2022-09-12_N-SRF -01	EV_EC1	WS		2022-09-12	10:20	G	12			2	2			8	13.5°C					
EV_EC1_WS_2022-09-12_N-SRF-AS -02	EV_EC1	WS		2022-09-12	10:21	G	1					1			↓					
EV_ECOUT_WS_2022-09-12_N-SRF -03	EV_ECOUT	WS		2022-09-12	13:10	G	8			2	2		4		12.1°C					
EV_ECOUT_WS_2022-09-12_N-SRF-AS -04	EV_ECOUT	WS		2022-09-12	13:11	G	1					1			↓					

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME
Field Temperatures ECOUT:	James Winter - Tech	September 12, 2022 1550		

SERVICE REQUEST (rush - subject to availability)

Regular (default)	X
Priority (2-3 business days) - 50% surcharge	
Emergency (1 Business Day) - 100% surcharge	
For Emergency <1 Day, ASAP or Weekend - Contact ALS	

Sampler's Name	Carter Phillips	Mobile #	
Sampler's Signature	Carter Phillips	Date/Time	September 12, 2022

END OF REPORT

Acute Toxicity Test Results

Samples collected September 12, 2022

Final Report

October 14, 2022

Submitted to: **Teck Coal Ltd.**
Sparwood, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates					
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation	*Daphnia magna* 20 mg/L antiscalant test initiation
F2_BPO_WG_2022-09-12_N / 2223-0123-01	12-Sept-22 at 0830h	13-Sept-22 at 0900h	13-Sept-22 at 1430h	13-Sept-22 at 1515h	13-Sept-22 at 1515h	-
F2_BPO_WG_2022-09-12_N-AS / 2223-0123-02	12-Sept-22 at 0831h	13-Sept-22 at 0900h	-	-	-	13-Sept-22 at 1520h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
F2_BPO_WG_2022-09-12_N	15.4°C	987	339
F2_BPO_WG_2022-09-12_N-AS	15.4°C	987	339

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)
- *Daphnia magna* 48-h single concentration screening test (conducted with 20 mg/L antiscalant)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample			
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* 20 mg/L antiscalant
F2_BPO_WG_2022-09-12_N	100	100	100	-
F2_BPO_WG_2022-09-12_N-AS	-	-	-	100

Sample ID	Percent Immobility in 100 (% v/v)		
	Daphnia magna 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* 20 mg/L antiscalant
F2_BPO_WG_2022-09-12_N	0	0	-
F2_BPO_WG_2022-09-12_N-AS	-	-	0

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
F2_BPO_WG_2022-09-12_N	Rainbow trout	None	None
	Daphnia magna	None	None
F2_BPO_WG_2022-09-12_N-AS	*Daphnia magna*	None	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	4.0 (3.5-4.4) g/L KCl[1]	6.9 (6.6 - 7.2) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.6 (2.7-4.8) g/L KCl	6.1 (5.2 - 7.2) g/L NaCl
Reference toxicant CV	9.4%	5.5%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, August 30, 2022; [2] Test Date September 21, 2022

LC = Lethal Concentration; CL = Confidence Limits, SD = Standard Deviation; CV = Coefficient of Variation

Report By:
Aishah Iqbal, BSc
Laboratory Biologist

Reviewed By:
Mimi Tran, Dipl. T.
Biologist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Control/dilution water for antiscalant test	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L), Na_2SeO_4 (2 µg Se/L) and 20 mg/L antiscalant
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC 164 Reference 2223-0123-01 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022-09-13	1430 *	ML/CD/KO	117 ~~07-Jan~~	ML JC
1	2022-09-14	0900	AH	-	MAH
2	2022-09-15	0930	CH	-	JC
3	2022-09-16	0830	CD	-	JC
4	2022-09-17	0920	CD/AM	117	NA

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 7.4
Initial EC (µS/cm): 1952
Salinity (ppt): 3

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L (yes/no)

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	8.6	8.6			
Temp (°C) of 100%	16				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	7.7	7.7						
Day 4	8.3	8.6						
EC (uS/cm)								
Day 0	405	2030						
Day 4	400	1892						
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	8.6	8.6						
Day 4	8.6	8.6						
Temperature (°C) (range: 14-16°C)								
Day 0	16	16						
Day 4	16	16						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	~~10~~ *	10						
Day 3	10(1)	10						
Day 4	10	10						

CD 10(1) *

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.4	0.5
2	3.2	0.4
3	3.4	0.5
4	3.4	0.4
5	3.0	0.3
6	3.0	0.3
7	3.0	0.3
8	3.2	0.3
9	2.4	0.2
10	2.8	0.2

Loading Density (g/L): 0.2 (must be ≤0.5 g/L)
Mean Length (cm): 3.1
Length Range (cm): 2.8-3.4
Mean Weight (g): 0.3 (Must be ≥0.3g)
Weight Range: (g): 0.2-0.5

Test Organism Information

Batch 20220708TR
Source Trout Lodge
Tank # 1
Days Held at 15± 2°C 49 (must be ≥14 days)
Percent stock mortality 0.31 (7 days prior to test, must be <2%)
Test Volume (L) 18

Comments :
96 hrs no PPT on tank

Reviewed By: SS Date Reviewed: 20221019127

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC164 Reference 2223-0123-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/09/13	1515	AG/KTM	2	DM
1	2022/09/14	0745	BS	-	MAF
2	2022/09/15	0845	BS	2	DM

Sample Information

Initial pH: 7.4
Initial EC (µS/cm): 1952
Salinity (ppt): 3

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				
day				pH (units) (range: 6.0-8.5)						
0	7.9	7.9	7.9	7.7	7.7	7.7				
2	8.1	8.0	8.0	7.9	8.0	8.0				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

				EC (uS/cm)						
0	389	402	407	1935	1974	1976				
2	397	408	411	1797	1920	1920				

				DO (mg/L) (**40-100% saturation at test temp.**)						
0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.3	9.3	9.3	9.4	9.4	9.4				

				Temperature (°C) (range: **8-12 °C**)						
0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

				Number Alive (I, immobile)						
0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar WED DE 3 Jar(s) mortality 7 days prior to test (must be ≤25%) 0

QA (previous month)
Days to first brood (≤12 days) 9
Average number of young produced (≥15 young) 41
Were test treatments randomized on test tray? Yes / No

Control Validity Criteria
Mean % mortality at 48 hours - 0%
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: ~~9.0~~ 9.4
DO % of sample prior to aeration: ~~97~~ 100%
Duration of aeration (37.5 +/- 12.5 mL/min/L) : —
Hardness (mg $CaCO_3$/L) of 100% : 987
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 339

Temperature (°C) of sample prior to aeration: 12
Is aeration required (<40% or >100%)? **Yes or No**
Filtered with 110um screen prior to testing **Yes or No**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Dilution Water
Pail label / preparation date 2:09/09
Hardness of dilution water (mg/L) 175

DO Levels (40-100% saturation) - corrected for altitude -
4.1 to 10.3 mg/L at 8°C
4.0 to 10.0 mg/L at 9°C
3.9 to 9.8 mg/L at 10°C
3.8 to 9.6 mg/L at 11°C
3.7 to 9.4 mg/L at 12°C

Comments/Observations:
0 hr: happt
48 hr: happt

Reviewed By: SS Date Reviewed: 2022/09/27

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC164 Reference 2223-0123-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/09/13	1515	AG/KTM	2	DM
1	2022/09/14	0810	BS	-	MAP
2	2022/09/15	0945	BS	2	DM

Sample Information

Initial pH: 7.4
Initial EC (µS/cm): 1952
Salinity (ppt): 3

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				
day				pH (units) (range: 6.0-8.5)						
0	7.9	7.9	8.0	7.7	7.6	7.6				
2	8.5	8.4	8.3	8.1	8.2	8.2				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

				EC (uS/cm)						
0	399	406	408 AG	1882	1951	1963				
2	403	411	409	1800	1964	1921				

				DO (mg/L) (**40-100% saturation at test temp.**)						
0	7.7	7.7	7.7	7.9	7.9	7.9				
2	7.9	7.9	7.9	7.9	7.9	7.9				

				Temperature (°C) (range: **18-22 °C**)						
0	21	21	21	20	20	20				
2	20	20	20	20	20	20				

				Number Alive (I, immobile)						
0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar WED D3 Jar(s) mortality 7 days prior to test (must be ≤25%) 0

QA (previous month)
Days to first brood (≤12 days) 9
Average number of young produced (≥15 young) 41
Were test treatments randomized on test tray? Yes / No

Control Validity Criteria
Mean % mortality at 48 hours - 0%
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: ~~8.4~~ 8.1 wm
DO % of sample prior to aeration: ~~102~~ 100% wm
Duration of aeration (37.5 +/- 12.5 mL/min/L) : —
Hardness (mg $CaCO_3$/L) of 100% : 987
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 339

Temperature (°C) of sample prior to aeration: 19 wm
Is aeration required (<40% or >100%)? Yes or No
Filtered with 110um screen prior to testing Yes or No
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or No

Dilution Water
Pail label / preparation date 2:09 109
Hardness of dilution water (mg/L) 175

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Comments/Observations:
0 hr: no ppt
48 hr: No ppt

Reviewed By: SS Date Reviewed: 2022/09/27

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS 20 Client TEC164 Reference 2223-0123-02

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/09/13	1520	AG/KTM	2	DM
1	2022/09/14	0810	BS	-	MAF
2	2022/09/15	0945	BS	2	DM

Sample Information

Initial pH: 7.4
Initial EC (µS/cm): 1952
Salinity (ppt): 3

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				
day	pH (units) (range: 6.0-8.5)									
0	8.2	8.1	8.1	7.7	7.7	7.7				
2	8.4	8.3	8.3	8.0	8.1	8.2				
	The pH of the sample was not adjusted prior to test setting, unless noted in the comments below									
	EC (uS/cm)									
0	420	413	407	1898	1957	1960				
2	532	429	418	1815	1883	1899				
	DO (mg/L) (**40-100% saturation at test temp.**)									
0	7.9	7.9	7.9	7.9	7.9	7.9				
2	7.6	7.6	7.6	7.6	7.6	7.6				
	Temperature (°C) (range: **18-22 °C**)									
0	20	20	20	20	20	20				
2	20	20	20	20	20	20				
	Number Alive (I, immobile)									
0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar Wed D1 Jar(s) mortality 7 days prior to test (must be ≤25%) 5

QA (previous month)
Days to first brood (≤12 days) 9
Average number of young produced (≥15 young) 41
Were test treatments randomized on test tray? Yes / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0%

Sample
DO (mg/L) of sample prior to aeration: ~~8.7~~ um 8.2
DO % of sample prior to aeration: ~~104~~ um 100%
Duration of aeration (37.5 +/- 12.5 mL/min/L) : —
Hardness (mg $CaCO_3$/L) of 100% : 987
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 339

Temperature (°C) of sample prior to aeration: 18
Is aeration required (<40% or >100%)? Yes or No ★ not aerated
Filtered with 110um screen prior to testing Yes or No
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or No

Dilution Water
Pail label / preparation date 2:09109
Hardness of dilution water (mg/L) 175

Antiscalant
Final Concentration in Sample: 20 mg/L
Volume of sample: 500mL Volume of antiscalant: 158 mL

Comments/Observations:
0 hr: no ppt
48 hr: No ppt

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Reviewed By: SS Date Reviewed: 2022/09/27

APPENDIX C – Chain-of-custody form

Teck

COC ID: F2 NAUTILUS 2022-09-12 | TURNAROUND TIME: | RUSH:

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO			
Facility Name / Job#	F2 SRF			Lab Name	Nautilus Environmental - BC			Report Format / Distribution		Excel	PDF	EDD
Project Manager	BRETT MASON			Lab Contact				Email 1:	Cole.Macgregor@teck.com	X	X	X
Email	BRETT.MASON@TECK.COM			Email	jacklyn@nautilusenvironmental.ca			Email 1:	teckcoal@equisonline.com			X
Address	RR1 HWY 3			Address	10823 27th Street SE			Email 2:	DL-EVO-SRF-LAB@teck.com	X	X	X
								Email 3:				
City	Sparwood	Province	BC	City	Calgary	Province	AB	Email 4:				
								Email 5:				
								Email 6:				
								Email 7:				
								Email 8:				
								Email 10:				
								Email 11:				
								Email 12:				
								Email 13:				
Postal Code	V0B 2G0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada					
Phone Number	250-425-6179			Phone Number	403-253-7121			PO number	*VPO00842410*			

SAMPLE DETAILS | **ANALYSIS REQUESTED** (Filtered - F: Field, L: Lab, FL: Field & Lab, N: None)

2022/09/13
09:00
Manitoulin
SC/SRS
4x20L carboys, 5x1L bottles
N06/N02
Good Condition

Sample ID	Sample Location (sys loc code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	Fil.	48hr Daphnia Magna Single Concentration Acute Toxicity 20C	48hr Daphnia Magna Single Concentration Acute Toxicity 10C	48hr Daphnia Magna Single Concentration Acute Toxicity Anitscalent	96hr Rainbow Trout Single Concentration Acute Toxicity (20L Bladders)	48hr Daphnia Magna Single Concentration Toxicity 15C
F2_BPO_WG_2022-09-12_N -01	F2_BPO	WG		2022-09-12	8:30	G	8		2	2		4	15.4°C
F2_BPO_WG_2022-09-12_N-AS -02	F2_BPO	WG		2022-09-12	8:31	G	1				1		✓

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME
	James Winter - Teck	September 12, 2022		
		1550		

SERVICE REQUEST (rush - subject to availability)				
Regular (default) X	Sampler's Name	Carter Phillips	Mobile #	
Priority (2-3 business days) - 50% surcharge				
Emergency (1 Business Day) - 100% surcharge	Sampler's Signature	Carter Phillips	Date/Time	September 12, 2022
For Emergency <1 Day, ASAP or Weekend - Contact ALS				

END OF REPORT

Acute Toxicity Test Results

Samples collected September 13, 2022

Final Report

October 14, 2022

Submitted to: **Teck Coal Ltd.**
Sparwood, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates						
	Collected	**Received**	**Rainbow trout test initiation**	***Daphnia magna* 10˚C test initiation**	***Daphnia magna* 15˚C test initiation**	***Daphnia magna* 20˚C test initiation**	***Daphnia magna* 5 mg/L antiscalant test initiation**
EV_GT1_WS_2022-09-13_N-SRF / 2223-0134-01	13-Sep-22 at 0820h	14-Sep-22 at 0830h	14-Sep-22 at 1430h	14-Sep-22 at 1425h	14-Sep-22 at 1430h	14-Sep-22 at 1430h	-
EV_BC1_WS_2022-09-13_N-SRF / 2223-0134-02	13-Sep-22 at 0930h	14-Sep-22 at 0830h	14-Sep-22 at 1430h	14-Sep-22 at 1420h	14-Sep-22 at 1440h	14-Sep-22 at 1435h	-
EV_BC1_WS_2022-09-13_N-SRF-AS / 2223-0134-03	13-Sep-22 at 0931h	14-Sep-22 at 0830h	-	-	-	-	14-Sep-22 at 1435h
EV_GT1_WS_2022-09-13_N-SRF-AS / 2223-0134-04	13-Sep-22 at 0821h	14-Sep-22 at 0830h	-	-	-	-	14-Sep-22 at 1445h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
EV_GT1_WS_2022-09-13_N-SRF	14.7°C	1012	274
EV_BC1_WS_2022-09-13_N-SRF	16.7°C	987	266
EV_BC1_WS_2022-09-13_N-SRF-AS	16.7°C	987	266
EV_GT1_WS_2022-09-13_N-SRF-AS	14.7°C	1012	274

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)
- *Daphnia magna* 48-h single concentration screening test (conducted at 15°C)
- *Daphnia magna* 48-h single concentration screening test (conducted with 5 mg/L antiscalant)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample				
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 15˚C	*Daphnia magna* 20˚C	*Daphnia magna* 5 mg/L antiscalant
EV_GT1_WS_2022-09-13_N-SRF	100	100	100	100	-
EV_BC1_WS_2022-09-13_N-SRF	100	100	100	100	-
EV_BC1_WS_2022-09-13_N-SRF-AS	-	-	-	-	100
EV_GT1_WS_2022-09-13_N-SRF-AS	-	-	-	-	100

Sample ID	Percent Immobility in 100 (% v/v)			
	Daphnia magna 10˚C	*Daphnia magna* 15˚C	*Daphnia magna* 20˚C	*Daphnia magna* 5 mg/L antiscalant
EV_GT1_WS_2022-09-13_N-SRF	0	0	0	-
EV_BC1_WS_2022-09-13_N-SRF	0	0	0	-
EV_BC1_WS_2022-09-13_N-SRF-AS	-	-	-	0
EV_GT1_WS_2022-09-13_N-SRF-AS	-	-	-	0

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
EV_GT1_WS_2022-09-13_N-SRF	Rainbow trout	None	None
	Daphnia magna	None	None
EV_BC1_WS_2022-09-13_N-SRF	Rainbow trout	None	None
	Daphnia magna	Surficial precipitate observed in the 20˚C test	None
EV_BC1_WS_2022-09-13_N-SRF-AS	*Daphnia magna*	None	None
EV_GT1_WS_2022-09-13_N-SRF-AS	*Daphnia magna*	None	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	3.9 (2.9-4.3) g/L KCl[1]	6.9 (6.6-7.2) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.6 (2.7-4.8) g/L KCl	6.1 (5.2-7.2) g/L NaCl
Reference toxicant CV	9.4%	5.5%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, September 14, 2022; [2] Test Date September 21, 2022

LC = Lethal Concentration; CL = Confidence Limits, SD = Standard Deviation; CV = Coefficient of Variation



Report By:
Alyssa Minifie, BSc
Laboratory Biologist



Reviewed By:
Mimi Tran, Dipl. T.
Biologist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Control/dilution water for antiscalant test	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L), Na_2SeO_4 (2 µg Se/L) and 5 mg/L antiscalant
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 4. Summary of test conditions: 48-h *Daphnia magna* survival test at 15˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	15 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS ENVIRONMENTAL

Trout Bench Sheet

Method TRS Client TEC164 Reference 2223-0134-01 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022-09-14	1430 *	CD/KCRM/ML	1/7	CC
1	2022-09-15	1320	CD	-	CC
2	2022-09-16	0830	CD	-	CC
3	2022-09-17	0838	CD/AM	-	NA
4	2022-09-18	1000	ML/KCRM	1/7	CC

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 6.3 ML 8.4
Initial EC (µS/cm): 1964
Salinity (ppt): 2

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L (yes/no)

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	9.7	8.6			
Temp (°C) of 100%	16				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: **5.5-8.5**)								
Day 0	7.7	8.4						
Day 4	8.5	8.5						
EC (uS/cm)								
Day 0	400	2000						
Day 4	420	1868						
DO (mg/L) (**70-100% saturation at test temp.**)								
Day 0	8.6	8.6						
Day 4	8.6	8.6						
Temperature (°C) (range: **14-16°C**)								
Day 0	16	16						
Day 4	16	16						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	2.9	0.3
2	3.0	0.3
3	4.4	1.1
4	3.1	0.4
5	3.4	0.4
6	3.8	0.7
7	3.1	0.3
8	3.8	0.7
9	2.9	0.3
10	3.4	0.4

Loading Density (g/L): 0.3 (must be ≤0.5 g/L)
Mean Length (cm): 3.4
Length Range (cm): 2.9-4.4
Mean Weight (g): 0.5 (Must be ≥0.3g)
Weight Range: (g): 0.3-1.1

Test Organism Information

Batch 20220727TR
Source Sam ~~Livington~~ Livingston
Tank # 5
Days Held at 15± 2°C 20 (must be ≥14 days)
Percent stock mortality 0.06 (7 days prior to test, must be <2%)
Test Volume (L) 18

Comments :
96hr: No ppt

Reviewed By: SS Date Reviewed: 2022/09/28

NAUTILUS ENVIRONMENTAL

Trout Bench Sheet

Method TRS Client TEC164 Reference 2223-0134-02 Chamber B

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022-09-14	1430 *	CD/KCRM/ML	1/7	CC
1	2022-09-15	0820	CD	-	LC
2	2022-09-16	0830	CD	-	LC
3	2022-09-17	0800	CD/AM	-	NA
4	2022-09-18	0955	ML/KCRM	1/7	KCRM

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: ~~7.2~~ ML 8.4
Initial EC (µS/cm): 1843
Salinity (ppt): 2

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L : yes/no

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	8.6	8.6			
Temp (°C) of 100%	16				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
			pH (units) (range: **5.5-8.5**)					
Day 0	8.0	8.1						
Day 4	8.5	8.5						
			EC (uS/cm)					
Day 0	415	1815						
Day 4	423	1785						
			DO (mg/L) (**70-100% saturation at test temp.**)					
Day 0	8.6	8.6						
Day 4	8.6	8.6						
			Temperature (°C) (range: **14-16°C**)					
Day 0	16	16						
Day 4	16	16						
			Number Alive (In brackets number stressed)					
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	2.8	0.2
2	3.2	0.3
3	3.0	0.3
4	3.2	0.3
5	3.2	0.3
6	3.7	0.7
7	3.6	0.6
8	3.2	0.3
9	3.1	0.3
10	3.4	0.4

Loading Density (g/L): 0.2
(must be ≤0.5 g/L)

Mean Length (cm): 3.2

Length Range (cm): 2.8-3.7

Mean Weight (g): 0.4
(Must be ≥0.3g)

Weight Range: (g): 0.2-0.7

Test Organism Information

Batch 20220727TR

Source Sam ~~Livington~~ Livingston SI

Tank # 5

Days Held at 15± 2°C 20
(must be ≥14 days)

Percent stock mortality 0.06
(7 days prior to test, must be <2%)

Test Volume (L) 17.5 ~~18~~ KCRM

Comments :
96hr NO ppt

Reviewed By: SS Date Reviewed: 2022/09/28

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC 164 Reference 2223-0134-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/09/14	1430	AI/BS	2	CC
1	2022/09/15	0800	BS	-	CC
2	2022/09/16	0930	BS	2	CC

Sample Information

Initial pH: 8.4
Initial EC (µS/cm): 1961
Salinity (ppt): 0

Lab Code	CTL A	CTL B	CTL C	100 A	100 B	100 C				

pH (units) (range: 6.0-8.5)

day										
0	8.2	8.2	8.2	8.4	8.4	8.4				
2	8.5	8.5	8.5	8.2	8.2	8.2				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	407	408	406	1966	1982	1981				
2	397	402	406	1827	1900	1907				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.7	7.7	7.7	7.9	7.9	7.9				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	21	21	21	20	20	20				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar Wed 25 Jar(s) mortality 7 days prior to test (must be ≤25%) 6

QA (previous month)
Days to first brood (≤12 days) 9
Average number of young produced (≥15 young) 38
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0%
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 11.1
DO % of sample prior to aeration: 138
Duration of aeration (37.5 +/- 12.5 mL/min/L): 20
Hardness (mg $CaCO_3$/L) of 100% : 1012
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) -
Alkalinity of 100% sample (mg $CaCO_3$/L): 274

Temperature (°C) of sample prior to aeration: 20
Is aeration required (<40% or >100%)? **Yes or No**
Filtered with 110um screen prior to testing **Yes or No**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Dilution Water
Pail label / preparation date Pail 5: 09/12
Hardness of dilution water (mg/L) 113

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Comments/Observations:
0hr: No ppt
48hr: No ppt

Reviewed By: SS Date Reviewed: 2022/09/28

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC 164 Reference 2223-0134-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/09/14	AI/BS 1425		2	CC
1	2022/09/15	0740	BS	-	AC
2	2022/09/16	0920	BS	2	CC

Sample Information

Initial pH:	8.4
Initial EC (µS/cm):	1964
Salinity (ppt):	2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day	CTLA	CTLB	CTLC	100A	100B	100C
0	7.8	7.9	7.9	~~8.0~~ 8.3 AI	~~8.1~~ 8.3 AI	~~8.2~~ 8.3 AI
2	8.6	8.6	8.5	8.3	8.3	8.3

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	396	406	406	1957	1937	1994
2	415	407	415	1918	1984	1974

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4
2	9.4	9.4	9.4	9.4	9.4	9.4

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12
2	12	12	12	12	12	12

Number Alive (I, immobile)

0	10	10	10	10	10	10
1	10	10	10	10	10	10
2	10	10	10	10	10	10

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar Wed C2 Jar(s) mortality 7 days prior to test (must be ≤25%) 0

QA (previous month)

Days to first brood (≤12 days) 9

Average number of young produced (≥15 young) 38

Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - 0%2 (must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 11.8

Temperature (°C) of sample prior to aeration: 12

DO % of sample prior to aeration: 125

Is aeration required (<40% or >100%)? **Yes or No**

Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20

Filtered with 110um screen prior to testing **Yes or No**

Hardness (mg $CaCO_3$/L) of 100% : 1012

Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —

Alkalinity of 100% sample (mg $CaCO_3$/L): 274

Dilution Water

Pail label / preparation date Pail 5 : 09112

Hardness of dilution water (mg/L) 113

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

Comments/Observations:

)hr: NO ppt

48Hr: No ppt

Reviewed By: SS Date Reviewed: 2022/09/28

NAUTILUS ENVIRONMENTAL

Daphnia 15°C Bench Sheet

Method DAS 15 Client TEC 164 Reference 2223-0134-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/09/14	1430	AI/BS	2	EC
1	2022/09/15	0745	BS	-	XC
2	2022/09/16	0920	BS	2	CC

Sample Information

Initial pH: 8.4
Initial EC (µS/cm): 1460 ~~1~~
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				
day				pH (units) (range: 6.0-8.5)						
0	8.2	8.2	8.2 ~~8.24~~ AI	8.24 ~~8.1~~ AI	8.4	8.4				
2	8.4	8.4	8.4	8.1 AI	8.1	8.2				
	The pH of the sample was not adjusted prior to test setting, unless noted in the comments below									
	EC (uS/cm)									
0	400	405	408	1918	1976	1985				
2	401	407	403	1527	1909	1905				
	DO (mg/L) (**40-100% saturation at test temp.**)									
0	8.4	8.4	8.4	8.4	8.4	8.4				
2	8.4	8.4	8.4	8.4	8.4	8.4				
	Temperature (°C) (range: **13-17 °C**)									
0	17	17	17	17	17	17				
2	17	17	17	17	17	17				
	Number Alive (I, immobile)									
0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar Wed C5 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 9
Average number of young produced (≥15 young) 38
Were test treatments randomized on test tray? Yes / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0%

Sample
DO (mg/L) of sample prior to aeration: 11.6
DO % of sample prior to aeration: 138
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20
Hardness (mg $CaCO_3$/L) of 100% : 1012
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 274

Temperature (°C) of sample prior to aeration: 17
Is aeration required (<40% or >100%)? **Yes or No**
Filtered with 110um screen prior to testing **Yes or No**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Dilution Water
Pail label / preparation date Pail5:09/12
Hardness of dilution water (mg/L) 113

DO Levels (40-100% saturation) - corrected for altitude -
3.7 to 9.1 mg/L at 13°C
3.6 to 8.9 mg/L at 14°C
3.5 to 8.8 mg/L at 15°C
3.4 to 8.6 mg/L at 16°C
3.4 to 8.4 mg/L at 17°C

Comments/Observations:
)Hr: No ppt
48Hr: No ppt

Reviewed By: SS Date Reviewed: 2022/09/28

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC 164 Reference 2223-0134-02

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/09/14	1435	AI BS	2	CC
1	2022/09/15	0800	ZS	-	AC
2	2022/09/16	0930	BS	2	CC

Sample Information

Initial pH: 8.4
Initial EC (µS/cm): 1843
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100 A	100 B	100 C				

pH (units) (range: 6.0-8.5)

day										
0	8.2	8.2	8.2	8.4	8.4	8.4				
2	8.5	8.5	8.4	8.2	8.2	8.2				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	399	401	403	1810	1816	1801				
2	386	398	399	1704	1779	1771				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.7	7.7	7.7	7.9	7.9	7.9				
2	7.9	7.9	7.9	7.6	7.6	7.6				

Temperature (°C) (range: **18-22 °C**)

0	21	21	21	20	20	20				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar Wed 05 Jar(s) mortality 7 days prior to test (must be ≤25%) 6

QA (previous month)
Days to first brood (≤12 days) 9
Average number of young produced (≥15 young) 38
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0%
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 8.8
Temperature (°C) of sample prior to aeration: 19
DO % of sample prior to aeration: 109
Is aeration required (<40% or >100%)? (Yes) or No
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20
Filtered with 110um screen prior to testing Yes or (No)
Hardness (mg $CaCO_3$/L) of 100% : 987
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) -
Alkalinity of 100% sample (mg $CaCO_3$/L): 266

Dilution Water
Pail label / preparation date Pail5:09/12
Hardness of dilution water (mg/L) 113

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Comments/Observations:
0hr: No ppt
48hr: Surficial ppt

Reviewed By: SS Date Reviewed: 2022/09/28

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC 164 Reference 2223-0134-02

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/09/14	1420	AI/BS	2	DM
1	2022/09/15	0740	BS	-	ZC
2	2022/09/16	0920	BS	2	CC

Sample Information

Initial pH: 8.4
Initial EC (µS/cm): 1843
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	7.1	7.2	7.2	7.6	7.6	7.7				
2	8.5	8.5	8.5	8.3	8.3	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	400	403	401	1800	1840	1843				
2	401	412	411	1742	1842	1848				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.7	9.7	9.7	9.7	9.7	9.7				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar Wed C5 Jar(s) mortality 7 days prior to test (must be ≤25%) 0

QA (previous month)
Days to first brood (≤12 days) 9
Average number of young produced (≥15 young) 38
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0%
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 9.4
Temperature (°C) of sample prior to aeration: 12
DO % of sample prior to aeration: ~~96~~ 100
Is aeration required (<40% or >100%)? **Yes or (No)**
Duration of aeration (37.5 +/- 12.5 mL/min/L) : -
Filtered with 110um screen prior to testing **Yes or (No)**
Hardness (mg $CaCO_3$/L) of 100% : 987
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or (No)**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) -
Alkalinity of 100% sample (mg $CaCO_3$/L): 266

Dilution Water
Pail label / preparation date Pail 5: 09/12
Hardness of dilution water (mg/L) 113

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

Comments/Observations:
)hr: No ppt
48Hr: No ppt

Reviewed By: SS Date Reviewed: 2022/09/28

NAUTILUS ENVIRONMENTAL

Daphnia 15°C Bench Sheet

Method DAS 15 Client TEC 164 Reference 2223-0134-02

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/09/14	1440	AI/BS	2	DM
1	2022/09/15	0745	BS	-	XC
2	2022/09/16	0920	BS	2	CC

Sample Information

Initial pH:	8.4
Initial EC (µS/cm):	1843
Salinity (ppt):	2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				
day				pH (units) (range: 6.0-8.5)						
0	8.2	8.2	8.2	8.4	8.4	8.4				
2	~~8.4~~	8.4	8.4	8.2	8.2	8.3				
	BS 8.5									
				BS 1742	EC (uS/cm)	*1792 BS				
0	400	398	396	1803	1823	1825				
2	~~401~~*	407	403	~~1827~~	~~1809~~*	1801				
	*BS 398			8.6 BS	8.6 BS	8.6 BS				
	8.4 BS	8.4 BS	8.4 BS	DO (mg/L) (**40-100% saturation at test temp.**)						
0	~~7.7~~	~~7.7~~	~~7.7~~	~~7.9~~	~~7.9~~	~~7.9~~				
2	8.4	8.4	8.4	8.4	8.4	8.4				
	BS	BS	BS	BS	BS	17 BS				
				Temperature (°C) (range: **13-17 °C**)						
0	~~21~~ 17	~~21~~ 17	~~21~~ 17	~~20~~ 17	~~20~~ 17	~~20~~				
2	17	17	17	17	17	17				
					Number Alive (I, immobile)					
0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar Ned E5 Jar(s) mortality 7 days prior to test (must be ≤25%) 6

QA (previous month)

Days to first brood (≤12 days) 9

Average number of young produced (≥15 young) 38

Were test treatments randomized on test tray? Yes / No

Control Validity Criteria

Mean % mortality at 48 hours - (must be ≤10%) 0%

Sample

DO (mg/L) of sample prior to aeration: 9.2

Temperature (°C) of sample prior to aeration: 17

DO % of sample prior to aeration: 109

Is aeration required (<40% or >100%)? Yes or No

Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20

Filtered with 110um screen prior to testing Yes or No

Hardness (mg $CaCO_3$/L) of 100% : 987

Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or No

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —

Alkalinity of 100% sample (mg $CaCO_3$/L): 266

Dilution Water

Pail label / preparation date Pail 5:09/12

Hardness of dilution water (mg/L) 113

DO Levels (40-100% saturation) - corrected for altitude -

3.7 to 9.1 mg/L at 13°C	3.4 to 8.6 mg/L at 16°C
3.6 to 8.9 mg/L at 14°C	3.4 to 8.4 mg/L at 17°C
3.5 to 8.8 mg/L at 15°C	

Comments/Observations:

)Hr: No ppt

48Hr: No ppt

Reviewed By: SS Date Reviewed: 2022/09/28

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method ~~AS-5~~ SS DAS - ~~AS~~S Client TEC Reference 2223-0134-03

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/09/14	1435	AI/BS	2	DM
1	2022/09/15	0750	BS	-	DC
2	2022/09/16	0930	BS	2	CC

Sample Information

Initial pH: 8.4
Initial EC (µS/cm): 1843
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	8.2	8.2	8.2	8.2	8.2	8.2				
2	8.2	8.1	8.1	8.0	8.0	8.1				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	404	415	417	1786	1820	1816				
2	407	420	420	1738	1805	1798				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.7	7.7	7.7	7.9	7.9	7.9				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	21	21	21	20	20	20				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar NedC5 Jar(s) mortality 7 days prior to test (must be ≤25%) 0

QA (previous month)
Days to first brood (≤12 days) 9
Average number of young produced (≥15 young) 38
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0%

Sample
DO (mg/L) of sample prior to aeration: 9.0
DO % of sample prior to aeration: ~~109~~ 111
Duration of aeration (37.5 +/- 12.5 mL/min/L): 20
Hardness (mg $CaCO_3$/L) of 100% : 987
Temperature (°C) of sample prior to aeration: 19
Is aeration required (<40% or >100%)? Yes or No
Filtered with 110um screen prior to testing Yes or No
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 266

Dilution Water
Pail label / preparation date Pail 5: 09/12
Hardness of dilution water (mg/L) 113

Antiscalant
Final Concentration in Sample: 5 mg/L
Volume of sample: 500mL Volume of antiscalant: 39.5mL

Comments/Observations:
)hr: No ppt
48Hr: No ppt

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Reviewed By: SS Date Reviewed: 2022/09/28

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method ~~AS-5~~ DDS-SAS Client TEC Reference 2223-0134-04

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/09/14	1445	AI/BS	2	DM
1	2022/09/15	0745	BS	-	ZC
2	2022/09/16	0940	BS	2	CC

Sample Information

Initial pH: 8.4
Initial EC (µS/cm): 1964
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	8.2	8.2	8.2	8.4	8.4	8.4				
2	8.4	8.4	8.4	8.2	8.2	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	409	406	409	1945	1971	1975				
2	404	408	411	1894	1957	1961				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.7	7.7	7.7	7.9	7.9	7.9				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	21	21	21	20	20	20				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar Med C2 Jar(s) mortality 7 days prior to test (must be ≤25%) 0

QA (previous month)
Days to first brood (≤12 days) 9
Average number of young produced (≥15 young) 38
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0%
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 11.1
Temperature (°C) of sample prior to aeration: 19
DO % of sample prior to aeration: 136
Is aeration required (<40% or >100%)? **Yes or No**
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20
Filtered with 110um screen prior to testing **Yes or No**
Hardness (mg $CaCO_3$/L) of 100% : 1012
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 274

Dilution Water
Pail label / preparation date Pail 5: 09/12
Hardness of dilution water (mg/L) 113

Antiscalant
Final Concentration in Sample: 5 mg/L
Volume of sample: 500mL Volume of antiscalant: 39.5mL

Comments/Observations:
)hr: No ppt
48Hr: No ppt

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Reviewed By: SS Date Reviewed: 2022/09/28

APPENDIX C – Chain-of-custody form

Teck

COC ID: EVO NAUTILUS 2022-09-13 | TURNAROUND TIME: | RUSH:

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name / Job#	Elkview Operations			Lab Name	Nautilus Environmental - BC			Report Format / Distribution		Excel	PDF	EDD
Project Manager	Group 1; Brett Mason			Lab Contact				Email 1:	teckcoal@equisonline.com			X
Email	Brett.Mason@teck.com			Email	jacklyn@nautilusenvironmental.ca			Email 2:	DL-EVO-SRF-LAB@teck.com	X	X	X
Address	RR1 HWY 3			Address	10823 27th Street SE			Email 3:	Cole.Macgregor@teck.com	X	X	X
								Email 4:				
City	Sparwood	Province	BC	City	Calgary	Province	AB	Email 5:				
								Email 6:				
								Email 7:				
								Email 8:				
								Email 9:				
								Email 10:				
								Email 11:				
								Email 12:				
								Email 13:				
Postal Code	V0B 2G0	Country	Canada	Postal Code	T2H 2K1	Country	Canada					
Phone Number	250-425-6179			Phone Number	T2Z 3V9			PO number	VPO00842410			

SAMPLE DETAILS

2022/09/14
08:30
Manitoulin
3C/SRS
6x20L carboys, 12x1L bottles
NOS/NOT
Good Condition

ANALYSIS REQUESTED

Filtered - F: Field, L: Lab, FL: Field & Lab, N: None

Sample ID 2223-0134	Sample Location (sys_loc code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	FIL	PRESERV.	ANALYSIS: 48hr Daphnia Magna Single Concentration Acute Toxicity 20C	48hr Daphnia Magna Single Concentration Acute Toxicity 10C	48hr Daphnia Magna Single Concentration Acute Toxicity Anitscalent	96hr Rainbow Trout Single Concentration Acute Toxicity (10 L Bladder)	96hr Rainbow Trout Single Concentration Acute Toxicity (20 L Bladder)	48hr Daphnia Magna Single Concentration Toxicity 15C							
EV_GT1_WS_2022-09-13_N-SRF -01	EV_GT1	WS		2022-09-13	8:20	G	9			2	2			4 ✓	1	14.7°C						
EV_BC1_WS_2022-09-13_N-SRF -02	EV_BC1	WS		2022-09-13	9:30	G	9			2	2			4 ✓	1	16.7°C						
EV_BC1_WS_2022-09-13_N-SRF-AS -03	EV_BC1	WS		2022-09-13	9:31	G	1					1 ✓				↓						
EV_GT1_WS_2022-09-13_N-SRF-AS -04	EV_GT1	WS		2022-09-13	8:21	G	1					1	✓			14.7°C						

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME
Field Temperatures	Nick Leggett - Teck	September 13, 2022		
		1400		

SERVICE REQUEST (rush - subject to availability)

Regular (default)	X
Priority (2-3 business days) - 50% surcharge	
Emergency (1 Business Day) - 100% surcharge	
For Emergency <1 Day, ASAP or Weekend - Contact ALS	

Sampler's Name	Gurtaj Virk	Mobile #	
Sampler's Signature		Date/Time	September 13, 2022

END OF REPORT

Acute Toxicity Test Results

Samples collected September 19, 2022

Final Report

September 28, 2022

Submitted to: **Teck Coal Ltd.**
Sparwood, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates					
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation	*Daphnia magna* antiscalant test initiation
F2_BPO_WG_2022-09-19_N / 2223-0194-01	19-Sep-22 at 0845h	20-Sep-22 at 0900h	20-Sep-22 at 1430h	20-Sep-22 at 1415h	20-Sep-22 at 1415h	-
F2_BPO_WG_2022-09-19_N-AS / 2223-0194-02	19-Sep-22 at 0846h	20-Sep-22 at 0900h	-	-	-	21-Sep-22 at 1440h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
F2_BPO_WG_2022-09-19_N	10.5°C	970	347
F2_BPO_WG_2022-09-19_N-AS	10.5°C	970	347

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)
- *Daphnia magna* 48-h single concentration screening test (conducted with 20 mg/L antiscalant)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample			
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
F2_BPO_WG_2022-09-19_N	100	100	100	-
F2_BPO_WG_2022-09-19_N-AS	-	-	-	100

Sample ID	Percent Immobility in 100 (% v/v)		
	Daphnia magna 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
F2_BPO_WG_2022-09-19_N	0	0	-
F2_BPO_WG_2022-09-19_N-AS	-	-	0

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
F2_BPO_WG_2022-09-19_N	Rainbow trout	None	None
	Daphnia magna	Surficial precipitate and precipitate observed on test vessel in 20˚C test	None
F2_BPO_WG_2022-09-19_N-AS	*Daphnia magna*	None	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	3.9 (2.9-4.3) g/L KCl[1]	6.9 (6.6-7.2) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.6 (2.7-4.8) g/L KCl	6.1 (5.2-7.2) g/L NaCl
Reference toxicant CV	9.4%	5.5%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date September 14, 2022; [2] Test date September 21, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation

Report By:
Kiara O'Shea, BSc
Laboratory Biologist

Reviewed By:
Jacklyn Poole, BSc
Laboratory and Quality Manager

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Control/dilution water for antiscalant test	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L), Na_2SeO_4 (2 µg Se/L) and 20 mg/L antiscalant
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC 164 Reference 2223-0194-01 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022-09-20	1430 *	KO/CD	1/7	MAP
1	2022-09-21	0750	CD	-	MAP
2	2022-09-22	0900	AI	-	MM
3	2022-09-23	0956	CD	-	YC
4	2022-09-24	1045	CD/EP	1/7	YC

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 7.7
Initial EC (µS/cm): 1904
Salinity (ppt): 2

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L : (yes)/no

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	8.8	8.8			
Temp (°C) of 100%	15				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: **5.5-8.5**)								
Day 0	7.5	7.7						
Day 4	7.9	8.5						
EC (uS/cm)								
Day 0	404	1961						
Day 4	404	1894						
DO (mg/L) (**70-100% saturation at test temp.**)								
Day 0	8.6	8.8						
Day 4	8.6	8.6						
Temperature (°C) (range: **14-16°C**)								
Day 0	16	15						
Day 4	16	16						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10(1)						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.7	0.6
2	3.4	0.5
3	3.8	0.7
4	3.0	0.3
5	3.4	0.5
6	4.0	0.8
7	4.0	0.9
8	3.0	0.4
9	2.9	0.3
10	3.4	0.4

Loading Density (g/L): 0.3 (must be ≤0.5 g/L)
Mean Length (cm): 3.5
Length Range (cm): 2.9-4.0
Mean Weight (g): 0.5 (Must be ≥0.3g)
Weight Range: (g): 0.3-0.9

Test Organism Information

Batch 20220727TR
Source Sam Livingston
Tank # 6
Days Held at 15± 2°C 26 (must be ≥14 days)
Percent stock mortality 0.13 (7 days prior to test, must be <2%)
Test Volume (L) 18

Comments :
96h: no PPT

Reviewed By: TP Date Reviewed: SEP 26 2022

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC 164 Reference 2223-0194-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/09/20	1415	AI/BS	3	DM
1	2022/09/21	0830	AI	-	mmf
2	2022/09/22	0825	NA	2	AI

Sample Information

Initial pH: 7.7
Initial EC (µS/cm): 1904
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	7.8	7.9	7.9	8.2	8.2	8.2				
2	7.9	7.9	7.9	8.3	8.3	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	405	402	405	1879	1913	1904				
2	419	412	414	1926	1934	1917				

DO (mg/L) (**40-100% saturation at test temp.**)

0 AI	~~9.7~~ 9.4	~~7.7~~ 9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0 AI	~~21~~ 12	~~21~~ 12	~~21~~ 12	~~19~~ 12	~~19~~ 12	~~19~~ 12				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar Wed C5 Jar(s) mortality 7 days prior to test (must be ≤25%) 0

QA (previous month)

Days to first brood (≤12 days) 9

Average number of young produced (≥15 young) 45

Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - 0%
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 10.0 Temperature (°C) of sample prior to aeration: 12

DO % of sample prior to aeration: 106 Is aeration required (<40% or >100%)? **Yes or No**

Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20 min Filtered with 110um screen prior to testing **Yes or No**

Hardness (mg $CaCO_3$/L) of 100% : 970 Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —

Alkalinity of 100% sample (mg $CaCO_3$/L): 347

Dilution Water

Pail label / preparation date Pail 5 : 09/16

Hardness of dilution water (mg/L) 160

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

Comments/Observations:

0hr: No ppt

48hr: No ppt.

Reviewed By: TP Date Reviewed: SEP 26 2022

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC 164 Reference 2223-0194-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/09/20	1415	AI/BS	3	DM
1	2022/09/21	0755	AG	-	MMF
2	2022/09/22	0825	NA	2	AI

Sample Information

Initial pH: 7.7
Initial EC (µS/cm): 1904
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	8.0	7.9	7.9	8.3	8.3	8.3				
2	8.0	8.0	8.0	8.3	8.3	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	413	409	402	1838	1879	1892				
2	415	418	416	1904	1923	1916				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.9	7.9	7.9				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	20	20	20				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar Wod C5 Jar(s) mortality 7 days prior to test (must be ≤25%) 0

QA (previous month)

Days to first brood (≤12 days) 9
Average number of young produced (≥15 young) 45
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - 0%
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 8.7 Temperature (°C) of sample prior to aeration: 18
DO % of sample prior to aeration: 106 Is aeration required (<40% or >100%)? Yes or No
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20min Filtered with 110um screen prior to testing Yes or No
Hardness (mg $CaCO_3$/L) of 100% : 170 Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or No
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 347

Dilution Water

Pail label / preparation date Pail 5: 09/16
Hardness of dilution water (mg/L) 160

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Comments/Observations:

0hr: no ppt
48hr: surficial ppt / ppt on jar

Reviewed By: TP Date Reviewed: SEP 26 2022

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS 20 Client TEC 162 (164 AM) Reference 2223-0194-02

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/09/21	1440	AG/AI	3	DM
1	2022/09/22	0806	AG	-	VM
2	2022/09/23	0935	BS	2	DM

Sample Information

Initial pH: 7.7
Initial EC (µS/cm): 1904
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	7.7	7.9	7.9	~~8.03~~ 8.0	8.1	8.1				
2	8.0	8.0	8.0	8.3	8.3	8.4				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	406	409	409	1843	1965	1889				
2	417	423	427	1881	1919	1930				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.9	7.9	7.9				
2	7.7	7.7	7.7	7.7	7.7	7.7				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	20	20	20				
2	~~21~~ 21	21	21	21	21	21				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar Wed D1 Jar(s) mortality 7 days prior to test (must be ≤25%) 5%

QA (previous month)
Days to first brood (≤12 days) 9
Average number of young produced (≥15 young) 41
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0%

Sample
DO (mg/L) of sample prior to aeration: 7.9 Temperature (°C) of sample prior to aeration: 20
DO % of sample prior to aeration: 100% Is aeration required (<40% or >100%)? **Yes or (No)**
Duration of aeration (37.5 +/- 12.5 mL/min/L) : — Filtered with 110um screen prior to testing **Yes or (No)**
Hardness (mg $CaCO_3$/L) of 100% : 970 Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or (No)**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 347

Dilution Water
Pail label / preparation date PS: 09/16
Hardness of dilution water (mg/L) 140

Antiscalant
Final Concentration in Sample: 20 mg/L
Volume of sample: 500 mL Volume of antiscalant: 1582µL

Comments/Observations:
0hr NO ppt
48 hr No ppt

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Reviewed By: TP Date Reviewed: SEP 26 2022

APPENDIX C – Chain-of-custody form

Teck

COC ID: F2 NAUTILUS - 2022-09-19 | TURNAROUND TIME: | RUSH:

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO			
Facility Name / Job#	F2 SRF			Lab Name	Nautilus Environmental - BC			Report Format / Distribution	Excel	PDF	EDD
Project Manager	BRETT MASON			Lab Contact				Email 1:	Cole.Macgregor@teck.com	X	X	X
Email	BRETT.MASON@TECK.COM			Email	jacklyn@nautilusenvironmental.ca			Email 1:	teckcoal@equisonline.com			X
Address	RR1 HWY 3			Address	10823 27th Street SE			Email 2:	DL-EVO-SRF-LAB@teck.com	X	X	X
								Email 3:				
City	Sparwood	Province	BC	City	Calgary	Province	AB	Email 4:				
								Email 5:				
								Email 6:				
								Email 7:				
								Email 8:				
								Email 10:				
								Email 11:				
								Email 12:				
								Email 13:				
Postal Code	V0B 2G0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada					
Phone Number	250-425-6179			Phone Number	403-253-7121			PO number	VPO00842410			

SAMPLE DETAILS | **ANALYSIS REQUESTED** | Filtered - F: Field, L: Lab, FL: Field & Lab, N: None

2022/09/20
08:00
Manitoulin
2e/SRS
4x20L carboys, 6x1L bottles
NoS/NoL
Good Condition

Sample ID 2223-0194	Sample Location (sys_loc_code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	Filt.	48hr Daphnia Magna Single Concentration Acute Toxicity 20C	48hr Daphnia Magna Single Concentration Acute Toxicity 10C	48hr Daphnia Magna Single Concentration Acute Toxicity Anitscalent	96hr Rainbow Trout Single Concentration Acute Toxicity (20L Bladders)	48hr Daphnia Magna Single Concentration Toxicity 15C							
F2_BPO_WG_2022-09-19_N -01	F2_BPO	WG		2022-09-19	8:45	G	8		2	2		4	10.5°C							
F2_BPO_WG_2022-09-19_N-AS -02	F2_BPO	WG		2022-09-19	8:46	G	1				1		✓							

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME
	Kristi Hammond	September 19, 2022 12:20		

SERVICE REQUEST (rush - subject to availability)

Regular (default)	
Priority (2-3 business days) - 50% surcharge	X
Emergency (1 Business Day) - 100% surcharge	
For Emergency <1 Day, ASAP or Weekend - Contact ALS	

Sampler's Name	Courtni Virgin	Mobile #	
Sampler's Signature		Date/Time	September 19, 2022

END OF REPORT

Acute Toxicity Test Results

Samples collected September 26, 2022

Final Report

October 4, 2022

Submitted to: **Teck Coal Ltd.**
Sparwood, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates					
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation	*Daphnia magna* antiscalant test initiation
EV_EC1_WS_2022-09-26_N-SRF / 2223-0297-01	26-Sep-22 at 0945h	27-Sep-22 at 0915h	27-Sep-22 at 1510h	27-Sep-22 at 1545h	27-Sep-22 at 1545h	-
EV_EC1_WS_2022-09-26_N-SRF-AS / 2223-0297-02	26-Sep-22 at 0946h	27-Sep-22 at 0915h	-	-	-	27-Sep-22 at 1550h
EV_ECOUT_WS_2022-09-26_N-SRF / 2223-0297-03	26-Sep-22 at 1230h	27-Sep-22 at 0915h	27-Sep-22 at 1520h	27-Sep-22 at 1550h	27-Sep-22 at 1550h	-
EV_ECOUT_WS_2022-09-26_N-SRF-AS / 2223-0297-04	26-Sep-22 at 1231h	27-Sep-22 at 0915h	-	-	-	27-Sep-22 at 1555h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
EV_EC1_WS_2022-09-26_N-SRF	10.3°C	903	347
EV_EC1_WS_2022-09-26_N-SRF-AS	10.3°C	903	347
EV_ECOUT_WS_2022-09-26_N-SRF	9.4°C	940	380
EV_ECOUT_WS_2022-09-26_N-SRF-AS	9.4°C	940	380

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)
- *Daphnia magna* 48-h single concentration screening test (conducted with 5 mg/L antiscalant)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample			
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
EV_EC1_WS_2022-09-26_N-SRF	100	100	100	-
EV_EC1_WS_2022-09-26_N-SRF-AS	-	-	-	100
EV_ECOUT_WS_2022-09-26_N-SRF	90	100	100	-
EV_ECOUT_WS_2022-09-26_N-SRF-AS	-	-	-	100

Sample ID	Percent Immobility in 100 (% v/v)		
	Daphnia magna 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
EV_EC1_WS_2022-09-26_N-SRF	0	3	-
EV_EC1_WS_2022-09-26_N-SRF-AS	-	-	0
EV_ECOUT_WS_2022-09-26_N-SRF	0	0	-
EV_ECOUT_WS_2022-09-26_N-SRF-AS	-	-	0

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
EV_EC1_WS_2022-09-26_N-SRF	Rainbow trout	None	None
	Daphnia magna	None	None
EV_EC1_WS_2022-09-26_N-SRF-AS	*Daphnia magna*	None	None
EV_ECOUT_WS_2022-09-26_N-SRF	Rainbow trout	Precipitate observed on the test vessel	None
	Daphnia magna	Surficial precipitate observed in 20˚C test	None
EV_ECOUT_WS_2022-09-26_N-SRF-AS	*Daphnia magna*	Surficial precipitate observed	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	4.0 (3.5-4.4) g/L KCl[1]	6.9 (6.6-7.2) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.6 (2.7-4.8) g/L KCl	6.1 (5.2-7.2) g/L NaCl
Reference toxicant CV	9.4%	5.5%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date August 30, 2022; [2] Test date September 21, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation





Report By:
Kiara O'Shea, BSc
Laboratory Biologist

Reviewed By:
Leila Oosterbroek, P Biol
Environmental Scientist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Control/dilution water for antiscalant test	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L), Na_2SeO_4 (2 µg Se/L) and 5 mg/L antiscalant
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS ENVIRONMENTAL

Trout Bench Sheet

Method TRS Client TEC164 Reference 2223-0297-01 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022-09-27	1510 *	CD/AM/KO	17	CC
1	2022-09-28	0730	CD	-	KC
2	2022-09-29	0832	MS	-	KC
3	2022-09-30	0820	Kam	-	MAF
4	2022-10-01	1030	NA/AM	7	ED

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 8.2
Initial EC (µS/cm): 1743
Salinity (ppt): 2

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L : yes/no

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	9.2	8.6			
Temp (°C) of 100%	16				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: **5.5-8.5**)								
Day 0	8.0	8.0						
Day 4	8.0	8.1						
EC (uS/cm)								
Day 0	411	1752						
Day 4	415	1723						
DO (mg/L) (**70-100% saturation at test temp.**)								
Day 0	8.6	8.6						
Day 4	8.8	8.8						
Temperature (°C) (range: **14-16°C**)								
Day 0	16	16						
Day 4	15	15						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.6	0.6
2	3.2	0.4
3	3.3	0.4
4	3.3	0.4
5	3.5	0.5
6	3.0	0.3
7	3.2	0.3
8	2.8	0.3
9	2.9	0.3
10	2.6	0.2

Loading Density (g/L): 0.2 (must be ≤0.5 g/L)
Mean Length (cm): 3.1
Length Range (cm): 2.6-3.6
Mean Weight (g): 0.4 (Must be ≥0.3g)
Weight Range: (g): 0.2-0.6

Test Organism Information

Batch: 20220708TR
Source: Trout Lodge
Tank #: 2
Days Held at 15± 2°C: 63 (must be ≥14 days)
Percent stock mortality: 0.13 (7 days prior to test, must be <2%)
Test Volume (L): 18

Comments :
96Hrs
96 LC0 NO ppt.

Reviewed By: CD Date Reviewed: 2022/10/03

NAUTILUS ENVIRONMENTAL

Trout Bench Sheet

Method TRS Client TEC164 Reference 2223-0297-03 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022-09-27	1520 *	CD/AM/KO	1/7	CC
1	2022-09-28	0730	CM	-	XC
2	2022-09-29	8:31	MJ	-	XC
3	2022-09-30	0810	Kam	-	[illegible]
4	2022-10-01	1035	NA/AM	7	EP

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 9.1
Initial EC (µS/cm): 1986
Salinity (ppt): 2

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L : (yes)/no

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	9.7	8.6			
Temp (°C) of 100%	16				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	8.0	7.7						
Day 4	8.1	8.2						
EC (uS/cm)								
Day 0	404	1897						
Day 4	412	1709						
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	8.6	8.6						
Day 4	8.8	8.8						
Temperature (°C) (range: 14-16°C)								
Day 0	16	16						
Day 4	15	15						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10(2)						
Day 4	10	10(2)						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.6	0.7
2	3.2	0.3
3	3.2	0.4
4	3.1	0.3
5	3.1	0.3
6	3.0	0.3
7	2.6	0.2
8	2.4	0.3
9	3.0	0.3
10	2.8	0.3

Loading Density (g/L): 0.2 (must be ≤0.5 g/L)
Mean Length (cm): 3.1
Length Range (cm): 2.8-3.6
Mean Weight (g): 0.3 (Must be ≥0.3g)
Weight Range: (g): 0.2-0.7

Test Organism Information

Batch 20220708TR
Source Trout Lodge
Tank # 2
Days Held at 15± 2°C 63 (must be ≥14 days)
Percent stock mortality 0.13 (7 days prior to test, must be <2%)
Test Volume (L) 18

Comments : 96Hrs
Day 3 stress; loss of buoyancy, dark colour
96 HR : ppt on bottom of tank. DAY4 stress: same as DAY 3.

Reviewed By: [signature] Date Reviewed: 2022/10/03

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC 164 Reference 2223-0297-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/09/27	1545	DM/AG	2	CC
1	2022/09/28	0900	AG	-	XC
2	2022/09/29	0820	AG	2	WM

Sample Information

Initial pH: 8.2
Initial EC (µS/cm): 1748
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	7.9	7.9	7.9	8.2	8.2	8.2				
2	8.0	7.9	7.8	7.8	7.9	7.9				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm) 1808

0	407	424	422	1691	1791	1791				
2	431	428	424	1654	1737	1761				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.7	7.7	7.7	7.7	7.7	7.7				
2	7.7	7.7	7.7	7.6	7.6	7.6				

Temperature (°C) (range: **18-22 °C**)

0	21	21	21	21	21	21				
2	21	21	21	21	21	21				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10(1i)	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar Wed D2 Jar(s) mortality 7 days prior to test (must be ≤25%) 6%

QA (previous month)

Days to first brood (≤12 days) 9

Average number of young produced (≥15 young) 35

Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 9.1

DO % of sample prior to aeration: 109 %

Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20min

Hardness (mg $CaCO_3$/L) of 100% : 903

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —

Alkalinity of 100% sample (mg $CaCO_3$/L): 347

Temperature (°C) of sample prior to aeration: 18

Is aeration required (<40% or >100%)? Yes or No

Filtered with 110um screen prior to testing Yes or No

Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or No

Dilution Water

Pail label / preparation date PM: 09/26

Hardness of dilution water (mg/L) 196

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Comments/Observations:

0hr: No ppt

48hr: no ppt

Reviewed By: ST Date Reviewed: 2022/10/03

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC 164 Reference 2223-0297-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/09/27	1545	DM/AG	2	CC
1	2022/09/28	0800	AG	-	YC
2	2022/09/29	0800	AG	2	[illegible]

Sample Information

Initial pH: 8.2
Initial EC (µS/cm): 1748
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				
day				pH (units) (range: 6.0-8.5)						
0	8.1	8.0	8.0	8.2	8.2	8.2				
2	7.9	7.9	7.9	8.0	8.0	8.1				
				The pH of the sample was not adjusted prior to test setting, unless noted in the comments below						
				EC (uS/cm)						
0	409	423	426	1713	1784	1803				
2	428	434	432	1722	1751	1792				
				DO (mg/L) (**40-100% saturation at test temp.**)						
0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				
				Temperature (°C) (range: **8-12 °C**)						
0	12	12	12	12	12	12				
2	12	12	12	12	12	12				
				Number Alive (I, immobile)						
0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar Wed E3/E2 Jar(s) mortality 7 days prior to test (must be ≤25%) 3%

QA (previous month)
Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 30
Were test treatments randomized on test tray? Yes / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0

Sample
DO (mg/L) of sample prior to aeration: 10.4
Temperature (°C) of sample prior to aeration: 12
DO % of sample prior to aeration: 111%
Is aeration required (<40% or >100%)? **Yes or No**
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 2 min
Filtered with 110um screen prior to testing **Yes or No**
Hardness (mg $CaCO_3$/L) of 100% : 903
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 347

Dilution Water
Pail label / preparation date PY: 09/24
Hardness of dilution water (mg/L) 180

DO Levels (40-100% saturation) - corrected for altitude -
4.1 to 10.3 mg/L at 8°C
4.0 to 10.0 mg/L at 9°C
3.9 to 9.8 mg/L at 10°C
3.8 to 9.6 mg/L at 11°C
3.7 to 9.4 mg/L at 12°C

Comments/Observations:
0hr: No ppt
48hr: no ppt

Reviewed By: [signature] Date Reviewed: 2022/10/03

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS 5 Client TEC 164 Reference 2223-0297-02

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/09/27	1550	DM/AG	2	CC
1	2022/09/28	0800	DG	-	XC
2	2022/09/29	0820	AG	2	VSM

Sample Information

Initial pH:	8.2
Initial EC (µS/cm):	1748
Salinity (ppt):	2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	7.9	7.9	8.0	7.9	8.0	8.0				
2	7.9	7.9	7.9	8.1	8.2	8.2				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	407	422	420	1729	1780	1801				
2	428	428	425	1725	1757	1757				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.7	7.7	7.7	7.9	7.9	7.9				
2	7.9	7.9	7.4	7.6	7.6	7.6				

Temperature (°C) (range: **18-22 °C**)

0	21	21	21	20	20	20				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar wed D5 Jar(s) mortality 7 days prior to test (must be ≤25%) 20%

QA (previous month)

Days to first brood (≤12 days) 9

Average number of young produced (≥15 young) 35

Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - (must be ≤10%) 0

Sample

DO (mg/L) of sample prior to aeration: 9.2 Temperature (°C) of sample prior to aeration: 18

DO % of sample prior to aeration: 111% Is aeration required (<40% or >100%)? (Yes) or No

Duration of aeration (37.5 +/- 12.5 mL/min/L): 20min Filtered with 110um screen prior to testing (Yes) or No

Hardness (mg $CaCO_3$/L) of 100% : 903 Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) -

Alkalinity of 100% sample (mg $CaCO_3$/L): 347

Dilution Water

Pail label / preparation date PL: 09/26

Hardness of dilution water (mg/L) 180

Antiscalant

Final Concentration in Sample: DM X5mg/L

Volume of sample: 500L Volume of antiscalant: 39.5µL

Comments/Observations:

0hr: NOPPT

48hr: noppt

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Reviewed By: [signature] Date Reviewed: 2022/10/03

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC 164 Reference 2223-0297-03

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/09/27	1550	DM/AG	2	CC
1	2022/09/28	0800	AG	-	CC
2	2022/09/29	0820	AG	2	CC

Sample Information

Initial pH: 9.1
Initial EC (µS/cm): 1986
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	8.0	8.0	7.9	7.7	7.7	7.9				
2	8.0	7.9	7.9	7.9	7.8	7.9				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	421	426	426	1808	1926	1935				
2	420	425	427	1712	1769	1728				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.7	7.7	7.7	7.9	7.9	7.9				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	21	21	21	20	20	20				
2	20	20	20	20	20	20				

Number Alive (l, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar wed D1 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 9
Average number of young produced (≥15 young) 35
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 9.1
DO % of sample prior to aeration: 111 %
Duration of aeration (37.5 +/- 12.5 mL/min/L): 20 min
Hardness (mg $CaCO_3$/L) of 100% : 940
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 380

Temperature (°C) of sample prior to aeration: 18
Is aeration required (<40% or >100%)? **Yes or No**
Filtered with 110um screen prior to testing **Yes or No**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Dilution Water

Pail label / preparation date pH: 09/26
Hardness of dilution water (mg/L) 10.0

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Comments/Observations:
0hr: No ppt
48hr: ppt on surface

Reviewed By: [signature] Date Reviewed: 2022/10/03

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC 164 Reference 2223-0297-03

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/09/27	1550	DM/AG	2	CC
1	2022/09/28	0736	AG	-	CC
2	2022/09/29	0800	AG	2	CC

Sample Information

Initial pH: 9.1
Initial EC (µS/cm): 1988
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	8.0	8.0	7.9	7.7	7.7	7.7				
2	8.0	8.0	8.0	7.8	7.9	7.9				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	415	423	424	1837	1928	1945				
2	428	430	430	1753	1823	1855				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (l, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar wed E3 Jar(s) mortality 7 days prior to test (must be ≤25%) 5 %

QA (previous month)
Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 30
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 10.4
DO % of sample prior to aeration: 111 %
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20min
Hardness (mg $CaCO_3$/L) of 100% : 940
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) =
Alkalinity of 100% sample (mg $CaCO_3$/L): 280

Temperature (°C) of sample prior to aeration: 12
Is aeration required (<40% or >100%)? **Yes or No**
Filtered with 110um screen prior to testing **Yes or (No)**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or (No)**

Dilution Water

Pail label / preparation date PM: 09/26
Hardness of dilution water (mg/L) 180

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

Comments/Observations:
0hr: No ppt
48hr: no ppt

Reviewed By: CP Date Reviewed: 2022/10/03

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS 5 Client TEC 164 Reference 2223-0297-04

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/09/27	1355	DM/AG	2	CC
1	2022/09/28	0900	AG	-	CC
2	2022/09/29	0925	AG	2	CC

Sample Information

Initial pH:	9.1
Initial EC (µS/cm):	1986
Salinity (ppt):	2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	8.0	8.0	8.0	8.0	8.0	8.0				
2	7.7	7.6	7.9	8.1	8.2	8.2				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	416	421	422	1807	1902	1928				
2	419	422	425	1762	1843	1872				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.7	7.7	7.7	7.9	7.9	7.9				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	21	21	21	20	20	20				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar wed D2 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)

Days to first brood (≤12 days) 9

Average number of young produced (≥15 young) 35

Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - (must be ≤10%) 0

Sample

DO (mg/L) of sample prior to aeration: 9.2 Temperature (°C) of sample prior to aeration: 19

DO % of sample prior to aeration: 112 % Is aeration required (<40% or >100%)? **Yes or No**

Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20 min Filtered with 110um screen prior to testing **Yes or No**

Hardness (mg $CaCO_3$/L) of 100% : 940 Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —

Alkalinity of 100% sample (mg $CaCO_3$/L): 380

Dilution Water

Pail label / preparation date B4: 09/26

Hardness of dilution water (mg/L) 180

Antiscalant

Final Concentration in Sample: DM X5mg/L

Volume of sample: 500L Volume of antiscalant: 39.5µL

Comments/Observations:

0hr: NOPPT

48hr: ppt on surface

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Reviewed By: DV Date Reviewed: 2022/10/03

APPENDIX C – Chain-of-custody form

Teck

COC ID: EVO NAUTILUS 2022-09-26 | TURNAROUND TIME: | RUSH:

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name / Job#	Elkview Operations			Lab Name	Nautilus Environmental - BC			Report Format / Distribution		Excel	PDF	EDD
Project Manager	Group 1; Brett Mason			Lab Contact				Email 1:	Cole.Macgregor@teck.com	X	X	X
Email	Brett.Mason@teck.com			Email	jacklyn@nautilusenvironmental.ca			Email 2:	teckcoal@equisonline.com			X
Address	RR1 HWY 3			Address	10823 27th Street SE			Email 3:	DL-EVO-SRF-LAB@teck.com	X	X	X
								Email 4:				
City	Sparwood	Province	BC	City	Calgary	Province	AB	Email 5:				
								Email 6:				
								Email 7:				
								Email 8:				
								Email 9:				
								Email 10:				
								Email 11:				
								Email 12:				
								Email 13:				
Postal Code	V0B 2G0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada					
Phone Number	250-425-6179			Phone Number	403-253-7121			PO number	VPO00842410			

SAMPLE DETAILS | **ANALYSIS REQUESTED** (Filtered - F: Field, L: Lab, FL: Field & Lab, N: None)

2022/09/27
09:15
Manitoulin
JC/SRS
1x20L carboys, 14x10L carboys, 10x1L bottles
NoG/NaT
Good Condition

Sample ID 2223-0297	Sample Location (sys_loc_code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	Filt.	Preserv.	ANALYSIS: 48hr Daphnia Magna Single Concentration Acute Toxicity 20C	48hr Daphnia Magna Single Concentration Acute Toxicity 10C	48hr Daphnia Magna Single Concentration Acute Toxicity Anitscelent	96hr Rainbow Trout Single Concentration Acute Toxicity (20 L Bladder)	96hr Rainbow Trout Single Concentration Acute Toxicity (10 L Bladder)	48hr Daphnia Magna Single Concentration Toxicity 15C						
EV_EC1_WS_2022-09-26_N-SRF -01	EV_EC1	WS		2022-09-26	9:45	G	12			2	2			8	10.3°C						
EV_EC1_WS_2022-09-26_N-SRF-AS -02	EV_EC1	WS		2022-09-26	9:45	G	1					1			↓						
EV_ECOUT_WS_2022-09-26_N-SRF -03	EV_ECOUT	WS		2022-09-26	12:30	G	11			2	2		1	6	9.4°C						
EV_ECOUT_WS_2022-09-26_N-SRF-AS -04	EV_ECOUT	WS		2022-09-26	12:30	G	1					1			↓						

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME
Field Temperatures	Ali Cunningham, Teck	2022-09-26		
ECOUT:		1500.		

SERVICE REQUEST (rush - subject to availability)

Regular (default)	
Priority (2-3 business days) - 50% surcharge	X
Emergency (1 Business Day) - 100% surcharge	
For Emergency <1 Day, ASAP or Weekend - Contact ALS	

Sampler's Name	Alison Block	Mobile #	
Sampler's Signature		Date/Time	September 26, 2022

END OF REPORT

Acute Toxicity Test Results

Samples collected September 26, 2022

Final Report

October 5, 2022

Submitted to: **Teck Coal Ltd.**
Sparwood, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates					
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation	*Daphnia magna* antiscalant test initiation
F2_BPO_WG_2022-09-26_N / 2223-0298-01	26-Sep-22 at 0800h	27-Sep-22 at 0915h	27-Sep-22 at 1530h	27-Sep-22 at 1600h	27-Sep-22 at 1600h	-
F2_BPO_WG_2022-09-26_N-AS / 2223-0298-02	26-Sep-22 at 0801h	27-Sep-22 at 0915h	-	-	-	27-Sep-22 at 1605h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
F2_BPO_WG_2022-09-26_N	12.6°C	1045	409
F2_BPO_WG_2022-09-26_N-AS	12.6°C	1045	409

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)
- *Daphnia magna* 48-h single concentration screening test (conducted with 20 mg/L antiscalant)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample			
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
F2_BPO_WG_2022-09-26_N	90	100	100	-
F2_BPO_WG_2022-09-26_N-AS	-	-	-	100

Sample ID	Percent Immobility in 100 (% v/v)		
	Daphnia magna 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
F2_BPO_WG_2022-09-26_N	0	0	-
F2_BPO_WG_2022-09-26_N-AS	-	-	0

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
F2_BPO_WG_2022-09-26_N	Rainbow trout	None	None
	Daphnia magna	Surficial precipitate observed in 20˚C test	None
F2_BPO_WG_2022-09-26_N-AS	*Daphnia magna*	None	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	4.0 (3.5-4.4) g/L KCl[1]	6.9 (6.6-7.2) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.6 (2.7-4.8) g/L KCl	6.1 (5.2-7.2) g/L NaCl
Reference toxicant CV	9.4%	5.5%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date August 30, 2022; [2] Test date September 21, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation

Report By:
Kiara O'Shea, BSc
Laboratory Biologist

Reviewed By:
Tamara Pomeroy, BSc
Laboratory and Quality Manager

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Control/dilution water for antiscalant test	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L), Na_2SeO_4 (2 µg Se/L) and 20 mg/L antiscalant
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS ENVIRONMENTAL

Trout Bench Sheet

Method TRS Client TEC164 Reference 2223-0298-01 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022-09-27	1530 *	CD/AM/KO	1 /7	CC
1	2022-09-28	0730	CY	-	YC
2	2022-09-29	8:35	MS	-	YC
3	2022-09-30	0805	Karm	-	[illegible]
4	2022-10-01	1035	NA/AM	7	EP

Note: * ; time when the test was loaded with fish

Sample Information CC

Initial pH: ~~8.0~~ 7.9
Initial EC (µS/cm): ~~1906~~ 1951
Salinity (ppt): ~~1~~ 3 OP.

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L : yes/no

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	8.6	8.6			
Temp (°C) of 100%	16				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	7.8	7.6						
Day 4	8.0	8.5						
EC (uS/cm)								
Day 0	405	1968						
Day 4	410	1924						
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	8.6	8.6						
Day 4	8.8	8.8						
Temperature (°C) (range: 14-16°C)								
Day 0	16	16						
Day 4	15	15						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10 (1)						
Day 3	10	9						
Day 4	10	9						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.2	0.4
2	3.3	0.5
3	4.1	0.8
4	3.4	0.4
5	3.0	0.3
6	3.3	0.4
7	3.3	0.4
8	3.2	0.4
9	2.9	0.2
10	2.7	0.2

Loading Density (g/L): 0.2
(must be ≤0.5 g/L)

Mean Length (cm): 3.2

Length Range (cm): 2.7-4.1

Mean Weight (g): 0.4
(Must be ≥0.3g)

Weight Range: (g): 0.2-0.8

Test Organism Information

Batch 20220708TR

Source Trout Lodge

Tank # 2

Days Held at 15± 2°C 63
(must be ≥14 days)

Percent stock mortality 0.13
(7 days prior to test, must be <2%)

Test Volume (L) 18

Comments : 100 → day-2 → loss of buoyancy.
~~96~~ Hrs
96 no No ppt.

Reviewed By: OP Date Reviewed: 2022/10/03

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC 164 Reference 2223-0298-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/09/27	1600	DM/AG	2	CC
1	2022/09/28	0745	AG	-	KC
2	2022/09/29	1015	NA	2	DM

Sample Information

Initial pH:	7.9
Initial EC (µS/cm):	1951
Salinity (ppt):	3

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	7.8	7.9	7.9	7.4	7.5	7.5				
2	8.0	8.0	8.0	8.1	8.1	8.1				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	392	413	419	1938	2010	2100				
2	419	419	424	1982	2100	2100				

DO (mg/L) (**40-100% saturation at test temp.**)

0	~~7.4~~ 7.7	~~7.9~~ 7.7	7.7	8.2	8.2	8.2				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	21	21	21	18	18	18				
2	20	20	20	20	20	20				

Number Alive (l, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar Wed C4 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)

Days to first brood (≤12 days) 8

Average number of young produced (≥15 young) 50

Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - 0%
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 8.2 Temperature (°C) of sample prior to aeration: 18

DO % of sample prior to aeration: 100 % Is aeration required (<40% or >100%)? **Yes or (No)**

Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20 min Filtered with 110um screen prior to testing **Yes or (No)**

Hardness (mg $CaCO_3$/L) of 100% : 1045 Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or (No)**

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —

Alkalinity of 100% sample (mg $CaCO_3$/L): 409

Dilution Water

Pail label / preparation date DM: 09/26

Hardness of dilution water (mg/L) 180

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Comments/Observations:

0hr: NO ppt

48hr: ~~NO~~ NA surficial ppt

Reviewed By: JP Date Reviewed: 2022/10/03

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC 164 Reference 2223-0298-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/09/27	1600	DM/AG	2	EC
1	2022/09/28	0735	AG	-	EC
2	2022/09/29	0955	NA	2	DM

Sample Information

Initial pH:	7.9
Initial EC (µS/cm):	1951
Salinity (ppt):	3

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	7.9	7.9	7.9	9.5	7.5	7.5				
2	8.0	8.0	8.0	8.2	8.2	8.2				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	411	420	418	1919	2080	2110				
2	423	431	431	1938	2090	2100				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.6	9.6	9.6	9.6	9.6	9.6				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	11	11	11	11	11	11				

Number Alive (l, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar wed D2 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)

Days to first brood (≤12 days) 9

Average number of young produced (≥15 young) 35

Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - 0%
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 9.4

Temperature (°C) of sample prior to aeration: 12

DO % of sample prior to aeration: 100%

Is aeration required (<40% or >100%)? **Yes or (No)**

Duration of aeration (37.5 +/- 12.5 mL/min/L) : —

Filtered with 110um screen prior to testing **Yes or (No)**

Hardness (mg $CaCO_3$/L) of 100% : 1045

Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or (No)**

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —

Alkalinity of 100% sample (mg $CaCO_3$/L): 409

Dilution Water

Pail label / preparation date P4: 09/14

Hardness of dilution water (mg/L) 180

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

Comments/Observations:

0hr: No ppt

48hr: No ppt.

Reviewed By: ST Date Reviewed: 2022/10/03

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS 20 Client TEC 164 Reference 2223-0298-02

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/09/27	1605	DM/AG	2	CC
1	2022/09/28	0745	AG	-	AC
2	2022/09/29	1015	NA	2	DM

Sample Information

Initial pH: 7.9
Initial EC (µS/cm): 1951
Salinity (ppt): 3

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	8.0	8.0	8.0	7.5	7.5	7.5				
2	8.0	8.0	8.1	8.3	8.3	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	421	423	425	1897	1995	2100				
2	431	433	434	1977	1999	2020				

DO (mg/L) (**40-100% saturation at test temp**.)

0	7.7	7.7	7.7	8.2	8.2	8.2				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	21	21	21	18	18	18				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar wed E3 Jar(s) mortality 7 days prior to test (must be ≤25%) 5%

QA (previous month)
Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 30
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0%

Sample
DO (mg/L) of sample prior to aeration: 8.2
DO % of sample prior to aeration: 100%
Duration of aeration (37.5 +/- 12.5 mL/min/L): -
Hardness (mg $CaCO_3$/L) of 100% : 1095
Temperature (°C) of sample prior to aeration: 18
Is aeration required (<40% or >100%)? **Yes or (No)**
Filtered with 110um screen prior to testing **Yes or (No)**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or (No)**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) -
Alkalinity of 100% sample (mg $CaCO_3$/L): 409

Dilution Water
Pail label / preparation date pd:09/26
Hardness of dilution water (mg/L) 180

Antiscalant
Final Concentration in Sample: 20mg/L
Volume of sample: 500L Volume of antiscalant: 158µL

Comments/Observations:
0hr: No ppt
48hr: No ppt.

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Reviewed By: ST Date Reviewed: 2022/10/03

APPENDIX C – Chain-of-custody form

Teck

Page 1 of 1

COC ID:	F2 NAUTILUS 2022-09-26	TURNAROUND TIME:		RUSH:	

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name / Job#	F2 SRF			Lab Name	Nautilus Environmental - BC			Report Format / Distribution		Excel	PDF	EDD
Project Manager	BRETT MASON			Lab Contact				Email 1:	Cole.Macgregor@teck.com	X	X	X
Email	BRETT.MASON@TECK.COM			Email	jacklyn@nautilusenvironmental.ca			Email 1:	teckcoal@equisonline.com			X
Address	RR1 HWY 3			Address	10823 27th Street SE			Email 2:	DL-EVO-SRF-LAB@teck.com	X	X	X
								Email 3:				
City	Sparwood	Province	BC	City	Calgary	Province	AB	Email 4:				
								Email 5:				
								Email 6:				
								Email 7:				
								Email 8:				
								Email 10:				
								Email 11:				
								Email 12:				
								Email 13:				
Postal Code	V0B 2G0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada					
Phone Number	250-425-6179			Phone Number	403-253-7121			PO number	*VPO00842410*			

SAMPLE DETAILS								ANALYSIS REQUESTED													Filtered - F: Field, L: Lab, FL: Field & Lab, N: None
2022/09/27 09:15 Manitoulin 2C/5RS 4x20L carboys, 6x1L bottles NGS/NGL Good Condition								Filt.													
								ANALYSIS	48hr Daphnia Magna Single Concentration Acute Toxicity 20C	48hr Daphnia Magna Single Concentration Acute Toxicity 10C	48hr Daphnia Magna Single Concentration Acute Toxicity Aniscalent	96hr Rainbow Trout Single Concentration Acute Toxicity (20L Bladders)	48hr Daphnia Magna Single Concentration Toxicity 15C							
Sample ID 2223-0296	Sample Location (sys_loc_code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.														
F2_BPO_WG_2022-09-26_N -01	F2_BPO	WG		2022-09-26	8:00	G	8		2	2		4	12.6°C								
F2_BPO_WG_2022-09-26_N-AS -02	F2_BPO	WG		2022-09-26	8:01	G	1				1		✓								

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME
		2022-09-26 1500		

SERVICE REQUEST (rush - subject to availability)					
Regular (default)		Sampler's Name	Alana Blade	Mobile #	
Priority (2-3 business days) - 50% surcharge	X				
Emergency (1 Business Day) - 100% surcharge		Sampler's Signature		Date/Time	September 26, 2022
For Emergency <1 Day, ASAP or Weekend - Contact ALS					

END OF REPORT

Acute Toxicity Test Results

Samples collected September 27, 2022

Final Report

October 5, 2022

Submitted to: **Teck Coal Ltd.**
Sparwood, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates						
	Collected	Rece ived	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 15˚C test initiation	*Daphnia magna* 20˚C test initiation	*Daphnia magna* antiscalant test initiation
EV_GT1_WS_2022-09-27_N-SRF / 2223-0314-01	27-Sep-22 at 0820h	28-Sep-22 at 0900h	28-Sep-22 at 1500h	28-Sep-22 at 1600h	-	28-Sep-22 at 1535h	-
EV_BC1_WS_2022-09-27_N-SRF / 2223-0314-02	27-Sep-22 at 1050h	28-Sep-22 at 0900h	28-Sep-22 at 1505h	28-Sep-22 at 1530h	28-Sep-22 at 1605h	28-Sep-22 at 1535h	-
EV_BC1_WS_2022-09-27_N-SRF-AS / 2223-0314-03	27-Sep-22 at 1051h	28-Sep-22 at 0900h	-	-	-	-	28-Sep-22 at 1545h
EV_GT1_WS_2022-09-27_N-SRF-AS / 2223-0314-04	27-Sep-22 at 0821h	28-Sep-22 at 0900h	-	-	-	-	28-Sep-22 at 1550h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
EV_GT1_WS_2022-09-27_N-SRF	15.0°C	1372	345
EV_BC1_WS_2022-09-27_N-SRF	15.9°C	1089	263
EV_BC1_WS_2022-09-27_N-SRF-AS	15.9°C	1089	263
EV_GT1_WS_2022-09-27_N-SRF-AS	15.0°C	1372	345

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)
- *Daphnia magna* 48-h single concentration screening test (conducted at 15°C)
- *Daphnia magna* 48-h single concentration screening test (conducted with 5 mg/L antiscalant)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample				
	Rainbow trout	***Daphnia magna* 10˚C**	***Daphnia magna* 15˚C**	***Daphnia magna* 20˚C**	***Daphnia magna* antiscalant**
EV_GT1_WS_2022-09-27_N-SRF	100	100	-	100	-
EV_BC1_WS_2022-09-27_N-SRF	100	100	100	100	-
EV_BC1_WS_2022-09-27_N-SRF-AS	-	-	-	-	100
EV_GT1_WS_2022-09-27_N-SRF-AS	-	-	-	-	100

Sample ID	Percent Immobility in 100 (% v/v)			
	***Daphnia magna* 10˚C**	***Daphnia magna* 15˚C**	***Daphnia magna* 20˚C**	***Daphnia magna* antiscalant**
EV_GT1_WS_2022-09-27_N-SRF	0	-	0	-
EV_BC1_WS_2022-09-27_N-SRF	0	0	0	-
EV_BC1_WS_2022-09-27_N-SRF-AS	-	-	-	0
EV_GT1_WS_2022-09-27_N-SRF-AS	-	-	-	0

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
EV_GT1_WS_2022-09-27_N-SRF	Rainbow trout	Precipitate observed on the bottom of test vessel	None
	Daphnia magna	Surficial precipitate observed in 10˚C test	None
EV_BC1_WS_2022-09-27_N-SRF	Rainbow trout	Precipitate observed on the bottom of test vessel	None
	Daphnia magna	Surficial precipitate observed in 20˚C test	None
EV_BC1_WS_2022-09-27_N-SRF-AS	*Daphnia magna*	None	None
EV_GT1_WS_2022-09-27_N-SRF-AS	*Daphnia magna*	None	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	4.0 (3.5-4.4) g/L KCl[1]	6.9 (6.6-7.2) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.6 (2.7-4.8) g/L KCl	6.1 (5.2-7.2) g/L NaCl
Reference toxicant CV	9.4%	5.5%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, August 30, 2022; [2] Test Date September 21, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation



Report By:
Daisy Meyer, BSc
Biologist



Reviewed By:
Jacklyn Poole, BSc
Laboratory and Quality Manager

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Control/dilution water for antiscalant test	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L), Na_2SeO_4 (2 µg Se/L) and 5 mg/L antiscalant
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 4. Summary of test conditions: 48-h *Daphnia magna* survival test at 15˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	15 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC 164 Reference 2223-3314-01 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022/09/28	1500*	ML/KCRM	7	lmm
1	2022/09/29	0835	AM	-	MF
2	2022/09/30	8:10	MF	-	MAF
3	2022/10/01	0850	NA	-	EP
4	2022/10/02	0945	MAF/NAV	7	DM

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 8.3
Initial EC (µS/cm): 1907
Salinity (ppt): 1

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L : **yes/no** kcrm/cc

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	9.5	9.6			
Temp (°C) of 100%	16				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	7.8	8.4						
Day 4	8.0	8.4						
EC (uS/cm)								
Day 0	410	2060						
Day 4	414	1908						
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	8.6	8.6						
Day 4	8.8	8.8						
Temperature (°C) (range: 14-16°C)								
Day 0	16	16						
Day 4	15	15						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.3	0.4
2	3.6	0.5
3	3.6	0.6
4	2.9	0.2
5	3.4	0.7
6	3.2	0.3
7	3.2	0.3
8	3.8	0.7
9	3.3	0.4
10	3.1	0.3

Loading Density (g/L): 0.2 (must be ≤0.5 g/L)
Mean Length (cm): 3.4
Length Range (cm): 2.9-3.9
Mean Weight (g): 0.4 (Must be ≥0.3g)
Weight Range: (g): 0.2-0.7

Test Organism Information

Batch 20220708TR
Source Trout Lodge
Tank # wm tank 2
Days Held at 15± 2°C GH (must be ≥14 days)
Percent stock mortality 0.18 (7 days prior to test, must be <2%)
Test Volume (L) 18

Comments :
96 hrs ppt on bottom of tank

Reviewed By: DM Date Reviewed: 2022/10/04

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC 164 Reference 2223-~~3~~0314-02 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022/09/28	1505 *	ML/KCRM	7	[illegible]
1	2022/09/29	0830	ASU	-	KC
2	2022/09/30	8:20	ML	-	MAF
3	2022/10/01	0850	NA	-	ED
4	2022/10/02	0950	MAF/MAV	7	DM

Note: * ; time when the test was loaded with fish

Kcrm/CC

Sample Information

Initial pH: 8.1

Initial EC (µS/cm): 1862

Salinity (ppt): 2

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L : yes/no

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	8.6	8.6			
Temp (°C) of 100%	16				

DO in mg/L (70% - 100% saturation)**

6.2 mg/L - 8.9 mg/L at 14°C

6.1 mg/L - 8.8 mg/L at 15°C

6.0 mg/L - 8.6 mg/L at 16°C

**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	7.9	8.1						
Day 4	8.0	8.4						
EC (uS/cm)								
Day 0	420	1942						
Day 4	423	1924						
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	8.6	8.6						
Day 4	8.8	8.8						
Temperature (°C) (range: 14-16°C)								
Day 0	16	16						
Day 4	15	15						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10 kcrm	10						
Day 4	MAF 10	9/10	9/10 MAF					

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control

Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	2.6	0.1
2	3.6	0.5
3	3.3	0.4
4	3.8	0.7
5	3.3	0.4
6	3.4	0.5
7	3.6	0.6
8	3.4	0.4
9	3.3	0.3
10	3.5	0.5

Loading Density (g/L): 0.2 (must be ≤0.5 g/L)

Mean Length (cm): 3.4

Length Range (cm): 2.6-3.8

Mean Weight (g): 0.4 (Must be ≥0.3g)

Weight Range: (g): 0.1-0.7

Test Organism Information

Batch 20220708TC

Source Trout Lodge

Tank # wim ~~64~~ 2

Days Held at 15± 2°C (must be ≥14 days) 64

Percent stock mortality (7 days prior to test, must be <2%) 0.18

Test Volume (L) 18

Comments :

96 hrs

ppt on bottom of tank.

Reviewed By: [signature]

Date Reviewed: 2022/10/04

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC164 Reference 2223-0314-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/09/28	1535	DM/MG	2	MM
1	2022/09/29	0800	AI	-	AC
2	2022/09/30	0945	BS/DM	2	EP

Sample Information

Initial pH: 8.3
Initial EC (µS/cm): 1907
Salinity (ppt): 1

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	7.8	7.8	7.9	8.2	8.3	8.3				
2	7.9	7.9	7.9	7.9	7.9	7.9				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	405	411	409	1976	2110	2120				
2	393	408	412	1881	1948	1983				

DO (mg/L) (**40-100% saturation at test temp**.)

0	7.9	7.9	7.9	7.9	7.9	7.9				
2	7.7	7.7	7.7	7.7	7.7	7.7				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	20	20	20				
2	21	21	21	21	21	21				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar Wed 04 Jar(s) mortality 7 days prior to test (must be ≤25%) 0

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 50
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 02
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 8.7 Temperature (°C) of sample prior to aeration: 20
DO % of sample prior to aeration: 114 % Is aeration required (<40% or >100%)? **Yes or No**
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20min Filtered with 110um screen prior to testing **Yes or No**
Hardness (mg $CaCO_3$/L) of 100% : 1372 Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 345

Dilution Water
Pail label / preparation date P2 : 09/26
Hardness of dilution water (mg/L) 177

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Comments/Observations:
0 hr: no ppt
48 hr: No ppt

Reviewed By: EP Date Reviewed: 2022/10/04

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC164 Reference 2223-0314-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/09/28	1600	DM/AG	2	WM
1	2022/09/29	0800	BS	-	AC
2	2022/09/30	0855	BS/DM	2	EP

Sample Information

Initial pH: 8.3
Initial EC (µS/cm): 1907
Salinity (ppt):

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	8.1	8.0	8.0	8.3	8.3	8.3				
2	8.1	8.0	8.0	8.0	8.1	8.1				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	403	411	420	1938	2120	2090				
2	401	411	424	1878	1998	1978				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**) WM

0	12	12	12	12	12	12	~~12~~			
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar Week DM Jar(s) mortality 7 days prior to test (must be ≤25%) 0

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 50
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0%
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 10.7 9.4 AM
Temperature (°C) of sample prior to aeration: 12 21
DO % of sample prior to aeration: 114%
Is aeration required (<40% or >100%)? **Yes or No**
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20min
Filtered with 110um screen prior to testing **Yes or No**
Hardness (mg $CaCO_3$/L) of 100% : 1372
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 345

Dilution Water
Pail label / preparation date R2: 04/26
Hardness of dilution water (mg/L) 177

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

Comments/Observations:
0 hr: no ppt
48 hr: superficial ppt

Reviewed By: EP Date Reviewed: 2022/10/04

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC164 Reference 2223-0314-02

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/09/28	1535	RM MG	2	WM
1	2022/09/29	0800	AI	-	KC
2	2022/09/30	1640	CC	2	MAP

Sample Information

Initial pH: 8.1
Initial EC (µS/cm): 1862
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	8.1	8.1	8.0	~7.8	7.8	7.9				
2	8.0	8.0	7.9	8.0	8.1	8.1				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	408	409	401	1888	1951	1959				
2	423	417	384	1842	1918	1911				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.9	7.9	7.9				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	20	20	20				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar Wed 04 Jar(s) mortality 7 days prior to test (must be ≤25%) 0

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 50
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0%
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 9.0
DO % of sample prior to aeration: 112 %
Duration of aeration (37.5 +/- 12.5 mL/min/L): 20min
Hardness (mg $CaCO_3$/L) of 100% : 1098
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 263

Temperature (°C) of sample prior to aeration: 20
Is aeration required (<40% or >100%)? Yes or No
Filtered with 110um screen prior to testing Yes or No
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or No

Dilution Water
Pail label / preparation date P2: 09/26
Hardness of dilution water (mg/L) 177

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Comments/Observations:
0 hr: No ppt
48 hr: ~~No ppt~~ cc Surficial ppt

Reviewed By: MP Date Reviewed: 2022/10/04.

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC164 Reference 2223-0314-02

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/09/28	1530	DM/AG	2	[illegible]
1	2022/09/29	0755	BS	-	AC
2	2022/09/30	1020	CC	2	MAF

Sample Information

Initial pH: 8.1
Initial EC (µS/cm): 1862
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day	CTLA	CTLB	CTLC	100A	100B	100C
0	7.8	8.0	8.0	8.0	8.0	8.0
2	8.1	8.1	8.1	8.1	8.2	8.2

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	~~407~~ 405	410	406	1919	1823	1905
2	467	420	424	1883	1969	1991

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4
2	9.4	9.4	9.4	9.4	9.4	9.4

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12
2	12	12	12	12	12	12

Number Alive (l, immobile)

0	10	10	10	10	10	10
1	10	10	10	10	10	10
2	10	10	10	10	10	10

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar Wed 05 Jar(s) mortality 7 days prior to test (must be ≤25%) 0

QA (previous month)

Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 37
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - 0%
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 10.5 Temperature (°C) of sample prior to aeration: 12
DO % of sample prior to aeration: 112% Is aeration required (<40% or >100%)? **(Yes) or No**
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20min Filtered with 110um screen prior to testing **Yes or (No)**
Hardness (mg $CaCO_3$/L) of 100% : 1098 Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or (No)**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 263

Dilution Water

Pail label / preparation date P2: 09/26
Hardness of dilution water (mg/L) 177

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

Comments/Observations:

0 hr: no ppt
48 hr: NO PPT

Reviewed By: SP Date Reviewed: 2022/10/14

NAUTILUS ENVIRONMENTAL

Daphnia 15°C Bench Sheet

Method DAS 15 Client TEC164 Reference 2223-0314-02

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/09/28	1605	DM/AG	2	wjm
1	2022/09/29	0810	BS		ZC
2	2022/09/30	1020	CC	2	MAF

Sample Information

Initial pH: 8.1
Initial EC (µS/cm): 1862
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	8.0	8.0	8.0	7.9	7.9	7.9				
2	8.0	8.0	8.0	8.1	8.2	8.2				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	419	422	419	1917	2060	1929				
2	411	421	424	1875	1964	1857				

DO (mg/L) (**40-100% saturation at test temp.**)

0	8.4	8.4	8.4	8.4	8.4	8.4				
2	8.4	8.4	8.4	8.4	8.4	8.4				

Temperature (°C) (range: **13-17 °C**)

0	17	17	17	17	17	17				
2	17	17	17	17	17	17				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar Wed Dy — Jar(s) mortality 7 days prior to test (must be ≤25%) 0

QA (previous month)

Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 50
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - 0%
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 9.4
DO % of sample prior to aeration: 112%
Duration of aeration (37.5 +/- 12.5 mL/min/L): 20min
Hardness (mg $CaCO_3$/L) of 100% : 1098
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 263

Temperature (°C) of sample prior to aeration: 17
Is aeration required (<40% or >100%)? **Yes or No**
Filtered with 110um screen prior to testing **Yes or No**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Dilution Water

Pail label / preparation date Pz: 09/26
Hardness of dilution water (mg/L) 177

DO Levels (40-100% saturation) - corrected for altitude -

3.7 to 9.1 mg/L at 13°C	3.4 to 8.6 mg/L at 16°C
3.6 to 8.9 mg/L at 14°C	3.4 to 8.4 mg/L at 17°C
3.5 to 8.8 mg/L at 15°C	

Comments/Observations:

0 hr: no ppt
48 hr: No ppt

Reviewed By: DP Date Reviewed: 2022/10/04

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS 5 Client TEC164 Reference 2223-0314-03

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/09/28	1545	DM/AG	2	WM
1	2022/09/29	0740	AT	-	XC
2	2022/09/30	0945	DM/BS	2	EP

Sample Information

Initial pH:	8.1
Initial EC (µS/cm):	1862
Salinity (ppt):	2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	8.1	8.1	7.9	7.9	7.9	8.0				
2	7.4	7.4	7.9	8.1	8.2	8.2				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	423	422	422	1900	2080	2080				
2	403	425	429	1862	1982	1970				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.9	7.9	7.9				
2	7.4	7.9	7.9	7.4	7.9	7.4				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	20	20	20				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar Wed 64 Jar(s) mortality 7 days prior to test (must be ≤25%) 20

QA (previous month)

Days to first brood (≤12 days) 9

Average number of young produced (≥15 young) 26

Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - (must be ≤10%) 0%

Sample

DO (mg/L) of sample prior to aeration: 8.5 Temperature (°C) of sample prior to aeration: 20

DO % of sample prior to aeration: 112 % Is aeration required (<40% or >100%)? **Yes or No**

Duration of aeration (37.5 +/- 12.5 mL/min/L): 20min Filtered with 110um screen prior to testing **Yes or No**

Hardness (mg $CaCO_3$/L) of 100% : 1098 Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —

Alkalinity of 100% sample (mg $CaCO_3$/L): 263

Dilution Water

Pail label / preparation date 12:09/26

Hardness of dilution water (mg/L) 177

Antiscalant

Final Concentration in Sample: 5 mg/L

Volume of sample: 500mL Volume of antiscalant: 39.5 mL

Comments/Observations:

0 hr: no ppt

48 hr: no ppt

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Reviewed By: DP Date Reviewed: 2022/10/04.

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS 5 Client TEC164 Reference 2223-0314-04

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/09/28	1550	DM/AB	2	wm
1	2022/09/29	0740	AI	-	XC
2	2022/09/30	0945	DM/BS	2	JC

Sample Information

Initial pH:	8.3
Initial EC (µS/cm):	1907
Salinity (ppt):	1

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	8.1	8.0	8.0	8.1	8.2	8.2				
2	7.9	7.9	7.9	8.2	8.2	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	420	418	421	1940	2090	2130				
2	406	425	427	1951	2010	2130				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.9	7.9	7.9				
2	7.9	7.9	7.9	7.7	7.7	7.7				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	20	21	20				
2	20	20	20	21	21	21				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar Wed E4 Jar(s) mortality 7 days prior to test (must be ≤25%) 5

QA (previous month)

Days to first brood (≤12 days) 9

Average number of young produced (≥15 young) 36

Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - (must be ≤10%) 0%

Sample

DO (mg/L) of sample prior to aeration: 8.4 Temperature (°C) of sample prior to aeration: 20

DO % of sample prior to aeration: 111 % Is aeration required (<40% or >100%)? **Yes or No**

Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20min Filtered with 110um screen prior to testing **Yes or No**

Hardness (mg $CaCO_3$/L) of 100% : 1372 Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —

Alkalinity of 100% sample (mg $CaCO_3$/L): 345

Dilution Water

Pail label / preparation date P2: 09/26

Hardness of dilution water (mg/L) 177

Antiscalant

Final Concentration in Sample: 5 mg/L

Volume of sample: 500mL Volume of antiscalant: 39.5mL

Comments/Observations:

0 hr: No ppt

48 hr: No ppt

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Reviewed By: JP Date Reviewed: 2022/10/04

APPENDIX C – Chain-of-custody form

Teck

COC ID:	EVO NAUTILUS 2022-09-27	TURNAROUND TIME:		RUSH:	

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name / Job#	Elkview Operations			Lab Name	Nautilus Environmental - BC			Report Format / Distribution		Excel	PDF	EDD
Project Manager	Group 1; Brett Mason			Lab Contact				Email 1:	teckcoal@equisonline.com			X
Email	Brett.Mason@teck.com			Email	jacklyn@nautilusenvironmental.ca			Email 2:	DL-EVO-SRF-LAB@teck.com	X	X	X
Address	RR1 HWY 3			Address	10823 27th Street SE			Email 3:	Cole.Macgregor@teck.com	X	X	X
								Email 4:				
City	Sparwood	Province	BC	City	Calgary	Province	AB	Email 5:				
								Email 6:				
								Email 7:				
								Email 8:				
								Email 9:				
								Email 10:				
								Email 11:				
								Email 12:				
								Email 13:				
Postal Code	V0B 2G0	Country	Canada	Postal Code	T2H 2K1	Country	Canada					
Phone Number	250-425-6179			Phone Number	T2Z 3V9			PO number	VPO00842410			

SAMPLE DETAILS / **ANALYSIS REQUESTED** — Filtered - F: Field, L: Lab, FL: Field & Lab, N: None

~~2022/09/~~
2223-0314
2022/09/29
09:00
Manitoulin, &
SRS/DL
11x1L bottles, 4x20L carboys, 8x20L carboys
Nos NOT
Good condition

Sample ID	Sample Location (sys_loc_code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	48hr Daphnia Magna Single Concentration Acute Toxicity 20C	48hr Daphnia Magna Single Concentration Acute Toxicity 10C	48hr Daphnia Magna Single Concentration Acute Toxicity Anitscalent	96hr Rainbow Trout Single Concentration Acute Toxicity (10 L Bladder)	96hr Rainbow Trout Single Concentration Acute Toxicity (20 L Bladder)	48hr Daphnia Magna Single Concentration Toxicity 15C	
EV_GT1_WS_2022-09-27_N-SRF -01	EV_GT1	WS		2022-09-27	8:20	G	8	2	2			4		15.0C
EV_BC1_WS_2022-09-27_N-SRF -02	EV_BC1	WS		2022-09-27	10:50	G	13	2	2		8		1	15.9°C
EV_BC1_WS_2022-09-27_N-SRF-AS -03	EV_BC1	WS		2022-09-27	10:51	G	1			1				↓
EV_GT1_WS_2022-09-27_N-SRF-AS -04	EV_GT1	WS		2022-09-27	8:21	G	1			1				15.0°C

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME
Field Temperatures	Teck - Nick Legend	September 27, 2022		
	[signature]	1345		

SERVICE REQUEST (rush - subject to availability)					
Regular (default)		Sampler's Name	James Rotar	Mobile #	
Priority (2-3 business days) - 50% surcharge	X				
Emergency (1 Business Day) - 100% surcharge		Sampler's Signature	[signature]	Date/Time	September 27, 2022
For Emergency <1 Day, ASAP or Weekend - Contact ALS					

END OF REPORT

Acute Toxicity Test Results

Samples collected October 03, 2022

Final Report

November 1, 2022

Submitted to: **Teck Coal Ltd.**
Sparwood, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates					
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation	*Daphnia magna* 5 mg/L antiscalant test initiation
EV_EC1_WS_2022-10-03_N-SRF / 2223-0365-01	03-Oct-22 at 1100h	04-Oct-22 at 0930h	04-Oct-22 at 1455h	04-Oct-22 at 1455h	04-Oct-22 at 1505h	-
EV_EC1_WS_2022-10-03_N-SRF-AS / 2223-0365-02	03-Oct-22 at 1101h	04-Oct-22 at 0930h	-	-	-	04-Oct-22 at 1455h
EV_ECOUT_WS_2022-10-03_N-SRF / 2223-0365-03	03-Oct-22 at 1340h	04-Oct-22 at 0930h	04-Oct-22 at 1440h	04-Oct-22 at 1450h	04-Oct-22 at 1450h	-
EV_ECOUT_WS_2022-10-03_N-SRF-AS / 2223-0365-04	03-Oct-22 at 1341h	04-Oct-22 at 0930h	-	-	-	04-Oct-22 at 1500h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
EV_EC1_WS_2022-10-03_N-SRF	11.4°C	886	304
EV_EC1_WS_2022-10-03_N-SRF-AS	11.4°C	886	304
EV_ECOUT_WS_2022-10-03_N-SRF	10.6°C	842	431
EV_ECOUT_WS_2022-10-03_N-SRF-AS	10.6°C	842	431

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)
- *Daphnia magna* 48-h single concentration screening test (conducted with 5 mg/L antiscalant)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample			
	Rainbow trout	***Daphnia magna* 10˚C**	***Daphnia magna* 20˚C**	***Daphnia magna* 5 mg/L antiscalant**
EV_EC1_WS_2022-10-03_N-SRF	100	100	100	-
EV_EC1_WS_2022-10-03_N-SRF-AS	-	-	-	100
EV_ECOUT_WS_2022-10-03_N-SRF	80	100	100	-
EV_ECOUT_WS_2022-10-03_N-SRF-AS	-	-	-	100

Sample ID	Percent Immobility in 100 (% v/v)		
	***Daphnia magna* 10˚C**	***Daphnia magna* 20˚C**	***Daphnia magna* 5 mg/L antiscalant**
EV_EC1_WS_2022-10-03_N-SRF	0	30	-
EV_EC1_WS_2022-10-03_N-SRF-AS	-	-	0
EV_ECOUT_WS_2022-10-03_N-SRF	0	27	-
EV_ECOUT_WS_2022-10-03_N-SRF-AS	-	-	0

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
EV_EC1_WS_2022-10-03_N-SRF	Rainbow trout	Precipitate observed on test vessel	None
	Daphnia magna	Surficial precipitate, as well as precipitate observed on test vessels in 20˚C and 10˚C tests	None
EV_EC1_WS_2022-10-03_N-SRF-AS	*Daphnia magna*	None	None
EV_ECOUT_WS_2022-10-03_N-SRF	Rainbow trout	Precipitate observed on test vessel	None
	Daphnia magna	Surficial precipitate, as well as precipitate observed on test vessels in 20˚C and 10˚C tests	None
EV_ECOUT_WS_2022-10-03_N-SRF-AS	*Daphnia magna*	Surficial precipitate, as well as precipitate observed on test vessels	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	3.8 (3.3-4.4) g/L KCl[1]	6.1 (5.8 - 6.4) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.6 (2.7-4.8) g/L KCl	6.1 (5.2 - 7.2) g/L NaCl
Reference toxicant CV	9.4%	5.5%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, October 3, 2022; [2] Test Date, October 5, 2022

LC = Lethal Concentration, CL = Confidence Limits, SD = Standard Deviation CV = Coefficient of Variation



Report By:
Mia Fearey, BIT
Biologist



Reviewed By:
Mimi Tran, Dipl. T.
Biologist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Control/dilution water for antiscalant test	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L), Na_2SeO_4 (2 µg Se/L) and 5 mg/L antiscalant
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC 164 Reference 2223-0365-01 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022/10/04	1455 *	AM/ML	7	CC
1	2022/10/05	0800	KO	-	CC
2	2022/10/06	0741	MJ	-	CC
3	2022/10/07	0902	MJ	-	CC
4	2022/10/08	0955	MS/AM/KO	7	N/A

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 8.0
Initial EC (µS/cm): 1797
Salinity (ppt): 2

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L (yes/no)

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	9.7	8.8			
Temp (°C) of 100%	14				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	7.9	7.9						
Day 4	8.4	8.3						
EC (uS/cm)								
Day 0	409	1776						
Day 4	427	1672						
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	8.6	8.8						
Day 4	8.6	8.6						
Temperature (°C) (range: 14-16°C)								
Day 0	16	15						
Day 4	16	16						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10 (1)						
Day 4	10	10 (1)						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.0	0.4
2	2.9	0.3
3	3.0	0.4
4	2.6	0.2
5	3.2	0.4
6	3.5	0.6
7	3.3	0.5
8	2.7	0.3
9	2.9	0.3
10	2.9	0.3

Loading Density (g/L): 0.2 (must be ≤0.5 g/L)
Mean Length (cm): 3.0
Length Range (cm): 2.6-3.5
Mean Weight (g): 0.4 (Must be ≥0.3g)
Weight Range: (g): 0.2-0.6

Test Organism Information

Batch 20220825TR
Source LSL
Tank # 12
Days Held at 15± 2°C 40 (must be ≥14 days)
Percent stock mortality 0 (7 days prior to test, must be <2%)
Test Volume (L) 18

Comments : 96 hrs: day-3 → 100 → loss of buoyancy, vertical movement. ppt on tank
day-4 → 100 → ↓

Reviewed By: EV Date Reviewed: 2022/10/12

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC 164 Reference 2223-0365-03 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022/10/04	1440 *	AM/ML	7	EC
1	2022/10/05	0800	KD	-	EC
2	2022/10/06	9:42	MJ	-	EC
3	2022/10/07	0903	MS	-	EC
4	2022/10/08	0956	MS/AM/KD		NH

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 7.7
Initial EC (µS/cm): 1876
Salinity (ppt): 2

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L : yes/no

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	10.1	8.9			
Temp (°C) of 100%	14				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	7.8	7.8						
Day 4	8.3	8.3						
EC (uS/cm)								
Day 0	415	1910						
Day 4	460	1706						
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	8.6	8.9						
Day 4	8.6	8.6						
Temperature (°C) (range: 14-16°C)								
Day 0	16	AM 16 14						
Day 4	16	16						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	9(1)						
Day 4	10	8						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	2.9	0.3
2	3.4	0.6
3	2.7	0.3
4	3.1	0.4
5	3.5	0.7
6	2.9	0.3
7	3.2	0.4
8	3.6	0.6
9	2.9	0.3
10	3.1	0.4

Loading Density (g/L): 0.2 (must be ≤0.5 g/L)
Mean Length (cm): 3.1
Length Range (cm): 2.7-3.6
Mean Weight (g): 0.4 (Must be ≥0.3g)
Weight Range: (g): 0.3-0.7

Test Organism Information

Batch 20220825TR
Source LSL
Tank # 12
Days Held at 15± 2°C: 40 (must be ≥14 days)
Percent stock mortality: 0 (7 days prior to test, must be <2%)
Test Volume (L): 18

Comments :
96 hrs: day-3 -100 → 1 dead ; loss of buoyancy. ppt on tank
day-4 -100 → 1 dead.

Reviewed By: EV Date Reviewed: 2022/10/12

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC 164 Reference 2223-0365-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/10/04	1505	LC/AG	2	VM
1	2022/10/05	0900	AG	-	EC
2	2022/10/06	0820	AG	2	EC

Sample Information

Initial pH:	8.0
Initial EC (µS/cm):	1797
Salinity (ppt):	2

Lab Code	CTL A	CTL C	CTL C	100 A	100 B	100 C

pH (units) (range: 6.0-8.5)

day										
0	7.9	7.9	7.9	8.0	8.1	8.1				
2	7.5	7.7	7.7	7.9	8.0	7.9				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	414	401	395	1767	1815	1796				
2	389	405	393	1662	1748	1778				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.7	7.7	7.7	8.4	8.4	8.4				
2	7.1	7.1	7.1	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	21	21	21	20	20	20				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10(3i)	10(6i)				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar WedE1 Jar(s) mortality 7 days prior to test (must be ≤25%) 5%

QA (previous month)

Days to first brood (≤12 days) 9

Average number of young produced (≥15 young) 37

Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - 0 (must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 9.2

DO % of sample prior to aeration: 112

Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20min

Hardness (mg $CaCO_3$/L) of 100% : 886

Temperature (°C) of sample prior to aeration: 18

Is aeration required (<40% or >100%)? (Yes) or No

Filtered with 110um screen prior to testing Yes or (No)

Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —

Alkalinity of 100% sample (mg $CaCO_3$/L): 304

Dilution Water

Pail label / preparation date P2:09/30

Hardness of dilution water (mg/L) 169

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Comments/Observations:

0hr: NO PPT

48hr: ppt on surface and jar.

Reviewed By: EV Date Reviewed: 2022/10/12

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC 164 Reference 2223-0365-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/10/04	1455	LC/AG	2	[illegible]
1	2022/10/05	0800	AG	-	CC
2	2022/10/06	0810	AG	2	CC

Sample Information

Initial pH: 8.0
Initial EC (µS/cm): 1797
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				
day				pH (units) (range: 6.0-8.5)						
0	7.9	7.9	7.9	8.0	8.0	8.0				
2	8.1	8.0	8.0	8.1	8.2	8.2				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

				EC (uS/cm)						
0	389	392	393	1811	1807	1795				
2	391	393	390	1713	1771	1749				

				DO (mg/L) (**40-100% saturation at test temp.**)						
0	9.4	9.4	9.4	9.6	9.6	9.6				
2	9.4	9.4	9.4	9.4	9.4	9.4				

				Temperature (°C) (range: **8-12 °C**)						
0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

				Number Alive (I, immobile)						
0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10 ~~(10 I)~~ AG	10 ~~(10 I)~~ AG	10 ~~(10 I)~~ AG				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar WedF1 Jar(s) mortality 7 days prior to test (must be ≤25%) 5%

QA (previous month)
Days to first brood (≤12 days) 9
Average number of young produced (≥15 young) 37
Were test treatments randomized on test tray? Yes / No

Control Validity Criteria
Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 10.3
Temperature (°C) of sample prior to aeration: ~~18~~ AG 12
DO % of sample prior to aeration: 110
Is aeration required (<40% or >100%)? Yes or No
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20min
Filtered with 110um screen prior to testing Yes or No
Hardness (mg $CaCO_3$/L) of 100% : 886
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or No
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 304

Dilution Water
Pail label / preparation date P2:09/30
Hardness of dilution water (mg/L) 167

DO Levels (40-100% saturation) - corrected for altitude -
4.1 to 10.3 mg/L at 8°C
4.0 to 10.0 mg/L at 9°C
3.9 to 9.8 mg/L at 10°C
3.8 to 9.6 mg/L at 11°C
3.7 to 9.4 mg/L at 12°C

Comments/Observations:
0hr: No ppt
48hr: ppt on surface and jar.

Reviewed By: EV Date Reviewed: 2022/10/12

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS 5 Client TEC 164 Reference 2223-0365-02

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/10/04	1455	LC/AG	2	VM
1	2022/10/05	0750	AG	-	CC
2	2022/10/06	0820	AG	2	CC

Sample Information

Initial pH:	8.0
Initial EC (µS/cm):	1797
Salinity (ppt):	2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	7.9	7.9	7.9	8.0	8.0	8.0				
2	8.0	8.0	8.0	8.2	8.3	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	388	390	392	1811	1808	1804				
2	392	392	404	1747	1770	1772				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.7	7.7	7.7	8.5	8.5	8.5				
2	7.7	7.7	7.7	7.7	7.7	7.7				

Temperature (°C) (range: **18-22 °C**)

0	21	21	21	20	20	20				
2	21	21	21	21	21	21				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar: Wedel — Jar(s) mortality 7 days prior to test (must be ≤25%): 5%

QA (previous month)

Days to first brood (≤12 days): 9

Average number of young produced (≥15 young): 37

Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - (must be ≤10%): 0

Sample

DO (mg/L) of sample prior to aeration: 9.0

DO % of sample prior to aeration: 110

Duration of aeration (37.5 +/- 12.5 mL/min/L): 20 min

Hardness (mg $CaCO_3$/L) of 100%: 886

Temperature (°C) of sample prior to aeration: 18

Is aeration required (<40% or >100%)? (Yes) or No

Filtered with 110um screen prior to testing: Yes or (No)

Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L): —

Alkalinity of 100% sample (mg $CaCO_3$/L): 304

Dilution Water

Pail label / preparation date: P2'09/30

Hardness of dilution water (mg/L): 167

Antiscalant

Final Concentration in Sample: 5 mg/L

Volume of sample: 500 Volume of antiscalant: 39.5 µL

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Comments/Observations:

0hr: NOPPT

48hr: no ppt

Reviewed By: EV Date Reviewed: 2022/10/12

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method: DAS 20 | Client: TEC 164 | Reference: 2223-0365-03

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/10/04	1450	LC/AG	2	WM
1	2022/10/05	0745	AG	-	CC
2	2022/10/06	0820	AG	2	CC

Sample Information

Initial pH: 7.7
Initial EC (µS/cm): 1876
Salinity (ppt): 2

Lab Code	CTL A	CTL C	CTL C	100 A	100 B	100 C				

pH (units) (range: 6.0-8.5)

day										
0	7.9	7.9	7.9	8.0	8.0	8.0				
2	8.1	8.0	7.9	7.7	7.7	7.8				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	393	395	391	1907	1935	1906				
2	401	403	~~396~~ AG 396	1682	1810	1757				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.7	7.7	7.7	8.5	8.5	8.5				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	21	21	21	20	20	20				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10 (1i)	10				
2	10	10	10	10 (2i)	10 (4i)	10 (2i)				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar: WedE2 — Jar(s) mortality 7 days prior to test (must be ≤25%): 11.1

QA (previous month)
Days to first brood (≤12 days): 9
Average number of young produced (≥15 young): 37
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%): 0

Sample
DO (mg/L) of sample prior to aeration: 8.9
DO % of sample prior to aeration: 109
Duration of aeration (37.5 +/- 12.5 mL/min/L): 20min
Hardness (mg $CaCO_3$/L) of 100%: 842
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L): —
Alkalinity of 100% sample (mg $CaCO_3$/L): 431

Temperature (°C) of sample prior to aeration: 18
Is aeration required (<40% or >100%)? **Yes or No**
Filtered with 110um screen prior to testing **Yes or No**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Dilution Water
Pail label / preparation date: P2:09/30
Hardness of dilution water (mg/L): 167

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Comments/Observations:
0hr: NO PPT
48hr: ppt on surface and jar.

Reviewed By: EV — Date Reviewed: 2022/10/12

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC 164 Reference 2223-0365-03

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/10/04	1450	LC/AG	2	WM
1	2022/10/05	0755	AG	-	CC
2	2022/10/06	0810	AG	2	CC

Sample Information

Initial pH: 7.7
Initial EC (µS/cm): 1876
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	7.7	7.7	7.7	7.9	7.9	7.9				
2	8.2	8.1	8.1	7.9	8.0	8.0				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	385	394	391	1925	1926	1914				
2	403	401	394	1686	1818	1838				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.6	9.6	9.6				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar Wed E3 Jar(s) mortality 7 days prior to test (must be ≤25%) 6%

QA (previous month)

Days to first brood (≤12 days) 9
Average number of young produced (≥15 young) 37
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 10.3
Temperature (°C) of sample prior to aeration: 12
DO % of sample prior to aeration: 110
Is aeration required (<40% or >100%)? **(Yes) or No**
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20min
Filtered with 110um screen prior to testing **Yes or (No)**
Hardness (mg $CaCO_3$/L) of 100% : 842
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or (No)**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 431

Dilution Water

Pail label / preparation date P2:09/30
Hardness of dilution water (mg/L) 167

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

Comments/Observations:

0hr: NO ppt
48hr: ppt on surface and jar

Reviewed By: EV Date Reviewed: 2022/10/12

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS 5 Client TEC 164 Reference 2223-0365-04

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/10/04	1500	LC/AG	2	VM
1	2022/10/05	0740	AG	-	CC
2	2022/10/06	0815	AG	2	CC

Sample Information

Initial pH: 7.7
Initial EC (µS/cm): 1870
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	8.0	8.0	8.0	7.8	7.8	7.8				
2	8.0	7.9	7.9	8.1	8.2	8.2				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	402	397	396	1943	1941	1936				
2	393	396	396	1843	1872	1875				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.7	7.7	7.7	8.4	8.4	8.4				
2	7.7	7.7	7.7	7.7	7.7	7.7				

Temperature (°C) (range; **18-22 °C**)

0	21	21	21	20	20	20				
2	21	21	21	21	21	21				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar WedEI — Jar(s) mortality 7 days prior to test (must be ≤25%) 5%

QA (previous month)
Days to first brood (≤12 days) 9
Average number of young produced (≥15 young) 37
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0

Sample
DO (mg/L) of sample prior to aeration: 8.4
DO % of sample prior to aeration: 107
Duration of aeration (37.5 +/- 12.5 mL/min/L): 20min
Hardness (mg $CaCO_3$/L) of 100% : 842
Temperature (°C) of sample prior to aeration: 18
Is aeration required (<40% or >100%)? **Yes or No**
Filtered with 110um screen prior to testing **Yes or No**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 451

Dilution Water
Pail label / preparation date P2:09/30
Hardness of dilution water (mg/L) 167

Antiscalant
Final Concentration in Sample: 5 mg/L
Volume of sample: 500 Volume of antiscalant: 39.5 µL

Comments/Observations:
0hr: No ppt
48hr: ppt on surface and jar

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Reviewed By: EV Date Reviewed: 2022/10/12

APPENDIX C – Chain-of-custody form

Teck

COC ID: **EVO NAUTILUS-2022-10-03** | TURNAROUND TIME: | RUSH:

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name / Job#	Elkview Operations			Lab Name	Nautilus Environmental - BC			Report Format / Distribution		Excel	PDF	EDD
Project Manager	Group 1; Brett Mason			Lab Contact				Email 1:	Cole.Macgregor@teck.com	X	X	X
Email	Brett.Mason@teck.com			Email	jacklyn@nautilusenvironmental.ca			Email 2:	teckcoal@equisonline.com			X
Address	RR1 HWY 3			Address	10823 27th Street SE			Email 3:	DL-EVO-SRF-LAB@teck.com	X	X	X
								Email 4:				
City	Sparwood	Province	BC	City	Calgary	Province	AB	Email 5:				
								Email 6:				
								Email 7:				
								Email 8:				
								Email 9:				
								Email 10:				
								Email 11:				
								Email 12:				
								Email 13:				
Postal Code	V0B 2G0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada					
Phone Number	250-425-6179			Phone Number	403-253-7121			PO number	*VPO00859537*			

SAMPLE DETAILS — **ANALYSIS REQUESTED** — Filtered - F: Field, L: Lab, FL: Field & Lab, N: None

2022/10/04
09:30
Manitoulin
DC/SRS
8x10L carboys, 4x20L carboys
10x1L bottles
N60/N0L
Good Condition

Sample ID 2223-0605	Sample Location (sys_loc_code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	48hr Daphnia Magna Single Concentration Acute Toxicity 20C	48hr Daphnia Magna Single Concentration Acute Toxicity 10C	48hr Daphnia Magna Single Concentration Acute Toxicity Anitscelent	96hr Rainbow Trout Single Concentration Acute Toxicity (20 L Bladder)	96hr Rainbow Trout Single Concentration Acute Toxicity (10 L Bladder)	48hr Daphnia Magna Single Concentration Toxicity 15C
EV_EC1_WS_2022-10-03_N-SRF -01	EV_EC1	WS		2022-10-03	11:00	G	12	2	2			8	11.4°C
EV_EC1_WS_2022-10-03_N-SRF-AS -02	EV_EC1	WS		2022-10-03	11:01	G	1			1			↓
EV_ECOUT_WS_2022-10-03_N-SRF -03	EV_ECOUT	WS		2022-10-03	13:40	G	8	2	2		4		10.6°C
EV_ECOUT_WS_2022-10-03_N-SRF-AS -04	EV_ECOUT	WS		2022-10-03	13:41	G	1			1			↓

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME
Field Temperatures ECOUT:		October 3, 2022 1630		

SERVICE REQUEST (rush - subject to availability)				
Regular (default) X	Sampler's Name		Mobile #	
Priority (2-3 business days) - 50% surcharge				
Emergency (1 Business Day) - 100% surcharge	Sampler's Signature		Date/Time	October 3, 2022
For Emergency <1 Day, ASAP or Weekend - Contact ALS				

END OF REPORT

Acute Toxicity Test Results

Samples collected October 3, 2022

Final Report

November 1, 2022

Submitted to: **Teck Coal Ltd.**
Sparwood, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates					
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation	*Daphnia magna* 20 mg/L antiscalant test initiation
F2_BPO_WG_2022-10-03_N / 2223-0366-01	3-Oct-22 at 0855h	4-Oct-22 at 0930h	4-Oct-22 at 1440h	4-Oct-22 at 1450h	4-Oct-22 at 1505h	-
F2_BPO_WG_2022-10-03_N-AS / 2223-0366-02	3-Oct-22 at 0856h	4-Oct-22 at 0930h	-	-	-	4-Oct-22 at 1500h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
F2_BPO_WG_2022-10-03_N	13.6°C	1141	337
F2_BPO_WG_2022-10-03_N-AS	13.6°C	1141	337

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)
- *Daphnia magna* 48-h single concentration screening test (conducted with 20 mg/L antiscalant)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample			
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* 20 mg/L antiscalant
F2_BPO_WG_2022-10-03_N	100	100	100	-
F2_BPO_WG_2022-10-03_N-AS	-	-	-	100

Sample ID	Percent Immobility in 100 (% v/v)		
	***Daphnia magna* 10˚C**	***Daphnia magna* 20˚C**	***Daphnia magna* 20 mg/L antiscalant**
F2_BPO_WG_2022-10-03_N	0	0	-
F2_BPO_WG_2022-10-03_N-AS	-	-	0

Precipitate observations

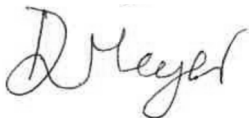
Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
F2_BPO_WG_2022-10-03_N	Rainbow trout	None	None
	Daphnia magna	None	None
F2_BPO_WG_2022-10-03_N-AS	*Daphnia magna*	None	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	3.8 (3.3-4.4) g/L KCl[1]	6.1 (5.8-6.4) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.6 (2.7-4.8) g/L KCl	6.1 (5.2-7.2) g/L NaCl
Reference toxicant CV	9.4%	5.5%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, October 3, 2022; [2] Test Date, October 5, 2022

LC = Lethal Concentration, CL = Confidence Limit, SD = Standard Deviation, CV = Coefficient of Variation



Report By:
Daisy Meyer, BSc
Laboratory Biologist



Reviewed By:
Mimi Tran, Dipl. T.
Biologist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Control/dilution water for antiscalant test	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L), Na_2SeO_4 (2 µg Se/L) and 20 mg/L antiscalant
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC 164 Reference 2223-0366-01 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022/10/04	1440*	AM/ML	7	CC
1	2022/10/05	0800	KO	-	CC
2	2022/10/06	9:42	MS	-	[illegible]
3	2022/10/07	0904	MS	-	[illegible]
4	2022/10/08	0857	MS / KO / AI		NA

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 7.6
Initial EC (µS/cm): 1912
Salinity (ppt): 3

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L : **yes/no**

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	8.6	8.6			
Temp (°C) of 100%	16				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
			pH (units) (range: **5.5-8.5**)					
Day 0	7.8	7.6						
Day 4	8.3	8.6						
			EC (uS/cm)					
Day 0	418	2020						
Day 4	424	1913						
			DO (mg/L) (**70-100% saturation at test temp.**)					
Day 0	8.6	8.6						
Day 4	8.6	8.6						
			Temperature (°C) (range: **14-16°C**)					
Day 0	16	16						
Day 4	16	16						
			Number Alive (In brackets number stressed)					
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10 (1)	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.9	0.8
2	4.1	1.0
3	3.0	0.3
4	3.1	0.4
5	3.2	0.5
6	3.4	0.5
7	2.7	0.2
8	2.5	0.2
9	3.6	0.7
10	2.9	0.3

Loading Density (g/L): 0.3
(must be ≤0.5 g/L)
Mean Length (cm): 3.2
Length Range (cm): 2.5-4.1
Mean Weight (g): 0.5
(Must be ≥0.3g)
Weight Range: (g): 0.2-1.0

Test Organism Information

Batch 20220825TR
Source LSL
Tank # 12
Days Held at 15± 2°C 40
(must be ≥14 days)
Percent stock mortality 0
(7 days prior to test, must be <2%)
Test Volume (L) 17 ~~18~~ AM

Comments : day ~~4~~ 4.91 → CTL → 1 stressed.
96 hrs:

NO ppt

Reviewed By: EV Date Reviewed: 2022/10/12

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC 164 Reference 2223-0366-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/10/04	1505	LC/AG	2	ujm
1	2022/10/05	0740	AG	-	CC
2	2022/10/06	0815	AG	2	CC

Sample Information

Initial pH: 7.6
Initial EC (µS/cm): 1912
Salinity (ppt): 3

Lab Code	CTL A	CTL C	CTL C	100 A	100 B	100 C				

pH (units) (range: 6.0-8.5)

day										
0	8.0	8.0	8.0	7.6	7.6	7.6				
2	8.1	7.9	7.9	8.3	8.3	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	398	397	395	1992	1993	2080				
2	397	398	398	1852	1923	1935				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.7	7.7	7.7	8.2	8.2	8.2				
2	7.7	7.7	7.7	7.7	7.7	7.7				

Temperature (°C) (range: **18-22 °C**)

0	21	21	21	18	18	18				
2	21	21	21	21	21	21				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar WPdE1 Jar(s) mortality 7 days prior to test (must be ≤25%) 5%

QA (previous month)
Days to first brood (≤12 days) 9
Average number of young produced (≥15 young) 37
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 8.2 Temperature (°C) of sample prior to aeration: DM 8 18
DO % of sample prior to aeration: 100 Is aeration required (<40% or >100%)? Yes or (No)
Duration of aeration (37.5 +/- 12.5 mL/min/L) : — Filtered with 110um screen prior to testing Yes or (No)
Hardness (mg $CaCO_3$/L) of 100% : 1191 Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 337

Dilution Water
Pail label / preparation date P21.09/30
Hardness of dilution water (mg/L) 167

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Comments/Observations:
0hr: NO PPT
48hr: no ppt

Reviewed By: EV Date Reviewed: 2022/10/12

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC 164 Reference 2223-0366-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/10/04	1450	LC/AG	2	WM
1	2022/10/05	0735	AG	-	✓
2	2022/10/06	0810	AG	2	NA

Sample Information

Initial pH:	7.6
Initial EC (µS/cm):	1912
Salinity (ppt):	3

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	7.9	7.9	7.9	7.5	7.5	7.6				
2	8.2	8.1	8.1	8.3	8.3	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	389	393	392	1970	1994	1936				
2	410	400	396	1881	1934	1884				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.2	9.2	9.2	9.3	9.3	9.3				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar WedE2 Jar(s) mortality 7 days prior to test (must be ≤25%) 11.1%

QA (previous month)

Days to first brood (≤12 days) 9

Average number of young produced (≥15 young) 37

Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - 0%
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 9.4 Temperature (°C) of sample prior to aeration: 12

DO % of sample prior to aeration: 100 Is aeration required (<40% or >100%)? **Yes or (No)**

Duration of aeration (37.5 +/- 12.5 mL/min/L) : — Filtered with 110um screen prior to testing **Yes or (No)**

Hardness (mg $CaCO_3$/L) of 100% : 1141 Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or (No)**

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —

Alkalinity of 100% sample (mg $CaCO_3$/L): 377

Dilution Water

Pail label / preparation date P2:09/30

Hardness of dilution water (mg/L) 167

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

Comments/Observations:

0hr: NOPPT

48hr: No ppt

Reviewed By: EV Date Reviewed: 2022/10/12

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS 20 Client TEC 164 Reference 2223-0366-02

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/10/04	1500	LC/AG	2	UM
1	2022/10/05	0905	AG	-	CC
2	2022/10/06	0815	AG		CC

Sample Information

Initial pH: 7.6
Initial EC (µS/cm): 1912
Salinity (ppt): 3

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

day											
	pH (units) (range: 6.0-8.5)										
0	8.0	8.0	8.0	7.6	7.6	7.6					
2	8.1	8.0	8.0	8.2	8.3	8.3					
	The pH of the sample was not adjusted prior to test setting, unless noted in the comments below										
	EC (uS/cm)										
0	399	401	397	1997	1988	1973					
2	412	402	401	1904	1924	1914					
	DO (mg/L) (**40-100% saturation at test temp.**)										
0	7.7	7.7	7.7	8.2	8.2	8.2					
2	7.7	7.7	7.7	7.7	7.7	7.7					
	Temperature (°C) (range: **18-22 °C**)										
0	21	21	21	18	18	18					
2	21	21	21	21	21	21					
	Number Alive (I, immobile)										
0	10	10	10	10	10	10					
1	10	10	10	10	10	10					
2	10	10	10	10	10	10					

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar WedE1 Jar(s) mortality 7 days prior to test (must be ≤25%) 5%

QA (previous month)
Days to first brood (≤12 days) 9
Average number of young produced (≥15 young) 37
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0

Sample
DO (mg/L) of sample prior to aeration: 8.2
DO % of sample prior to aeration: 100
Duration of aeration (37.5 +/- 12.5 mL/min/L): —
Hardness (mg $CaCO_3$/L) of 100% : 1141
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 327

Temperature (°C) of sample prior to aeration: 18
Is aeration required (<40% or >100%)? **Yes or (No)**
Filtered with 110um screen prior to testing **Yes or (No)**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or (No)**

Dilution Water
Pail label / preparation date P21.09/30
Hardness of dilution water (mg/L) 167

Antiscalant
Final Concentration in Sample: 20 mg/L
Volume of sample: 500 Volume of antiscalant: 158 µL

Comments/Observations:
0hr: NO ppt
48hr: no ppt

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Reviewed By: EV Date Reviewed: 2022/10/12

APPENDIX C – Chain-of-custody form

Teck

COC ID:	F2 NAUTILUS-2022-10-03	TURNAROUND TIME:		RUSH:	

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name / Job#	F2 SRF			Lab Name	Nautilus Environmental - BC			Report Format / Distribution		Excel	PDF	EDD
Project Manager	BRETT MASON			Lab Contact				Email 1:	Cole.Macgregor@teck.com	X	X	X
Email	BRETT.MASON@TECK.COM			Email	jacklyn@nautilusenvironmental.ca			Email 1:	teckcoal@equisonline.com			X
Address	RR1 HWY 3			Address	10823 27th Street SE			Email 2:	DL-EVO-SRF-LAB@teck.cor	X	X	X
								Email 3:				
City	Sparwood	Province	BC	City	Calgary	Province	AB	Email 4:				
								Email 5:				
								Email 6:				
								Email 7:				
								Email 8:				
								Email 10:				
								Email 11:				
								Email 12:				
								Email 13:				
Postal Code	V0B 2G0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada					
Phone Number	250-425-6179			Phone Number	403-253-7121			PO number	*VPO00859537*			

SAMPLE DETAILS / **ANALYSIS REQUESTED** — Filtered - F: Field, L: Lab, FL: Field & Lab, N: None

2022/10/03
09:30
Manitoulin
JC/GRS
4x20L carboys, 5x1L bottles
NOS/NOI
Good Condition

Sample ID 2223-0566	Sample Location (sys loc code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	48hr Daphnia Magna Single Concentration Acute Toxicity 20C	48hr Daphnia Magna Single Concentration Acute Toxicity 10C	48hr Daphnia Magna Single Concentration Acute Toxicity Anitscalent	96hr Rainbow Trout Single Concentration Acute Toxicity (20L Bladders)	48hr Daphnia Magna Single Concentration Toxicity 15C
F2_BPO_WG_2022-10-03_N -01	F2_BPO	WG		2022-10-03	8:55	G	8	2	2		4	13.6°C
F2_BPO_WG_2022-10-03_N-AS -02	F2_BPO	WG		2022-10-03	8:56	G	1			1		↓

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME
	[signature]	October 3, 2022 1630		

SERVICE REQUEST (rush - subject to availability)					
Regular (default)	X	Sampler's Name	[signature]	Mobile #	
Priority (2-3 business days) - 50% surcharge					
Emergency (1 Business Day) - 100% surcharge		Sampler's Signature	[signature]	Date/Time	October 3, 2022
For Emergency <1 Day, ASAP or Weekend - Contact ALS					

END OF REPORT

Acute Toxicity Test Results

Samples collected October 4, 2022

Final Report

November 2, 2022

Submitted to: **Teck Coal Ltd.**
Sparwood, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates					
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation	*Daphnia magna* antiscalant test initiation
EV_GT1_WS_2022-10-04_N-SRF / 2223-0395-01	4-Oct-22 at 0920h	5-Oct-22 at 0800h	7-Oct-22 at 1520h	6-Oct-22 at 1500h	6-Oct-22 at 1500h	-
EV_BC1_WS_2022-10-04_N-SRF / 2223-0395-02	4-Oct-22 at 1020h	5-Oct-22 at 0800h	7-Oct-22 at 1530h	6-Oct-22 at 1505h	6-Oct-22 at 1505h	-
EV_BC1_WS_2022-10-04_N-SRF-AS / 2223-0395-03	4-Oct-22 at 1021h	5-Oct-22 at 0800h	-	-	-	6-Oct-22 at 1510h
EV_GT1_WS_2022-10-04_N-SRF-AS / 2223-0395-04	4-Oct-22 at 0921h	5-Oct-22 at 0800h	-	-	-	6-Oct-22 at 1510h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
EV_GT1_WS_2022-10-04_N-SRF	11.4°C	292	192
EV_BC1_WS_2022-10-04_N-SRF	12.9°C	884	279
EV_BC1_WS_2022-10-04_N-SRF-AS	12.9°C	884	279
EV_GT1_WS_2022-10-04_N-SRF-AS	11.4°C	292	192

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)
- *Daphnia magna* 48-h single concentration screening test (conducted with 5 mg/L antiscalant)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample			
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
EV_GT1_WS_2022-10-04_N-SRF	100	100	100	-
EV_BC1_WS_2022-10-04_N-SRF	100	100	100	-
EV_BC1_WS_2022-10-04_N-SRF-AS	-	-	-	100
EV_GT1_WS_2022-10-04_N-SRF-AS	-	-	-	100

Sample ID	Percent Immobility in 100 (% v/v)		
	Daphnia magna 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
EV_GT1_WS_2022-10-04_N-SRF	0	3	-
EV_BC1_WS_2022-10-04_N-SRF	0	0	-
EV_BC1_WS_2022-10-04_N-SRF-AS	-	-	0
EV_GT1_WS_2022-10-04_N-SRF-AS	-	-	0

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
EV_GT1_WS_2022-10-04_N-SRF	Rainbow trout	Precipitate observed on test vessel	None
	Daphnia magna	Surficial precipitate observed in 10˚C and 20˚C test vessels and precipitate observed on 20˚C test vessels	None
EV_BC1_WS_2022-10-04_N-SRF	Rainbow trout	Precipitate observed on test vessel	None
	Daphnia magna	Surficial precipitate observed in 10˚C and 20˚C test vessels and precipitate observed on 20˚C test vessels	None
EV_BC1_WS_2022-10-04_N-SRF-AS	*Daphnia magna*	None	None
EV_GT1_WS_2022-10-04_N-SRF-AS	*Daphnia magna*	None	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	3.7 (3.3-4.2) g/L KCl[1]	6.7 (6.4-6.9) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.6 (2.7-4.8) g/L KCl	6.2 (5.3-7.2) g/L NaCl
Reference toxicant CV	9.4%	5.1%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date October 6, 2022; [2] Test date, October 19, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation





Report By:
Kiara O'Shea, BSc
Laboratory Biologist

Reviewed By:
Emma Marus, BSc
Biologist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Control/dilution water for antiscalant test	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L), Na_2SeO_4 (2 µg Se/L) and 5 mg/L antiscalant
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC 164 Reference 2223-0395-01 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	10/7/2022	1520*	AM/KO/MCAM	7	KC
1	10/8/2022	0935	MS	-	MM
2	10/9/2022	0900	KO	-	MAE
3	10/10/2022	0850	MI	-	MAE
4	10/11/2022	0830	MS/AM/KO	7	EC

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 8.4
Initial EC (µS/cm): 1982
Salinity (ppt): 3

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L : yes/no

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	8.6	8.6			
Temp (°C) of 100%	16				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: **5.5-8.5**)								
Day 0	7.8	8.1						
Day 4	8.2	8.2						
EC (uS/cm)								
Day 0	417	2050						
Day 4	420	1890						
DO (mg/L) (**70-100% saturation at test temp.**)								
Day 0	8.6	8.6						
Day 4	8.6	8.6						
Temperature (°C) (range: **14-16°C**)								
Day 0	16	16						
Day 4	16	16						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10(1)						
Day 4	10	10(1)						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	2.7	0.2
2	3.2	0.4
3	3.1	0.3
4	3.2	0.4
5	3.2	0.3
6	3.2	0.4
7	3.6	0.5
8	3.2	0.3
9	3.2	0.3
10	3.2	0.4

Loading Density (g/L): 0.2 (must be ≤0.5 g/L)
Mean Length (cm): 3.2
Length Range (cm): 2.7-3.6
Mean Weight (g): 0.4 (Must be ≥0.3g)
Weight Range (g): 0.2-0.5

Test Organism Information

Batch 20220818TR
Source Trout Lodge
Tank # 1
Days Held at 15± 2°C 31 (must be ≥14 days)
Percent stock mortality 0.08 (7 days prior to test, must be <2%)
Test Volume (L) 18

Comments : 96 Hrs: day-3-100 → lots of buoyancy > PPT in tank.
day-4-100 →

Reviewed By: SS Date Reviewed: 20221011 19

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC 164 Reference 2223-0395-02 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	10/7/2022	1530*	AM/ KO/MCAM	7	XC
1	10/8/2022	0935	MJ	-	MM
2	10/9/2022	0900	KO	-	MMF
3	10/10/2022	0910	MF	-	MMF
4	10/11/2022	0830	MS/AM/EP 7		CC

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 8.2
Initial EC (µS/cm): 1942
Salinity (ppt): 3

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L : **yes/no**

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	8.6	8.6			
Temp (°C) of 100%	16				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	7.8	8.1						
Day 4	8.1	8.1						
EC (uS/cm)								
Day 0	415	2020						
Day 4	422	1865						
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	8.6	8.6						
Day 4	8.6	8.6						
Temperature (°C) (range: 14-16°C)								
Day 0	16	16						
Day 4	16	16						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10(1)						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	2.9	0.3
2	3.0	0.3
3	3.0	0.3
4	3.2	0.4
5	2.5	0.2
6	2.9	0.2
7	2.9	0.3
8	3.3	0.5
9	3.1	0.4
10	3.1	0.3

Loading Density (g/L): 0.7 (must be ≤0.5 g/L)
Mean Length (cm): 3.0
Length Range (cm): 2.5-3.3
Mean Weight (g): 0.3 (Must be ≥0.3g)
Weight Range: (g): 0.2-0.5

Test Organism Information

Batch 20220818TR
Source Trout Lodge
Tank # 1
Days Held at 15± 2°C 31 (must be ≥14 days)
Percent stock mortality 0.08 (7 days prior to test, must be <2%)
Test Volume (L) 18

Comments : 96 Hrs: day -3 - 100% - loss of buoyancy. PPT on tank.

Reviewed By: SS Date Reviewed: 2022/10/19

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC 164 Reference 2223-0395-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/10/06	1500	NA / AG	2	[illegible]
1	2022/10/07	0815	BS	-	[illegible]
2	2022/10/08	0810	NA	2	[illegible]

Sample Information

Initial pH: 8.4
Initial EC (µS/cm): 1982
Salinity (ppt): 3

Lab Code	CTL A	CTL B	CTL C	100 A	100 B	100 C				
day				pH (units) (range: 6.0-8.5)						
0	7.7	7.7	7.7	8.1	8.1	8.1				
2	8.0	8.0	8.0	8.1	8.0	8.0				
				The pH of the sample was not adjusted prior to test setting, unless noted in the comments below						
				EC (uS/cm)						
0	418	427	429	2110	2180	2180				
2	431	435	432	2100	2110	2130				
				DO (mg/L) (**40-100% saturation at test temp.**)						
0	7.9	7.9	7.9	7.9	7.9	7.9				
2	7.9	7.9	7.9	7.9	7.9	7.9				
				Temperature (°C) (range: **18-22 °C**)						
0	20	20	20	20	20	20				
2	20	20	20	20	20	20				
				Number Alive (I, immobile)						
0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10 (1i)	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar Wed E2 Jar(s) mortality 7 days prior to test (must be ≤25%) 5%

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 38
Were test treatments randomized on test tray? Yes / No

Control Validity Criteria
Mean % mortality at 48 hours - 0%
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 8.9
DO % of sample prior to aeration: 110
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20
Hardness (mg $CaCO_3$/L) of 100% : 292
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 192

Temperature (°C) of sample prior to aeration: 20
Is aeration required (<40% or >100%)? Yes or No
Filtered with 110um screen prior to testing Yes or No
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or No

Dilution Water
Pail label / preparation date P3: 10/03
Hardness of dilution water (mg/L) 195

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Comments/Observations:
0hr: No ppt
48hr: surficial ppt / ppt on jar

Reviewed By: SS Date Reviewed: 2022/10/19

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC 164 Reference 2223-0395-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/10/06	1500	NA IAG	2	UTM
1	2022/10/07	0900	BS	-	
2	2022/10/08	0805	NA	2	UTM

Sample Information

Initial pH: 8.4
Initial EC (µS/cm): 1982
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	7.6	7.6	7.7	8.1	8.2	8.2				
2	8.0	8.0	8.0	8.1	8.1	8.1				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	420	427	423	2106	2170	2180				
2	422	430	427	1973	2130	2150				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar Wed D3 Jar(s) mortality 7 days prior to test (must be ≤25%) 5%

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 38
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0%

Sample
DO (mg/L) of sample prior to aeration: 10.3
DO % of sample prior to aeration: 110
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20
Hardness (mg $CaCO_3$/L) of 100% : 292
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 192

Temperature (°C) of sample prior to aeration: 12
Is aeration required (<40% or >100%)? **Yes or No**
Filtered with 110um screen prior to testing **Yes or No**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Dilution Water
Pail label / preparation date P3: 10103
Hardness of dilution water (mg/L) 195

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

Comments/Observations:
0hr: NO ppt
48hr: ~~No ppt~~ NA surficial ppt.

Reviewed By: SS Date Reviewed: 2022/10/19

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC 164 Reference 2223-0395-02

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/10/06	1505	NA/AG	2	Wpm
1	2022/10/07	0815	BS	-	
2	2022/10/08	0815	NA	2	

Sample Information

Initial pH:	8.2
Initial EC (µS/cm):	1942
Salinity (ppt):	3

Lab Code	CTL A	CTL B	CTL C	100 A	100 B	100 C

pH (units) (range: 6.0-8.5)

day										
0	7.7	7.7	7.7	8.2	8.2	8.2				
2	8.0	8.0	8.0	8.0	8.0	8.0				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	420	~~346~~ 426	427	2120	2160	2170				
2	422	430	431	2100	2150	2170				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.9	7.9	7.9				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	20	20	20				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar Wed E2 Jar(s) mortality 7 days prior to test (must be ≤25%) 5%

QA (previous month)

Days to first brood (≤12 days) 8

Average number of young produced (≥15 young) 38

Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - 0%
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 8.5

DO % of sample prior to aeration: 106

Duration of aeration (37.5 +/- 12.5 mL/min/L): 20

Hardness (mg $CaCO_3$/L) of 100% : 884

Temperature (°C) of sample prior to aeration: 20

Is aeration required (<40% or >100%)? **Yes or No**

Filtered with 110um screen prior to testing **Yes or No**

Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —

Alkalinity of 100% sample (mg $CaCO_3$/L): 279

Dilution Water

Pail label / preparation date P3:10103

Hardness of dilution water (mg/L) 195

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Comments/Observations:

0hr: No ppt

48hr: surficial ppt / ppt on jar

Reviewed By: SS Date Reviewed: 20221011 19

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC 164 Reference 2223-0395-02

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/10/06	1505	NA/AG	2	
1	2022/10/07	0800	BS	-	
2	2022/10/08	0810	NA	2	

Sample Information

Initial pH: 8.2
Initial EC (µS/cm): 1942
Salinity (ppt): 3

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	7.7	7.7	7.7	8.2	8.2	8.2				
2	8.0	8.0	8.0	8.1	8.1	8.1				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	422	425	428	2090	2120	2160				
2	425	427	430	2110	2110	2110				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.6	9.6	9.6	9.6	9.6	9.6				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	11	11	11	11	11	11				

Number Alive (l, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar Wed C2 Jar(s) mortality 7 days prior to test (must be ≤25%) 5%

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 38 N/A 8
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0%
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 10.0
DO % of sample prior to aeration: 106
Duration of aeration (37.5 +/- 12.5 mL/min/L): 20
Hardness (mg $CaCO_3$/L) of 100% : 984
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 279

Temperature (°C) of sample prior to aeration: 12
Is aeration required (<40% or >100%)? **Yes or No**
Filtered with 110um screen prior to testing **Yes or No**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Dilution Water
Pail label / preparation date P3: 10103
Hardness of dilution water (mg/L) 195

DO Levels (40-100% saturation) - corrected for altitude -
4.1 to 10.3 mg/L at 8°C
4.0 to 10.0 mg/L at 9°C
3.9 to 9.8 mg/L at 10°C
3.8 to 9.6 mg/L at 11°C
3.7 to 9.4 mg/L at 12°C

Comments/Observations:
0hr: NOPPT
48hr: surficial ppt

Reviewed By: SS Date Reviewed: 2022/10/19

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS 5 Client TEC 164 Reference 2223-0395-03

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/10/06	1510	NA/AG	2	WTM
1	2022/10/07	0815	BS	-	
2	2022/10/08	0815	NA	2	WTM

Sample Information

Initial pH:	8.2
Initial EC (µS/cm):	1942
Salinity (ppt):	3

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	7.7	7.7	7.7	7.9	7.9	7.9				
2	8.0	8.1	8.1	8.3	8.3	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	416	421	426	2000	2160	2170				
2	429	434	436	2120	2150	2170				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.9	7.9	7.9				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	20	20	20				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar Wed E2 Jar(s) mortality 7 days prior to test (must be ≤25%) 5%

QA (previous month)

Days to first brood (≤12 days) 8

Average number of young produced (≥15 young) 38

Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - (must be ≤10%) 0%

Sample

DO (mg/L) of sample prior to aeration: 7.9

DO % of sample prior to aeration: 100

Duration of aeration (37.5 +/- 12.5 mL/min/L) : —

Hardness (mg $CaCO_3$/L) of 100% : 884

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —

Alkalinity of 100% sample (mg $CaCO_3$/L): 279

Temperature (°C) of sample prior to aeration: 20

Is aeration required (<40% or >100%)? **Yes or (No)**

Filtered with 110um screen prior to testing **Yes or (No)**

Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or (No)**

Dilution Water

Pail label / preparation date P3: 10103

Hardness of dilution water (mg/L) 195

Antiscalant

Final Concentration in Sample: 5mg/L

Volume of sample: 500mL Volume of antiscalant: 39.5µL

Comments/Observations:

0hr: No ppt

48hr: No ppt.

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Reviewed By: SS Date Reviewed: 20221101119

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS 5 Client TEC 164 Reference 2223-0395-04

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/10/06	1510	NA/AG	2	[illegible]
1	2022/10/07	0820	BS	-	[illegible]
2	2022/10/08	0815	NA	2	[illegible]

Sample Information

Initial pH: 8.4
Initial EC (µS/cm): 1982
Salinity (ppt): 3

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				
day	pH (units) (range: 6.0-8.5)									
0	7.7	7.7	7.7	8.2	8.2	8.2				
2	8.1	8.1	8.1	8.3	8.3	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

	EC (uS/cm)									
0	416	425	426	2110	2170	2170				
2	428	430	430	2140	2190	2180				
	DO (mg/L) (**40-100% saturation at test temp.**)									
0	7.9	7.9	7.9	7.9	7.9	7.9				
2	7.9	7.9	7.9	7.9	7.9	7.9				
	Temperature (°C) (range: **18-22 °C**)									
0	20	20	20	20	20	20				
2	20	20	20	20	20	20				
	Number Alive (I, immobile)									
0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar Wed D4 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 38
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0%

Sample

DO (mg/L) of sample prior to aeration: 8.5
DO % of sample prior to aeration: 106
Duration of aeration (37.5 +/- 12.5 mL/min/L): 20
Hardness (mg $CaCO_3$/L) of 100%: 292
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) ~
Alkalinity of 100% sample (mg $CaCO_3$/L): 192

Temperature (°C) of sample prior to aeration: 20
Is aeration required (<40% or >100%)? **Yes or No**
Filtered with 110um screen prior to testing **Yes or No**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Dilution Water
Pail label / preparation date P3:10103
Hardness of dilution water (mg/L) 195

Antiscalant
Final Concentration in Sample: 5mg/L
Volume of sample: 500mL Volume of antiscalant: 39.5µL

Comments/Observations:
0hr: No ppt
48hr: No ppt.

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Reviewed By: SS Date Reviewed: 20221019

APPENDIX C – Chain-of-custody form

Teck

COC ID: EVO NAUTILUS 2022-10-04 | TURNAROUND TIME: | RUSH:

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO			
Facility Name / Job#	Elkview Operations			Lab Name	Nautilus Environmental - BC			Report Format / Distribution		Excel	PDF	EDD
Project Manager	Group 1; Brett Mason			Lab Contact				Email 1:	teckcoal@equisonline.com			X
Email	Brett.Mason@teck.com			Email	jacklyn@nautilusenvironmental.ca			Email 2:	DL-EVO-SRF-LAB@teck.com	X	X	X
Address	RR1 HWY 3			Address	10823 27th Street SE			Email 3:	[redacted]	X	X	X
								Email 4:				
City	Sparwood	Province	BC	City	Calgary	Province	AB	Email 5:				
								Email 6:				
								Email 7:				
								Email 8:				
								Email 9:				
								Email 10:				
								Email 11:				
								Email 12:				
								Email 13:				
Postal Code	V0B 2G0	Country	Canada	Postal Code	T2H 2K1	Country	Canada					
Phone Number	250-425-6179			Phone Number	T2Z 3V9			PO number	VPO00859537			

SAMPLE DETAILS | **ANALYSIS REQUESTED** (Filtered - F: Field, L: Lab, FL: Field & Lab, N: None)

2022/10/05
09:00
Manitoulin
3C/SRS
8x20L carboys, 10x1L bottles
N68/NoI
Good Condition

Sample ID 2223-0395	Sample Location (sys_loc_code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	FIL	PRESERV	ANALYSIS: 48hr Daphnia Magna Single Concentration Acute Toxicity 20C	48hr Daphnia Magna Single Concentration Acute Toxicity 10C	48hr Daphnia Magna Single Concentration Acute Toxicity Antisenlent	96hr Rainbow Trout Single Concentration Acute Toxicity (10 L Bladder)	96hr Rainbow Trout Single Concentration Acute Toxicity (20 L Bladder)	48hr Daphnia Magna Single Concentration Toxicity 15C
EV_GT1_WS_2022-10-04_N-SRF -01	EV_GT1	WS		2022-10-04	9:20	G	8			2	2		11.4°C	4	
EV_BC1_WS_2022-10-04_N-SRF -02	EV_BC1	WS		2022-10-04	10:20	G	8			2	2		12.9°C	4	
EV_BC1_WS_2022-10-04_N-SRF-AS -03	EV_BC1	WS		2022-10-04	10:21	G	1					1	12.9°C		
EV_GT1_WS_2022-10-04_N-SRF-AS -04	EV_GT1	WS		2022-10-04	9:21	G	1					1	11.4°C		

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME
Field Temperatures		October 4, 2022		

SERVICE REQUEST (rush - subject to availability)

Regular (default)	
Priority (2-3 business days) - 50% surcharge	X
Emergency (1 Business Day) - 100% surcharge	
For Emergency <1 Day, ASAP or Weekend - Contact ALS	

Sampler's Name	Carter Phillips	Mobile #	
Sampler's Signature	Carter Phillips	Date/Time	October 4, 2022

END OF REPORT

Acute Toxicity Test Results

Samples collected October 9, 2022

Final Report

November 9, 2022

Submitted to: **Teck Coal Ltd.**
Sparwood, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates					
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation	*Daphnia magna* antiscalant test initiation
EV_ECOUT_WS_2022-10-09_N-SRF/ 2223-0461-01	09-Oct-22 at 1150h	11-Oct-22 at 1500h	12-Oct-22 at 1345h	12-Oct-22 at 1405h	12-Oct-22 at 1415h	-
EV_ECOUT_WS_2022-10-09_N-SRF-AS/ 2223-0461-02	09-Oct-22 at 1151h	11-Oct-22 at 1500h	-	-	-	12-Oct-22 at 1425h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
EV_ECOUT_WS_2022-10-09_N-SRF	12.0°C	987	363
EV_ECOUT_WS_2022-10-09_N-SRF-AS	12.0°C	987	363

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)
- *Daphnia magna* 48-h single concentration screening test (conducted with 5 mg/L antiscalant)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample			
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
EV_ECOUT_WS_2022-10-09_N-SRF	100	100	100	100
EV_ECOUT_WS_2022-10-09_N-SRF-AS	100	100	100	100

Sample ID	Percent Immobility in 100 (% v/v)		
	Daphnia magna 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
EV_ECOUT_WS_2022-10-09_N-SRF	0	0	-
EV_ECOUT_WS_2022-10-09_N-SRF-AS	-	-	13

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
EV_ECOUT_WS_2022-10-09_N-SRF	Rainbow trout	Precipitate observed on the bottom of test vessel	None
	Daphnia magna	Surficial precipitate observed in 20-degree test. Precipitate observed on the bottom of both test vessel	None
EV_ECOUT_WS_2022-10-09_N-SRF-AS	*Daphnia magna*	Surficial precipitate observed. Precipitate observed on the bottom of test vessel	Precipitate observed on carapace

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	3.7 (3.3-4.2) g/L KCl[1]	6.7 (6.4-6.9) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.6 (2.7-4.8) g/L KCl	6.2 (5.3-7.2) g/L NaCl
Reference toxicant CV	9.4%	5.1%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, October 6, 2022; [2] Test Date October 19, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation



Report By:
Emma Pedersen, BSc
Biologist



Reviewed By:
Jacklyn Poole, BSc
Laboratory and Quality Manager

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Control/dilution water for antiscalant test	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L), Na_2SeO_4 (2 µg Se/L) and 5 mg/L antiscalant
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC 164 Reference 2223-0461-01 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022/10/12	1345 *	AM/KCRM	7	AC
1	2022/10/13	1045	MS	-	CD
2	2022/10/14	0900	Acrm	-	AC
3	2022/10/15	0910	AI	-	NA
4	2022/10/16	0950	CC/KCRM	7	MAT

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 7.5
Initial EC (µS/cm): 2070
Salinity (ppt): 3

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L: yes/no

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	9.3	8.6			
Temp (°C) of 100%	16				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

	Conc.	CTL	100						
pH (units) (range: **5.5-8.5**)	Day 0	7.8	7.8						
	Day 4	8.1	8.0						
EC (uS/cm)	Day 0	409	1898						
	Day 4	430	1696						
DO (mg/L) (**70-100% saturation at test temp.**)	Day 0	8.6	8.6						
	Day 4	8.6	8.6						
Temperature (°C) (range: **14-16°C**)	Day 0	16	16						
	Day 4	16	16						
Number Alive (In brackets number stressed)	Day 0	10	10						
	Day 1	10	10						
	Day 2	10	10						
	Day 3	10	10						
	Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.5	0.4
2	3.3	0.3
3	2.9	0.2
4	3.1	0.3
5	3.1	0.3
6	3.5	0.4
7	3.3	0.3
8	3.3	0.3
9	3.6	0.3
10	3.2	0.4

Loading Density (g/L): 0.2 (must be ≤0.5 g/L)
Mean Length (cm): ~~3.32~~ 3.3
Length Range (cm): 2.9-3.6
Mean Weight (g): 0.335
(Must be ≥0.3g)
Weight Range: (g): 0.2-0.4

Test Organism Information

Batch 20220818TR
Source Trout Lodge
Tank # 1
Days Held at 15± 2°C 36 (must be ≥14 days)
Percent stock mortality 0.24 (7 days prior to test, must be <2%)
Test Volume (L) 17 ~~18~~ AM

Comments :
96 hrs: ppt on bottom

Reviewed By: CW Date Reviewed: OCT 24 2022

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC 164 Reference 2223-0461-01

Test Log MS

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/10/11 12	1415	DM/LC AT	2	WM
1	2022/10/12 13	0830	AT	-	
2	2022/10/13 14	0910	DM	2	WM

Sample Information

Initial pH:	7.5
Initial EC (µS/cm):	2070
Salinity (ppt):	3

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	8.1	8.1	8.1	7.9	7.9	7.9				
2	8.0	8.1	8.1	8.0	8.0	8.1				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	410	415	420	1895	1962	1930				
2	404	416	428	1753	1638	1812				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.9	7.9	7.9				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	20	20	20				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar Wed C5/D1 Jar(s) mortality 7 days prior to test (must be ≤25%) DM 3%

QA (previous month)

Days to first brood (≤12 days) 9

Average number of young produced (≥15 young) 41

Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - 0 % (must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 9.0

Temperature (°C) of sample prior to aeration: 20

DO % of sample prior to aeration: 115

Is aeration required (<40% or >100%)? **Yes or No**

Duration of aeration (37.5 +/- 12.5 mL/min/L) 20min

Filtered with 110um screen prior to testing **Yes or No**

Hardness (mg $CaCO_3$/L) of 100% : 987

Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —

Alkalinity of 100% sample (mg $CaCO_3$/L): 363

Dilution Water

Pail label / preparation date P3: 10/11

Hardness of dilution water (mg/L) 123

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Comments/Observations:

0hr: No ppt

48hr: Surfacetal ppt. ppt on jar

Reviewed By: CW Date Reviewed: OCT 24 2022

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC 164 Reference 2223-0461-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/10/11 12	1405	DM/~~LC~~ SA	2	WTM
1	2022/10/12 13	0830	AI	-	[illegible]
2	2022/10/13 14	0840	DM	2	WTM

Sample Information

Initial pH:	7.5
Initial EC (µS/cm):	2070
Salinity (ppt):	3

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				
day				pH (units) (range: 6.0-8.5)						
0	8.1	8.0	8.0	7.6	7.6	7.6				
2	8.2	8.1	8.1	8.3	8.3	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

				EC (uS/cm)						
0	408	416	425	1890	1977	1953				
2	421	417	429	1824	1913	1903				

				DO (mg/L) (**40-100% saturation at test temp.**)						
0	DM ~~7~~ 9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

				Temperature (°C) (range: **8-12 °C**)						
0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

				Number Alive (I, immobile)						
0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar Wed 01 Jar(s) mortality 7 days prior to test (must be ≤25%) 5%

QA (previous month)

Days to first brood (≤12 days) 8

Average number of young produced (≥15 young) 43

Were test treatments randomized on test tray? Yes / No

Control Validity Criteria

Mean % mortality at 48 hours - (must be ≤10%) 0%

Sample

DO (mg/L) of sample prior to aeration: 9.4

Temperature (°C) of sample prior to aeration: 12

DO % of sample prior to aeration: 100%

Is aeration required (<40% or >100%)? **Yes or No**

Duration of aeration (37.5 +/- 12.5 mL/min/L) : —

Filtered with 110um screen prior to testing **Yes or No**

Hardness (mg $CaCO_3$/L) of 100% : 987

Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —

Alkalinity of 100% sample (mg $CaCO_3$/L): 363

Dilution Water

Pail label / preparation date 3/10/11

Hardness of dilution water (mg/L) 123

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C

4.0 to 10.0 mg/L at 9°C

3.9 to 9.8 mg/L at 10°C

3.8 to 9.6 mg/L at 11°C

3.7 to 9.4 mg/L at 12°C

Comments/Observations:

0hr: No PPT

48hr: Slight ppt on jar.

Reviewed By: [illegible] Date Reviewed: OCT 24 2022

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method: DAS AS 5 | Client: TEC 164 | Reference: 2223-0461-02

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/10/11	1425	DM/LCA	2	
1	2022/10/12	0830	AH	-	
2	2022/10/13	0900	DM	2	

Sample Information

Initial pH:	7.5
Initial EC (µS/cm):	2070
Salinity (ppt):	3

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	8.0	8.0	8.0	8.0	8.0	8.0				
2	8.2	8.2	8.2	8.3	8.3	8.4				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	412	414	424	1862	1926	1947				
2	424	428	464	1810	1903	1889				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.9	7.9	7.9				
2	7.7	7.7	7.5	7.7	7.7	7.7				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	20	20	20				
2	21	21	21	21	21	21				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10(2:)	10(2:)	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar: wed DR

Jar(s) mortality 7 days prior to test (must be ≤25%): 5%

QA (previous month)

Days to first brood (≤12 days): 8

Average number of young produced (≥15 young): 43

Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - (must be ≤10%): 0%

Sample

DO (mg/L) of sample prior to aeration: 9.0

DO % of sample prior to aeration: 114

Duration of aeration (37.5 +/- 12.5 mL/min/L): 20mn

Hardness (mg $CaCO_3$/L) of 100%: 987

Temperature (°C) of sample prior to aeration: 20

Is aeration required (<40% or >100%)? **Yes or No**

Filtered with 110um screen prior to testing **Yes or No**

Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L): —

Alkalinity of 100% sample (mg $CaCO_3$/L): 363

Dilution Water

Pail label / preparation date: 3:10/11

Hardness of dilution water (mg/L): 123

Antiscalant

Final Concentration in Sample: 5mg/L

Volume of sample: 500mL | Volume of antiscalant: 39.5µL

Comments/Observations:

0hr: No PPT

48hr: Surficial ppt. ppt on jar. very little ppt on carapace

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Reviewed By: CW | Date Reviewed: OCT 24 2022

APPENDIX C – Chain-of-custody form

Teck

COC ID: EVO NAUTILUS 100922 **TURNAROUND TIME:** Regular (default) **RUSH:** NO

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name	Elkview Operation			Lab Name	Nautilus			Report Format / Distribution		Excel	PDF	EDD
EQuIS Facility Code	EVO			Lab Contact	Jacklyn Poole			Email 1:	DL-EVO-SRF-LAB@teck.com	X	X	X
Project Manager	Brett Mason			Email	jacklyn@nautilusenvironmental.ca			Email 2:	Cole.Macgregor@teck.com	X	X	X
Email	brett.mason@teck.com			Address	10823 27th Street SE			Email 3:	TeckCoal@equisonline.com			X
Address	RR1 HWY 3							Email 4:				
City	Sparwood	Province	BC	City	Calgary	Province	AB	Email 5:				
Postal Code	V0B 2G0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada	Email 6:				
Phone Number	250 425 4837			Phone Number	403 253 7121			PO number	VPO00859537			

SAMPLE DETAILS / **ANALYSIS REQUESTED**

2022/10/11
15:00
Manitoulin
JC
4x20L carboys, 5x1L bottles
NaS/NaI
Good Condition

Please indicate Y below if Filtered

Sample ID 2223-0461	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	ANALYSIS: 48hr Daphnia magna Acute Toxicity 20C NAUT_48hr_DM_PF	48hr Daphnia magna Acute Toxicity 10C NAUT_48hr_DM_PF_MOD10	48hr Daphnia magna Acute Toxicity 5mg/L Antiscalant NAUT_48hr_DM_PF_5AS	96hr Rainbow Trout Acute Toxicity NAUT_96hr_RT_PF	48hr Daphnia magna Acute Toxicity 15C NAUT_48hr_DM_PF_MOD15										
EV_ECOUT_WS_2022-10-09_N-SRF -01	EV_ECOUT	WS		2022-10-09	11:50	G	8	2	2		4		12.0°C									
EV_ECOUT_WS_2022-10-09_N-SRF-AS -02	EV_ECOUT	WS		2022-10-09	11:51	G	1			1												

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	Date	Time	ACCEPTED BY/AFFILIATION	Date	Time
	Nick Lagarde - Teck	9-Oct-22	1330			

SERVICE REQUEST (rush - subject to availability)					
Regular (default)	X	Sampler's Name		Mobile #	
Priority (2-3 business days) - 50% surcharge					
Emergency (1 Business Day) - 100% surcharge		Sampler's Signature		Date/Time	9-Oct-22
For Emergency <1 Day, ASAP or Weekend - Contact Nautilus					

END OF REPORT

Acute Toxicity Test Results

Samples collected October 10, 2022

Final Report

November 9, 2022

Submitted to: **Teck Coal Ltd.**
Sparwood, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates					
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation	*Daphnia magna* antiscalant test initiation
F2_BPO_WG_2022-10-10_N/ 2223-0463-01	10-Oct-22 at 0800h	11-Oct-22 at 1500h	12-Oct-22 at 1445h	12-Oct-22 at 1435h	12-Oct-22 at 1430h	-
F2_BPO_WG_2022-10-10_N-AS/ 2223-0463-02	10-Oct-22 at 0801h	11-Oct-22 at 1500h	-	-	-	12-Oct-22 at 1420h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
F2_BPO_WG_2022-10-10_N	11.2°C	1141	382
F2_BPO_WG_2022-10-10_N-AS	11.2°C	1141	382

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)
- *Daphnia magna* 48-h single concentration screening test (conducted with 5 mg/L antiscalant)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample			
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
F2_BPO_WG_2022-10-10_N	100	97	100	-
F2_BPO_WG_2022-10-10_N-AS	-	-	-	100

Sample ID	Percent Immobility in 100 (% v/v)		
	Daphnia magna 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
F2_BPO_WG_2022-10-10_N	3	0	-
F2_BPO_WG_2022-10-10_N-AS	-	-	0

Precipitate observations

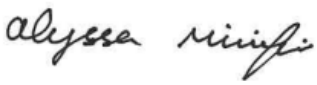
Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
F2_BPO_WG_2022-10-10_N	Rainbow trout	None	None
	Daphnia magna	None	None
F2_BPO_WG_2022-10-10_N-AS	*Daphnia magna*	None	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	3.7 (3.3-4.2) g/L KCl[1]	6.1 (5.8-6.4) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.6 (2.7-4.8) g/L KCl	6.1 (5.2-7.2) g/L NaCl
Reference toxicant CV	9.4%	5.5%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, October 6, 2022; [2] Test Date October 5, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation



Report By:
Alyssa Minifie, BSc
Laboratory Biologist



Reviewed By:
Jacklyn Poole, BSc
Laboratory and Quality Manager

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Control/dilution water for antiscalant test	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L), Na_2SeO_4 (2 µg Se/L) and 5 mg/L antiscalant
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC 164 Reference 2223-0463-01 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022/10/12	1445 *	AM/KCRM	7	ZC
1	2022/10/13	1045	MS	-	ST
2	2022/10/14	0900	Kcrm	-	ZC
3	2022/10/15	0910	AI	-	NA
4	2022/10/16	0945	CC/kcrm	7	MAF

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 7.4
Initial EC (µS/cm): 2140
Salinity (ppt): 4

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L : yes/no

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	8.4	8.4			
Temp (°C) of 100%	16				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: **5.5-8.5**)								
Day 0	7.5	7.5						
Day 4	8.1	8.5						
EC (uS/cm)								
Day 0	415	1971						
Day 4	434	1899						
DO (mg/L) (**70-100% saturation at test temp.**)								
Day 0	7.9	8.4						
Day 4	8.6	8.6						
Temperature (°C) (range: **14-16°C**)								
Day 0	16	16						
Day 4	16	16						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10(1)						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.1	0.3
2	3.4	0.4
3	2.8	0.2
4	3.6	0.3
5	3.1	0.3
6	3.1	0.3
7	3.1	0.3
8	3.2	0.3
9	2.7	0.2
10	2.8	0.2

Loading Density (g/L): 0.2 (must be ≤0.5 g/L)
Mean Length (cm): 3.0
Length Range (cm): 2.7-3.4
Mean Weight (g): 0.3 (Must be ≥0.3g)
Weight Range: (g): 0.2-0.4

Test Organism Information

Batch 20220818TR
Source Trout Lodge
Tank # 1
Days Held at 15± 2°C 36 (must be ≥14 days)
Percent stock mortality 0.24 (7 days prior to test, must be <2%)
Test Volume (L) 18

Comments : day 5: stressed fish, loss of buoyancy
96 hrs: NO PPT

Reviewed By: CW Date Reviewed: OCT 20 2022

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC 164 Reference 2223-0463-01

Test Log

Day	Date MS	Time	Technician	Chem. Cart	Daily Data Review
0	2022/10/11 12	1430	DM/LC	2	
1	2022/10/12 13	0830	AT	-	
2	2022/10/13 14	0910	DM	2	

Sample Information

Initial pH:	7.4
Initial EC (µS/cm):	2140
Salinity (ppt):	4

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	8.1	8.1	8.0	8.2	8.2	8.2				
2	8.2	8.2	8.2	8.5	8.5	8.5				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	416	429	429	1953	2100	2120				
2	410	428	432	1906	1998	2100				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.9	7.9	7.9				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	20	20	20				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	20	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar wed E3 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)

Days to first brood (≤12 days) 8

Average number of young produced (≥15 young) 32

Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - 0%
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 8.7

DO % of sample prior to aeration: 110

Duration of aeration (37.5 +/- 12.5 mL/min/L): 80 min

Hardness (mg $CaCO_3$/L) of 100%: 1141

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —

Alkalinity of 100% sample (mg $CaCO_3$/L): 382

Temperature (°C) of sample prior to aeration: 20

Is aeration required (<40% or >100%)? **Yes or No**

Filtered with 110um screen prior to testing **Yes or No**

Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Dilution Water

Pail label / preparation date P3: 10/11

Hardness of dilution water (mg/L) 123

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Comments/Observations:

0hr: No PPT

48hr: No ppt.

Reviewed By: CW Date Reviewed: OCT 2 0 2022

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC 164 Reference 2223-0463-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/10/11 12	1435	DM/EA	2	WM
1	2022/10/12 13	0830	AI	-	ST
2	2022/10/13 14	0840	DM	2	WM

Sample Information

Initial pH: 7.4
Initial EC (µS/cm): 2140
Salinity (ppt): 4

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	8.1	8.0	8.0	7.5	7.5	7.5				
2	8.2	8.1	8.1	8.4	8.4	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	420	426	422	1887	2120	2080				
2	425	425	427	1841	2090	1975				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	9	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar wed D2 Jar(s) mortality 7 days prior to test (must be ≤25%) 5%

QA (previous month)

Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 43
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - 0%
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 9.4
DO % of sample prior to aeration: 100
Duration of aeration (37.5 +/- 12.5 mL/min/L) : —
Hardness (mg $CaCO_3$/L) of 100% : 141
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 382

Temperature (°C) of sample prior to aeration: 12
Is aeration required (<40% or >100%)? **Yes or (No)**
Filtered with 110um screen prior to testing **Yes or (No)**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or (No)**

Dilution Water

Pail label / preparation date P3'.10/11
Hardness of dilution water (mg/L) 123

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C
4.0 to 10.0 mg/L at 9°C
3.9 to 9.8 mg/L at 10°C
3.8 to 9.6 mg/L at 11°C
3.7 to 9.4 mg/L at 12°C

Comments/Observations:

0hr: No PPT
48hr: No ppt.

Reviewed By: [signature] Date Reviewed: OCT 20 2022

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS 5 Client TEC 164 Reference 2223-0463-02

Test Log MS

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/10/11 12	1420	DM/CA1	2	MM
1	2022/10/12 13	0830	AI	-	
2	2022/10/13 14	0915	DM	3	MM

Sample Information

Initial pH:	7.4
Initial EC (µS/cm):	2140
Salinity (ppt):	4

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	8.1	8.0	8.0	8.0	8.0	8.0				
2	8.1	8.1	8.1	8.4	8.4	8.4				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	415	423	423	1946	1984	1956				
2	396	420 DM	411	1823	1857	1828				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.9	7.9	7.9				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	20	20	20				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar Mod E1 Jar(s) mortality 7 days prior to test (must be ≤25%) 5%

QA (previous month)

Days to first brood (≤12 days) 6

Average number of young produced (≥15 young) 32

Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - (must be ≤10%) 0%

Sample

DO (mg/L) of sample prior to aeration: 8.7 Temperature (°C) of sample prior to aeration: 20

DO % of sample prior to aeration: 110 Is aeration required (<40% or >100%)? (Yes) or No

Duration of aeration (37.5 +/- 12.5 mL/min/L) 20 min Filtered with 110um screen prior to testing Yes or (No)

Hardness (mg $CaCO_3$/L) of 100% : 114 Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —

Alkalinity of 100% sample (mg $CaCO_3$/L): 382

Dilution Water

Pail label / preparation date P3:10/11

Hardness of dilution water (mg/L) 123

Antiscalant

Final Concentration in Sample: 5mg/L

Volume of sample: 500mL Volume of antiscalant: 39.5µL

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C 3.1 to 7.7 mg/L at 21°C

3.2 to 8.1 mg/L at 19°C 3.0 to 7.6 mg/L at 22°C

3.2 to 7.9 mg/L at 20°C

Comments/Observations:

0hr: No PPT

48hr: No ppt.

Reviewed By: CW Date Reviewed: OCT 20 2022

APPENDIX C – Chain-of-custody form

Teck

COC ID: FSF NAUTILUS 101022 **TURNAROUND TIME:** Regular (default) **RUSH:** NO

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name	F2 SRF			Lab Name	Nautilus			Report Format / Distribution		Excel	PDF	EDD
EQuIS Facility Code	FSF			Lab Contact	Jacklyn Poole			Email 1:	DL-EVO-SRF-LAB@teck.com	X	X	X
Project Manager	Brett Mason			Email	jacklyn@nautilusenvironmental.ca			Email 2:	Cole.Macgregor@teck.com	X	X	X
Email	brett.mason@teck.com			Address	10823 27th Street SE			Email 3:	TeckCoal@equisonline.com			X
Address	RR1 HWY 3							Email 4:				
City	Sparwood	Province	BC	City	Calgary	Province	AB	Email 5:				
Postal Code	V0B 2G0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada	Email 6:				
Phone Number	250 425 4837			Phone Number	403 253 7121			PO number				

SAMPLE DETAILS / **ANALYSIS REQUESTED**

2022/10/11
15:00
Manitoulin
JC
4x20L carboys, 6x1L bottles
NGS/NoI
Good Condition

Please indicate Y below if Filtered

Sample ID 2223-0463	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	ANALYSIS: 48hr Daphnia magna Acute Toxicity 20C NAUT_48hr_DM_PF	48hr Daphnia magna Acute Toxicity 10C NAUT_48hr_DM_PF_MOD10	48hr Daphnia magna Acute Toxicity 5mg/L Antiscalant NAUT_48hr_DM_PF_5AS	96hr Rainbow Trout Acute Toxicity NAUT_96hr_RT_PF	48hr Daphnia magna Acute Toxicity 15C NAUT_48hr_DM_PF_MOD15									
F2_BPO_WG_2022-10-10_N -01	F2_BPO	WG		2022-10-10	08:00	G	8	2	2		4		11.2°C								
F2_BPO_WG_2022-10-10_N-AS -02	F2_BPO	WG		2022-10-10	08:01	G	1			1			↓								

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	Date	Time	ACCEPTED BY/AFFILIATION	Date	Time
	Nick Lagarde - Teck	10-Oct-22	1030			

SERVICE REQUEST (rush - subject to availability)					
Regular (default)	X	Sampler's Name	E Donsnell	Mobile #	
Priority (2-3 business days) - 50% surcharge					
Emergency (1 Business Day) - 100% surcharge		Sampler's Signature		Date/Time	10-Oct-22
For Emergency <1 Day, ASAP or Weekend - Contact Nautilus					

END OF REPORT

Acute Toxicity Test Results

Samples collected October 17, 2022

Final Report

November 9, 2022

Submitted to: **Teck Coal Ltd.**
Sparwood, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates					
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation	*Daphnia magna* 5 mg/L antiscalant test initiation
EV_EC1_WS_2022-10-17_N-SRF / 2223-0521-01	17-Oct-22 at 1010h	18-Oct-22 at 0900h	18-Oct-22 at 1415h	18-Oct-22 at 1535h	18-Oct-22 at 1530h	-
EV_EC1_WS_2022-10-17_N-SRF-AS / 2223-0521-02	17-Oct-22 at 1011h	18-Oct-22 at 0900h	-	-	-	18-Oct-22 at 1540h
EV_ECOUT_WS_2022-10-17_N-SRF / 2223-0521-03	17-Oct-22 at 1230h	18-Oct-22 at 0900h	18-Oct-22 at 1420h	18-Oct-22 at 1540h	18-Oct-22 at 1545h	-
EV_ECOUT_WS_2022-10-17_N-SRF-AS / 2223-0521-04	17-Oct-22 at 1231h	18-Oct-22 at 0900h	-	-	-	18-Oct-22 at 1550h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
EV_EC1_WS_2022-10-17_N-SRF	9.5°C	981	343
EV_EC1_WS_2022-10-17_N-SRF-AS	6.1°C	981	343
EV_ECOUT_WS_2022-10-17_N-SRF	8.3°C	1005	356
EV_ECOUT_WS_2022-10-17_N-SRF-AS	4.7°C	1005	356

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)
- *Daphnia magna* 48-h single concentration screening test (conducted with 5 mg/L antiscalant)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample			
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* 5 mg/L antiscalant
EV_EC1_WS_2022-10-17_N-SRF	100	100	100	-
EV_EC1_WS_2022-10-17_N-SRF-AS	-	-	-	100
EV_ECOUT_WS_2022-10-17_N-SRF	100	100	100	-
EV_ECOUT_WS_2022-10-17_N-SRF-AS	-	-	-	100

Sample ID	Percent Immobility in 100 (% v/v)		
	Daphnia magna 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* 5 mg/L antiscalant
EV_EC1_WS_2022-10-17_N-SRF	0	0	-
EV_EC1_WS_2022-10-17_N-SRF-AS	-	-	0
EV_ECOUT_WS_2022-10-17_N-SRF	0	0	-
EV_ECOUT_WS_2022-10-17_N-SRF-AS	-	-	0

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
EV_EC1_WS_2022-10-17_N-SRF	Rainbow trout	Precipitate observed on the test vessel	None
	Daphnia magna	Surficial precipitate observed in the 20˚C test	None
EV_EC1_WS_2022-10-17_N-SRF-AS	*Daphnia magna*	None	None
EV_ECOUT_WS_2022-10-17_N-SRF	Rainbow trout	Precipitate observed on the test vessel	None
	Daphnia magna	Surficial precipitate observed	None
EV_ECOUT_WS_2022-10-17_N-SRF-AS	*Daphnia magna*	Surficial precipitate observed	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	3.7 (3.3-4.2) g/L KCl[1]	6.7 (6.4-6.9) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.6 (2.7-4.8) g/L KCl	6.2 (5.3-7.2) g/L NaCl
Reference toxicant CV	9.4%	5.1%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, October 6, 2022; [2] Test Date, October 19, 2022

LC = Lethal Concentration, CL = Confidence Limits, SD = Standard Deviation, CV = Coefficient of Variation



Report By:
Alyssa Minifie, BSc
Laboratory Biologist



Reviewed By:
Mimi Tran, Dipl. T.
Biologist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Control/dilution water for antiscalant test	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L), Na_2SeO_4 (2 µg Se/L) and 5 mg/L antiscalant
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC 164 Reference 2223-0521-01 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022/10/18	1415 *	ML/KO	7	KM
1	2022/10/19	0850	MS	-	KM
2	2022/10/20	0850	KC	-	NA
3	2022/10/21	0800	KO	-	KC
4	2022/10/22	1015	KO/ML	7	NA

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 8.00
Initial EC (µS/cm): 1863
Salinity (ppt): 3

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L (yes/no)

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	9.9 ~~8.5~~ KM	8.9			
Temp (°C) of 100%	15 ML 14				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	7.6	8.1						
Day 4	8.1	8.1						
EC (uS/cm)								
Day 0	401	1553						
Day 4	411	1734						
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	8.8	8.9						
Day 4	8.6	8.8						
Temperature (°C) (range: 14-16°C)								
Day 0	15	14						
Day 4	16	15						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10(2)						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.7	0.4
2	3.6	0.4
3	3.8	0.4
4	3.7	0.4
5	2.5	0.3
6	3.4	0.3
7	3.2	0.2
8	3.7	0.3
9	3.3	0.2
10	2.5	0.1

Loading Density (g/L): 0.2 (must be ≤0.5 g/L)
Mean Length (cm): 3.4
Length Range (cm): 2.5-3.8
Mean Weight (g): 0.3 (Must be ≥0.3g)
Weight Range: (g): 0.1-0.4

Test Organism Information

Batch 20220818TR
Source Trout Lodge
Tank # 1
Days Held at 15± 2°C 42 (must be ≥14 days)
Percent stock mortality 0.27 (7 days prior to test, must be <2%)
Test Volume (L) 18

Comments :
96 hrs ppt on bottom + sides of tank

Reviewed By: EV Date Reviewed: 2022/10/25

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC 164 Reference 2223-0521-03 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022/10/18	1490 *	ML/KO	7	WM
1	2022/10/19	0850	MS	-	WM
2	2022/10/20	0855	MC	-	NA
3	2022/10/21	0750	MO	-	MC
4	2022/10/22	1020	WM/KO/AI	7	NA

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 7.8
Initial EC (µS/cm): 1916
Salinity (ppt): 3

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L (yes/no)

	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
Preaeration time					
DO(mg/L) of 100%	10.1	8.9			
Temp (°C) of 100%	14				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: **5.5-8.5**)								
Day 0	7.6	7.6						
Day 4	8.1	8.1						
EC (uS/cm)								
Day 0	424	1932						
Day 4	403	1669						
DO (mg/L) (**70-100% saturation at test temp.**)								
Day 0	8.6	8.9						
Day 4	8.6	8.8						
Temperature (°C) (range: **14-16°C**)								
Day 0	16	14						
Day 4	15	15						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	~~3.5~~ KO	0.5
2	~~3.3~~ KO	0.4
3	~~3.0~~ KO	0.3
4	3.6	0.3
5	3.8	0.5
6	3.1	0.2
7	3.1	0.2
8	3.3	0.3
9	3.1	0.3
10	3.2	0.3

Loading Density (g/L): 0.2 (must be ≤0.5 g/L)
Mean Length (cm): 3.4
Length Range (cm): 3.1-3.8
Mean Weight (g): 0.3 (Must be ≥0.3g)
Weight Range: (g): 0.2-0.5

Test Organism Information

Batch 20220818TR
Source Trout Lodge
Tank # 1
Days Held at 15± 2°C 42 (must be ≥14 days)
Percent stock mortality 0.27 (7 days prior to test, must be <2%)
Test Volume (L) 17.5 ~~18~~ mL

Comments :
96 hrs ppt on bottom + sides at time

Reviewed By: EV Date Reviewed: 2022/10/25

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC 164 Reference 2223-0521-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/10/18	1530	AM/AI/LC	2	EP
1	2022/10/19	0800	BS	-	
2	2022/10/20	0830	DM	2	NA

Sample Information

Initial pH: 8.0
Initial EC (µS/cm): 1863
Salinity (ppt): 3

Lab Code	CTL A	CTL B	CTL C	100 A	100 B	100 C				

pH (units) (range: 6.0-8.5)

day										
0	7.6	7.6	7.6	8.0	8.1	8.1				
2	8.2	8.1	8.1	8.1	8.1	8.1				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	423	430	427	1854	1842	1908				
2	449	437	443	1798	1859	1879				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.9	7.9	7.9				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	20	20	20				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar Wed ES Jar(s) mortality 7 days prior to test (must be ≤25%) 11

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 25
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0%
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 9.1
DO % of sample prior to aeration: 115%
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20 mins
Hardness (mg $CaCO_3$/L) of 100% : 981
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 343

Temperature (°C) of sample prior to aeration: 20
Is aeration required (<40% or >100%)? (Yes) or No
Filtered with 110um screen prior to testing Yes or (No)
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)

Dilution Water
Pail label / preparation date P3:10/14
Hardness of dilution water (mg/L) 182

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Comments/Observations:
0 HR: no ppt
48 HR: very slight surficial ppt

Reviewed By: EV Date Reviewed: 2022/10/25

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC 164 Reference 2223-0521-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/10/18	1535	AM/AI/LC	2	EP
1	2022/10/19	0740	BS	-	WM
2	2022/10/20	0815	AI	2	NA

Sample Information

Initial pH: 8.0
Initial EC (µS/cm): 1863
Salinity (ppt): 3

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	7.8	7.7	7.7	8.0	8.1	8.1				
2	8.0	7.9	7.9	8.2	8.3	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	426	426	430	1818	1857	1906				
2	423	436	435	1987	2090	2090				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar Wed E3 Jar(s) mortality 7 days prior to test (must be ≤25%) 11

QA (previous month)

Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 25
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 10.8
Temperature (°C) of sample prior to aeration: 12
DO % of sample prior to aeration: 115%
Is aeration required (<40% or >100%)? **Yes or No**
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20mins
Filtered with 110um screen prior to testing **Yes or No**
Hardness (mg $CaCO_3$/L) of 100% : 981
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) -
Alkalinity of 100% sample (mg $CaCO_3$/L): 343

Dilution Water

Pail label / preparation date P3:1014
Hardness of dilution water (mg/L) 182

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

Comments/Observations:

0HR: NO PPT
48HR: NO PPT

Reviewed By: EV Date Reviewed: 2022/10/25

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS 5 Client TEC 164 Reference 2223-0521-02

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/10/18	1540	AM/AI/LC	2	EP
1	2022/10/19	0800	RS	-	km
2	2022/10/20	0815	AI	2	UA

Sample Information

Initial pH: 8.0
Initial EC (µS/cm): 1863
Salinity (ppt): 3

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	7.8	7.7	7.7	7.10	8.0	8.0				
2	7.9	8.0	8.0	8.2	8.3	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	432	432	432	1785	1892	1887				
2	433	437	434	1816	1894	1877				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.9	7.9	7.9				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	20	20	20				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar Wed E2 Jar(s) mortality 7 days prior to test (must be ≤25%) 11

QA (previous month)

Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 25
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - (must be ≤10%) 0

Sample

DO (mg/L) of sample prior to aeration: 8.8
DO % of sample prior to aeration: 112%
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20mins
Hardness (mg $CaCO_3$/L) of 100% : 981
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 343

Temperature (°C) of sample prior to aeration: 20
Is aeration required (<40% or >100%)? **Yes or No**
Filtered with 110um screen prior to testing **Yes or No**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Dilution Water

Pail label / preparation date 23.10/14
Hardness of dilution water (mg/L) 152

Antiscalant

Final Concentration in Sample: 5 mg/L
Volume of sample: 500 ~~ml~~ mL Volume of antiscalant: 39.5 µL

Comments/Observations:

0hr: nopot
48hr: No ppt

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Reviewed By: EV Date Reviewed: 2022/10/25

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC 164 Reference 2223-0521-03

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/10/18	1545	AM/AI/LC	2	EP
1	2022/10/19	0800	BS	-	WM
2	2022/10/20	0815	AI	2	NA

Sample Information

Initial pH: 7.8
Initial EC (µS/cm): 1916
Salinity (ppt): 3

Lab Code	CTL A	CTL B	CTL C	100 A	100 B	100 C

pH (units) (range: 6.0-8.5)

day										
0	7.8	7.8	7.7	7.8	7.9	7.9				
2	8.0	8.0	8.0	7.9	7.9	7.9				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	403	425	432	1864	1949	1981				
2	428	440	452	1826	1862	1903				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.9	7.9	7.9				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	20	20	20				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar Wed D4 Jar(s) mortality 7 days prior to test (must be ≤25%) 0

QA (previous month)

Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 25
Were test treatments randomized on test tray? (Yes) No

Control Validity Criteria

Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 9.2 Temperature (°C) of sample prior to aeration: 19
DO % of sample prior to aeration: 113 Is aeration required (<40% or >100%)? (Yes) or No
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20 mins Filtered with 110um screen prior to testing Yes or (No)
Hardness (mg $CaCO_3$/L) of 100% : 1005 Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) -
Alkalinity of 100% sample (mg $CaCO_3$/L): 356

Dilution Water

Pail label / preparation date D3:10/14
Hardness of dilution water (mg/L) 182

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Comments/Observations:

0 HR: NO ppt
48 HR: surficial ppt

Reviewed By: EV Date Reviewed: 2022/10/25

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC 164 Reference 2223-0521-03

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/10/18	1540	AM/AI/LC	2	EP
1	2022/10/19	0740	BS	-	WM
2	2022/10/20	0815	AI	2	NA

Sample Information

Initial pH: 7.8
Initial EC (µS/cm): 1916
Salinity (ppt): 3

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	7.8	7.7	7.7	7.8	7.9	7.9				
2	8.0	8.0	8.0	8.2	8.2	8.2				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	412	421	429	1867	1957	1460				
2	441	430	439	1914	1953	1960				

DO (mg/L) (**40-100% saturation at test temp.**)

0	~~14~~ 9.4 AM	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	~~20~~ 12	~~20~~ 12	~~8~~ 12 AM	12	12	12				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar Wed C2/D3 Jar(s) mortality 7 days prior to test (must be ≤25%) 0

QA (previous month)

Days to first brood (≤12 days) AM 8 & 9
Average number of young produced (≥15 young) 30
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 10.6
Temperature (°C) of sample prior to aeration: 12 AM 12
DO % of sample prior to aeration: 113
Is aeration required (<40% or >100%)? **Yes or No**
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20 mins
Filtered with 110um screen prior to testing **Yes or No**
Hardness (mg $CaCO_3$/L) of 100% : 1005
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 356

Dilution Water

Pail label / preparation date P3:10|M
Hardness of dilution water (mg/L) 182

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

Comments/Observations:

0HR: ~~PP~~ no PPT
48HR: surficial ppt

Reviewed By: EV Date Reviewed: 2022/10/25

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS 5 Client TEC 164 Reference 2223-0521-04

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/10/18	1550	AM/AI/LC	2	EP
1	2022/10/19	0805	BS	-	WM
2	2022/10/20	0815	AI	2	NA

Sample Information

Initial pH: 7.8
Initial EC (µS/cm): 1916
Salinity (ppt): 3

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	7.8	7.8	7.7	7.8	7.8	7.8				
2	8.0	8.0	8.0	8.3	8.3	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	420	431	433	1863	1946	1963				
2	450	447	439	1879	1941	1948				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.9	7.9	7.9				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	20	20	20				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar Wed D5 Jar(s) mortality 7 days prior to test (must be ≤25%) 0

QA (previous month)

Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 25
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - (must be ≤10%) 0

Sample

DO (mg/L) of sample prior to aeration: 9.2
DO % of sample prior to aeration: 114
Duration of aeration (37.5 +/- 12.5 mL/min/L): 20mins
Hardness (mg $CaCO_3$/L) of 100%: 1005
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 356

Temperature (°C) of sample prior to aeration: 19
Is aeration required (<40% or >100%)? **Yes or No**
Filtered with 110um screen prior to testing **Yes or No**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Dilution Water

Pail label / preparation date P3:10/14
Hardness of dilution water (mg/L) 182

Antiscalant

Final Concentration in Sample: 5 mg/L
Volume of sample: 500 ~~ml~~ mL Volume of antiscalant: 39.5 µL

Comments/Observations:

0hr: no ppt
48hr: surficial ppt

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Reviewed By: EV Date Reviewed: 2022/10/25

APPENDIX C – Chain-of-custody form

Teck

Page 1 of 1

COC ID: EVO NAUTILUS 101722 **TURNAROUND TIME:** Regular (default) **RUSH:** NO

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name	Elkview Operation			Lab Name	Nautilus			Report Format / Distribution		Excel	PDF	EDD
EQuIS Facility Code	EVO			Lab Contact	Jacklyn Poole			Email 1:	DL-EVO-SRF-LAB@teck.com	X	X	X
Project Manager	Brett Mason			Email	jacklyn@nautilusenvironmental.ca			Email 2:	Cole.Macgregor@teck.com	X	X	X
Email	brett.mason@teck.com			Address	10823 27th Street SE			Email 3:	TeckCoal@equisonline.com			X
Address	RR1 HWY 3							Email 4:				
City	Sparwood	Province	BC	City	Calgary	Province	AB	Email 5:				
Postal Code	V0B 2G0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada	Email 6:				
Phone Number	250 425 4837			Phone Number	403 253 7121			PO number	859537			

SAMPLE DETAILS

2022/10/18
09:00
Manitou Lin
SE/SRS
8x10L carboys, 4x20L carboys
10x1L bottles
NoS/NoL
Good Condition

ANALYSIS REQUESTED

Please indicate Y below if Filtered

Sample ID 2223-0521	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	48hr Daphnia magna Acute Toxicity 20C (NAUT_48hr_DM_PF)	48hr Daphnia magna Acute Toxicity 10C (NAUT_48hr_DM_PF_MOD10)	48hr Daphnia magna Acute Toxicity 5mg/L _SAS (NAUT_48hr_DM_PF)	96hr Rainbow Trout Acute Toxicity (NAUT_96hr_RT_PF)	48hr Daphnia magna Acute Toxicity 15C (NAUT_48hr_DM_PF_MOD15)	
EV_EC1_WS_2022-10-17_N-SRF -01	EV_EC1	WS		2022-10-17	10:10	G	12	2	2		4		9.5°C
EV_EC1_WS_2022-10-17_N-SRF-AS -02	EV_EC1	WS		2022-10-17	10:11	G	1			1			6.1°C
EV_ECOUT_WS_2022-10-17_N-SRF -03	EV_ECOUT	WS		2022-10-17	12:30	G	8	2	2		4		8.3°C
EV_ECOUT_WS_2022-10-17_N-SRF-AS -04	EV_ECOUT	WS		2022-10-17	12:31	G	1			1			4.7°C

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	Date	Time	ACCEPTED BY/AFFILIATION	Date	Time
	[signature]	17-Oct-22	1630			

SERVICE REQUEST (rush - subject to availability)

Regular (default)	X
Priority (2-3 business days) - 50% surcharge	
Emergency (1 Business Day) - 100% surcharge	
For Emergency <1 Day, ASAP or Weekend - Contact Nautilus	

Sampler's Name	Ariana Lewis	Mobile #	
Sampler's Signature	[signature]	Date/Time	17-Oct-22

END OF REPORT

Acute Toxicity Test Results

Samples collected October 17, 2022

Final Report

November 10, 2022

Submitted to: **Teck Coal Ltd.**
Sparwood, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates					
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation	*Daphnia magna* 20 mg/L antiscalant test initiation
F2_BPO_WG_2022-10-17_N / 2223-0522-01	17-Oct-22 at 0815h	18-Oct-22 at 0900h	18-Oct-22 at 1425h	18-Oct-22 at 1535h	18-Oct-22 at 1550h	-
F2_BPO_WG_2022-10-17_N-AS / 2223-0522-02	17-Oct-22 at 0816h	18-Oct-22 at 0900h	-	-	-	18-Oct-22 at 1600h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
F2_BPO_WG_2022-10-17_N	9.6°C	1051	334
F2_BPO_WG_2022-10-17_N-AS	12.6°C	1051	334

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)
- *Daphnia magna* 48-h single concentration screening test (conducted with 20 mg/L antiscalant)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample			
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* 20 mg/L antiscalant
F2_BPO_WG_2022-10-17_N	100	100	100	-
F2_BPO_WG_2022-10-17_N-AS	-	-	-	100

Sample ID	Percent Immobility in 100 (% v/v)		
	Daphnia magna 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* 20 mg/L antiscalant
F2_BPO_WG_2022-10-17_N	0	0	-
F2_BPO_WG_2022-10-17_N-AS	-	-	0

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
F2_BPO_WG_2022-10-17_N	Rainbow trout	None	None
	Daphnia magna	None	None
F2_BPO_WG_2022-10-17_N-AS	Rainbow trout	None	None
	Daphnia magna	None	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	3.7 (3.3-4.2) g/L KCl[1]	6.7 (6.4-6.9) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.6 (2.7-4.8) g/L KCl	6.2 (5.3-7.2) g/L NaCl
Reference toxicant CV	9.4%	5.1%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, October 6, 2022; [2] Test Date, October 19, 2022

LC = Lethal Concentration, CL = Confidence Limits, SD = Standard Deviation; CV = Coefficient of Variation

Report By:
Maryam Lo, BSc
Laboratory Biologist

Reviewed By:
Mimi Tran, Dipl. T.
Biologist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Control/dilution water for antiscalant test	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L), Na_2SeO_4 (2 µg Se/L) and 20 mg/L antiscalant
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC 164 Reference 2223-0522-01 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022/10/18	1425 *	ML/KO	7	um
1	2022/10/19	0850	ML	-	um
2	2022/10/20	0859	KC	-	NA
3	2022/10/21	0755	KO	-	KC
4	2022/10/22	1020	um/KO/AL	7	NA

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 7.7
Initial EC (µS/cm): 1989
Salinity (ppt): 3

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L : **yes/no**

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	9.1	8.9			
Temp (°C) of 100%	14				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: **5.5-8.5**)								
Day 0	7.6	7.5						
Day 4	8.1	8.3						
EC (uS/cm)								
Day 0	424	1992						
Day 4	413	1920						
DO (mg/L) (**70-100% saturation at test temp.**)								
Day 0	8.8	8.9						
Day 4	8.8 um 8.6	8.6						
Temperature (°C) (range: **14-16°C**)								
Day 0	15	14						
Day 4	16	16						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.9	0.4
2	3.5	0.3
3	3.4	0.3
4	3.4	0.3
5	3.5	0.3
6	3.5	0.3
7	3.5	0.3
8	3.3	0.3
9	3.6	0.4
10	3.6	0.4

Loading Density (g/L): 0.2
(must be ≤0.5 g/L)
Mean Length (cm): 3.5
Length Range (cm): 3.3-3.9
Mean Weight (g): 0.3
(Must be ≥0.3g)
Weight Range: (g): 0.3-0.4

Test Organism Information

Batch 20220818TR
Source Trout Lodge
Tank # 1
Days Held at 15± 2°C 42
(must be ≥14 days)
Percent stock mortality 0.27
(7 days prior to test, must be <2%)
Test Volume (L) 17.5 ~~18~~ mL

Comments :
96 hrs repot

Reviewed By: [signature] Date Reviewed: OCT 2 8 2022

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method: DAS 20 | Client: TEC 164 | Reference: 2223-0522-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/10/18	1550	AM/AI/LC	2	EP
1	2022/10/19	0805	BS	-	WM
2	2022/10/20	0815	AI	2	N/A

Sample Information

Initial pH:	7.7
Initial EC (µS/cm):	1989
Salinity (ppt):	3

Lab Code	CTL A	CTL B	CTL C	100 A	100 B	100 C

pH (units) (range: 6.0-8.5)

day	CTL A	CTL B	CTL C	100 A	100 B	100 C
0	7.8	7.7	7.7	7.8	7.8	7.8
2	7.9	7.9	8.0	8.3	8.3	8.3

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	414	429	432	1920	2080	2090
2	426	435	436	1943	1983	1969

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.9	7.9	7.9
2	7.9	7.9	7.9	7.9	7.9	7.9

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	20	20	20
2	20	20	20	20	20	20

Number Alive (I, immobile)

0	10	10	10	10	10	10
1	10	10	10	10	10	10
2	10	10	10	10	10	10

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar: Wed CT (E1) — Jar(s) mortality 7 days prior to test (must be ≤25%): 0

QA (previous month)

Days to first brood (≤12 days): AM 8
Average number of young produced (≥15 young): AM 34.25
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - (must be ≤10%): 0

Sample

DO (mg/L) of sample prior to aeration: 8.7 — Temperature (°C) of sample prior to aeration: 19
DO % of sample prior to aeration: 107% — Is aeration required (<40% or >100%)? (Yes) or No AM
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20 mins — Filtered with 110um screen prior to testing (Yes) or No
Hardness (mg $CaCO_3$/L) of 100% : 1051 — Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L): —
Alkalinity of 100% sample (mg $CaCO_3$/L): 334

Dilution Water

Pail label / preparation date: P3:10/14
Hardness of dilution water (mg/L): 182

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Comments/Observations:

0 HR: no ppt
48 HR: No ppt

Reviewed By: [signature] — Date Reviewed: OCT 28 2022

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC 164 Reference 2223-0522-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/10/18	1735	AM/AI/LC	2	EP
1	2022/10/19	0740	BS	-	YM
2	2022/10/20	0815	AI	2	NA

Sample Information

Initial pH: 7.7
Initial EC (µS/cm): 1989
Salinity (ppt): 3

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	7.8	7.96	7.7	7.8	7.8	7.8				
2	8.0	8.0	8.0	8.2	8.2	8.2				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	424	431	424	1948	2090	2100				
2	471	457	440	1832	1929	1911				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar Wed D5 Jar(s) mortality 7 days prior to test (must be ≤25%) 0

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 25
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0

Sample

DO (mg/L) of sample prior to aeration: 10.1
DO % of sample prior to aeration: 107 %
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20 mins
Hardness (mg $CaCO_3$/L) of 100% : 1051
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 334

Temperature (°C) of sample prior to aeration: 12
Is aeration required (<40% or >100%)? **Yes or No**
Filtered with 110um screen prior to testing **Yes or (No)**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or (No)**

Dilution Water
Pail label / preparation date R3:10/20 AM 14
Hardness of dilution water (mg/L) 182

DO Levels (40-100% saturation) - corrected for altitude -
4.1 to 10.3 mg/L at 8°C
4.0 to 10.0 mg/L at 9°C
3.9 to 9.8 mg/L at 10°C
3.8 to 9.6 mg/L at 11°C
3.7 to 9.4 mg/L at 12°C

Comments/Observations:
0HR: No ppt
48HR: No ppt

Reviewed By: [signature] Date Reviewed: OCT 28 2022

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method: DAS AS 20 | Client: TEC 164 | Reference: 2223-0522-02

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/10/18	1619	AI/AM/LC	2	EP
1	2022/10/19	0810	BS	-	[illegible]
2	2022/10/20	0820	AI	2	NA

Sample Information

Initial pH:	7.7
Initial EC (µS/cm):	1989
Salinity (ppt):	3

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	7.8	7.7	7.7	7.6	7.6	7.6				
2	7.9	7.9	7.9	8.3	8.3	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	419	431	432	1940	2080	2090				
2	431	436	436	1962	1960	1959				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.9	7.9	7.9				
2	8.1	8.1	8.1	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**) AM

0	20	20	20	20	20	20	20			
2	19	19	19	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar: wed F1 | Jar(s) mortality 7 days prior to test (must be ≤25%): 0

QA (previous month)

Days to first brood (≤12 days): 8

Average number of young produced (≥15 young): 25

Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - (must be ≤10%): 0

Sample

DO (mg/L) of sample prior to aeration: 9.7

DO % of sample prior to aeration: 107

Duration of aeration (37.5 +/- 12.5 mL/min/L): 20mins

Hardness (mg $CaCO_3$/L) of 100% : 1051

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L): —

Alkalinity of 100% sample (mg $CaCO_3$/L): 334

Temperature (°C) of sample prior to aeration: 19

Is aeration required (<40% or >100%)? **Yes or No**

Filtered with 110um screen prior to testing **Yes or No**

Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Dilution Water

Pail label / preparation date: P3:10/14

Hardness of dilution water (mg/L): 182

Antiscalant

Final Concentration in Sample: 20 mg/L

Volume of sample: 500 mL | Volume of antiscalant: 158 µL

Comments/Observations:

0hr: no ppt

48hr: no ppt

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Reviewed By: [signature] | Date Reviewed: OCT 2 8 2022

APPENDIX C – Chain-of-custody form

Teck

Page 1 of 1

COC ID: FSF NAUTILUS 101722 | TURNAROUND TIME: Regular (default) | RUSH: NO

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name	F2 SRF			Lab Name	Nautilus			Report Format / Distribution		Excel	PDF	EDD
EQuIS Facility Code	FSF			Lab Contact	Jacklyn Poole			Email 1:	DL-EVO-SRF-LAB@teck.com	X	X	X
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City	Sparwood	Province	BC	City	Calgary	Province	AB	Email 5:				
Postal Code	V0B 2G0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada	Email 6:				
Phone Number	250 425 4837			Phone Number	403 253 7121			PO number	859537			

SAMPLE DETAILS

2022/10/18
09:00
Manitoulin
DC/SRS
4x20L cardboard, 5x1L bottles
NOS/NOL
Good Condition

ANALYSIS REQUESTED

Please indicate Y below if Filtered

Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	48hr Daphnia magna Acute Toxicity 20C (NAUT_48hr_DM_PF)	48hr Daphnia magna Acute Toxicity 10C (NAUT_48hr_DM_PF_MOD10)	48hr Daphnia magna Acute Toxicity 20mg/L Antiscalant (NAUT_48hr_DM_PF_20AS)	96hr Rainbow Trout Acute Toxicity (NAUT_96hr_RT_PF)	48hr Daphnia magna Acute Toxicity 15C (NAUT_48hr_DM_PF_MOD15)									
F2_BPO_WG_2022-10-17_N -01	F2_BPO	WG		2022-10-17	08:15	G	18	2	2		4		9.68								
F2_BPO_WG_2022-10-17_N-AS -02	F2_BPO	WG		2022-10-17	08:16	G	1			1			12.6°C								

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	Date	Time	ACCEPTED BY/AFFILIATION	Date	Time
		17-Oct-22	1630			

SERVICE REQUEST (rush - subject to availability)

Regular (default)	X
Priority (2-3 business days) - 50% surcharge	
Emergency (1 Business Day) - 100% surcharge	
For Emergency <1 Day, ASAP or Weekend - Contact Nautilus	

Sampler's Name	ADIANA LEWIS	Mobile #	
Sampler's Signature		Date/Time	17-Oct-22

END OF REPORT

Acute Toxicity Test Results

Samples collected October 18, 2022

Final Report

November 14, 2022

Submitted to: **Teck Coal Ltd.**
Sparwood, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates					
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation	*Daphnia magna* 5 mg/L antiscalant test initiation
EV_BC1_WS_2022-10-18_N-SRF / 2223-0542-01	18-Oct-22 at 0920h	19-Oct-22 at 0830h	19-Oct-22 at 1450h	19-Oct-22 at 1430h	19-Oct-22 at 1425h	-
EV_BC1_WS_2022-10-18_N-SRF-AS / 2223-0542-02	18-Oct-22 at 0921h	19-Oct-22 at 0830h	-	-	-	19-Oct-22 at 1425h
EV_GT1_WS_2022-10-18_N-SRF / 2223-0542-03	18-Oct-22 at 0800h	19-Oct-22 at 0830h	19-Oct-22 at 1455h	19-Oct-22 at 1435h	19-Oct-22 at 1440h	-
EV_GT1_WS_2022-10-18_N-SRF-AS / 2223-0542-04	18-Oct-22 at 0801h	19-Oct-22 at 0830h	-	-	-	19-Oct-22 at 1440h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
EV_BC1_WS_2022-10-18_N-SRF	8.7°C	1271	318
EV_BC1_WS_2022-10-18_N-SRF-AS	8.7°C	1271	318
EV_GT1_WS_2022-10-18_N-SRF	8.7°C	1458	356
EV_GT1_WS_2022-10-18_N-SRF-AS	8.7°C	1458	356

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)
- *Daphnia magna* 48-h single concentration screening test (conducted with 5 mg/L antiscalant)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample			
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* 5 mg/L antiscalant
EV_BC1_WS_2022-10-18_N-SRF	100	100	100	-
EV_BC1_WS_2022-10-18_N-SRF-AS	-	-	-	100
EV_GT1_WS_2022-10-18_N-SRF	100	100	100	-
EV_GT1_WS_2022-10-18_N-SRF-AS	-	-	-	100

Sample ID	Percent Immobility in 100 (% v/v)		
	Daphnia magna 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* 5 mg/L antiscalant
EV_BC1_WS_2022-10-18_N-SRF	0	0	-
EV_BC1_WS_2022-10-18_N-SRF-AS	-	-	0
EV_GT1_WS_2022-10-18_N-SRF	0	0	-
EV_GT1_WS_2022-10-18_N-SRF-AS	-	-	0

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
EV_BC1_WS_2022-10-18_N-SRF	Rainbow trout	None	None
	Daphnia magna	Precipitate observed on the surface of test vessel	None
EV_BC1_WS_2022-10-18_N-SRF-AS	*Daphnia magna*	None	None
EV_GT1_WS_2022-10-18_N-SRF	Rainbow trout	Precipitate observed on the test vessel	None
	Daphnia magna	Precipitate observed on the surface of test vessel in 20˚C test	None
EV_GT1_WS_2022-10-18_N-SRF-AS	*Daphnia magna*	None	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	3.7 (3.3-4.2) g/L KCl[1]	6.7 (6.4-6.9) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.6 (2.7-4.8) g/L KCl	6.2 (5.3-7.2) g/L NaCl
Reference toxicant CV	9.4%	5.1%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, October 6, 2022; [2] Test Date, October 19, 2022

LC = Lethal Concentration, CL = Confidence Limits, SD = Standard Deviation, CV = Coefficient of Variation



Report By:
Lily Cole, B.Sc.
Laboratory Biologist



Reviewed By:
Mimi Tran, Dipl. T.
Biologist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Control/dilution water for antiscalant test	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L), Na_2SeO_4 (2 µg Se/L) and 5 mg/L antiscalant
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC 164 Reference 2223-0542-01 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022-10-19	1450 *	ML/KO	7	AM
1	2022-10-20	0905	KC	-	NA
2	2022-10-21	0890	KO	-	KC
3	2022-10-22	0850	AM	-	KM
4	2022-10-23	0935	KC/ML	7	NA

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 7.9
Initial EC (µS/cm): 1924
Salinity (ppt): 5

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L (yes/no)

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	8.9	8.9			
Temp (°C) of 100%	14				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: **5.5-8.5**)								
Day 0	7.5	8.0						
Day 4	8.0	8.1						
EC (uS/cm)								
Day 0	413	1959						
Day 4	364	1706						
DO (mg/L) (**70-100% saturation at test temp.**)								
Day 0	8.8	8.9						
Day 4	8.8	8.8						
Temperature (°C) (range: **14-16°C**)								
Day 0	15	14						
Day 4	15	15						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.2	0.3
2	3.5	0.3
3	3.6	0.3
4	3.3	0.3
5	3.4	0.3
6	3.3	0.3
7	3.4	0.3
8	3.5	0.3
9	3.6	0.4
10	3.8	0.4

Loading Density (g/L): 0.2 (must be ≤0.5 g/L)
Mean Length (cm): 3.5
Length Range (cm): 3.2-3.8
Mean Weight (g): 0.3 (Must be ≥0.3g)
Weight Range: (g): 0.3-0.4

Test Organism Information

Batch 20220818TR
Source Trout Lodge
Tank # 1
Days Held at 15± 2°C 43 (must be ≥14 days)
Percent stock mortality 0.24 (7 days prior to test, must be <2%)
Test Volume (L) 18

Comments :
96 hrs no PPT

Reviewed By: [signature] Date Reviewed: OCT 2 8 2022

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC 164 Reference 2223-0542-03 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022-10-19	1455 *	ML/KO	7	AM
1	2022-10-20	0905	YC	-	NA
2	2022-10-21	0910	KO	-	YC
3	2022-10-22	0950	AM	-	WM
4	2022-10-23	0940	KO/ML	7	NA

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 8.1
Initial EC (µS/cm): 2070
Salinity (ppt): 3

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L : **yes/no**

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	9.7	8.9			
Temp (°C) of 100%	~~15~~ 14 ML				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: **5.5-8.5**)								
Day 0	7.6	8.2						
Day 4	8.0	8.1						
EC (uS/cm)								
Day 0	412	2200						
Day 4	360	1508						
DO (mg/L) (**70-100% saturation at test temp.**)								
Day 0	8.8	8.9						
Day 4	8.9	8.8						
Temperature (°C) (range: **14-16°C**)								
Day 0	15	14						
Day 4	15	15						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.3	0.3
2	3.8	0.4
3	3.7	0.3
4	3.8	0.4
5	3.5	0.3
6	3.7	0.4
7	3.5	0.3
8	3.8	0.4
9	3.5	0.3
10	3.6	0.3

Loading Density (g/L): 0.2 (must be ≤0.5 g/L)
Mean Length (cm): 3.6
Length Range (cm): 3.3-3.8
Mean Weight (g): 0.3 (Must be ≥0.3g)
Weight Range: (g): 0.3-0.4

Test Organism Information

Batch 20220818TR
Source Trout Lodge
Tank # 1
Days Held at 15± 2°C 43 (must be ≥14 days)
Percent stock mortality 0.24 (7 days prior to test, must be <2%)
Test Volume (L) ~~18~~ 16.5 L KO

Comments :
96 hrs PPT

Reviewed By: [signature] Date Reviewed: OCT 28 2022

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC164 Reference 2223-0542-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/10/19	1425	BS/AG	2	ZC
1	2022/10/20	0750	NA	-	ZC
2	2022/10/21	1020	BS/AG	2	ZC

Sample Information

Initial pH: 7.9
Initial EC (µS/cm): 1924
Salinity (ppt): 5

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	7.5	7.6	7.6	7.9	7.9	7.9				
2	7.9	7.9	7.9	8.0	8.0	8.0				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	408	424	434	1897	2070	1961				
2	431	435	436	1932	1970	1930				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	8.1	8.1	8.1				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	19	19	19				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar: Wed D1 — Jar(s) mortality 7 days prior to test (must be ≤25%): 0%

QA (previous month)

Days to first brood (≤12 days): 9
Average number of young produced (≥15 young): 31
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - (must be ≤10%): 0%

Sample

DO (mg/L) of sample prior to aeration: 9.6
Temperature (°C) of sample prior to aeration: 18
DO % of sample prior to aeration: 115
Is aeration required (<40% or >100%)? **Yes or No**
Duration of aeration (37.5 +/- 12.5 mL/min/L): 20 min
Filtered with 110um screen prior to testing **Yes or (No)**
Hardness (mg $CaCO_3$/L) of 100% : 127.1
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or (No)**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L): —
Alkalinity of 100% sample (mg $CaCO_3$/L): 318

Dilution Water

Pail label / preparation date: P2: 10/17
Hardness of dilution water (mg/L): 210

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Comments/Observations:

0 hr: No ppt
48 hr: survival ppt

Reviewed By: [signature] Date Reviewed: OCT 28 2022

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC164 Reference 2223-0542-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/10/19	1430	BS/AG	2	AC
1	2022/10/20	0740	BS	-	VA
2	2022/10/21	1010	BS/AG	2	AC

Sample Information

Initial pH: 7.9
Initial EC (µS/cm): 1924
Salinity (ppt): 5

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	7.6	7.7	7.6	7.9	8.0	8.0				
2	8.0	7.9	7.9	8.0	8.1	8.1				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	426	439	428	2110	2200	2170				
2	414	441	434	2180	2200	2100				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar Wed 05 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)

Days to first brood (≤12 days) 9
Average number of young produced (≥15 young) 31
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - 0%
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 10.8
DO % of sample prior to aeration: 115
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20 min
Hardness (mg $CaCO_3$/L) of 100% : 1271
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 318

Temperature (°C) of sample prior to aeration: 12
Is aeration required (<40% or >100%)? **Yes or No**
Filtered with 110um screen prior to testing **Yes or No**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Dilution Water

Pail label / preparation date RE: 10/17
Hardness of dilution water (mg/L) 210

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

Comments/Observations:

0 hr: No ppt
48 hr: surface ppt

Reviewed By: DP Date Reviewed: OCT 2 8 2022

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS 5 Client TEC164 Reference 2223-0542-02

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/10/19	1425	BS/AG	2	YC
1	2022/10/20	0750	NA	-	YC
2	2022/10/21	1040	WM	2	YC

Sample Information

Initial pH: 7.9
Initial EC (µS/cm): 1924
Salinity (ppt): 5

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	7.7	7.6	7.6	7.9	8.0	8.0				
2	7.7	7.7	7.7	8.1	8.1	8.1				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	474	437	433	1906	1958	1953				
2	391	427	435	1911	1951	1935				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	8.1	8.1	8.1				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	19	19	19				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar Wed 05 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 9
Average number of young produced (≥15 young) 31
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0%

Sample
DO (mg/L) of sample prior to aeration: 9.8
DO % of sample prior to aeration: 116
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20 min
Hardness (mg $CaCO_3$/L) of 100% : 1271
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 318

Temperature (°C) of sample prior to aeration: 18
Is aeration required (<40% or >100%)? **Yes or No**
Filtered with 110um screen prior to testing **Yes or No**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Dilution Water
Pail label / preparation date PS: 10/17
Hardness of dilution water (mg/L) 143

Antiscalant
Final Concentration in Sample: 5 mg/L
Volume of sample: 500ml Volume of antiscalant: 39.5

Comments/Observations:
0 hr: No ppt
48 hr: no ppt

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Reviewed By: ST Date Reviewed: OCT 2 8 2022

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC164 Reference 2223-0542-03

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/10/19	1440	BS/AG	2	ZC
1	2022/10/20	0755	NA	-	ZC
2	2022/10/21	1020	KM	2	ZC

Sample Information

Initial pH:	8.1
Initial EC (µS/cm):	2070
Salinity (ppt):	3

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	7.7	7.7	7.7	7.9	8.0	8.0				
2	7.9	7.9	7.9	7.9	7.9	8.0				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	498	447	441	1988	2210	2180				
2	478	441	441	1690	2150	2120				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	8.1	8.1	8.1				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	19	19	19				
2	20	20	20	20	20	20				

Number Alive (l, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar Wed 05 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)

Days to first brood (≤12 days) 9

Average number of young produced (≥15 young) 31

Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - 0%
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 9.5 Temperature (°C) of sample prior to aeration: 18

DO % of sample prior to aeration: 113 Is aeration required (<40% or >100%)? **Yes or No**

Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20 min Filtered with 110um screen prior to testing **Yes or (No)**

Hardness (mg $CaCO_3$/L) of 100% : 1458 Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or (No)**

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —

Alkalinity of 100% sample (mg $CaCO_3$/L): 350

Dilution Water

Pail label / preparation date P2: 19/17

Hardness of dilution water (mg/L) 210

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Comments/Observations:

0 hr: No ppt

48 hr: Survival ppt

Reviewed By: OP Date Reviewed: OCT 2 8 2022

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC164 Reference 2223-0542-03

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/10/19	1435	BS/AG	2	JC
1	2022/10/20	0755	NA	-	JC
2	2022/10/21	1010	BS/AG	2	JC

Sample Information

Initial pH: 8.1
Initial EC (µS/cm): 2070
Salinity (ppt): 3

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	7.7	7.7	7.6	8.0	8.0	8.0				
2	8.0	8.0	7.8	8.0	8.0	8.0				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	411	433	431	1986	2210	2230				
2	431	438	434	2090	2170	2170				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	~~9.4~~	~~9.4~~	~~9.4~~				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (l, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar Wed 05 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 9
Average number of young produced (≥15 young) 31
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0%
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 10.6
DO % of sample prior to aeration: 113
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20 min
Hardness (mg $CaCO_3$/L) of 100% : 1458
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) ~
Alkalinity of 100% sample (mg $CaCO_3$/L): 256

Temperature (°C) of sample prior to aeration: 12
Is aeration required (<40% or >100%)? **Yes or No**
Filtered with 110um screen prior to testing **Yes or No**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Dilution Water
Pail label / preparation date P2: 10/17
Hardness of dilution water (mg/L) 210

DO Levels (40-100% saturation) - corrected for altitude -
4.1 to 10.3 mg/L at 8°C
4.0 to 10.0 mg/L at 9°C
3.9 to 9.8 mg/L at 10°C
3.8 to 9.6 mg/L at 11°C
3.7 to 9.4 mg/L at 12°C

Comments/Observations:
0 hr: No ppt
48 hr: no ppt

Reviewed By: DP Date Reviewed: OCT 28 2022

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS 5 Client TEC164 Reference 2223-0542-04

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/10/19	1446	BS/AG	2	YC
1	2022/10/20	0755	NA	-	YC
2	2022/10/21	1025	VM	2	YC

Sample Information

Initial pH: 8.1
Initial EC (µS/cm): 2070
Salinity (ppt): 3

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	7.7	7.7	7.6	8.1	8.1	8.1				
2	7.9	7.9	7.9	8.1	8.1	8.2				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	429	432	434	2130	2200	2210				
2	431	430	425	2190	2190	2200				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.9	7.9	7.9				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	20	20	20				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar Week DS Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 9
Average number of young produced (≥15 young) 31
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0%

Sample
DO (mg/L) of sample prior to aeration: 10.0
DO % of sample prior to aeration: 118
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20 min
Hardness (mg $CaCO_3$/L) of 100% : 1459
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) -
Alkalinity of 100% sample (mg $CaCO_3$/L): 3560

Temperature (°C) of sample prior to aeration: 18
Is aeration required (<40% or >100%)? **Yes or No**
Filtered with 110um screen prior to testing **Yes or No**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Dilution Water
Pail label / preparation date PS: 10/17
Hardness of dilution water (mg/L) 143

Antiscalant
Final Concentration in Sample: 5 mg/L
Volume of sample: 500ml Volume of antiscalant: 39.5

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C 3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C 3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C

Comments/Observations:
0 hr: No ppt
48 hr: heavy ppt

Reviewed By: [signature] Date Reviewed: OCT 28 2022

APPENDIX C – Chain-of-custody form

Teck

Page 1 of 1

COC ID: EVO NAUTILUS 101822 **TURNAROUND TIME:** Regular (default) **RUSH:** NO

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name	Elkview Operation			Lab Name	Nautilus			Report Format / Distribution		Excel	PDF	EDD
EQuIS Facility Code	EVO			Lab Contact	Jacklyn Poole			Email 1:	DL-EVO-SRF-LAB@teck.com	X	X	X
Project Manager	Brett Mason			Email	jacklyn@nautilusenvironmental.ca			Email 2:	Cole.Macgregor@teck.com	X	X	X
Email	brett.mason@teck.com			Address	10823 27th Street SE			Email 3:	TeckCoal@equisonline.com			X
Address	RR1 HWY 3							Email 4:				
City	Sparwood	Province	BC	City	Calgary	Province	AB	Email 5:				
Postal Code	V0B 2G0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada	Email 6:				
Phone Number	250 425 4837			Phone Number	403 253 7121			PO number	859537			

SAMPLE DETAILS

2022/10/18
08:30
Manitonlin
DC/SRS
8x10L carboys, 4x20L carboys
10x1L bottles
N6S/N6L
Good Condition

ANALYSIS REQUESTED

Please indicate Y below if Filtered

Sample ID 2223-0547	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	ANALYSIS: 48hr Daphnia magna Acute Toxicity 20C (NAUT_48hr_DM_PF)	48hr Daphnia magna Acute Toxicity 10C (NAUT_48hr_DM_PF_MOD10)	48hr Daphnia magna Acute Toxicity 5mg/L Antiscalant (NAUT_48hr_DM_PF_SAS)	96hr Rainbow Trout Acute Toxicity (NAUT_96hr_RT_PF)	48hr Daphnia magna Acute Toxicity 15C (NAUT_48hr_DM_PF_MOD15)	
EV_BC1_WS_2022-10-18_N-SRF -01	EV_BC1	WS		2022-10-18	09:20	G	12	2	2		8		8.7°C
EV_BC1_WS_2022-10-18_N-SRF-AS -02	EV_BC1	WS		2022-10-18	09:21	G	1			1			↓
EV_GT1_WS_2022-10-18_N-SRF -03	EV_GT1	WS		2022-10-18	08:00	G	8	2	2		4		8.7°C
EV_GT1_WS_2022-10-18_N-SRF-AS -04	EV_GT1	WS		2022-10-18	08:01	G	1			1			↓

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	Date	Time	ACCEPTED BY/AFFILIATION	Date	Time
	Ariana Lewis	18-Oct-22				

SERVICE REQUEST (rush - subject to availability)

Regular (default)	X
Priority (2-3 business days) - 50% surcharge	
Emergency (1 Business Day) - 100% surcharge	
For Emergency <1 Day, ASAP or Weekend - Contact Nautilus	

Sampler's Name	Ariana Lewis	Mobile #	
Sampler's Signature		Date/Time	18-Oct-22

END OF REPORT

Acute Toxicity Test Results

Samples collected October 24, 2022

Final Report

November 16, 2022

Submitted to: **Teck Coal Ltd.**
Sparwood, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates					
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation	*Daphnia magna* 20 mg/L antiscalant test initiation
F2_BPO_WG_2022-10-24_N / 2223-0609-01	24-Oct-22 at 0950h	25-Oct-22 at 0925h	25-Oct-22 at 1445h	25-Oct-22 at 1520h	25-Oct-22 at 1515h	-
F2_BPO_WG_2022-10-24_N-AS / 2223-0609-02	24-Oct-22 at 0950h	25-Oct-22 at 0925h	-	-	-	25-Oct-22 at 1515h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
F2_BPO_WG_2022-10-24_N	8.9°C	1088	353
F2_BPO_WG_2022-10-24_N-AS	8.9°C	1088	353

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)
- *Daphnia magna* 48-h single concentration screening test (conducted with 20 mg/L antiscalant)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample			
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* 20 mg/L antiscalant
F2_BPO_WG_2022-10-24_N	100	100	100	-
F2_BPO_WG_2022-10-24_N-AS	-	-	-	100

Sample ID	Percent Immobility in 100 (% v/v)		
	Daphnia magna 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* 20 mg/L antiscalant
F2_BPO_WG_2022-10-24_N	0	0	-
F2_BPO_WG_2022-10-24_N-AS	-	-	0

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
F2_BPO_WG_2022-10-24_N	Rainbow trout	None	None
	Daphnia magna	None	None
F2_BPO_WG_2022-10-24_N-AS	*Daphnia magna*	None	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	3.8 (3.3-4.4) g/L KCl[1]	6..7 (6.4-6.9) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.6 (2.7-4.8) g/L KCl	6.2 (5.3-7.2) g/L NaCl
Reference toxicant CV	9.4%	5.1%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date October 3, 2022; [2] Test date, October 19, 2022

LC = Lethal Concentration, CL = Confidence Limits, SD = Standard Deviation, CV = Coefficient of Variation



Report By:
Kiara O'Shea, BSc
Laboratory Biologist



Reviewed By:
Mimi Tran, Dipl. T.
Biologist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Control/dilution water for antiscalant test	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L), Na_2SeO_4 (2 µg Se/L) and 20 mg/L antiscalant
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC 164 Reference 0609-01 2223-0616-TP Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022-10-25	1445 *	KO/ML/BS	7	EP
1	2022-10-26	0905	MS	-	MAF
2	2022-10-27	0750	MS	-	KC
3	2022-10-28	0855	MS	-	um
4	2022-10-29	0927	NA/MS/DI	7	KO

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 7.7
Initial EC (µS/cm): 1926
Salinity (ppt): 3

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L (yes/no)

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	9.4	8.9			
Temp (°C) of 100%	14				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: **5.5-8.5**)								
Day 0	7.8	~~7.9~~ 8.2 ML						
Day 4	7.8	8.4						
EC (uS/cm)								
Day 0	~~429 ML~~ 407	~~2570~~ 1855 ML						
Day 4	393	1841						
DO (mg/L) (**70-100% saturation at test temp.**)								
Day 0	8.8	8.9						
Day 4	8.8	8.8						
Temperature (°C) (range: **14-16°C**)								
Day 0	15	14						
Day 4	15	15						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	4.1	0.5
2	4.2	0.5
3	3.6	0.3
4	3.5	0.3
5	3.2	0.2
6	3.5	0.3
7	3.2	0.2
8	3.8	0.4
9	4.0	0.3
10	3.5	0.3

Loading Density (g/L): 0.2 (must be ≤0.5 g/L)
Mean Length (cm): 3.7
Length Range (cm): 3.2-4.2
Mean Weight (g): 0.3 (Must be ≥0.3g)
Weight Range: (g): 0.2-0.5

Test Organism Information

Batch 20220825TR
Source LSL
Tank # 3
Days Held at 15± 2°C 19 (must be ≥14 days)
Percent stock mortality 0.09 (7 days prior to test, must be <2%)
Test Volume (L) 18

Comments :
96h: No ppt

Reviewed By: [signature] Date Reviewed: NOV 0 1 2022

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC 164 Reference 2223-0609-01 AM

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/10/25	1520	AI/AM	2	FP
1	2022/10/26	0905	BS	-	MAF
2	2022/10/27	0820	AG/BS	2	NA

Sample Information OP

Initial pH:	8.1	7.7
Initial EC (µS/cm):	2670	1926
Salinity (ppt):	5	3

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5) 8.1

day										
0	7.8	7.8	7.8	7AM	8.1	8.1				
2	8.0	7.9	7.9	8.2	8.2	8.2				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	432	424	420	1822	1883	1906				
2	428	430	429	1869	1922	1928				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (l, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar Wed C5 Jar(s) mortality 7 days prior to test (must be ≤25%) 0/1

QA (previous month)

Days to first brood (≤12 days) 8

Average number of young produced (≥15 young) 35

Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - 0 (must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: AM 10.1 / 11.0 Temperature (°C) of sample prior to aeration: AM 12 / 12

DO % of sample prior to aeration: 117% Is aeration required (<40% or >100%)? **Yes or No**

Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20 mins Filtered with 110um screen prior to testing **Yes or No**

Hardness (mg $CaCO_3$/L) of 100% : ~~1153~~ 1083 Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) -

Alkalinity of 100% sample (mg $CaCO_3$/L) OP ~~176~~ 353

Dilution Water

Pail label / preparation date 5:10/20

Hardness of dilution water (mg/L) 128

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

Comments/Observations:

0 hr no ppt

48 hr no ppt

Reviewed By: OP Date Reviewed: NOV 0 1 2022

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC 164 Reference 2223-0609-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/10/25	1515	AI/AM	2	EP
1	2022/10/26	0810	BS	-	MAF
2	2022/10/27	0850	AG/BS	2	NA

Sample Information

Initial pH:	~~8.1~~ ∞	7.7
Initial EC (µS/cm):	~~2870~~	1926
Salinity (ppt):	~~5~~	3

Lab Code	CTL A	CTL B	CTL C	100 A	100 B	100 C				
day				pH (units) (range: 6.0-8.5)						
0	7.8	7.8	7.7	7.8	7.8	7.8				
2	7.8	7.9	7.9	8.2	8.2	8.2				
	The pH of the sample was not adjusted prior to test setting, unless noted in the comments below									
				EC (uS/cm)						
0	421	419	419	1842	1898	1933				
2	401	416	419	1844	1877	1907				
				DO (mg/L) (**40-100% saturation at test temp.**)						
0	8.2	8.2	8.2	8.2	8.2	8.2				
2	7.9	7.9	7.9	7.9	7.9	7.9				
				Temperature (°C) (range: **18-22 °C**)						
0	18	18	18	18	18	18				
2	20	20	20	20	20	20				
				Number Alive (I, immobile)						
0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar Wed C5 Jar(s) mortality 7 days prior to test (must be ≤25%) 0/1

QA (previous month)

Days to first brood (≤12 days) 8

Average number of young produced (≥15 young) 35

Were test treatments randomized on test tray? Yes / No

Control Validity Criteria

Mean % mortality at 48 hours - (must be ≤10%) 0

Sample

DO (mg/L) of sample prior to aeration: 9.4

Temperature (°C) of sample prior to aeration: 18

DO % of sample prior to aeration: 115%

Is aeration required (<40% or >100%)? **Yes or No**

Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20 mins

Filtered with 110um screen prior to testing **Yes or No**

Hardness (mg $CaCO_3$/L) of 100% : ∞ ~~1453~~ 1088

Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —

Alkalinity of 100% sample (mg $CaCO_3$/L): ∞ ~~476~~ 353

Dilution Water

Pail label / preparation date 5.10/20

Hardness of dilution water (mg/L) 128

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C

3.2 to 8.1 mg/L at 19°C

3.2 to 7.9 mg/L at 20°C

3.1 to 7.7 mg/L at 21°C

3.0 to 7.6 mg/L at 22°C

Comments/Observations:

0 hr no ppt

48 hr no ppt

Reviewed By: [signature] Date Reviewed: OCT 31 2022

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS 20 Client TEC 164 Reference 2223-0609-~~03~~ -02 AM

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/10/25	1515	AI/AM	2	EP
1	2022/10/26	0810	BS	-	MAF
2	2022/10/27	0950	AG/BS	2	NA

Sample Information EP

Initial pH: ~~8.4~~ 7.7
Initial EC (µS/cm): ~~2876~~ 1426
Salinity (ppt): ~~5~~ 3

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	7.7	7.7	7.7	7.9	7.9	7.9				
2	7.9	7.9	7.9	8.2	8.2	8.2				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	409	424	423	1872	1911	1919				
2	445	428	429	1781	1854	1873				

DO (mg/L) (**40-100% saturation at test temp.**)

0	8.2	8.2	8.2	8.1	8.1	8.1				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	18	18	18	19	19	19				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar Wed C5 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 35
Were test treatments randomized on test tray? (Yes) No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0

Sample
DO (mg/L) of sample prior to aeration: 9.7
DO % of sample prior to aeration: 118
Duration of aeration (37.5 +/- 12.5 mL/min/L): 20 mins
Hardness (mg $CaCO_3$/L) of 100% ~~PE1453~~ 1090
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) -
Alkalinity of 100% sample (mg $CaCO_3$/L): ~~446~~ 353.

Temperature (°C) of sample prior to aeration: 18
Is aeration required (<40% or >100%)? **Yes or No**
Filtered with 110um screen prior to testing **Yes or No**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Dilution Water
Pail label / preparation date 5:10/20
Hardness of dilution water (mg/L) 128

Antiscalant
Final Concentration in Sample: 20 mg/L
Volume of sample: 500 mL Volume of antiscalant: 156 AM uL

Comments/Observations:
0 hr no ppt
48 hr no ppt

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Reviewed By: EP Date Reviewed: NOV 0 1 2022

APPENDIX C – Chain-of-custody form

Teck

Page 1 of 1

COC ID: FSF NAUTILUS 102422 | TURNAROUND TIME: Regular (default) | RUSH: NO

PROJECT/CLIENT INFO

Facility Name	F2 SRF		
EQuIS Facility Code	FSF		
Project Manager	Brett Mason		
Email	brett.mason@teck.com		
Address	RR1 HWY 3		
City	Sparwood	Province	BC
Postal Code	V0B 2G0	Country	Canada
Phone Number	250 425 4837		

LABORATORY

Lab Name	Nautilus		
Lab Contact	Jacklyn Poole		
Email	jacklyn@nautilusenvironmental.ca		
Address	10823 27th Street SE		
City	Calgary	Province	AB
Postal Code	T2Z 3V9	Country	Canada
Phone Number	403 253 7121		

OTHER INFO

Report Format / Distribution		Excel	PDF	EDD
Email 1:	DL-EVO-SRF-LAB@teck.com	X	X	X
Email 2:	Cole.Macgregor@teck.com	X	X	X
Email 3:	TeckCoal@equisonline.com			X
Email 4:				
Email 5:				
Email 6:				

PO number: 859537

SAMPLE DETAILS

2022/10/26
~~09:15~~ 09:25
Manitoulin
SC/SRS Jugs
4x20L ~~carboys~~, 5x1L bottles
NoS/NoI
~~Good Condition~~
Jugs missing sample labels

ANALYSIS REQUESTED

Please indicate Y below if Filtered

Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	NAUT_48hr_DM_PF Acute Toxicity 20C	NAUT_48hr_DM_PF _MOD10 Acute Toxicity 10C	NAUT_48hr_DM_PF _20AS Acute Toxicity 20mg/L Antiscalant	NAUT_96hr_RT_PF Acute Toxicity	NAUT_48hr_DM_PF _MOD15 Acute Toxicity 15C	
F2_BPO_WG_2022-10-24_N	2223-0809 -01	F2_BPO	WG		2022-10-24	09:50	G	8	2	2		4		8.9℃
F2_BPO_WG_2022-10-24_N-AS	-02	F2_BPO	WG		2022-10-24	09:50	G	1			1			↓

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS

RELINQUISHED BY/AFFILIATION

Nick Legendre - Teck

Date: 24-Oct-22 | Time: 1550

ACCEPTED BY/AFFILIATION

Date | Time

SERVICE REQUEST (rush - subject to availability)

Regular (default)	X
Priority (2-3 business days) - 50% surcharge	
Emergency (1 Business Day) - 100% surcharge	
For Emergency <1 Day, ASAP or Weekend - Contact Nautilus	

Sampler's Name	Courtney Kirk	Mobile #	
Sampler's Signature		Date/Time	24-Oct-22

END OF REPORT

Acute Toxicity Test Results

Samples collected October 31, 2022

Final Report

November 25, 2022

Submitted to: **Teck Coal Ltd.**
Sparwood, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates					
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation	*Daphnia magna* 5 mg/L antiscalant test initiation
EV_EC1_WS_2022-10-31_N-SRF / 2223-0679-01	31-Oct-22 at 1000h	01-Nov-22 at 0910h	01-Nov-22 at 1430h	01-Nov-22 at 1605h	01-Nov-22 at 1605h	-
EV_EC1_WS_2022-10-31_N-SRF-AS / 2223-0679-02	31-Oct-22 at 1001h	01-Nov-22 at 0910h	-	-	-	01-Nov-22 at 1545h
EV_ECOUT_WS_2022-10-31_N-SRF / 2223-0679-03	31-Oct-22 at 1245h	01-Nov-22 at 0910h	01-Nov-22 at 1505h	01-Nov-22 at 1615h	01-Nov-22 at 1620h	-
EV_ECOUT_WS_2022-10-31_N-SRF-AS / 2223-0679-04	31-Oct-22 at 1246h	01-Nov-22 at 0910h	-	-	-	01-Nov-22 at 1610h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
EV_EC1_WS_2022-10-31_N-SRF	5.9°C	997	341
EV_EC1_WS_2022-10-31_N-SRF-AS	5.9°C	997	341
EV_ECOUT_WS_2022-10-31_N-SRF	4.3°C	920	420
EV_ECOUT_WS_2022-10-31_N-SRF-AS	4.3°C	920	420

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)
- *Daphnia magna* 48-h single concentration screening test (conducted with 5 mg/L antiscalant)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample			
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* 5 mg/L antiscalant
EV_EC1_WS_2022-10-31_N-SRF	100	100	100	-
EV_EC1_WS_2022-10-31_N-SRF-AS	-	-	-	100
EV_ECOUT_WS_2022-10-31_N-SRF	90	100	100	-
EV_ECOUT_WS_2022-10-31_N-SRF-AS	-	-	-	100

Sample ID	Percent Immobility in 100 (% v/v)		
	Daphnia magna 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* 5 mg/L antiscalant
EV_EC1_WS_2022-10-31_N-SRF	0	0	-
EV_EC1_WS_2022-10-31_N-SRF-AS	-	-	0
EV_ECOUT_WS_2022-10-31_N-SRF	0	0	-
EV_ECOUT_WS_2022-10-31_N-SRF-AS	-	-	0

Precipitate observations

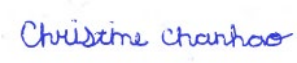
Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
EV_EC1_WS_2022-10-31_N-SRF	Rainbow trout	Precipitate observed on sides and bottom of test vessel	None
	Daphnia magna	Surficial precipitate observed in 20˚C test	None
EV_EC1_WS_2022-10-31_N-SRF-AS	*Daphnia magna*	None	None
EV_ECOUT_WS_2022-10-31_N-SRF	Rainbow trout	Precipitate observed on sides and bottom of test vessel	None
	Daphnia magna	Surficial precipitate observed in 20˚C test	None
EV_ECOUT_WS_2022-10-31_N-SRF-AS	*Daphnia magna*	Surficial precipitate observed	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	3.7 (3.3-4.2) g/L KCl[1]	6.7 (6.4-6.9) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.6 (2.7-4.8) g/L KCl	6.2 (5.3-7.2) g/L NaCl
Reference toxicant CV	9.4%	5.1%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, October 6, 2022; [2] Test Date, October 19, 2022

LC = Lethal Concentration, CL = Confidence Limits, SD = Standard Deviation, CV = Coefficient of Variation





Report By:
Christine Chanhao, BSc
Biologist

Reviewed By:
Jacklyn Poole, BSc
Laboratory and Quality Manager

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Control/dilution water for antiscalant test	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L), Na_2SeO_4 (2 µg Se/L) and 5 mg/L antiscalant
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC 164 Reference 2223-0679-01 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022/11/01	1430 *	ML/BS	7	WM
1	2022/11/02	0745	BS	-	EP
2	2022/11/03	0805	BS	-	mac
3	2022/11/04	0900	mac	-	KO
4	2022/11/05	1100	ML/AH	7	NA

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 8.0
Initial EC (µS/cm): 1757
Salinity (ppt): 1

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L (yes/no)

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	10.2	8.9			
Temp (°C) of 100%	14				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	7.5	8.0						
Day 4	8.2	8.2						
EC (uS/cm)								
Day 0	388	1757						
Day 4	430	1743						
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	8.9	8.9						
Day 4	8.6	8.6						
Temperature (°C) (range: 14-16°C)								
Day 0	14	14						
Day 4	16	16						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10 (2)						
Day 3	10 mucus	10 (1)						
Day 4	10	10 (1)						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.7	0.4
2	4.0	0.5
3	3.5	0.3
4	3.5	0.3
5	4.0	0.4
6	4.0	0.6
7	3.7	0.3
8	3.5	0.4
9	3.5	0.3
10	3.4	0.3

Loading Density (g/L): 0.2
(must be ≤0.5 g/L)
Mean Length (cm): 3.7
Length Range (cm): 3.4-4.0
Mean Weight (g): 0.4
(Must be ≥0.3g)
Weight Range: (g): 0.3-0.6

Test Organism Information

Batch 20220818TR
Source Trout Lodge
Tank # 2
Days Held at 15± 2°C 56
(must be ≥14 days)
Percent stock mortality 0.21
(7 days prior to test, must be <2%)
Test Volume (L) 18

Comments: 96 hrs ppt in 100% tank (side/bottom) * Day 2: dark coloration

Reviewed By: [signature]
Date Reviewed: NOV 07 2022

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC 164 Reference 2223-0679-03 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022/11/01	1505 *	ML/BS	7	WM
1	2022/11/02	0815	BS	-	EP
2	2022/11/03	0800	BS	-	MMF
3	2022/11/04	0900	MMF	-	KO
4	2022/11/05	1034	MS/BF/AI	7	NA

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 7.8
Initial EC (µS/cm): 1784
Salinity (ppt): 3

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L : yes/no

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	10.3	8.9			
Temp (°C) of 100%	14				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: **5.5-8.5**)								
Day 0	7.9	7.7						
Day 4	8.2	8.1						
EC (uS/cm)								
Day 0	437	1882						
Day 4	477	1695						
DO (mg/L) (**70-100% saturation at test temp.**)								
Day 0	8.5	8.4						
Day 4	8.1	8.6 MS						
Temperature (°C) (range: **14-16°C**)								
Day 0	15	14						
Day 4	16	16						

Number Alive (In brackets number stressed)

Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	9						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.4	0.4
2	3.7	0.3
3	4.2	0.5
4	3.6	0.3
5	3.9	0.4
6	4.0	0.4
7	3.6	0.4
8	3.2	0.2
9	4.0	0.5
10	3.9	0.5

Loading Density (g/L): 0.2 (must be ≤0.5 g/L)
Mean Length (cm): 3.8
Length Range (cm): 3.2-4.2
Mean Weight (g): 0.4 (Must be ≥0.3g)
Weight Range: (g): 0.2-0.5

Test Organism Information

Batch 20220818TR
Source Trout Lodge
Tank # 2
Days Held at 15± 2°C 56 (must be ≥14 days)
Percent stock mortality 0.21 (7 days prior to test, must be <2%)
Test Volume (L) 18

Comments : 96 hrs ppt on tank 100% (side bottom)

Reviewed By: JP Date Reviewed: NOV 07 2022

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC 164 Reference 2223-0679-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/11/01	1605	AI/AM	2	WM
1	2022/11/02	0855	BS	-	EP
2	2022/11/03	1020	BS	2	AI

Sample Information

Initial pH: 8.0
Initial EC (µS/cm): 1757
Salinity (ppt): 1

Lab Code	CTL A	CTL B	CTL C	100 A	100 B	100 C

pH (units) (range: 6.0-8.5)

day										
0	7.7	7.7	7.7	8.2	8.2	8.2				
2	7.9	7.7	7.7	7.9	7.9	8.0				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	482	485	492	1707	1803	1816				
2	504	487	492	1697	1780	1776				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.9	7.9	7.9				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	20	20	20				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar Wed CM Jar(s) mortality 7 days prior to test (must be ≤25%) 01.

QA (previous month)
Days to first brood (≤12 days) 9
Average number of young produced (≥15 young) 34
Were test treatments randomized on test tray? Yes No

Control Validity Criteria
Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 9.9 Temperature (°C) of sample prior to aeration: 18
DO % of sample prior to aeration: 121. Is aeration required (<40% or >100%)? **Yes or No**
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20 mins Filtered with 110um screen prior to testing **Yes or No**
Hardness (mg $CaCO_3$/L) of 100% : 997 Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 341

Dilution Water
Pail label / preparation date P1:10/29
Hardness of dilution water (mg/L) 130

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C 3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C 3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C

Comments/Observations:
0 hr no ppt
48 hr ppt on surface

Reviewed By: Date Reviewed: NOV 07 2022

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC 164 Reference 2223-0679-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/11/01	1605	AI/AM	2	[illegible]
1	2022/11/02	0840	BS	-	EP
2	2022/11/03	0925	BS	2	DM

Sample Information

Initial pH: 8.0
Initial EC (µS/cm): 1757
Salinity (ppt): ~~2~~ 1

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				
day				pH (units) (range: 6.0-8.5)						
0	7.8	7.7	7.7	8.1	8.2	8.2				
2	7.8	7.8	7.9	8.1	8.1	8.2				
				The pH of the sample was not adjusted prior to test setting, unless noted in the comments below						
				EC (uS/cm)						
0	487	485	494	1734	1800	1763				
2	492	490	503	1732	1817	1773				
				DO (mg/L) (**40-100% saturation at test temp.**)						
0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				
				Temperature (°C) (range: **8-12 °C**)						
0	12	12	12	12	12	12				
2	12	12	12	12	12	12				
				Number Alive (I, immobile)						
0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar Wed El Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 9
Average number of young produced (≥15 young) 25
Were test treatments randomized on test tray? Yes / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0%

Sample
DO (mg/L) of sample prior to aeration: 11.4
DO % of sample prior to aeration: 121%
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20 mins
Hardness (mg $CaCO_3$/L) of 100% : 997
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 341

Temperature (°C) of sample prior to aeration: 12
Is aeration required (<40% or >100%)? Yes or No
Filtered with 110um screen prior to testing Yes or No
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or No

Dilution Water
Pail label / preparation date P1:10/29
Hardness of dilution water (mg/L) 170

DO Levels (40-100% saturation) - corrected for altitude -
4.1 to 10.3 mg/L at 8°C
4.0 to 10.0 mg/L at 9°C
3.9 to 9.8 mg/L at 10°C
3.8 to 9.6 mg/L at 11°C
3.7 to 9.4 mg/L at 12°C

Comments/Observations:
0 hr no ppt
48 hr No ppt

Reviewed By: [illegible] Date Reviewed: NOV 07 2022

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS 5 Client TEC 164 Reference 2223-0679-02

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/11/01	1545	~~AG/DM~~ AM/AI	2	—
1	2022/11/02	0855	BS	-	EP
2	2022/11/03	0930	BS	2	DM

Sample Information

Initial pH: 8.0
Initial EC (µS/cm): 1757
Salinity (ppt): ~~7.1~~ 8.

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				
day				pH (units) (range: 6.0-8.5)						
0	7.8	7.7	7.7	8.1	8.1	8.1				
2	7.9	7.9	7.9	8.2	8.2	8.2				
				The pH of the sample was not adjusted prior to test setting, unless noted in the comments below						
				EC (uS/cm)						
0	499	503	504	1759	1808	1831				
2	488	502	514	1742	1812	1827				
				DO (mg/L) (**40-100% saturation at test temp.**)						
0	7.9	7.9	7.9	8.1	8.1	8.1				
2	7.9	7.9	7.9	7.9	7.9	7.9				
				Temperature (°C) (range: **18-22 °C**)						
0	20	20	20	19	19	19				
2	20	20	20	20	20	20				
				Number Alive (I, immobile)						
0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar Wed D5 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 32
Were test treatments randomized on test tray? Yes / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0%

Sample
DO (mg/L) of sample prior to aeration: 10.0
Temperature (°C) of sample prior to aeration: 18
DO % of sample prior to aeration: 122%
Is aeration required (<40% or >100%)? Yes or No
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20mins
Filtered with 110um screen prior to testing Yes or No
Hardness (mg $CaCO_3$/L) of 100% : 997
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or No
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 341

Dilution Water
Pail label / preparation date PI: 10/29
Hardness of dilution water (mg/L) 170

Antiscalant
Final Concentration in Sample: 5 mg/L
Volume of sample: 500 ~~Ml~~ mL Volume of antiscalant: 39.5µL

Comments/Observations:
0 hr no ppt
48 hr No ppt

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Reviewed By: [signature] Date Reviewed: NOV 07 2022

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC 164 Reference 2223-0679-03

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/11/01	1620	AI/AM	2	WM
1	2022/11/02	0855	BS	-	EP
2	2022/11/03	0925	BS	2	DM

Sample Information

Initial pH: 7.8
Initial EC (µS/cm): 1764
Salinity (ppt): 3

Lab Code	CTL A	CTL B	CTL C	100 A	100 B	100 C

pH (units) (range: 6.0-8.5)

day										
0	7.8	7.7	7.7	7.9	7.9	8.0				
2	7.7	7.8	7.8	7.9	7.9	7.9				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	487	494	497	1818	1908	1898				
2	470	485	498	1755	1843	1843				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.9	7.9	7.9				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	20	20	20				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar Wed E1 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)

Days to first brood (≤12 days) 9

Average number of young produced (≥15 young) 25

Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - 0%
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 10.1 Temperature (°C) of sample prior to aeration: 18

DO % of sample prior to aeration: 125% Is aeration required (<40% or >100%)? **Yes or No**

Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20 mins Filtered with 110um screen prior to testing **Yes or No**

Hardness (mg $CaCO_3$/L) of 100% : 420 Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —

Alkalinity of 100% sample (mg $CaCO_3$/L): 420

Dilution Water

Pail label / preparation date Pl;10/27

Hardness of dilution water (mg/L) 170

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Comments/Observations:

0 hr no ppt

48 hr surficial ppt

Reviewed By: [signature] Date Reviewed: NOV 07 2022

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC 164 Reference 2223-0679-03

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/11/01	1615	AI/AM	2	MM
1	2022/11/02	0840	BS	-	EP
2	2022/11/03	0925	BS	2	DM

Sample Information

Initial pH: 7.8
Initial EC (µS/cm): 1784
Salinity (ppt): 3

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

7.7 AM

pH (units) (range: 6.0-8.5)

day										
0	7.8	~~7.8~~	7.7	7.9	8.0	8.0				
2	7.7	7.8	7.8	8.0	8.0	8.0				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

498 AM

EC (uS/cm)

0	493	~~493~~	502	1863	1880	1919				
2	484	502	505	1868	1882	1922				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar wed AM Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 9
Average number of young produced (≥15 young) 34
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0%
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 11.6
Temperature (°C) of sample prior to aeration: 12
DO % of sample prior to aeration: 123%
Is aeration required (<40% or >100%)? (Yes) or No
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20 mins
Filtered with 110um screen prior to testing Yes or (No)
Hardness (mg $CaCO_3$/L) of 100% : 420
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 420

Dilution Water
Pail label / preparation date DI: 10/29
Hardness of dilution water (mg/L) 170

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

Comments/Observations:
0 hr no ppt
48 hr no ppt

Reviewed By: GP Date Reviewed: NOV 07 2022

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS 5 Client TEC 164 Reference 2223-0679-04

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/11/01	1610	AG/~~DM~~	AM2/A3	-
1	2022/11/02	0900	BS	-	EP
2	2022/11/03	0930	BS	2	DM

Sample Information

Initial pH: 7.8
Initial EC (µS/cm): 1764
Salinity (ppt): 3

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	7.7	7.7	7.7	7.9	7.9	7.9				
2	7.9	7.8	7.8	8.0	8.1	8.2				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	500	499	502	1861	1915	1921				
2	482	496	502	1800	1870	1874				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.9	7.9	7.9				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	20	20	20				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar Wed D3 Jar(s) mortality 7 days prior to test (must be ≤25%) 5%

QA (previous month)

Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 32
Were test treatments randomized on test tray? Yes / No

Control Validity Criteria

Mean % mortality at 48 hours - (must be ≤10%) 0%

Sample

DO (mg/L) of sample prior to aeration: 10.3 Temperature (°C) of sample prior to aeration: 19
DO % of sample prior to aeration: 127% Is aeration required (<40% or >100%)? **Yes or No**
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20 minis Filtered with 110um screen prior to testing **Yes or No**
Hardness (mg $CaCO_3$/L) of 100% : 920 Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) -
Alkalinity of 100% sample (mg $CaCO_3$/L): 420

Dilution Water

Pail label / preparation date P1:10/29
Hardness of dilution water (mg/L) 170

Antiscalant

Final Concentration in Sample: 5 mg/L
Volume of sample: 500 ~~Ml~~ mL Volume of antiscalant: 39.5µL

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Comments/Observations:

0 hr no ppt
48 hr surficial ppt

Reviewed By: DP Date Reviewed: NOV 07 2022

APPENDIX C – Chain-of-custody form

Teck

Page 1 of 1

COC ID: EVO NAUTILUS 103122 | TURNAROUND TIME: Regular (default) | RUSH: NO

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO			
Facility Name	Elkview Operation			Lab Name	Nautilus			Report Format / Distribution		Excel	PDF	EDD
EQuIS Facility Code	EVO			Lab Contact	Jacklyn Poole			Email 1:	DL-EVO-SRF-LAB@teck.com	X	X	X
Project Manager	Brett Mason			Email	jacklyn@nautilusenvironmental.ca			Email 2:	Cole.Macgregor@teck.com	X	X	X
Email	brett.mason@teck.com			Address	10823 27th Street SE			Email 3:	TeckCoal@equisonline.com			X
Address	RR1 HWY 3							Email 4:				
City	Sparwood	Province	BC	City	Calgary	Province	AB	Email 5:				
Postal Code	V0B 2G0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada	Email 6:				
Phone Number	250 425 4837			Phone Number	403 253 7121			PO number	859537			

SAMPLE DETAILS

2022/11/01
09:10
Manitou Lin
DC/SRS
4 8x20L carboys, ~~10x~~ 8x10L carboys
10x1L bottles
NoS/NaI
Good Cond.

ANALYSIS REQUESTED

Please indicate Y below if Filtered

Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	NAUT_48hr_DM_PF 48hr Daphnia magna Acute Toxicity 20C	NAUT_48hr_DM_PF_MOD10 48hr Daphnia magna Acute Toxicity 10C	NAUT_48hr_DM_PF_SAS 48hr Daphnia magna Acute Toxicity 5mg/L Antiscalant	NAUT_96hr_RT_PF 96hr Rainbow Trout Acute Toxicity	NAUT_48hr_DM_PF_MOD15 48hr Daphnia magna Acute Toxicity 15C
EV_EC1_WS_2022-10-31_N-SRF -01	5.9°C EV_EC1	WS		2022-10-31	10:00	G	8	2	2		4	
EV_EC1_WS_2022-10-31_N-SRF-AS -02	5.9°C EV_EC1	WS		2022-10-31	10:01	G	1			1		
EV_ECOUT_WS_2022-10-31_N-SRF -03	4.3°C EV_ECOUT	WS		2022-10-31	12:45	G	8	2	2		4	
EV_ECOUT_WS_2022-10-31_N-SRF-AS -04	4.3°C EV_ECOUT	WS		2022-10-31	12:46	G	1			1		

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	Date	Time	ACCEPTED BY/AFFILIATION	Date	Time
	Aidan Sweeney	31-Oct-22				

SERVICE REQUEST (rush - subject to availability)

Regular (default)	X
Priority (2-3 business days) - 50% surcharge	
Emergency (1 Business Day) - 100% surcharge	
For Emergency <1 Day, ASAP or Weekend - Contact Nautilus	

Sampler's Name	Carter Phillips	Mobile #	
Sampler's Signature	Carter Phillips	Date/Time	31-Oct-22

END OF REPORT

Acute Toxicity Test Results

Samples collected October 31, 2022

Final Report

November 25, 2022

Submitted to: **Teck Coal Ltd.**
Sparwood, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates					
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation	*Daphnia magna* antiscalant test initiation
F2_BPO_WG_2022-10-31_N / 2223-0680-01	31-Oct-22 at 0810h	1-Nov-22 at 0910h	1-Nov-22 at 1445h	2-Nov-22 at 1415h	2-Nov-22 at 1415h	-
F2_BPO_WG_2022-10-31_N-AS / 2223-0680-02	31-Oct-22 at 0811h	1-Nov-22 at 0910h	-	-	-	2-Nov-22 at 1420h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
F2_BPO_WG_2022-10-31_N	6.8°C	1021	323
F2_BPO_WG_2022-10-31_N-AS	6.8°C	1021	323

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)
- *Daphnia magna* 48-h single concentration screening test (conducted with 20 mg/L antiscalant)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample			
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
F2_BPO_WG_2022-10-31_N	90	100	100	-
F2_BPO_WG_2022-10-31_N-AS	-	-	-	100

Sample ID	Percent Immobility in 100 (% v/v)		
	***Daphnia magna* 10˚C**	***Daphnia magna* 20˚C**	***Daphnia magna* antiscalant**
F2_BPO_WG_2022-10-31_N	0	0	-
F2_BPO_WG_2022-10-31_N-AS	-	-	0

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
F2_BPO_WG_2022-10-31_N	Rainbow trout	None	None
	Daphnia magna	Surficial precipitate observed in 20˚C test vessels	None
F2_BPO_WG_2022-10-31_N-AS	*Daphnia magna*	None	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	3.7 (3.3-4.2) g/L KCl[1]	6.6 (6.4-6.8) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.6 (2.7-4.8) g/L KCl	6.2 (5.3-7.2) g/L NaCl
Reference toxicant CV	9.4%	5.1%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date October 6, 2022; [2] Test date November 2, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation

Report By:
Kiara O'Shea, BSc
Laboratory Biologist

Reviewed By:
Jacklyn Poole, BSc
Laboratory and Quality Manager

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Control/dilution water for antiscalant test	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L), Na_2SeO_4 (2 µg Se/L) and 20 mg/L antiscalant
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC 164 Reference 2223-0680-01 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022/11/01	1445 *	ML/BS	7	WM
1	2022/11/02	0755	BS	-	EP
2	2022/11/03	0800	BS	-	MAP
3	2022/11/04	0900	MAP	-	KO
4	2022/11/05	1042	MJA	7	NA

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 7.9
Initial EC (µS/cm): 18853
Salinity (ppt): 2

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L: **yes/no**

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	10.2	8.9			
Temp (°C) of 100%	14				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
			pH (units) (range: **5.5-8.5**)					
Day 0	~~7.5~~ 8.0 ML	7.9						
Day 4	8.2	8.5						
			EC (uS/cm)					
Day 0	~~404~~ 432 ML	18853						
Day 4	498	18600						
			DO (mg/L) (**70-100% saturation at test temp.**)					
Day 0	~~8.9~~ 8.8 ML	8.9						
Day 4	8.6	8.6						
			Temperature (°C) (range: **14-16°C**)					
Day 0	~~14~~ 15 ML	~~15~~ 14						
Day 4	16	16						
			Number Alive (In brackets number stressed)					
Day 0	10	10						
Day 1	10	10 (1)						
Day 2	10	10 (1)						
Day 3	10	9						
Day 4	M) ~~8~~ 10	9						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	4.1	0.5
2	4.4	0.5
3	4.0	0.5
4	3.8	0.3
5	3.7	0.3
6	3.7	~~0.2~~ 0.3
7	3.9	0.4
8	4.5	0.5
9	3.9	0.4
10	3.2	0.3

Loading Density (g/L): 0.2 (must be ≤0.5 g/L)
Mean Length (cm): 3.9
Length Range (cm): 3.2-4.5
Mean Weight (g): 0.4 (Must be ≥0.3g)
Weight Range: (g): ~~0.2~~ 0.3-0.5 SS

Test Organism Information

Batch 20220818TR
Source Trout Lodge
Tank # 2
Days Held at 15± 2°C 56 (must be ≥14 days)
Percent stock mortality 0.21 (7 days prior to test, must be <2%)
Test Volume (L) 18

Comments :
96 hrs no ppt

* Day 1: loss of buoyancy
* Day 2: loss of buoyancy.

Reviewed By: SS Date Reviewed: 2022111110

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC164 Reference 2223-0680-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/11/02	1415	AG/AI	2	WM
1	2022/11/03	0905	RS	-	WMF
2	2022/11/04	0920	DM	2	AI

Sample Information

Initial pH:	7.9
Initial EC (µS/cm):	1883
Salinity (ppt):	2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	7.6	7.6	7.6	8.0	8.0	8.0				
2	8.2	8.2	8.2	8.5	8.5	8.5				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	405	409	407	1895	1910	1810				
2	397	414	412	1820	1876	1776				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.9	7.9	7.9				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	20	20	20				
2	20	20	20	20	20	20				

Number Alive (l, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar Wed C5 Jar(s) mortality 7 days prior to test (must be ≤25%) 0

QA (previous month)

Days to first brood (≤12 days) 9

Average number of young produced (≥15 young) 31

Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - 0%

(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 8.5 Temperature (°C) of sample prior to aeration: 21

DO % of sample prior to aeration: 107 Is aeration required (<40% or >100%)? **Yes or No**

Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20m Filtered with 110um screen prior to testing **Yes or No**

Hardness (mg $CaCO_3$/L) of 100% : 1021 Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —

Alkalinity of 100% sample (mg $CaCO_3$/L): 323

Dilution Water

Pail label / preparation date P3:10131

Hardness of dilution water (mg/L) 163

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Comments/Observations:

0 hr: No ppt

48 hr: ~~No ppt~~ pm - surficial ppt.

Reviewed By: SS Date Reviewed: 20221111 10

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC164 Reference 2223-0680-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/11/02	1415	AG/AI	2	Um
1	2022/11/03	0855	BS	-	MAF
2	2022/11/04	0905	OM	2	AI

Sample Information

Initial pH: 7.9
Initial EC (µS/cm): 1983
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	7.5	7.5	7.5	8.0	8.0	8.0				
2	8.1	8.2	8.2	8.5	8.5	8.5				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	408	409	415	1906	1914	1060				
2	398	408	425	1852	1908	1941				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar Wed C4 Jar(s) mortality 7 days prior to test (must be ≤25%) 0

QA (previous month)
Days to first brood (≤12 days) 9
Average number of young produced (≥15 young) 31
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0%
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 10.1
DO % of sample prior to aeration: 107
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20m
Hardness (mg $CaCO_3$/L) of 100% : 1021
Temperature (°C) of sample prior to aeration: 12
Is aeration required (<40% or >100%)? Yes or No
Filtered with 110um screen prior to testing Yes or No
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or No
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 323

Dilution Water
Pail label / preparation date P3:22/10/31
Hardness of dilution water (mg/L) 163

DO Levels (40-100% saturation) - corrected for altitude -
4.1 to 10.3 mg/L at 8°C
4.0 to 10.0 mg/L at 9°C
3.9 to 9.8 mg/L at 10°C
3.8 to 9.6 mg/L at 11°C
3.7 to 9.4 mg/L at 12°C

Comments/Observations:
0 hr: NO ppt
48 hr: NO ppt.

Reviewed By: SS Date Reviewed: 2022/11/10

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS 20 Client TEC164 Reference 2223-0680-02

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/11/02	1420	AG/AI	2	WM
1	2022/11/03	0910	BS	-	MAF
2	2022/11/04	0915	DM	2	AI

Sample Information

Initial pH: 7.9
Initial EC (µS/cm): 1883
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	7.8	7.8	7.7	8.0	8.0	8.1				
2	8.1	8.1	8.1	8.5	8.5	8.5				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	420	416	423	1882	1917	1915				
2	405	414	424	1900	1870	1877				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.9	7.9	7.9				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	20	20	20				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar Wed C5 Jar(s) mortality 7 days prior to test (must be ≤25%) 0

QA (previous month)
Days to first brood (≤12 days) 9
Average number of young produced (≥15 young) 31
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0%

Sample
DO (mg/L) of sample prior to aeration: 8.7
DO % of sample prior to aeration: 111
Duration of aeration (37.5 +/- 12.5 mL/min/L): 20m
Hardness (mg $CaCO_3$/L) of 100% : 1021
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 323

Temperature (°C) of sample prior to aeration: 21
Is aeration required (<40% or >100%)? **Yes or No**
Filtered with 110um screen prior to testing **Yes or No**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Dilution Water
Pail label / preparation date P3:101 31
Hardness of dilution water (mg/L) 163

Antiscalant
Final Concentration in Sample: 20 mg/L
Volume of sample: 500mL Volume of antiscalant: 158mL

Comments/Observations:
0 hr: NO ppt
48 hr: NO ppt.

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Reviewed By: SS Date Reviewed: 2022111110

APPENDIX C – Chain-of-custody form

Teck

COC ID: FSF NAUTILUS 103122 **TURNAROUND TIME:** Regular (default) **RUSH:** NO

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name	F2 SRF			Lab Name	Nautilus			Report Format / Distribution		Excel	PDF	EDD
EQuIS Facility Code	FSF			Lab Contact	Jacklyn Poole			Email 1:	DL-EVO-SRF-LAB@teck.com	X	X	X
Project Manager	Brett Mason			Email	jacklyn@nautilusenvironmental.ca			Email 2:	Cole.Macgregor@teck.com	X	X	X
Email	brett.mason@teck.com			Address	10823 27th Street SE			Email 3:	TeckCoal@equisonline.com			X
Address	RR1 HWY 3							Email 4:				
City	Sparwood	Province	BC	City	Calgary	Province	AB	Email 5:				
Postal Code	V0B 2G0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada	Email 6:				
Phone Number	250 425 4837			Phone Number	403 253 7121			PO number	859537			

SAMPLE DETAILS

2022/11/01
09:10
Manitoulin
JC/SRS
4x20L carboys, 5x1L bottles
NoS/NoJ
Good Condition

ANALYSIS REQUESTED

Please indicate Y below if Filtered

Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	ANALYSIS: 48hr Daphnia magna Acute Toxicity 20C NAUT_48hr_DM_PF	48hr Daphnia magna Acute Toxicity 10C NAUT_48hr_DM_PF_MOD10	48hr Daphnia magna Acute Toxicity 20mg/L Antiscalant NAUT_48hr_DM_PF_20AS	96hr Rainbow Trout Acute Toxicity NAUT_96hr_RT_PF	48hr Daphnia magna Acute Toxicity 15C NAUT_48hr_DM_PF_MOD15
F2_BPO_WG_2022-10-31_N -01	6.8°C F2_BPO	WG		2022-10-31	08:10	G	8	2	2		4	
F2_BPO_WG_2022-10-31_N-AS -02	6.8°C F2_BPO	WG		2022-10-31	08:11	G	1			1		

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	Date	Time	ACCEPTED BY/AFFILIATION	Date	Time
	[signature]	31-Oct-22				

SERVICE REQUEST (rush - subject to availability)

Regular (default)	X
Priority (2-3 business days) - 50% surcharge	
Emergency (1 Business Day) - 100% surcharge	
For Emergency <1 Day, ASAP or Weekend - Contact Nautilus	

Sampler's Name	Carter Phillips	Mobile #	
Sampler's Signature	Carter Phillips	Date/Time	31-Oct-22

END OF REPORT

Acute Toxicity Test Results

Samples collected November 1, 2022

Final Report

November 24, 2022

Submitted to: **Teck Coal Ltd.**
Sparwood, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates					
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation	*Daphnia magna* 5 mg/L antiscalant test initiation
EV_BC1_WS_2022-11-01_N-SRF / 2223-0689-01	1-Nov-22 at 0820h	2-Nov-22 at 0930h	2-Nov-22 at 1440h	2-Nov-22 at 1540h	2-Nov-22 at 1535h	-
EV_BC1_WS_2022-11-01_N-SRF-AS / 2223-0689-02	1-Nov-22 at 0821h	2-Nov-22 at 0930h	-	-	-	2-Nov-22 at 1545h
EV_GT1_WS_2022-11-01_N-SRF / 2223-0689-03	1-Nov-22 at 0900h	2-Nov-22 at 0930h	2-Nov-22 at 1440h	2-Nov-22 at 1545h	2-Nov-22 at 1550h	-
EV_GT1_WS_2022-11-01_N-SRF-AS / 2223-0689-04	1-Nov-22 at 0901h	2-Nov-22 at 0930h	-	-	-	2-Nov-22 at 1555h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
EV_BC1_WS_2022-11-01_N-SRF	5.3°C	884	213
EV_BC1_WS_2022-11-01_N-SRF-AS	5.3°C	884	213
EV_GT1_WS_2022-11-01_N-SRF	5.4°C	1020	253
EV_GT1_WS_2022-11-01_N-SRF-AS	5.4°C	1020	253

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)
- *Daphnia magna* 48-h single concentration screening test (conducted with 5 mg/L antiscalant)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample			
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* 5 mg/L antiscalant
EV_BC1_WS_2022-11-01_N-SRF	100	100	100	-
EV_BC1_WS_2022-11-01_N-SRF-AS	-	-	-	100
EV_GT1_WS_2022-11-01_N-SRF	100	100	100	-
EV_GT1_WS_2022-11-01_N-SRF-AS	-	-	-	100

Sample ID	Percent Immobility in 100 (% v/v)		
	Daphnia magna 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* 5 mg/L antiscalant
EV_BC1_WS_2022-11-01_N-SRF	0	0	-
EV_BC1_WS_2022-11-01_N-SRF-AS	-	-	0
EV_GT1_WS_2022-11-01_N-SRF	0	0	-
EV_GT1_WS_2022-11-01_N-SRF-AS	-	-	0

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
EV_BC1_WS_2022-11-01_N-SRF	Rainbow trout	Precipitate observed on the bottom of test vessel	None
	Daphnia magna	None	None
EV_BC1_WS_2022-11-01_N-SRF-AS	*Daphnia magna*	None	None
EV_GT1_WS_2022-11-01_N-SRF	Rainbow trout	Precipitate observed on the bottom of test vessel	None
	Daphnia magna	None	None
EV_GT1_WS_2022-11-01_N-SRF-AS	*Daphnia magna*	None	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	3.7 (3.3-4.2) g/L KCl[1]	6.6 (6.4-6.8) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.6 (2.7-4.8) g/L KCl	6.2 (5.3-7.2) g/L NaCl
Reference toxicant CV	9.4%	5.1%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, October 6, 2022; [2] Test Date November 2, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation

Report By:
Maryam Lo, BSc
Laboratory Biologist

Reviewed By:
Mimi Tran, Dipl. T.
Biologist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Control/dilution water for antiscalant test	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L), Na_2SeO_4 (2 µg Se/L) and 5 mg/L antiscalant
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC 164 Reference 2223-0689-01 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022/11/02	1400 *	AM/BS	7	AI
1	2022/11/03	0840	BS	-	MAF
2	2022/11/04	0900	MAF	-	KG
3	2022/11/05	0800	MS	-	MAF
4	2022/11/06	1000	NA/ML/AM	7	WM

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 7.9
Initial EC (µS/cm): 2076
Salinity (ppt): 3

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L: **yes/no**

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	10.1	8.9	8.6		
Temp (°C) of 100%	16				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	7.8	8.0						
Day 4	8.1	8.3						
EC (uS/cm)								
Day 0	375	1973						
Day 4	369	1874						
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	8.6	8.6						
Day 4	8.8	8.8						
Temperature (°C) (range: 14-16°C)								
Day 0	16	16						
Day 4	~~8.0~~ 15 NA	~~8.1~~ 15 NA						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	9	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.8	0.5
2	4.2	0.7
3	3.9	0.4
4	4.6	0.7
5	3.7	0.3
6	3.8	0.4
7	3.8	0.4
8	3.1	0.2
9	2.8	0.2
10	3.6	0.4

Loading Density (g/L): 0.2 (must be ≤0.5 g/L)
Mean Length (cm): 3.7
Length Range (cm): 2.8-4.6
Mean Weight (g): 0.4 (Must be ≥0.3g)
Weight Range: (g): 0.2-0.7

Test Organism Information

Batch 20220818TR
Source Trout Lodge
Tank # 2
Days Held at 15± 2°C 57 (must be ≥14 days)
Percent stock mortality 0.21 (7 days prior to test, must be <2%)
Test Volume (L) 18

Comments :
96 hrs: ~~No~~ ppt on bottom of tank

Reviewed By: JO Date Reviewed: 2022/11/09

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC 164 Reference 2223-0689-03 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022/11/02	1440 *	AM/BS	7	AM
1	2022/11/03	0840	BS	-	MAF
2	2022/11/04	0900	MAF	-	KO
3	2022/11/05	0820	MS	-	MAF
4	2022/11/06	1000	NM/ML/AM	7	VM

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 8.1
Initial EC (µS/cm): 2150
Salinity (ppt): 3

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L (yes/no)

	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
Preaeration time					
DO(mg/L) of 100%	9.8	9.6	8.6		
Temp (°C) of 100%	16				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	7.6	8.2						
Day 4	8.1	8.3						
EC (uS/cm)								
Day 0	3678	1460						
Day 4	367	1993						
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	8.6	8.6						
Day 4	8.8	8.8						
Temperature (°C) (range: 14-16°C)								
Day 0	16	16						
Day 4	15	15						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.5	0.4
2	3.7	0.4
3	3.7	0.4
4	4.0	0.5
5	3.7	0.4
6	3.8	0.4
7	4.0	0.5
8	3.8	0.4
9	3.4	0.3
10	3.6	0.3

Loading Density (g/L): 0.2 (must be ≤0.5 g/L)
Mean Length (cm): 3.8
Length Range (cm): 3.4-4.0
Mean Weight (g): 0.4 (Must be ≥0.3g)
Weight Range: (g): 0.3-0.5

Test Organism Information

Batch 20220818TR
Source Trout Lodge
Tank # 2
Days Held at 15± 2°C 57 (must be ≥14 days)
Percent stock mortality 0.21 (7 days prior to test, must be <2%)
Test Volume (L) 18

Comments :
96 hrs: ppt on bottom of tank

Reviewed By: VM Date Reviewed: 2022/11/09

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC164 Reference 2223-0689-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/11/02	1535	DM/KO	2	AI
1	2022/11/03	0920	BS	-	MAF
2	2022/11/04	0850	BS	2	DM

Sample Information

Initial pH: 7.7
Initial EC (µS/cm): 2070
Salinity (ppt): 3

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	7.7	7.8	7.8	8.1	8.1	8.1				
2	8.2	8.2	8.2	8.2	8.2	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	405	407	414	1988	1954	1961				
2	423	428	426	1976	1973	2090				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.9	7.9	7.9				
2	7.4	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	20	20	20				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar wed D5 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 9
Average number of young produced (≥15 young) 36
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0%
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 10.4
Temperature (°C) of sample prior to aeration: 20
DO % of sample prior to aeration: 132
Is aeration required (<40% or >100%)? (Yes) or No
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20min
Filtered with 110um screen prior to testing Yes or (No)
Hardness (mg $CaCO_3$/L) of 100% : 884
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 213

Dilution Water
Pail label / preparation date 3:10/31
Hardness of dilution water (mg/L) 163

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Comments/Observations:
0 hr: NO ppt
48 hr: No ppt

Reviewed By: VO Date Reviewed: 2022/11/09

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC164 Reference 2223-0689-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/11/02	1540	DM/KO	2	AI
1	2022/11/03	0900	BS	-	MAP
2	2022/11/04	0845	BS	2	DM

Sample Information

Initial pH: 7.9
Initial EC (µS/cm): 2070
Salinity (ppt): 3

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	7.7	7.7	7.7	8.0	8.0	8.0				
2	8.0	8.1	8.0	8.3	8.3	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	399	409	414	1982	1965	1963				
2	399	414	415	1892	1950	1965				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar wed E1 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%.

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 35
Were test treatments randomized on test tray? (Yes) / No
DM 11, 2

Control Validity Criteria
Mean % mortality at 48 hours - 0%
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 9.4
Temperature (°C) of sample prior to aeration: 12
DO % of sample prior to aeration: 119
Is aeration required (<40% or >100%)? (Yes) or No
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20min
Filtered with 110um screen prior to testing Yes or (No)
Hardness (mg $CaCO_3$/L) of 100% : 884
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 213

Dilution Water
Pail label / preparation date PB: 10/31
Hardness of dilution water (mg/L) 163

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

Comments/Observations:
0 hr: No ppt
48 hr: No ppt

Reviewed By: KO Date Reviewed: 2022/11/09

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS 5 Client TEC164 Reference 2223-0689-02

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/11/02	1545	DM/KO	2	AI
1	2022/11/03	0920	BS	-	MAF
2	2022/11/04	0830	BS	2	DM

Sample Information

Initial pH: 7.9
Initial EC (µS/cm): 2070
Salinity (ppt): 3

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	7.8	7.7	7.7	8.0	8.0	8.1				
2	8.0	8.1	8.1	8.4	8.4	8.4				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	402	411	413	1987	1944	1951				
2	394	413	412	1900	1921	1939				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	8.1	8.1	8.1				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	19	19	19				
2	20	20	20	20	20	20				

Number Alive (l, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar wed E1 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)

Days to first brood (≤12 days) 8

Average number of young produced (≥15 young) 35

Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - (must be ≤10%) 0%

Sample

DO (mg/L) of sample prior to aeration: 11.3

DO % of sample prior to aeration: 140

Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20min

Hardness (mg $CaCO_3$/L) of 100% : 864

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —

Alkalinity of 100% sample (mg $CaCO_3$/L): 213

Temperature (°C) of sample prior to aeration: 19

Is aeration required (<40% or >100%)? (Yes) or No

Filtered with 110um screen prior to testing Yes or (No)

Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)

Dilution Water

Pail label / preparation date 3:10/31

Hardness of dilution water (mg/L) 163

Antiscalant

Final Concentration in Sample: 5 mg/L

Volume of sample: 500mL Volume of antiscalant: 39.5µL

Comments/Observations:

0 hr: No ppt

48 hr: No ppt

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Reviewed By: [illegible] Date Reviewed: 2022/11/09

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC164 Reference 2223-0689-03

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/11/02	1550	DM/KO	2	AI
1	2022/11/03	0920	BS	-	MMF
2	2022/11/04	0850	BS	2	DM

Sample Information

Initial pH: 8.1
Initial EC (µS/cm): 2150
Salinity (ppt): 3

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	7.6	7.7	7.7	8.1	8.1	8.1				
2	8.2	8.2	8.2	8.2	8.3	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	404	413	413	2120	2210	2200				
2	404	415	413	2090	2180	2180				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	~~21208.1~~	8.1	8.1				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	19	19	19				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar Wed 05 Jar(s) mortality 7 days prior to test (must be ≤25%) 0 %

QA (previous month)
Days to first brood (≤12 days) 9
Average number of young produced (≥15 young) 36
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0%
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 10.4
DO % of sample prior to aeration: 129
Duration of aeration (37.5 +/- 12.5 mL/min/L): 20 min
Hardness (mg $CaCO_3$/L) of 100% : 1020
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 253

Temperature (°C) of sample prior to aeration: 19
Is aeration required (<40% or >100%)? **Yes or No**
Filtered with 110um screen prior to testing **Yes or No**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Dilution Water
Pail label / preparation date 3:10/31
Hardness of dilution water (mg/L) 163

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C 3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C 3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C

Comments/Observations:
0 hr: No ppt
48 hr: No ppt

Reviewed By: LO Date Reviewed: 2022/11/09

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC164 Reference 2223-0689-03

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/11/02	1545	DM/KO	2	AI
1	2022/11/03	0900	BS	-	YYYF
2	2022/11/04	0845	BS	2	DM

Sample Information

Initial pH: 8.1
Initial EC (µS/cm): 2150
Salinity (ppt): 3

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	7.8	7.7	7.7	8.1	8.1	8.1				
2	8.1	8.1	8.1	8.3	8.3	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	405	411	414	1912	1970	1984				
2	403	413	416	1970	1981	2070				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar Wed D5 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 9
Average number of young produced (≥15 young) 36
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0%
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 11.0
DO % of sample prior to aeration: 117
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20min
Hardness (mg $CaCO_3$/L) of 100% : 1020
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 253

Temperature (°C) of sample prior to aeration: 12
Is aeration required (<40% or >100%)? **Yes or No**
Filtered with 110um screen prior to testing **Yes or No**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Dilution Water

Pail label / preparation date 3:10/31
Hardness of dilution water (mg/L) 165

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

Comments/Observations:
0 hr: No ppt
48 hr: No ppt

Reviewed By: KO Date Reviewed: 2022/11/09

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS 5 Client TEC164 Reference 2223-0689-04

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/11/02	1555	DM/KO	2	AI
1	2022/11/03	0915	BS	-	MAF
2	2022/11/04	0850	BS	2	DM

Sample Information

Initial pH: 8.1
Initial EC (µS/cm): 2150
Salinity (ppt): 3

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	7.7	7.7	7.7	8.1	8.1	8.1				
2	8.1	8.1	8.2	8.3	8.4	8.4				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	416	413	415	1991	2120	2150				
2	405	412	415	1975	2110	2140				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	8.1	8.1	8.1				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	19	19	19				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar Med C3 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 9
Average number of young produced (≥15 young) 31
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0%

Sample
DO (mg/L) of sample prior to aeration: 10.4
DO % of sample prior to aeration: 124
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20min
Hardness (mg $CaCO_3$/L) of 100% : 1020
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) -
Alkalinity of 100% sample (mg $CaCO_3$/L): 253

Temperature (°C) of sample prior to aeration: 19
Is aeration required (<40% or >100%)? Yes or No
Filtered with 110um screen prior to testing Yes or (No)
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)

Dilution Water
Pail label / preparation date 3:10/31
Hardness of dilution water (mg/L) 163

Antiscalant
Final Concentration in Sample: 5 mg/L
Volume of sample: 500mL Volume of antiscalant: 39.546

Comments/Observations:
0 hr: NO PPT
48 hr: No ppt

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Reviewed By: JO Date Reviewed: 2022/11/09

APPENDIX C – Chain-of-custody form

Teck

Page 1 of 1

COC ID: EVO NAUTILUS 110122 | TURNAROUND TIME: Regular (default) | RUSH: NO

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name	Elkview Operation			Lab Name	Nautilus			Report Format / Distribution		Excel	PDF	EDD
EQuIS Facility Code	EVO			Lab Contact	Jacklyn Poole			Email 1:	DL-EVO-SRF-LAB@teck.com	X	X	X
Project Manager	Brett Mason			Email	jacklyn@nautilusenvironmental.ca			Email 2:	Cole.Macgregor@teck.com	X	X	X
Email	brett.mason@teck.com			Address	10823 27th Street SE			Email 3:	TeckCoal@equisonline.com			X
Address	RR1 HWY 3							Email 4:				
City	Sparwood	Province	BC	City	Calgary	Province	AB	Email 5:				
Postal Code	V0B 2G0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada	Email 6:				
Phone Number	250 425 4837			Phone Number	403 253 7121			PO number	859537			

SAMPLE DETAILS | **ANALYSIS REQUESTED**

2022/11/02
09:30
Manitoulin
3C/SRS
8x10L carboys
4x20L carboys
10x1L bottles
N65/N66
Good Condition

Please indicate Y below if Filtered

Sample ID 2223-06489	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	ANALYSIS: NAUT_48hr_DM_PF 48hr Daphnia magna Acute Toxicity 20C	NAUT_48hr_DM_PF_MOD10 48hr Daphnia magna Acute Toxicity 10C	NAUT_48hr_DM_PF_5AS 48hr Daphnia magna Acute Toxicity 5mg/L Antiscalant	NAUT_96hr_RT_PF 96hr Rainbow Trout Acute Toxicity	NAUT_48hr_DM_PF_MOD15 48hr Daphnia magna Acute Toxicity 15C		
EV_BC1_WS_2022-11-01_N-SRF -01	EV_BC1	WS		2022-11-01	08:20	G	12	2	2		8		5.3℃	
EV_BC1_WS_2022-11-01_N-SRF-AS -02	EV_BC1	WS		2022-11-01	08:21	G	1			1			↓	
EV_GT1_WS_2022-11-01_N-SRF -03	EV_GT1	WS		2022-11-01	09:00	G	8	2	2		4		5.3℃	
EV_GT1_WS_2022-11-01_N-SRF-AS -04	EV_GT1	WS		2022-11-01	09:01	G	1			1			↓	

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	Date	Time	ACCEPTED BY/AFFILIATION	Date	Time
	Aida Sweeney	1-Nov-22				

SERVICE REQUEST (rush - subject to availability)

Regular (default)	X
Priority (2-3 business days) - 50% surcharge	
Emergency (1 Business Day) - 100% surcharge	
For Emergency <1 Day, ASAP or Weekend - Contact Nautilus	

Sampler's Name	Ariana Lewis	Mobile #	
Sampler's Signature		Date/Time	1-Nov-22

END OF REPORT

Acute Toxicity Test Results

Samples collected November 7, 2022

Final Report

November 28, 2022

Submitted to: **Teck Coal Ltd.**
Sparwood, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates					
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation	*Daphnia magna* 20 mg/L antiscalant test initiation
F2_BPO_WG_2022-11-07_N / 2223-0750-01	7-Nov-22 at 1010h	8-Nov-22 at 0930h	8-Nov-22 at 1450h	8-Nov-22 at 1435h	8-Nov-22 at 1430h	-
F2_BPO_WG_2022-11-07_N-AS / 2223-0750-02	7-Nov-22 at 1011h	8-Nov-22 at 0930h	-	-	-	8-Nov-22 at 1440h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
F2_BPO_WG_2022-11-07_N	2.6°C	975	330
F2_BPO_WG_2022-11-07_N-AS	2.6°C	975	330

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)
- *Daphnia magna* 48-h single concentration screening test (conducted with 20 mg/L antiscalant)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample			
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* 20 mg/L antiscalant
F2_BPO_WG_2022-11-07_N	100	100	100	-
F2_BPO_WG_2022-11-07_N-AS	-	-	-	100

Sample ID	Percent Immobility in 100 (% v/v)		
	***Daphnia magna* 10˚C**	***Daphnia magna* 20˚C**	***Daphnia magna* 20 mg/L antiscalant**
F2_BPO_WG_2022-11-07_N	0	0	-
F2_BPO_WG_2022-11-07_N-AS	-	-	0

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
F2_BPO_WG_2022-11-07_N	Rainbow trout	None	None
	Daphnia magna	Surficial and test vessel precipitate observed in 20-degree test.	None
F2_BPO_WG_2022-11-07_N-AS	*Daphnia magna*	None	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	4.5 (4.1-5.0) g/L KCl[1]	6.6 (6.4-6.8) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.7 (2.8-4.9) g/L KCl	6.2 (5.3-7.2) g/L NaCl
Reference toxicant CV	9.1%	5.1%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, November 8, 2022; [2] Test Date November 2, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation



Report By:
Emma Pedersen, BSc
Biologist



Reviewed By:
Mimi Tran, Dipl. T.
Biologist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Control/dilution water for antiscalant test	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L), Na_2SeO_4 (2 µg Se/L) and 20 mg/L antiscalant
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC 164 Reference 2223-0750-01 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022-11-08	1450 *	KO/ML	7	AC
1	2022-11-09	0740	AM	-	EP
2	2022-11-10	0845	BS	-	MAF
3	2022-11-11	0900	ML	-	MAF
4	2022-11-12	0910	CC/NA	7	MAF

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 7.6
Initial EC (µS/cm): 1816
Salinity (ppt): 2

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L (yes/no)

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	8.8	8.8			
Temp (°C) of 100%	15				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	8.1	7.8						
Day 4	8.0	8.4						
EC (uS/cm)								
Day 0	388	2110						
Day 4	408	~~1952~~ 1945						
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	8.8	8.9						
Day 4	8.6	8.8						
Temperature (°C) (range: 14-16°C)								
Day 0	15	15						
Day 4	16	15						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.5	0.3
2	4.0	0.5
3	3.6	0.3
4	4.4	0.6
5	4.3	0.6
6	3.5	0.3
7	3.5	0.4
8	4.3	0.6
9	4.0	0.5
10	3.7	0.5

Loading Density (g/L): 0.26 (3 L)
(must be ≤0.5 g/L)
Mean Length (cm): 3.9
Length Range (cm): 3.5-4.5
Mean Weight (g): 0.5
(Must be ≥0.3g)
Weight Range: (g): 0.3-0.6

Test Organism Information

Batch 20220928TR
Source LSL
Tank # 4
Days Held at 15± 2°C 41
(must be ≥14 days)
Percent stock mortality 0
(7 days prior to test, must be <2%)
Test Volume (L) 18

Comments :
96h: No PPT

Reviewed By: [illegible] Date Reviewed: 2022/11/16

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS Client TEC 164 Reference 2223-0750-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/11/08	1430	LC/AG	2	EP
1	2022/11/09	0820	DM	-	EP
2	2022/11/10	1000	DM	2	NA

Sample Information

Initial pH:	7.6
Initial EC (µS/cm):	1816
Salinity (ppt):	2

Lab Code	CTL A	CTL B	CTL C	100 A	100 B	100 C

pH (units) (range: 6.0-8.5)

day										
0	8.0	8.0	8.0	7.9	7.9	7.9				
2	8.0	8.0	8.1	8.3	8.2	8.2				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	368	373	373	1939	1968	1968				
2	364	374	377	1839	1888	1901				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	8.8	8.8	8.8				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	18	18	18				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar WedD1 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)

Days to first brood (≤12 days) 9

Average number of young produced (≥15 young) 39

Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - 0 % (must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 11.3

DO % of sample prior to aeration: 125 %

Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20 Mins

Hardness (mg $CaCO_3$/L) of 100% : 975

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —

Alkalinity of 100% sample (mg $CaCO_3$/L): 230

Temperature (°C) of sample prior to aeration: 18°C

Is aeration required (<40% or >100%)? (Yes) or No

Filtered with 110um screen prior to testing Yes or (No)

Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)

Dilution Water

Pail label / preparation date P4: 11105

Hardness of dilution water (mg/L) 151

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C 3.1 to 7.7 mg/L at 21°C

3.2 to 8.1 mg/L at 19°C 3.0 to 7.6 mg/L at 22°C

3.2 to 7.9 mg/L at 20°C

Comments/Observations:

0hr: No ppt

48hr: Superficial ppt. ppt on jar

Reviewed By: [illegible] Date Reviewed: 2022/11/16

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC 164 Reference 2223-0750-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/11/08	1435	LC/AG	2	EP
1	2022/11/09	0940	DM	-	EP
2	2022/11/10	1140	NA	2	MAF

Sample Information

Initial pH: 7.6
Initial EC (µS/cm): 1816
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	8.0	8.0	8.0	7.9	7.9	7.9				
2	8.1	8.1	8.1	8.4	8.4	8.4				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	367	371	369	1962	1978	1976				
2	374	378	373	1956	1959	1964				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.7	9.7	9.7				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	10	10	10				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar Wed N1 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)

Days to first brood (≤12 days) 9
Average number of young produced (≥15 young) 39
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - 0%
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 11.5
DO % of sample prior to aeration: 116%
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20 mins
Hardness (mg $CaCO_3$/L) of 100% : 975
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): ~~23~~ 330

Temperature (°C) of sample prior to aeration: 10°C
Is aeration required (<40% or >100%)? **Yes or No**
Filtered with 110um screen prior to testing **Yes or No**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Dilution Water

Pail label / preparation date P4: 11/05
Hardness of dilution water (mg/L) 151

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

Comments/Observations:

0hr: no ppt
48hr: No ppt.

Reviewed By: W Date Reviewed: 2022/11/16

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method: DAS AS 20 | Client: TEC 164 | Reference: 2223-0750-02

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/11/08	1440	LC/AG	2	EP
1	2022/11/09	0820	DM	-	EP
2	2022/11/10	0950	DM	2	NA

Sample Information

Initial pH:	7.6
Initial EC (µS/cm):	1816
Salinity (ppt):	2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	8.0	8.0	8.0	7.9	7.9	7.9				
2	8.2	8.1	8.1	8.4	8.4	8.5				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	373	378	373	1944	1974	1974				
2	390	379	394	1857	1929	1973				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	9.0	9.0	9.0				
2	7.7	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	18	18	18				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar: Wed N1 — Jar(s) mortality 7 days prior to test (must be ≤25%): 0%

QA (previous month)

Days to first brood (≤12 days): 9

Average number of young produced (≥15 young): 39

Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - (must be ≤10%): 0%

Sample

DO (mg/L) of sample prior to aeration: 11.2 — Temperature (°C) of sample prior to aeration: 18°C

DO % of sample prior to aeration: 124% — Is aeration required (<40% or >100%)? (Yes) or No

Duration of aeration (37.5 +/- 12.5 mL/min/L): _____ — Filtered with 110um screen prior to testing Yes or (No)

Hardness (mg $CaCO_3$/L) of 100%: 975 — Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L): —

Alkalinity of 100% sample (mg $CaCO_3$/L): 330

Dilution Water

Pail label / preparation date: D4: 11105

Hardness of dilution water (mg/L): 151

Antiscalant

Final Concentration in Sample: 20 mg/L

Volume of sample: 500mL — Volume of antiscalant: 158µL

Comments/Observations:

0hr: No ppt

48hr: No ppt

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Reviewed By: [illegible] — Date Reviewed: 2022/11/16

APPENDIX C – Chain-of-custody form

Teck

Page 1 of 1

COC ID: FSF NAUTILUS 110722 **TURNAROUND TIME:** Regular (default) **RUSH: NO**

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name	F2 SRF			Lab Name	Nautilus			Report Format / Distribution		Excel	PDF	EDD
EQuIS Facility Code	FSF			Lab Contact	Jacklyn Poole			Email 1:	DL-EVO-SRF-LAB@teck.com	X	X	X
Project Manager	Brett Mason			Email	jacklyn@nautilusenvironmental.ca			Email 2:	Cole.Macgregor@teck.com	X	X	X
Email	brett.mason@teck.com			Address	10823 27th Street SE			Email 3:	TeckCoal@equisonline.com			X
Address	RR1 HWY 3							Email 4:				
City	Sparwood	Province	BC	City	Calgary	Province	AB	Email 5:				
Postal Code	V0B 2G0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada	Email 6:				
Phone Number	250 425 4837			Phone Number	403 253 7121			PO number		859537		

SAMPLE DETAILS

2022/11/08
09:30
Manitoulin
JC
4x20L carboys, 5x1L bottles
N&S/NoI
~~Good Condition~~, 4x20L carboys;
2x1L bottles ~~Poor/frozen~~, <50% Frozen
JC

ANALYSIS REQUESTED

Please indicate Y below if Filtered

Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	ANALYSIS: NAUT_48hr_DM_PF 48hr Daphnia magna Acute Toxicity 20C	NAUT_48hr_DM_PF_MOD10 48hr Daphnia magna Acute Toxicity 10C	NAUT_48hr_DM_PF_20AS 48hr Daphnia magna Acute Toxicity 20mg/L Antiscalant	NAUT_96hr_RT_PF 96hr Rainbow Trout Acute Toxicity	NAUT_48hr_DM_PF_MOD15 48hr Daphnia magna Acute Toxicity 15C	
F2_BPO_WG_2022-11-07_N -01	F2_BPO	WG		2022-11-07	10:10	G	8	2	2		4		2.6°C
F2_BPO_WG_2022-11-07_N-AS -02	F2_BPO	WG		2022-11-07	10:11	G	1			1			↓

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	Date	Time	ACCEPTED BY/AFFILIATION	Date	Time
	ALI TECK	7-Nov-22	14:00			

SERVICE REQUEST (rush - subject to availability)

Regular (default)	X
Priority (2-3 business days) - 50% surcharge	
Emergency (1 Business Day) - 100% surcharge	
For Emergency <1 Day, ASAP or Weekend - Contact Nautilus	

Sampler's Name	E Duysuell	Mobile #	
Sampler's Signature		Date/Time	7-Nov-22

END OF REPORT

Acute Toxicity Test Results

Samples collected November 14, 2022

Final Report

November 29, 2022

Submitted to: **Teck Coal Ltd.**
Sparwood, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates					
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation	*Daphnia magna* 5 mg/L antiscalant test initiation
EV_EC1_WS_2022-11-14_N-SRF / 2223-0813-01	14-Nov-22 at 1000h	15-Nov-22 at 0925h	15-Nov-22 at 1445h	15-Nov-22 at 1410h	15-Nov-22 at 1410h	-
EV_EC1_WS_2022-11-14_N-SRF-AS / 2223-0813-02	14-Nov-22 at 1001h	15-Nov-22 at 0925h	-	-	-	15-Nov-22 at 1410h
EV_ECOUT_WS_2022-11-14_N-SRF / 2223-0813-03	14-Nov-22 at 1220h	15-Nov-22 at 0925h	15-Nov-22 at 1510h	15-Nov-22 at 1415h	15-Nov-22 at 1415h	-
EV_ECOUT_WS_2022-11-14_N-SRF-AS / 2223-0813-04	14-Nov-22 at 1221h	15-Nov-22 at 0925h	-	-	-	15-Nov-22 at 1415h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
EV_EC1_WS_2022-11-14_N-SRF	1.8°C	897	345
EV_EC1_WS_2022-11-14_N-SRF-AS	1.8°C	897	345
EV_ECOUT_WS_2022-11-14_N-SRF	1.9°C	912	385
EV_ECOUT_WS_2022-11-14_N-SRF-AS	1.9°C	912	385

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)
- *Daphnia magna* 48-h single concentration screening test (conducted with 5 mg/L antiscalant)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample			
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* 5 mg/L antiscalant
EV_EC1_WS_2022-11-14_N-SRF	100	100	100	-
EV_EC1_WS_2022-11-14_N-SRF-AS	-	-	-	100
EV_ECOUT_WS_2022-11-14_N-SRF	100	100	100	-
EV_ECOUT_WS_2022-11-14_N-SRF-AS	-	-	-	100

Sample ID	Percent Immobility in 100 (% v/v)		
	Daphnia magna 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* 5 mg/L antiscalant
EV_EC1_WS_2022-11-14_N-SRF	0	0	-
EV_EC1_WS_2022-11-14_N-SRF-AS	-	-	0
EV_ECOUT_WS_2022-11-14_N-SRF	0	3	-
EV_ECOUT_WS_2022-11-14_N-SRF-AS	-	-	0

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
EV_EC1_WS_2022-11-14_N-SRF	Rainbow trout	Precipitate observed on the sides and bottom of test vessel	None
	Daphnia magna	Surficial precipitate observed in the test conducted at 20°C	None
EV_EC1_WS_2022-11-14_N-SRF-AS	*Daphnia magna*	None	None
EV_ECOUT_WS_2022-11-14_N-SRF	Rainbow trout	Precipitate observed on the sides and bottom of test vessel	None
	Daphnia magna	Surficial precipitate observed in the test conducted at 10°C, precipitate observed on the surface and on the test vessel when conducted at 20°C	Precipitate observed on carapace in the test conducted at 20°C
EV_ECOUT_WS_2022-11-14_N-SRF-AS	*Daphnia magna*	Precipitate observed on the surface and on test vessel	Precipitate observed on carapace

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	4.5 (4.1-5.0) g/L KCl[1]	6.6 (6.4-6.8) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.7 (2.8-4.9) g/L KCl	6.2 (5.3-7.2) g/L NaCl
Reference toxicant CV	9.1%	5.1%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, November 8, 2022; [2] Test Date November 2, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation

Report By:
Maryam Lo, BSc
Laboratory Biologist

Reviewed By:
Mimi Tran, Dipl. T.
Biologist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Control/dilution water for antiscalant test	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L), Na_2SeO_4 (2 µg Se/L) and 5 mg/L antiscalant
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14 with February 2016 amendments
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14 with February 2016 amendments
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS ENVIRONMENTAL

Trout Bench Sheet

Method TRS Client TEC 164 Reference 2223-0813-01 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022/11/15	1445 *	ML/BS	7	DC
1	2022/11/16	1015	KG/M	-	mat
2	2022/11/17	0810	BS	-	mat
3	2022/11/18	0730	KM	-	mat
4	2022/11/19	~~0850~~ 1040	MS	7	NA

Note: * : time when the test was loaded with fish

Sample Information

Initial pH: 7.9
Initial EC (µS/cm): 1809
Salinity (ppt): 3

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L: **yes/no**

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	9.5	8.6			
Temp (°C) of 100%	16				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	7.6	8.0						
Day 4	8.2	8.9						
EC (uS/cm)								
Day 0	395	1896						
Day 4	343	1806						
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	8.6	8.6						
Day 4	8.8	8.6						
Temperature (°C) (range: 14-16°C)								
Day 0	16	16						
Day 4	15	16						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.7	0.3
2	3.9	0.4
3	3.5	0.3
4	4.2	0.5
5	3.9	0.4
6	4.2	0.5
7	4.2	0.6
8	4.0	0.4
9	3.7	0.3
10	4.2	0.6

Loading Density (g/L): 0.4 (must be ≤0.5 g/L)
Mean Length (cm): 4.0
Length Range (cm): 3.5-4.2
Mean Weight (g): 0.4 ~~0.5~~
(Must be ≥0.3g)
Weight Range: (g): 0.4 0.3-~~0.6~~ EV

Test Organism Information

Batch 20220928TR
Source LSL
Tank # 4
Days Held at 15± 2°C 48 (must be ≥14 days)
Percent stock mortality 0.15 (7 days prior to test, must be <2%)
Test Volume (L) 18

Comments : 96 hrs ppt in 100% (side | bottom)

Reviewed By: EV Date Reviewed: 2022/11/22

NAUTILUS ENVIRONMENTAL

Trout Bench Sheet

Method TRS Client TEC 164 Reference 2223-0813-03 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022/11/15	1510 *	ML/BS	7	MC
1	2022/11/16	1005	Kam	-	MMF
2	2022/11/17	0810	BS	-	MMF
3	2022/11/18	0735	Kam	-	MMF
4	2022/11/19	MS ~~0750~~ 1045	MS	7	NA

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 7.6
Initial EC (µS/cm): 1912
Salinity (ppt): 3

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L: **yes/no**

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	9.5	8.6			
Temp (°C) of 100%	16				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	7.7	7.5						
Day 4	8.3	8.1						
EC (uS/cm)								
Day 0	409	2040						
Day 4	459	1840						
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	8.6	8.6						
Day 4	8.6	8.6						
Temperature (°C) (range: 14-16°C)								
Day 0	16	16						
Day 4	16	16						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.0	0.2
2	3.2	0.4
3	3.0	0.2
4	3.3	0.4
5	3.4	0.3
6	4.0	0.4
7	3.6	0.3
8	3.8	0.4
9	4.5	0.6
10	3.6	0.3

Loading Density (g/L): 0.2 (must be ≤0.5 g/L)
Mean Length (cm): 3.6
Length Range (cm): 3.0-4.5
Mean Weight (g): 0.4 (Must be ≥0.3g)
Weight Range: (g): 0.2-0.6

Test Organism Information

Batch 20220928TR
Source LSL
Tank # 4
Days Held at 15± 2°C: 48 (must be ≥14 days)
Percent stock mortality: 0.15 (7 days prior to test, must be <2%)
Test Volume (L): 18

Comments : 96 hrs ppt on 100% (side | bottom.

Reviewed By: EV Date Reviewed: 2022/11/22

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC 164 Reference 2223-0813-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/11/15	1410	AI/AG	2	KTM
1	2022/11/16	0800	AG	-	MAF
2	2022/11/17	0830	AG	2	KTM

Sample Information

Initial pH: 7.9
Initial EC (µS/cm): 1809
Salinity (ppt): 3

Lab Code	CTL A	CTL B	CTL C	100 A	100 B	100 C				

pH (units) (range: 6.0-8.5)

day										
0	8.0	7.9	7.9	8.0	8.0	8.0				
2	8.0	8.0	8.0	8.0	8.0	8.0				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	397	411	412	1643	1876	1887				
2	403	420	418	~~1776~~ 1767	1818	1820				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.9	7.9	7.9				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	20	20	20				
2	20	20	20	20	20	20				

Number Alive (l, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar Wed ~~El/E2~~ AG C3 Jar(s) mortality 7 days prior to test (must be ≤25%) ~~5%/0%~~ AG 0%

QA (previous month)
Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 43
Were test treatments randomized on test tray? (Yes) No

Control Validity Criteria
Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 10.5
Temperature (°C) of sample prior to aeration: 18
DO % of sample prior to aeration: 128
Is aeration required (<40% or >100%)? (Yes) or No
Duration of aeration (37.5 +/- 12.5 mL/min/L): 20
Filtered with 110um screen prior to testing Yes or (No)
Hardness (mg $CaCO_3$/L) of 100% : 297
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 345

Dilution Water
Pail label / preparation date P2:11/12
Hardness of dilution water (mg/L) 146

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Comments/Observations:
0 hr NO ppt
48 hr ppt on surface

Reviewed By: EV Date Reviewed: 2022/11/22

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC 164 Reference 2223-0813-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/11/15	1410	AI/AG	2	LTM
1	2022/11/16	0730	AG	-	MAF
2	2022/11/17	0830	AG	2	LTM

Sample Information

Initial pH: 7.9
Initial EC (µS/cm): 1509
Salinity (ppt): 3

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	8.0	8.0	7.9	8.0	8.0	8.0				
2	8.0	8.0	7.9	8.1	8.2	8.2				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	422	414	414	1869	1880	1895				
2	427	416	415	1763	1047	1863				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar Wed c1/c2 Jar(s) mortality 7 days prior to test (must be ≤25%) EV ~~5%/0%~~, 2.5%

QA (previous month)

Days to first brood (≤12 days) 7

Average number of young produced (≥15 young) 43

Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 12.0

DO % of sample prior to aeration: 128

Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20

Hardness (mg $CaCO_3$/L) of 100% : 897

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) -

Alkalinity of 100% sample (mg $CaCO_3$/L): 345

Temperature (°C) of sample prior to aeration: 12

Is aeration required (<40% or >100%)? **Yes or No**

Filtered with 110um screen prior to testing **Yes or (No)**

Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or (No)**

Dilution Water

Pail label / preparation date P2: 11/12

Hardness of dilution water (mg/L) 146

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

Comments/Observations:

0hr NO ppt

48hr no ppt

Reviewed By: EV Date Reviewed: 2022/11/22

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS 5 Client TEC 164 Reference 2223-0813-02

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/11/15	1410	AI/AG	2	WM
1	2022/11/16	0755	AG	-	MAT
2	2022/11/17	0830	AG	2	WM

Sample Information

Initial pH: 7.9
Initial EC (µS/cm): 1809
Salinity (ppt): 3

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	8.0	7.9	7.9	8.0	8.0	8.0				
2	8.1	8.0	8.0	8.3	8.3	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	409	414	414	1813	1870	1889				
2	476	446	423	1917	1891	1919				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.9	7.9	7.9				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	20	20	20				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar Wed C2 Jar(s) mortality 7 days prior to test (must be ≤25%) 0

QA (previous month)
Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 43
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0

Sample
DO (mg/L) of sample prior to aeration: 10.3 Temperature (°C) of sample prior to aeration: 18
DO % of sample prior to aeration: 125 Is aeration required (<40% or >100%)? **Yes or No**
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20 Filtered with 110um screen prior to testing **Yes or No**
Hardness (mg $CaCO_3$/L) of 100% : 897 Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 345

Dilution Water
Pail label / preparation date P2: 11/12
Hardness of dilution water (mg/L) 146

Antiscalant
Final Concentration in Sample: 5 mg/L ~~15 mg/L~~ AG
Volume of sample: 500 mL Volume of antiscalant: 39.5µL

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C 3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C 3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C

Comments/Observations:
0hr NO ppt
48hr no ppt

Reviewed By: EV Date Reviewed: 2022/11/22

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC 164 Reference 2223-0813-03

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/11/15	1415	AI/AG	2	UM
1	2022/11/16	0755	AG	-	MAF
2	2022/11/17	0830	AG	2	UM

Sample Information

Initial pH: 7.10
Initial EC (µS/cm): 1917
Salinity (ppt): 3

Lab Code	CTL A	CTL B	CTL C	100 A	100 B	100 C

pH (units) (range: 6.0-8.5)

day										
0	7.9	7.9	7.9	7.8	7.8	7.8				
2	8.0	8.0	8.0	7.9	7.9	7.9				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	398	410	412	1872	1943	1956				
2	416	419	418	1751	1819	1814				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.9	7.9	7.9				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	20	20	20				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10 (1i)	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar Wed C2 + C3 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 43
Were test treatments randomized on test tray? (Yes) No

Control Validity Criteria
Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 9.8
DO % of sample prior to aeration: 119
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20
Hardness (mg $CaCO_3$/L) of 100% : 917
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 385

Temperature (°C) of sample prior to aeration: 18
Is aeration required (<40% or >100%)? (Yes) or No
Filtered with 110um screen prior to testing (Yes) or No
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)

Dilution Water
Pail label / preparation date P2:11112
Hardness of dilution water (mg/L) 146

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Comments/Observations:
0 hr NO ppt
48 hr ppt on jar, surface and carapace

Reviewed By: EV Date Reviewed: 2022/11/22

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC 164 Reference 2223-0813-03

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/11/15	1415	AI/AG	2	VTM
1	2022/11/16	0755	AG	-	mAF
2	2022/11/17	0830	AG	2	VTM

Sample Information

Initial pH: 7.6
Initial EC (µS/cm): 1912
Salinity (ppt): 3

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	8.0	7.9	7.9	7.8	7.6	7.6				
2	8.1	8.1	8.0	8.0	8.0	8.0				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	399	411	412	1878	1939	1953				
2	416	417	417	1806	1852	1881				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar Wed C3 Jar(s) mortality 7 days prior to test (must be ≤25%) 0

QA (previous month)

Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 43
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 11.2
Temperature (°C) of sample prior to aeration: 12
DO % of sample prior to aeration: 119
Is aeration required (<40% or >100%)? **Yes or No**
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20
Filtered with 110um screen prior to testing **Yes or No**
Hardness (mg $CaCO_3$/L) of 100% : 912
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 385

Dilution Water

Pail label / preparation date PJ:11/12
Hardness of dilution water (mg/L) 146

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

Comments/Observations:

0hr NO ppt
48hr ppt on surface

Reviewed By: EV Date Reviewed: 2022/11/22

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS 5 Client TEC 164 Reference 2223-0813-04

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/11/15	1415	AI/AG	2	KM
1	2022/11/16	0755	AG	-	MMF
2	2022/11/17	0830	AG	2	KM

Sample Information

Initial pH: 7.6
Initial EC (µS/cm): 1912
Salinity (ppt): 3

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	7.9	7.9	7.9	7.8	7.8	7.8				
2	8.0	8.0	8.0	8.2	8.2	8.2				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	394	412	413	1908	1946	1952				
2	406	416	420	1792	1877	1883				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.9	7.9	7.9				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	20	20	20				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar Wed C4 Jar(s) mortality 7 days prior to test (must be ≤25%) 5%

QA (previous month)
Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 43
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 9.9
DO % of sample prior to aeration: 121
Duration of aeration (37.5 +/- 12.5 mL/min/L): 20
Hardness (mg $CaCO_3$/L) of 100% : 912
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 385

Temperature (°C) of sample prior to aeration: 18
Is aeration required (<40% or >100%)? **Yes or No**
Filtered with 110um screen prior to testing **Yes or No**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Dilution Water
Pail label / preparation date P2: 11/12
Hardness of dilution water (mg/L) 146

Antiscalant
Final Concentration in Sample: 5 mg/L ~~15 mg/L~~ 146
Volume of sample: 500 mL Volume of antiscalant: 39.5µL

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Comments/Observations:
0hr NO ppt
48hr ppt on surface, jar, and carapace

Reviewed By: EV Date Reviewed: 2022/11/22

APPENDIX C – Chain-of-custody form

Teck

Page 1 of 1

COC ID: EVO NAUTILUS 111422 **TURNAROUND TIME:** Regular (default) **RUSH:** NO

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name	Elkview Operation			Lab Name	Nautilus			Report Format / Distribution		Excel	PDF	EDD
EQuIS Facility Code	EVO			Lab Contact	Jacklyn Poole			Email 1:	DL-EVO-SRF-LAB@teck.com	X	X	X
Project Manager	Brett Mason			Email	jacklyn@nautilusenvironmental.ca			Email 2:	Cole.Macgregor@teck.com	X	X	X
Email	brett.mason@teck.com			Address	10823 27th Street SE			Email 3:	TeckCoal@equisonline.com			X
Address	RR1 HWY 3							Email 4:				
City	Sparwood	Province	BC	City	Calgary	Province	AB	Email 5:				
Postal Code	V0B 2G0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada	Email 6:				
Phone Number	250 425 4837			Phone Number	403 253 7121			PO number	859537			

SAMPLE DETAILS

2022/11/15
09:25
Manitoulin
DC/SRS
16x10L cartboys, 10x1L bottles
NoS/NoT
Good Condition

ANALYSIS REQUESTED

Please indicate Y below if Filtered

Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	ANALYSIS: NAUT_48hr_DM_PF 48hr Daphnia magna Acute Toxicity 20C	NAUT_48hr_DM_PF_MOD10 48hr Daphnia magna Acute Toxicity 10C	NAUT_48hr_DM_PF_5AS 48hr Daphnia magna Acute Toxicity 5mg/L Antiscalant	NAUT_96hr_RT_PF 96hr Rainbow Trout Acute Toxicity	NAUT_48hr_DM_PF_MOD15 48hr Daphnia magna Acute Toxicity 15C		
EV_EC1_WS_2022-11-14_N-SRF -01	EV_EC1	WS		2022-11-14	10:00	G	12	2	2		8		1.8°C	
EV_EC1_WS_2022-11-14_N-SRF-AS -02	EV_EC1	WS		2022-11-14	10:01	G	1			1			↓	
EV_ECOUT_WS_2022-11-14_N-SRF -03	EV_ECOUT	WS		2022-11-14	12:20	G	12	2	2		8		1.9°C	
EV_ECOUT_WS_2022-11-14_N-SRF-AS -04	EV_ECOUT	WS		2022-11-14	12:21	G	1			1			↓	

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	Date	Time	ACCEPTED BY/AFFILIATION	Date	Time
		14-Nov-22 15:55				

SERVICE REQUEST (rush - subject to availability)

Regular (default)	X
Priority (2-3 business days) - 50% surcharge	
Emergency (1 Business Day) - 100% surcharge	
For Emergency <1 Day, ASAP or Weekend - Contact Nautilus	

Sampler's Name	ABible	Mobile #	
Sampler's Signature		Date/Time	14-Nov-22

END OF REPORT

Acute Toxicity Test Results

Sample collected November 14, 2022

Final Report

December 1, 2022

Submitted to: **Teck Coal Ltd.**
Sparwood, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates					
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation	*Daphnia magna* 20 mg/L antiscalant test initiation
F2_BPO_WG_2022-11-14_N/ 2223-0814-01	14-Nov-22 at 0820h	15-Nov-22 at 0925h	15-Nov-22 at 1440h	15-Nov-22 at 1420h	15-Nov-22 at 1420h	-
F2_BPO_WG_2022-11-14_N-AS/ 2223-0814-02	14-Nov-22 at 0821h	15-Nov-22 at 0925h	-	-	-	15-Nov-22 at 1425h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
F2_BPO_WG_2022-11-14_N	2.4°C	1040	367
F2_BPO_WG_2022-11-14_N-AS	2.4°C	1040	367

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)
- *Daphnia magna* 48-h single concentration screening test (conducted with 20 mg/L antiscalant)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample			
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* 20 mg/L antiscalant
F2_BPO_WG_2022-11-14_N	100	100	100	-
F2_BPO_WG_2022-11-14_N-AS	-	-	-	100

Sample ID	Percent Immobility in 100 (% v/v)		
	Daphnia magna 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* 20 mg/L antiscalant
F2_BPO_WG_2022-11-14_N	0	0	-
F2_BPO_WG_2022-11-14_N-AS	-	-	0

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
F2_BPO_WG_2022-11-14_N	Rainbow trout	Precipitate observed on test vessel	None
	Daphnia magna	Surficial precipitate observed and precipitate observed on test vessel when conducted at 20°C	None
F2_BPO_WG_2022-11-14_N-AS	*Daphnia magna*	None	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	4.5 (4.1-5.0) g/L KCl[1]	6.8 (6.5-7.1) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.7 (2.8-4.9) g/L KCl	6.2 (5.3-7.2) g/L NaCl
Reference toxicant CV	9.1%	5.1%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, November 8, 2022; [2] Test Date November 21, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation

Report By:
Maryam Lo, BSc
Laboratory Biologist

Reviewed By:
Emma Pedersen, BSc
Laboratory Biologist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Control/dilution water for antiscalant test	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L), Na_2SeO_4 (2 µg Se/L) and 20 mg/L antiscalant
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14 with February 2016 amendments
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14 with February 2016 amendments
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS ENVIRONMENTAL

Trout Bench Sheet

Method TRS Client TEC 164 Reference 2223-0814-01 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022/11/15	1440 *	ML/BS	7	JC
1	2022/11/16	1005	Kam	-	MAF
2	2022/11/17	0810	BS	-	MAF
3	2022/11/18	0735	Kam	-	MAF
4	2022/11/19	1050	MS	7	NA

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 7.6
Initial EC (µS/cm): 1949
Salinity (ppt): 3

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L : **yes/no**

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	7.8	8.8			
Temp (°C) of 100%	15				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: **5.5-8.5**)								
Day 0	7.6	7.6						
Day 4	8.1	8.5						
EC (uS/cm)								
Day 0	405	2000						
Day 4	489	1931						
DO (mg/L) (**70-100% saturation at test temp.**)								
Day 0	8.6	8.8						
Day 4	8.6	8.6						
Temperature (°C) (range: **14-16°C**)								
Day 0	16	15						
Day 4	16	16						

Number Alive (In brackets number stressed)

Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	4.2	0.5
2	3.5	0.3
3	4.0	0.4
4	4.2	0.5
5	3.4	0.4
6	3.2	0.3
7	3.2	0.2
8	4.0	0.4
9	4.0	0.5
10	4.2	0.4

Loading Density (g/L): MS 7/0.2
(must be ≤0.5 g/L)
Mean Length (cm): 3.8
Length Range (cm): 3.2-4.2
Mean Weight (g): 0.4
(Must be ≥0.3g)
Weight Range: (g): 0.2-0.5

Test Organism Information

Batch 20220928TR
Source LSL
Tank # 4
Days Held at 15± 2°C 48
(must be ≥14 days)
Percent stock mortality 0.15
(7 days prior to test, must be <2%)
Test Volume (L) 18

Comments : 96 hrs ppt in 100% (bottom)

Reviewed By: EV Date Reviewed: 2022/11/22

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC 164 Reference 2223-0814-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/11/15	1420	AI/AG	2	WTM
1	2022/11/16	0750	AG	-	MRF
2	2022/11/17	0845	NA	2	DM

Sample Information

Initial pH: 7.6
Initial EC (µS/cm): 1949
Salinity (ppt): 3

Lab Code	CTL A	CTL B	CTL C	100 A	100 B	100 C

pH (units) (range: 6.0-8.5)

day	CTL A	CTL B	CTL C	100 A	100 B	100 C
0	7.8	7.9	7.9	7.8	7.8	7.8
2	8.1	8.0	8.0	8.1	8.1	8.1

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	395	409	411	1903	1976	1988
2	427	422	418	1875	1921	1925

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.9	7.9	7.9
2	7.9	7.9	7.9	7.9	7.9	7.9

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	20	20	20
2	20	20	20	20	20	20

Number Alive (I, immobile)

0	10	10	10	10	10	10
1	10	10	10	10	10	10
2	10	10	10	10	10	10

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar Wed C4 Jar(s) mortality 7 days prior to test (must be ≤25%) 5%

QA (previous month)
Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 43
Were test treatments randomized on test tray? (Yes) No

Control Validity Criteria
Mean % mortality at 48 hours - 0%
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 9.1
Temperature (°C) of sample prior to aeration: 18
DO % of sample prior to aeration: 111
Is aeration required (<40% or >100%)? (Yes) or No
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20
Filtered with 110um screen prior to testing Yes or (No)
Hardness (mg $CaCO_3$/L) of 100% : 1040
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 367

Dilution Water
Pail label / preparation date PJ: 11/12
Hardness of dilution water (mg/L) 146

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Comments/Observations:
0 hr No ppt
48 hr surficial ppt / ppt on jar

Reviewed By: EV Date Reviewed: 2022/11/22

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC 164 Reference 2223-0814-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/11/15	1420	AI/AG	2	MAF
1	2022/11/16	0730	AG	-	MAF
2	2022/11/17	0840	NA	2	DM

Sample Information

Initial pH: 7.6
Initial EC (µS/cm): 1949
Salinity (ppt): 3

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	7.9	7.9	7.9	7.8	7.9	7.9				
2	8.0	8.0	8.0	8.3	8.3	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	406	413	412	1921	1983	1989				
2	424	417	416	1898	1951	1955				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.6	9.6	9.6	9.6	9.6	9.6				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	11	11	11	11	11	11				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar WED D1 Jar(s) mortality 7 days prior to test (must be ≤25%) 0

QA (previous month)
Days to first brood (≤12 days) 9
Average number of young produced (≥15 young) 30
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0%
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 10.4
DO % of sample prior to aeration: 111
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20
Hardness (mg $CaCO_3$/L) of 100% : 1040
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 367

Temperature (°C) of sample prior to aeration: 12
Is aeration required (<40% or >100%)? **Yes or No**
Filtered with 110um screen prior to testing **Yes or (No)**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or (No)**

Dilution Water
Pail label / preparation date P2-11/12
Hardness of dilution water (mg/L) 146

DO Levels (40-100% saturation) - corrected for altitude -
4.1 to 10.3 mg/L at 8°C
4.0 to 10.0 mg/L at 9°C
3.9 to 9.8 mg/L at 10°C
3.8 to 9.6 mg/L at 11°C
3.7 to 9.4 mg/L at 12°C

Comments/Observations:
0hr NO ppt
48hr No ppt

Reviewed By: EV Date Reviewed: 2022/11/22

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS 20 Client TEC 164 Reference 2223-0814-02

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/11/15	1425	AI/AG	2	MAF
1	2022/11/16	0750	AG	-	MAF
2	2022/11/17	0860	AG	2	MAF

Sample Information

Initial pH:	7.6
Initial EC (µS/cm):	1949
Salinity (ppt):	3

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	7.8	7.9	7.9	8.0	8.1	8.1				
2	7.7	7.8	7.9	8.2	8.3	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	387	412	415	1914	1960	1974				
2	440	417	417	1855	1911	1925				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.9	7.9	7.9				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	20	20	20				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar Wed C5 Jar(s) mortality 7 days prior to test (must be ≤25%) 5%

QA (previous month)

Days to first brood (≤12 days) 7

Average number of young produced (≥15 young) 43

Were test treatments randomized on test tray? (Yes) No

Control Validity Criteria

Mean % mortality at 48 hours - (must be ≤10%) 0

Sample

DO (mg/L) of sample prior to aeration: 9.3

DO % of sample prior to aeration: 114

Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20

Hardness (mg $CaCO_3$/L) of 100% : 1040

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —

Alkalinity of 100% sample (mg $CaCO_3$/L): 367

Temperature (°C) of sample prior to aeration: 18

Is aeration required (<40% or >100%)? **Yes or No**

Filtered with 110um screen prior to testing **Yes or No**

Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Dilution Water

Pail label / preparation date P2:11/12

Hardness of dilution water (mg/L) 146

Antiscalant

Final Concentration in Sample: 20 mg/L

Volume of sample: 500 mL Volume of antiscalant: 158 µL

Comments/Observations:

0hr NO ppt

48hr no ppt

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Reviewed By: EV Date Reviewed: 2022/11/22

APPENDIX C – Chain-of-custody form

Teck

Page 1 of 1

COC ID: FSF NAUTILUS 111422 **TURNAROUND TIME:** Regular (default) **RUSH: NO**

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO			
Facility Name	F2 SRF			Lab Name	Nautilus			Report Format / Distribution		Excel	PDF	EDD
EQuIS Facility Code	FSF			Lab Contact	Jacklyn Poole			Email 1:	DL-EVO-SRF-LAB@teck.com	X	X	X
Project Manager	Brett Mason			Email	jacklyn@nautilusenvironmental.ca			Email 2:	Cole.Macgregor@teck.com	X	X	X
Email	brett.mason@teck.com			Address	10823 27th Street SE			Email 3:	TeckCoal@equisonline.com			X
Address	RR1 HWY 3							Email 4:				
City	Sparwood	Province	BC	City	Calgary	Province	AB	Email 5:				
Postal Code	V0B 2G0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada	Email 6:				
Phone Number	250 425 4837			Phone Number	403 253 7121			PO number	859537			

SAMPLE DETAILS

2022/11/15
09:25
Manitoulin
DC/SRS
4x20L carboys
5x1L bottles
No Nos
Good Condition

ANALYSIS REQUESTED

Please indicate Y below if Filtered

Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	ANALYSIS: 48hr Daphnia magna Acute Toxicity 20C (NAUT_48hr_DM_PF)	48hr Daphnia magna Acute Toxicity 10C (NAUT_48hr_DM_PF_MOD10)	48hr Daphnia magna Acute Toxicity 20ug/L Antiscalant (NAUT_48hr_DM_PF_20AS)	96hr Rainbow Trout Acute Toxicity (NAUT_96hr_RT_PF)	48hr Daphnia magna Acute Toxicity 15C (NAUT_48hr_DM_PF_MOD15)	
F2_BPO_WG_2022-11-14_N -01	F2_BPO	WG		2022-11-14	08:20	G	8	2	2		4		2,4°C
F2_BPO_WG_2022-11-14_N-AS -02	F2_BPO	WG		2022-11-14	08:21	G	1			1			✓

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	Date	Time	ACCEPTED BY/AFFILIATION	Date	Time
	Regan	14-Nov-22				
		15:55				

SERVICE REQUEST (rush - subject to availability)

Regular (default)	X
Priority (2-3 business days) - 50% surcharge	
Emergency (1 Business Day) - 100% surcharge	
For Emergency <1 Day, ASAP or Weekend - Contact Nautilus	

Sampler's Name	ARIOH	Mobile #	
Sampler's Signature	AR	Date/Time	14-Nov-22

END OF REPORT

Acute Toxicity Test Results

Samples collected November 15, 2022

Final Report

December 7, 2022

Submitted to: **Teck Coal Ltd.**
Sparwood, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates					
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation	*Daphnia magna* antiscalant test initiation
EV_BC1_WS_2022-11-15_N-SRF/ 2223-0832-01	15-Nov-22 at 1000h	16-Nov-22 at 0920h	16-Nov-22 at 1420h	16-Nov-22 at 1440h	16-Nov-22 at 1450h	-
EV_BC1_WS_2022-11-15_N-SRF-AS/ 2223-0832-02	15-Nov-22 at 1001h	16-Nov-22 at 0920h	-	-	-	16-Nov-22 at 1440h
EV_GT1_WS_2022-11-15_N-SRF/ 2223-0832-03	15-Nov-22 at 0730h	16-Nov-22 at 0920h	16-Nov-22 at 1415h	16-Nov-22 at 1545h	16-Nov-22 at 1525h	-
EV_GT1_WS_2022-11-15_N-SRF-AS/ 2223-0832-04	15-Nov-22 at 0731	16-Nov-22 at 0920h	-	-	-	16-Nov-22 at 1540h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
EV_BC1_WS_2022-11-15_N-SRF	0.3°C	1185	256
EV_BC1_WS_2022-11-15_N-SRF-AS	0.3°C	1185	256
EV_GT1_WS_2022-11-15_N-SRF	-1.3°C	1057	360
EV_GT1_WS_2022-11-15_N-SRF-AS	-1.3°C	1057	360

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)
- *Daphnia magna* 48-h single concentration screening test (conducted with 5 mg/L antiscalant)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample			
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
EV_BC1_WS_2022-11-15_N-SRF	100	100	100	-
EV_BC1_WS_2022-11-15_N-SRF-AS	-	-	-	100
EV_GT1_WS_2022-11-15_N-SRF	100	100	100	-
EV_GT1_WS_2022-11-15_N-SRF-AS	-	-	-	100

Sample ID	Percent Immobility in 100 (% v/v)		
	Daphnia magna 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
EV_BC1_WS_2022-11-15_N-SRF	0	0	-
EV_BC1_WS_2022-11-15_N-SRF-AS	-	-	0
EV_GT1_WS_2022-11-15_N-SRF	0	0	-
EV_GT1_WS_2022-11-15_N-SRF-AS	-	-	0

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
EV_BC1_WS_2022-11-15_N-SRF	Rainbow trout	Precipitate observed on the test vessel	None
	Daphnia magna	Surficial precipitate observed in 20°C test	None
EV_BC1_WS_2022-11-15_N-SRF-AS	*Daphnia magna*	None	None
EV_GT1_WS_2022-11-15_N-SRF	Rainbow trout	Precipitate observed on the test vessel	None
	Daphnia magna	Surficial precipitate observed in 10 and 20°C tests	None
EV_GT1_WS_2022-11-15_N-SRF-AS	*Daphnia magna*	None	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	4.5 (4.1-5.0) g/L KCl[1]	6.6 (6.4-6.8) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.7 (2.8-4.9) g/L KCl	6.2 (5.3-7.2) g/L NaCl
Reference toxicant CV	9.1%	5.1%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, November 8, 2022; [2] Test Date November 2, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation

Report By:
Maryam Lo, BSc
Laboratory Biologist

Reviewed By:
Leila Oosterbroek, P Biol
Environmental Scientist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Control/dilution water for antiscalant test	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L), Na_2SeO_4 (2 µg Se/L) and 5 mg/L antiscalant
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14 with February 2016 amendments
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14 with February 2016 amendments
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC 164 Reference 2223-0832-01 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022-11-16	1420 *	ML/BS	7	KO
1	2022-11-17	0920	BS	-	MAF
2	2022-11-18	0800	KAM	-	MAF
3	2022-11-19	0900	CC	-	MAF
4	2022-11-20	1015	KAM/ML	7	AM

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 7.9
Initial EC (µS/cm): 2150
Salinity (ppt): 3

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L (yes/no)

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	9.9	8.6			
Temp (°C) of 100%	16				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	8.1	8.1						
Day 4	8.2	8.2						
EC (uS/cm)								
Day 0	387	7340						
Day 4	309	2200						
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	8.6	8.6						
Day 4	8.8	8.8						
Temperature (°C) (range: 14-16°C)								
Day 0	16	16						
Day 4	16	16						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.6	0.4
2	3.4	0.3
3	3.5	0.3
4	5.0	1.1
5	3.3	0.3
6	3.7	0.4
7	3.5	0.3
8	3.4	0.3
9	3.3	0.3
10	3.4	0.3

Loading Density (g/L): 0.2 (must be ≤0.5 g/L)
Mean Length (cm): 3.6
Length Range (cm): 3.3-5.0
Mean Weight (g): 0.4 (Must be ≥0.3g)
Weight Range: (g): 0.3-1.1

Test Organism Information

Batch 20220928TR
Source LSL
Tank # 4
Days Held at 15± 2°C: 49 (must be ≥14 days)
Percent stock mortality: 0.15 (7 days prior to test, must be <2%)
Test Volume (L): 18

Comments :
96 hrs PPT on tank

Reviewed By: MAF Date Reviewed: 22/11/27

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC 164 Reference 2223-0832-03 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022-11-16	1415 *	ML/BS	7	KO
1	2022-11-17	0820	BS	-	MAF
2	2022-11-18	0805	Kam	-	MAF
3	2022-11-19	0900	CG	-	MAF
4	2022-11-20	0910	Kam/ML	7	AM

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 8.2
Initial EC (µS/cm): 1454
Salinity (ppt): 3

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L (yes/no)

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	10.1	8.6			
Temp (°C) of 100%	16				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	8.1	8.2						
Day 4	8.3	8.1						
EC (uS/cm)								
Day 0	384	~~1512~~ 2070 BS						
Day 4	396	1946						
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	8.8	8.6						
Day 4	8.5	8.5						
Temperature (°C) (range: 14-16°C)								
Day 0	15	16						
Day 4	16	15						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	4.2	0.6
2	4.0	0.6
3	3.8	0.4
4	3.9	0.4
5	4.3	0.6
6	3.8	0.4
7	3.2	0.2
8	3.5	0.3
9	3.0	0.2
10	3.0	0.2

Loading Density (g/L): 0.2 (must be ≤0.5 g/L)
Mean Length (cm): 3.7
Length Range (cm): 3.0-4.3
Mean Weight (g): 0.4 (Must be ≥0.3g)
Weight Range: (g): 0.2-0.6

Test Organism Information

Batch 20220928TR
Source LSL
Tank # 4
Days Held at 15± 2°C 49 (must be ≥14 days)
Percent stock mortality 0.15 (7 days prior to test, must be <2%)
Test Volume (L) 18

Comments :
96 hrs PPT on tank.

Reviewed By: MAF Date Reviewed: 22/11/22

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS Client TEC 164 Reference 2223-0832-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/11/16	1450	AI/AG	2	VMM
1	2022/11/17	0755	DM	-	VMM
2	2022/11/18	1000	CC	2	DM

Sample Information

Initial pH: 7.9
Initial EC (µS/cm): 2150
Salinity (ppt): 3

Lab Code	CTL A	CTLB	CTL C	100 A	100 B	100 C				

pH (units) (range: 6.0-8.5)

day										
0	7.7	7.7	7.7	8.0	8.0	8.1				
2	8.0	8.0	8.0	8.1	8.1	8.1				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	408	367	360	~~2646~~ 2240	2270	2240				
2	395	372	363	1995	2180	2200				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	~~8.1~~ 7.9	~~8.1~~ 7.9	~~8.1~~ 7.9				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	~~19~~ 20	~~19~~ 20	~~19~~ 20				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar wed 6:3 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 6
Average number of young produced (≥15 young) 35
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 10% Temperature (°C) of sample prior to aeration: 18
DO % of sample prior to aeration: 116% Is aeration required (<40% or >100%)? **Yes or No**
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 2 min Filtered with 110um screen prior to testing **Yes or No**
Hardness (mg $CaCO_3$/L) of 100% : 1185 Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 256

Dilution Water
Pail label / preparation date P4: "/14
Hardness of dilution water (mg/L) 138

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Comments/Observations:
0 HR no ppt
48 HRS Superficial ppt

Reviewed By: MAC Date Reviewed: 22/11/22

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC 164 Reference 2223-0832-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/11/16	1440	AI/AG	2	WM
1	2022/11/17	0740	AG	-	MAF
2	2022/11/18	1000	CC	2	DM

Sample Information

Initial pH: 7.9
Initial EC (µS/cm): 2150
Salinity (ppt): 3

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	7.9	7.8	7.8	8.1	8.1	8.1				
2	7.9	7.9	7.9	8.2	8.2	8.2				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	348	368	361	2120	2250	2240				
2	356	360	363	2080	2220	2230				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar Wed D2 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%.

QA (previous month)
Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 41
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0%.

Sample

DO (mg/L) of sample prior to aeration: 10.9
DO % of sample prior to aeration: 115%
Duration of aeration (37.5 +/- 12.5 mL/min/L): 20 min
Hardness (mg $CaCO_3$/L) of 100% : 1185
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 256

Temperature (°C) of sample prior to aeration: 12
Is aeration required (<40% or >100%)? **Yes or No**
Filtered with 110um screen prior to testing **Yes or No**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Dilution Water
Pail label / preparation date PM: 11/14
Hardness of dilution water (mg/L) 136

DO Levels (40-100% saturation) - corrected for altitude -
4.1 to 10.3 mg/L at 8°C
4.0 to 10.0 mg/L at 9°C
3.9 to 9.8 mg/L at 10°C
3.8 to 9.6 mg/L at 11°C
3.7 to 9.4 mg/L at 12°C

Comments/Observations:
0 HR no ppt cc
48 HR ppt on surface NO ppt

Reviewed By: MAF Date Reviewed: 22/11/22

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS 5 Client TEC 164 Reference 2223-0832-02

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/11/16	1440	AI/AG	2	KM
1	2022/11/17	0755	DM	-	MAF
2	2022/11/18	1000	CC	2	DM

Sample Information

Initial pH:	7.9
Initial EC (µS/cm):	2150
Salinity (ppt):	3

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	7.9	7.8	7.8	8.2	8.2	8.2				
2	8.0	8.0	8.0	8.3	8.3	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	369	353	360	2150	2220	2220				
2	362	358	361	2110	2180	2190				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.9	7.9	7.9				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	20	20	20				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar WildEy Jar(s) mortality 7 days prior to test (must be ≤25%) 5%

QA (previous month)

Days to first brood (≤12 days) 9

Average number of young produced (≥15 young) 30

Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - (must be ≤10%) 0%

Sample

DO (mg/L) of sample prior to aeration: 10 Temperature (°C) of sample prior to aeration: 18

DO % of sample prior to aeration: 116% Is aeration required (<40% or >100%)? (Yes) or No

Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20min Filtered with 110um screen prior to testing (Yes) or No

Hardness (mg $CaCO_3$/L) of 100% : 1165 Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —

Alkalinity of 100% sample (mg $CaCO_3$/L): 2056

Dilution Water

Pail label / preparation date P4: 11/14

Hardness of dilution water (mg/L) 138

Antiscalant

Final Concentration in Sample: 5 mg/L

Volume of sample: 990ml Volume of antiscalant: 39.5uL

Comments/Observations:

0 HR no ppt

48 HR No ppt

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Reviewed By: MAF Date Reviewed: 22/11/22

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS Client TEC 164 Reference 2223-0832-03

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/11/16	1525	KO/KTM	2	AI
1	2022/11/17	0940	DM	-	MAF
2	2022/11/18	1005	CC	2	DM

Sample Information

Initial pH: 8.2
Initial EC (µS/cm): 1954
Salinity (ppt): 3

Lab Code	CTL A	CTLB	CTL C	100 A	100 B	100 C				

pH (units) (range: 6.0-8.5)

day										
0	7.6	7.7	7.7	8.1	8.1	8.2				
2	8.0	8.0	8.6	8.1	8.1	8.2				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	343	353	366	1921	2080	2080				
2	372	366	370	1858	1929	1946				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.9	7.9	7.9				
2	7.7	7.7	7.7	7.7	7.7	7.7				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	20	20	20				
2	21	21	21	21	21	21				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar Wed D3 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%.

QA (previous month)
Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 41
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0%
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 10.5
DO % of sample prior to aeration: 128%
Duration of aeration (37.5 +/- 12.5 mL/min/L): 20 mins
Hardness (mg $CaCO_3$/L) of 100% : 1057
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 360

Temperature (°C) of sample prior to aeration: 20
Is aeration required (<40% or >100%)? (Yes) or No
Filtered with 110um screen prior to testing Yes or (No)
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)

Dilution Water
Pail label / preparation date P4:11/14
Hardness of dilution water (mg/L) 138

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Comments/Observations:
0 HR no ppt
48 HRS Superficial ppt

Reviewed By: MAF Date Reviewed: 22/11/22

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC 164 Reference 2223-0832-03

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/11/16	1545	KO/KTM	2	AI
1	2022/11/17	0740	AG	-	MMF
2	2022/11/18	1015	CC	2	DM

Sample Information

Initial pH: 8.2
Initial EC (µS/cm): 1954
Salinity (ppt): 3

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	7.7	7.7	7.7	8.1	8.2	8.2				
2	7.8	7.8	7.8	8.2	8.2	8.2				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	362	366	367	1955	2100	2100				
2	372	368	368	1922	2100	2090				

DO (mg/L) (**40-100% saturation at test temp.**)

0	~~7.9~~ 9.4	~~7.9~~ 9.4	~~7.9~~ 9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	~~20~~ 12	~~20~~ 12	~~20~~ 12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar Wed C1 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 35
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0%

Sample

DO (mg/L) of sample prior to aeration: 12.0
DO % of sample prior to aeration: 128%
Duration of aeration (37.5 +/- 12.5 mL/min/L): 20 mins
Hardness (mg $CaCO_3$/L) of 100% : 1057
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 360

Temperature (°C) of sample prior to aeration: 12
Is aeration required (<40% or >100%)? (Yes) or No
Filtered with 110um screen prior to testing Yes or (No)
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)

Dilution Water
Pail label / preparation date 24:11/14
Hardness of dilution water (mg/L) 138

DO Levels (40-100% saturation) - corrected for altitude -
4.1 to 10.3 mg/L at 8°C
4.0 to 10.0 mg/L at 9°C
3.9 to 9.8 mg/L at 10°C
3.8 to 9.6 mg/L at 11°C
3.7 to 9.4 mg/L at 12°C

Comments/Observations:
0 HR no spt
48 HR Surficial ppt

Reviewed By: MAC Date Reviewed: 22/11/22

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS 5 Client TEC 164 Reference 2223-0832-04

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/11/16	1540	KO/KTM	2	A1
1	2022/11/17	0730	DM	-	MAF
2	2022/11/18	1010	CC	2	DM

Sample Information

Initial pH:	8.2
Initial EC (µS/cm):	1954
Salinity (ppt):	3

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	7.7	7.7	7.7	8.2	8.2	8.2				
2	8.0	8.0	8.0	8.4	8.4	8.4				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	360	357	371	1940	2090	2100				
2	390	367	384	1897	2090	2066				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.9	7.9	7.9				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	20	20	20				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar Wed E4 Jar(s) mortality 7 days prior to test (must be ≤25%) 5%

QA (previous month)

Days to first brood (≤12 days) 9
Average number of young produced (≥15 young) 30
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - (must be ≤10%) 0%

Sample

DO (mg/L) of sample prior to aeration: 10.7
DO % of sample prior to aeration: 129%
Duration of aeration (37.5 +/- 12.5 mL/min/L): 20 mins
Hardness (mg $CaCO_3$/L) of 100% : 1057
Temperature (°C) of sample prior to aeration: 19
Is aeration required (<40% or >100%)? Yes or No
Filtered with 110um screen prior to testing Yes or (No)
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 360

Dilution Water

Pail label / preparation date P4: 11/14
Hardness of dilution water (mg/L) 138

Antiscalant

Final Concentration in Sample: 5mg/L
Volume of sample: 500mL Volume of antiscalant: 39.5mL

Comments/Observations:

0 HR no ppt
48 HR NO ppt

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Reviewed By: MAF Date Reviewed: 22/11/22

APPENDIX C – Chain-of-custody form

Teck

Page 1 of 1

COC ID: EVO NAUTILUS 111522 **TURNAROUND TIME:** Regular (default) **RUSH: NO**

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name	Elkview Operation			Lab Name	Nautilus			Report Format / Distribution		Excel	PDF	EDD
EQuIS Facility Code	EVO			Lab Contact	Jacklyn Poole			Email 1:	DL-EVO-SRF-LAB@teck.com	X	X	X
Project Manager	Brett Mason			Email	jacklyn@nautilusenvironmental.ca			Email 2:	Cole.Maegregor@teck.com	X	X	X
Email	brett.mason@teck.com			Address	10823 27th Street SE			Email 3:	TeckCoal@equisonline.com			X
Address	RR1 HWY 3							Email 4:				
City	Sparwood	Province	BC	City	Calgary	Province	AB	Email 5:				
Postal Code	V0B 2G0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada	Email 6:				
Phone Number	250 425 4837			Phone Number	403 253 7121			PO number	859537			

SAMPLE DETAILS

2022/11/16
09:20
Manitoulin
DC/SRS
8x10L carboys
4x20L carboys
10x1L bottles
N68/Nat
Good Condition

Sample ID 2223-0662	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	ANALYSIS: NAUT_48hr_DM_PF 48hr Daphnia magna Acute Toxicity 20C	NAUT_48hr_DM_PF_MOD10 48hr Daphnia magna Acute Toxicity 10C	NAUT_48hr_DM_PF_5AS 48hr Daphnia magna Acute Toxicity 5mg/L Antiscalant	NAUT_96hr_RT_PF 96hr Rainbow Trout Acute Toxicity	NAUT_48hr_DM_PF_MOD15 48hr Daphnia magna Acute Toxicity 15C	Please indicate Y below if Filtered									
EV_BC1_WS_2022-11-15_N-SRF -01	EV_BC1	WS		2022-11-15	10:00	G	12	2	2		8		0.3°C									
EV_BC1_WS_2022-11-15_N-SRF-AS -02	EV_BC1	WS		2022-11-15	10:01	G	1			1			↓									
EV_GT1_WS_2022-11-15_N-SRF -03	EV_GT1	WS		2022-11-15	07:30	G	8	2	2		4		-1.3°C									
EV_GT1_WS_2022-11-15_N-SRF-AS -04	EV_GT1	WS		2022-11-15	07:31	G	1			1			↓									

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	Date	Time	ACCEPTED BY/AFFILIATION	Date	Time
		15-Nov-22	1245			

SERVICE REQUEST (rush - subject to availability)

Regular (default)	X
Priority (2-3 business days) - 50% surcharge	
Emergency (1 Business Day) - 100% surcharge	
For Emergency <1 Day, ASAP or Weekend - Contact Nautilus	

Sampler's Name		Mobile #	
Sampler's Signature		Date/Time	15-Nov-22

END OF REPORT

Acute Toxicity Test Results

Samples collected November 21, 2022

Final Report

December 6, 2022

Submitted to: **Teck Coal Ltd.**
Sparwood, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates					
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation	*Daphnia magna* 20 mg/L antiscalant test initiation
F2_BPO_WG_2022-11-21_N / 2223-0884-01	21-Nov-22 at 1100h	22-Nov-22 at 0855h	22-Nov-22 at 1410h	22-Nov-22 at 1500h	22-Nov-22 at 1500h	-
F2_BPO_WG_2022-11-21_N-AS / 2223-0884-02	21-Nov-22 at 1101h	22-Nov-22 at 0855h	-	-	-	22-Nov-22 at 1500h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
F2_BPO_WG_2022-11-21_N	8.8°C	1076	400
F2_BPO_WG_2022-11-21_N-AS	8.8°C	1076	400

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)
- *Daphnia magna* 48-h single concentration screening test (conducted with 20 mg/L antiscalant)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample			
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* 20 mg/L antiscalant
F2_BPO_WG_2022-11-21_N	100	100	100	-
F2_BPO_WG_2022-11-21_N-AS	-	-	-	100

Sample ID	Percent Immobility in 100 (% v/v)		
	Daphnia magna 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* 20 mg/L antiscalant
F2_BPO_WG_2022-11-21_N	0	7	-
F2_BPO_WG_2022-11-21_N-AS	-	-	0

Precipitate observations

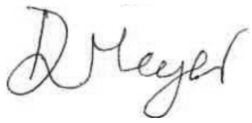
Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
F2_BPO_WG_2022-11-21_N	Rainbow trout	None	None
	Daphnia magna	Surficial precipitate observed in the 20-degree test	None
F2_BPO_WG_2022-11-21_N-AS	*Daphnia magna*	None	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	4.5 (4.1-5.0) g/L KCl[1]	6.8 (6.5-7.1) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.7 (2.8-4.9) g/L KCl	6.2 (5.3-7.2) g/L NaCl
Reference toxicant CV	9.1%	5.1%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, November 8, 2022; [2] Test Date November 21, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation



Report By:
Daisy Meyer, BSc
Laboratory Biologist



Reviewed By:
Emma Pedersen, BSc
Biologist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Control/dilution water for antiscalant test	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L), Na_2SeO_4 (2 µg Se/L) and 20 mg/L antiscalant
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14 with February 2016 amendments
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14 with February 2016 amendments
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC 164 Reference 2223-0884-01 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022/11/22	1410 *	ML/BS	7	MM
1	2022/11/23	0910	MS	-	MC
2	2022/11/24	0900	MS	-	MC
3	2022/11/25	0845	MS	-	MAF
4	2022/11/26	1025	MS/MS	7	N/A

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 7.5
Initial EC (µS/cm): 2110
Salinity (ppt): 4

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L : **yes/no**

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	9.7	8.6			
Temp (°C) of 100%	16				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: **5.5-8.5**)								
Day 0	8.2	7.8						
Day 4	8.2	8.4						
EC (uS/cm)								
Day 0	476	2036						
Day 4	430	1888						
DO (mg/L) (**70-100% saturation at test temp.**)								
Day 0	8.8	8.6						
Day 4	8.6	8.6						
Temperature (°C) (range: **14-16°C**)								
Day 0	15	16						
Day 4	16	16						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.8	0.3
2	3.8	0.3
3	4.2	0.4
4	4.2	0.5
5	4.0	0.5
6	4.4	0.5
7	3.4	0.5
8	3.5	0.3
9	3.3	0.3
10	3.7	0.3

Loading Density (g/L): 0.2
(must be ≤0.5 g/L)
Mean Length (cm): 4.0
Length Range (cm): 3.5-4.4
Mean Weight (g): 0.4
(Must be ≥0.3g)
Weight Range: (g): 0.3-0.7

Test Organism Information

Batch 20220928TR
Source LSL
Tank # 3
Days Held at 15± 2°C 55
(must be ≥14 days) 55 SS
Percent stock mortality 0.18
(7 days prior to test, must be <2%)
Test Volume (L) 18

Comments : 96 hrs no ppt.

Reviewed By: SS Date Reviewed: 2022/12/01

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS Client TEC 164 Reference 2223-0884-01

Test Log

Sample Information

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/11/22	1500	DM/KO	2	KM
1	2022/11/23	0835	AG	-	KC
2	2022/11/24	0910	KO/AI	2	KC
	CTLA	CTLB	CTLC	100A	100B	100C
Lab Code	~~ctl~~	~~6.25~~	~~12.5~~	~~25~~	~~50~~	~~100~~ DM

Initial pH: 7.5
Initial EC (µS/cm): 2110
Salinity (ppt): 4

day

pH (units) (range: 6.0-8.5)

day										
0	7.8	7.8	7.8	7.9	7.9	7.9				
2	8.0	8.0	8.0	8.3	8.2	8.2				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	360	378	379	1948	2130	2140				
2	363	379	380	1945	1983	1969				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.9	7.7	7.9				
2	~~7.9~~	7.9	7.9	7.9	7.9	~~7.9~~				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	20	20	20				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10(I)	10	10(I)				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar wed D3 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 36
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0%
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 9.2
Temperature (°C) of sample prior to aeration: 19
DO % of sample prior to aeration: 114 %
Is aeration required (<40% or >100%)? (Yes or No)
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20min
Filtered with 110um screen prior to testing (Yes or No)
Hardness (mg $CaCO_3$/L) of 100% : 1076
Is hardness adjustment required (<25 mg $CaCO_3$/L)? (Yes or No)
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 400

Dilution Water
Pail label / preparation date 3:11/18
Hardness of dilution water (mg/L) 198

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Comments/Observations:
0 hr NO ppt
48 hr Surficial ppt

Reviewed By: SS Date Reviewed: 20221121O1

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC 164 Reference 2223-0884-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/11/22	1500	DM/KO	2	KM
1	2022/11/23	0830	AG	-	JC
2	2022/11/24	0900	KO/AI	2	JC

Sample Information

Initial pH: 7.5
Initial EC (µS/cm): 2110
Salinity (ppt): 4

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	7.8	7.8	7.8	7.9	7.9	7.9				
2	8.0	8.0	8.0	8.3	8.3	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	379	380	379	2140	2140	2140				
2	374	381	382	1979	2110	2100				

DO (mg/L) (**40-100% saturation at test temp.**)

0	DM 9.4	DM 9.4	DM 9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	DM 12	DM 12	DM 12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (l, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar wed DM E3/E1 Jar(s) mortality 7 days prior to test (must be ≤25%) DM 0.5%

QA (previous month)
Days to first brood (≤12 days) 9
Average number of young produced (≥15 young) 39
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0%
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 10.7
DO % of sample prior to aeration: 114
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20min
Hardness (mg $CaCO_3$/L) of 100% : 1076
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 400

Temperature (°C) of sample prior to aeration: 12
Is aeration required (<40% or >100%)? **Yes or No**
Filtered with 110um screen prior to testing **Yes or (No)**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or (No)**

Dilution Water
Pail label / preparation date 3:11/18
Hardness of dilution water (mg/L) 148

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

Comments/Observations:
0 hr No ppt
48 hr no ppt

Reviewed By: SS Date Reviewed: 2022/12/01

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS 20 Client TEC 164 Reference ~~2223-0883-02~~ 2223-0884-02

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/11/22	1500	DM/KO	2	lm
1	2022/11/23	0835	AG	-	JC
2	2022/11/24	0925	KO/AI	2	JC

Sample Information

Initial pH:	7.5
Initial EC (µS/cm):	2110
Salinity (ppt):	4

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	7.8	7.8	7.8	7.9	8.0	8.0				
2	8.1	8.1	8.1	8.5	8.4	8.4				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	382	382	382	1956	2120	2140				
2	373	396	396	1702	2120	2060				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	8.1	8.1	8.1				
2	8.1	8.1	8.1	8.1	8.1	8.1				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	19	19	19				
2	19	19	19	19	19	19				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar wed 04 Jar(s) mortality 7 days prior to test (must be ≤25%) 5%

QA (previous month)

Days to first brood (≤12 days) 7

Average number of young produced (≥15 young) 36

Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - (must be ≤10%) 0%

Sample

DO (mg/L) of sample prior to aeration: 9.6

Temperature (°C) of sample prior to aeration: 19

DO % of sample prior to aeration: 114

Is aeration required (<40% or >100%)? (Yes) or No

Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20min

Filtered with 110um screen prior to testing Yes or (No)

Hardness (mg $CaCO_3$/L) of 100% : 1076

Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —

Alkalinity of 100% sample (mg $CaCO_3$/L): 4100

Dilution Water

Pail label / preparation date 3.11/16

Hardness of dilution water (mg/L) 148

Antiscalant

Final Concentration in Sample: 20 mg/L

Volume of sample: 500 ml (mL) Volume of antiscalant: 158 µL

Comments/Observations:

0 hr No ppt

48 hr noppt

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Reviewed By: SS Date Reviewed: 2022/12/01

APPENDIX C – Chain-of-custody form

Teck

COC ID: FSF NAUTILUS 112122 **TURNAROUND TIME:** Regular (default) **RUSH:** NO

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name	F2 SRF			Lab Name	Nautilus			Report Format / Distribution		Excel	PDF	EDD
EQuIS Facility Code	FSF			Lab Contact	Jacklyn Poole			Email 1:	DL-EVO-SRF-LAB@teck.com	X	X	X
Project Manager	Brett Mason			Email	jacklyn@nautilusenvironmental.ca			Email 2:	Cole.Macgregor@teck.com	X	X	X
Email	brett.mason@teck.com			Address	10823 27th Street SE			Email 3:	TeckCoal@equisonline.com			X
Address	RR1 HWY 3							Email 4:				
City	Sparwood	Province	BC	City	Calgary	Province	AB	Email 5:				
Postal Code	V0B 2G0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada	Email 6:				
Phone Number	250 425 4837			Phone Number	403 253 7121			PO number	859537			

SAMPLE DETAILS

2022/11/22
08:55
Manitoulin
JC/SRS
3x20L carboys, 2x10L carboys
5x1L bottles
NoS/NoI
Good Condition

ANALYSIS REQUESTED

Please indicate Y below if Filtered

Sample ID 2223-0884	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	ANALYSIS: 48hr Daphnia magna Acute Toxicity 20C NAUT_48hr_DM_PF	48hr Daphnia magna Acute Toxicity 10C NAUT_48hr_DM_PF_MOD10	48hr Daphnia magna Acute Toxicity 20mg/L Antiscalant NAUT_48hr_DM_PF_20AS	96hr Rainbow Trout Acute Toxicity NAUT_96hr_RT_PF	48hr Daphnia magna Acute Toxicity 15C NAUT_48hr_DM_PF_MOD15										
F2_BPO_WG_2022-11-21_N -01	F2_BPO	WG		2022-11-21	11:00	G	9	2 ✓	2 ✓		5 ✓		8.8°C									
F2_BPO_WG_2022-11-21_N-AS -02	F2_BPO	WG		2022-11-21	11:01	G	1			1 ✓			↓									

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	Date	Time	ACCEPTED BY/AFFILIATION	Date	Time
	Nick Lagorde - Teck	21-Nov-22				
	[signature]	1445				

SERVICE REQUEST (rush - subject to availability)					
Regular (default)	X	Sampler's Name	E Darswell	Mobile #	
Priority (2-3 business days) - 50% surcharge					
Emergency (1 Business Day) - 100% surcharge		Sampler's Signature	[signature]	Date/Time	21-Nov-22
For Emergency <1 Day, ASAP or Weekend - Contact Nautilus					

END OF REPORT

Acute Toxicity Test Results

Samples collected November 28, 2022

Final Report

December 15, 2022

Submitted to: **Teck Coal Ltd.**
Sparwood, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates					
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation	*Daphnia magna* antiscalant test initiation
EV_EC1_WS_2022-11-28_N-SRF / 2223-0936-01	28-Nov-22 at 1000h	29-Nov-22 at 1030h	30-Nov-22 at 1420h	29-Nov-22 at 1425h	29-Nov-22 at 1425h	-
EV_EC1_WS_2022-11-28_N-SRF-AS / 2223-0936-02	28-Nov-22 at 1001h	29-Nov-22 at 1030h	-	-	-	29-Nov-22 at 1430h
EV_ECOUT_WS_2022-11-28_N-SRF / 2223-0936-03	28-Nov-22 at 1220h	29-Nov-22 at 1030h	30-Nov-22 at 1425h	29-Nov-22 at 1440h	29-Nov-22 at 1435h	-
EV_ECOUT_WS_2022-11-28_N-SRF-AS / 2223-0936-04	28-Nov-22 at 1221h	29-Nov-22 at 1030h	-	-	-	29-Nov-22 at 1445h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
EV_EC1_WS_2022-11-28_N-SRF	-3.3°C	1059	452
EV_EC1_WS_2022-11-28_N-SRF-AS	-3.3°C	1059	452
EV_ECOUT_WS_2022-11-28_N-SRF	-4.0°C	1156	396
EV_ECOUT_WS_2022-11-28_N-SRF-AS	-4.0°C	1156	396

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)
- *Daphnia magna* 48-h single concentration screening test (conducted with 5 mg/L antiscalant)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample			
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
EV_EC1_WS_2022-11-28_N-SRF	100	100	100	-
EV_EC1_WS_2022-11-28_N-SRF-AS	-	-	-	100
EV_ECOUT_WS_2022-11-28_N-SRF	100	100	100	-
EV_ECOUT_WS_2022-11-28_N-SRF-AS	-	-	-	100

Sample ID	Percent Immobility in 100 (% v/v)		
	Daphnia magna 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
EV_EC1_WS_2022-11-28_N-SRF	0	10	-
EV_EC1_WS_2022-11-28_N-SRF-AS	-	-	0
EV_ECOUT_WS_2022-11-28_N-SRF	0	3	-
EV_ECOUT_WS_2022-11-28_N-SRF-AS	-	-	3

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
EV_EC1_WS_2022-11-28_N-SRF	Rainbow trout	Precipitate observed on the test vessel	None
	Daphnia magna	Surficial precipitate observed in 10- and 20-degree tests; precipitate observed on test vessel in 20-degree test	None
EV_EC1_WS_2022-11-28_N-SRF-AS	*Daphnia magna*	None	None
EV_ECOUT_WS_2022-11-28_N-SRF	Rainbow trout	Precipitate observed on the test vessel	None
	Daphnia magna	Surficial precipitate observed in 10- and 20-degree tests; precipitate observed on test vessel in 20-degree test	None
EV_ECOUT_WS_2022-11-28_N-SRF-AS	*Daphnia magna*	Surficial precipitate observed	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	3.6 (3.3-4.0) g/L KCl[1]	6.5 (6.2-6.7) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.8 (3.0-4.8) g/L KCl	6.2 (5.3-7.2) g/L NaCl
Reference toxicant CV	7.8%	5.1%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, November 25, 2022; [2] Test Date November 30, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation



Report By:
Lily Cole, BSc
Laboratory Biologist



Reviewed By:
Leila Oosterbroek, P Biol
Environmental Scientist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Control/dilution water for antiscalant test	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L), Na_2SeO_4 (2 µg Se/L) and 5 mg/L antiscalant
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14 with February 2016 amendments
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14 with February 2016 amendments
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC164 Reference 2223-0936-01 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022-11-30	1490 *	BS/ML	7	AM
1	2022-12-01	0900	MS	-	MAE
2	2022-12-02	0940	MS	-	MAE
3	2022-12-03	0920	MS	-	EP
4	2022-12-04	0945	KM/ML	7	KO

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 7.9
Initial EC (µS/cm): 1771
Salinity (ppt): 2

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L: **yes/no**

	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
Preaeration time					
DO(mg/L) of 100%	8.6	8.6			
Temp (°C) of 100%	16				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	7.9	8.0						
Day 4	8.2	8.2						
EC (uS/cm)								
Day 0	402	1744						
Day 4	383	1594						
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	8.8	8.6						
Day 4	8.6	8.8						
Temperature (°C) (range: 14-16°C)								
Day 0	15	16						
Day 4	15	15						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.6	0.4
2	3.8	0.4
3	3.5	0.3
4	3.9	0.4
5	3.7	0.4
6	4.1	0.5
7	3.7	0.4
8	3.7	0.4
9	3.6	0.3
10	4.0	0.5

Loading Density (g/L): 0.2 (must be ≤0.5 g/L)
Mean Length (cm): 3.8
Length Range (cm): 3.5-4.1
Mean Weight (g): 0.4 (Must be ≥0.3g)
Weight Range: (g): 0.3-0.5

Test Organism Information

Batch 20221028TR
Source Smoky Trout Farm
Tank # 11
Days Held at 15± 2°C 33 (must be ≥14 days)
Percent stock mortality 0.43 (7 days prior to test, must be <2%)
Test Volume (L) 18

Comments:
96 hr: PPT S.des ; bottom

Reviewed By: SS Date Reviewed: 20221121108

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC164 Reference 2223-0936-03 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022-11-30	1425 *	BS/ML	7	AM
1	2022-12-01	0900	MS	-	MMF
2	2022-12-02	0940	MS	-	MMF
3	2022-12-03	0920	YC	-	EP
4	2022-12-04	0950	Kerm/ML	7	KO

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 7.6
Initial EC (µS/cm): 1893
Salinity (ppt): 2

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L: **yes/no**

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	8.6	8.6			
Temp (°C) of 100%	16				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: **5.5-8.5**)								
Day 0	8.2	7.7						
Day 4	8.2	8.1						
EC (uS/cm)								
Day 0	421	1825						
Day 4	390	1577						
DO (mg/L) (**70-100% saturation at test temp.**)								
Day 0	8.8	8.6						
Day 4	8.6	8.6						
Temperature (°C) (range: **14-16°C**)								
Day 0	15	16						
Day 4	15	15						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.5	0.3
2	~~3.1~~ 4.1	0.5
3	3.8	0.4
4	3.9	0.4
5	3.7	0.3
6	4.0	0.4
7	4.0	0.5
8	3.9	0.5
9	3.9	0.5
10	3.7	0.3

Loading Density (g/L): 0.2 (must be ≤0.5 g/L)
Mean Length (cm): 3.9
Length Range (cm): 3.5-4.1
Mean Weight (g): 0.4 (Must be ≥0.3g)
Weight Range: (g): 0.3-0.5

Test Organism Information

Batch 20221028TR
Source Smoky Trout Farm
Tank # 11
Days Held at 15± 2°C 33 (must be ≥14 days)
Percent stock mortality 0.43 (7 days prior to test, must be <2%)
Test Volume (L) 17.5 ~~18~~ mL

Comments :
96 hr: PPT sides & bottom

Reviewed By: SS Date Reviewed: 20221210 8

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS Client TEC 164 Reference 2223-0936-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/11/29	1425	KO/DM	2	RC
1	2022/11/30	0740	KO	-	MAF
2	2022/12/01	0810	KO/CC	2	DM

Sample Information

Initial pH: 7.9
Initial EC (µS/cm): 1771
Salinity (ppt): 2

Lab Code	CTL A	CTL B	CTL C	100 A	100 B	100 C

pH (units) (range: 6.0-8.5)

day										
0	7.9	8.0	7.9	8.1	8.1	8.1				
2	8.0	8.0	8.0	8.0	8.0	8.0				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	328	348	349	1745	1846	1866				
2	359	359	355	1655	1740	1764				

DO (mg/L) (**40-100% saturation at test temp.**)

0	8.1	8.1	8.1	8.2	8.2	8.2				
2	8.1	8.1	8.1	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	19	19	19	18	18	18				
2	19	19	19	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10(SI)	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar wed E1 Jar(s) mortality 7 days prior to test (must be ≤25%) 11%

QA (previous month)
Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 28
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0%
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 9.4 Temperature (°C) of sample prior to aeration: 18
DO % of sample prior to aeration: 115 Is aeration required (<40% or >100%)? (Yes) or No
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20min Filtered with 110um screen prior to testing Yes or (No)
Hardness (mg $CaCO_3$/L) of 100% : 1059 Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 452

Dilution Water
Pail label / preparation date 6:11/23
Hardness of dilution water (mg/L) 150

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C 3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C 3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C

Comments/Observations:
0 HR NO PA
48 HRS Surficial ppt + ppt on jar

Reviewed By: SS Date Reviewed: 20221121108

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC 164 Reference 2223-0936-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/11/29	1425	KO/DM	2	ZC
1	2022/11/30	0945	AG	-	MAF
2	2022/12/01	0815	KO/CS	2	DM

Sample Information

Initial pH: 7.9
Initial EC (µS/cm): 1771
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	8.1	8.0	7.9	8.1	8.1	8.1				
2	8.0	8.0	8.0	8.2	8.2	8.2				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	345	348	348	1784	1854	1866				
2	387	361	354	1735	1817	1832				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar med DI
Jar(s) mortality 7 days prior to test (must be ≤25%) 10%

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 33
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0%
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 11.0
Temperature (°C) of sample prior to aeration: 11
DO % of sample prior to aeration: 115
Is aeration required (<40% or >100%)? **Yes or No**
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20min
Filtered with 110um screen prior to testing **Yes or No**
Hardness (mg $CaCO_3$/L) of 100% : 1059
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 452

Dilution Water
Pail label / preparation date 6:11/23
Hardness of dilution water (mg/L) 150

DO Levels (40-100% saturation) - corrected for altitude -
4.1 to 10.3 mg/L at 8°C
4.0 to 10.0 mg/L at 9°C
3.9 to 9.8 mg/L at 10°C
3.8 to 9.6 mg/L at 11°C
3.7 to 9.4 mg/L at 12°C

Comments/Observations:
0 HR No ppt
48 HRS no ppt surficial ppt KO

Reviewed By: SS Date Reviewed: 2022/12/08

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS 5 Client TEC 164 Reference 2223-0936-02

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/11/29	1430	KO/DM	2	DC
1	2022/11/30	0800	KO	-	mnf
2	2022/12/01	0820	KO/CC	2	DM

Sample Information

Initial pH: 7.9
Initial EC (µS/cm): 1771
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	7.8	7.9	7.9	8.1	8.1	8.1				
2	7.8	7.9	7.9	8.4	8.4	8.4				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	354	354	347	1798	1854	1853				
2	365	362	357	1762	1838	1834				

DO (mg/L) (**40-100% saturation at test temp.**)

0	8.1	8.1	8.1	8.2	8.2	8.2				
2	7.9	7.9	7.9	8.1	8.1	8.1				

Temperature (°C) (range: **18-22 °C**)

0	19	19	19	18	18	18				
2	20	20	20	19	19	19				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	9*	10	10				
2	10	10	10	9	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar Wed 05 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%.

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 33
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0%.

Sample

DO (mg/L) of sample prior to aeration: 9.8
Temperature (°C) of sample prior to aeration: 18
DO % of sample prior to aeration: 120
Is aeration required (<40% or >100%)? (Yes) or No
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20min
Filtered with 110um screen prior to testing Yes or (No)
Hardness (mg $CaCO_3$/L) of 100% : 1059
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 452

Dilution Water
Pail label / preparation date 6.11/23
Hardness of dilution water (mg/L) 150

Antiscalant
Final Concentration in Sample: 5mg/L
Volume of sample: 500mL Volume of antiscalant: 39.5mL

* one daphnid stuck on side - do not include in mortality

Comments/Observations:
0 HR no ppt
48 HRS no ppt

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Reviewed By: SS Date Reviewed: 20221121108

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS Client TEC 164 Reference 2223-0936-03

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/11/29	1435	KO/DM	2	ZC
1	2022/11/30	0800	KO	-	MAF
2	2022/12/01	0825	KO/CC	2	DM

Sample Information

Initial pH:	7.6
Initial EC (µS/cm):	1893
Salinity (ppt):	2

Lab Code	CTL A	CTL B	CTL C	100 A	100 B	100 C				

pH (units) (range: 6.0-8.5)

day										
0	8.0	7.9	8.0	7.9	7.9	7.9				
2	7.9	8.0	8.0	8.0	8.0	8.0				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	362	351	348	1952	1923	1940				
2	356	357	353	1681	1778	1783				

DO (mg/L) (**40-100% saturation at test temp.**)

0	8.1	8.1	8.1	8.2	8.2	8.2				
2	8.1	8.1	8.1	8.1	8.1	8.1				

Temperature (°C) (range: **18-22 °C**)

0	19	19	19	18	18	18				
2	19	19	19	19	19	19				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10(I)	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar Med D5/D2 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)

Days to first brood (≤12 days) 8

Average number of young produced (≥15 young) 33

Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - 0%

(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 9.6

Temperature (°C) of sample prior to aeration: 18

DO % of sample prior to aeration: 117

Is aeration required (<40% or >100%)? (Yes) or No

Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20min

Filtered with 110um screen prior to testing Yes or (No)

Hardness (mg $CaCO_3$/L) of 100% : 1156

Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —

Alkalinity of 100% sample (mg $CaCO_3$/L): 396

Dilution Water

Pail label / preparation date 6:11/23

Hardness of dilution water (mg/L) 150

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Comments/Observations:

0 HR NO ppt

48 HRS Surficial ppt + ppt on jar

Reviewed By: SS Date Reviewed: 2022/12/08

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC 164 Reference 2223-0936-03

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/11/29	1440	KO/DM	2	ZC
1	2022/11/30	0755	AG	-	MAF
2	2022/12/01	0825	KO/CC	2	OM

Sample Information

Initial pH: 7.6
Initial EC (µS/cm): 1893
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	7.9	7.9	7.9	7.8	7.8	7.9				
2	8.1	8.1	8.1	8.2	8.2	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	355	352	350	1876	1919	1937				
2	359	355	353	1833	1873	1864				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.6	9.6	9.6				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar Wed D5 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 6
Average number of young produced (≥15 young) 33
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0%
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 11.6
Temperature (°C) of sample prior to aeration: 10
DO % of sample prior to aeration: 114
Is aeration required (<40% or >100%)? **Yes or No**
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20min
Filtered with 110um screen prior to testing **Yes or No**
Hardness (mg $CaCO_3$/L) of 100% : 1156
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 396

Dilution Water
Pail label / preparation date 6:11/23
Hardness of dilution water (mg/L) 150

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

Comments/Observations:
0 HR No ppt
48 HRS Surficial ppt

Reviewed By: SS Date Reviewed: 2022/12/08

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS 5 Client TEC 164 Reference 2223-0936-04

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/11/29	1445	KO/DM	2	AC
1	2022/11/30	0740	KO	-	MAE
2	2022/12/01	0930	KO/KO/AC	2	DM

Sample Information

Initial pH: 7.6
Initial EC (µS/cm): 1893
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	7.9	7.9	7.9	7.8	7.9	7.9				
2	8.1	8.0	8.0	8.3	8.3	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	364	352	348	1835	1911	1923				
2	374	355	348	1768	1822	1833				

DO (mg/L) (**40-100% saturation at test temp.**)

0	8.1	8.1	8.1	8.2	8.2	8.2				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	19	19	19	18	18	18				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10(I)				
2	10	9*	10	10	10	10(I)				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar med D3 Jar(s) mortality 7 days prior to test (must be ≤25%) 10%

QA (previous month)

Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 33
Were test treatments randomized on test tray? (Yes) No

Control Validity Criteria

Mean % mortality at 48 hours - (must be ≤10%) 0%

Sample

DO (mg/L) of sample prior to aeration: 9.9
DO % of sample prior to aeration: 121
Duration of aeration (37.5 +/- 12.5 mL/min/L): 20min
Hardness (mg $CaCO_3$/L) of 100% : 1156
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 396

Temperature (°C) of sample prior to aeration: 18
Is aeration required (<40% or >100%)? **Yes or No**
Filtered with 110um screen prior to testing **Yes or No**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Dilution Water

Pail label / preparation date 6.11/23
Hardness of dilution water (mg/L) 150

Antiscalant

Final Concentration in Sample: 5mg/L
Volume of sample: 200mL Volume of antiscalant: 39.5ML

* one shock to jar - do not incl. in mortality

Comments/Observations:
0 HR NO ppt
48 HRS Surficial ppt

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Reviewed By: SS Date Reviewed: 2022/12/08

APPENDIX C – Chain-of-custody form

Teck

COC ID: EVO NAUTILUS 112822 | TURNAROUND TIME: Regular (default) | RUSH: NO

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name	Elkview Operation			Lab Name	Nautilus			Report Format / Distribution		Excel	PDF	EDD
EQuIS Facility Code	EVO			Lab Contact	Jacklyn Poole			Email 1:	DL-EVO-SRF-LAB@teck.com	X	X	X
Project Manager	Brett Mason			Email	jacklyn@nautilusenvironmental.ca			Email 2:	Cole.Macgregor@teck.com	X	X	X
Email	brett.mason@teck.com			Address	10823 27th Street SE			Email 3:	TeckCoal@equisonline.com			X
Address	RR1 HWY 3							Email 4:				
City	Sparwood	Province	BC	City	Calgary	Province	AB	Email 5:				
Postal Code	V0B 2G0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada	Email 6:				
Phone Number	250 425 4837			Phone Number	403 253 7121			PO number	859537			

SAMPLE DETAILS / **ANALYSIS REQUESTED**

2022/11/29
10:30
Manitoulin
JC/AG/SRS
16x10Learboys
10x1Lbottles
NoS/NoI
Good Condition

Please indicate Y below if Filtered

Sample ID 2223-0936	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	NAUT_48hr_DM_PF 48hr Daphnia magna Acute Toxicity 20C	NAUT_48hr_DM_PF_MOD10 48hr Daphnia magna Acute Toxicity 10C	NAUT_48hr_DM_PF_5AS 48hr Daphnia magna Acute Toxicity 5mg/L Antiscalant	NAUT_96hr_RT_PF 96hr Rainbow Trout Acute Toxicity	NAUT_48hr_DM_PF_MOD15 48hr Daphnia magna Acute Toxicity 15C	
EV_EC1_WS_2022-11-28_N-SRF -01	EV_EC1	WS		2022-11-28	10:00	G	12	2	2		8		-3.5°C
EV_EC1_WS_2022-11-28_N-SRF-AS -02	EV_EC1	WS		2022-11-28	10:01	G	1			1			↓
EV_ECOUT_WS_2022-11-28_N-SRF -03	EV_ECOUT	WS		2022-11-28	12:20	G	12	2	2		8		-4.0°C
EV_ECOUT_WS_2022-11-28_N-SRF-AS -04	EV_ECOUT	WS		2022-11-28	12:21	G	1			1			↓

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	Date	Time	ACCEPTED BY/AFFILIATION	Date	Time
	[signature] Jeffrey	28-Nov-22				

SERVICE REQUEST (rush - subject to availability)					
Regular (default)	X	Sampler's Name	ABlole	Mobile #	
Priority (2-3 business days) - 50% surcharge					
Emergency (1 Business Day) - 100% surcharge		Sampler's Signature	[signature]	Date/Time	28-Nov-22
For Emergency <1 Day, ASAP or Weekend - Contact Nautilus					

END OF REPORT

Acute Toxicity Test Results

Samples collected November 28, 2022

Final Report

December 20, 2022

Submitted to: **Teck Coal Ltd.**
Sparwood, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates					
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation	*Daphnia magna* 20 mg/L antiscalant test initiation
F2_BPO_WG_2022-11-28_N/ 2223-0937-01	28-Nov-22 at 0810h	29-Nov-22 at 1030h	30-Nov-22 at 1430h	29-Nov-22 at 1450h	29-Nov-22 at 1445h	-
F2_BPO_WG_2022-11-28_N-AS/ 2223-0937-02	28-Nov-22 at 0811h	29-Nov-22 at 1030h	-	-	-	29-Nov-22 at 1450h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
F2_BPO_WG_2022-11-28_N	-1.4°C	926	336
F2_BPO_WG_2022-11-28_N-AS	-1.4°C	926	336

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)
- *Daphnia magna* 48-h single concentration screening test (conducted with 20 mg/L antiscalant)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample			
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* 20 mg/L antiscalant
F2_BPO_WG_2022-11-28_N	100	100	100	-
F2_BPO_WG_2022-11-28_N-AS	-	-	-	100

Sample ID	Percent Immobility in 100 (% v/v)		
	Daphnia magna 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* 20 mg/L antiscalant
F2_BPO_WG_2022-11-28_N	0	0	-
F2_BPO_WG_2022-11-28_N-AS	-	-	0

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
F2_BPO_WG_2022-11-28_N	Rainbow trout	Precipitate observed on the test vessel	None
	Daphnia magna	Surficial precipitate observed when conducted at 20°C	None
F2_BPO_WG_2022-11-28_N-AS	*Daphnia magna*	None	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	3.6 (3.3-4.0) g/L KCl[1]	6.5 (6.2-6.7) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.8 (3.0 -4.8) g/L KCl	6.2 (5.3-7.2) g/L NaCl
Reference toxicant CV	7.8%	5.1%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, November 25, 2022; [2] Test Date November 30, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation

Report By:
Maryam Lo, BSc
Laboratory Biologist

Reviewed By:
Emma Pedersen, BSc
Laboratory Biologist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Control/dilution water for antiscalant test	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L), Na_2SeO_4 (2 µg Se/L) and 20 mg/L antiscalant
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14 with February 2016 amendments
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14 with February 2016 amendments
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC164 Reference 2223-0937-01 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022-11-30	1430 *	BS/ML	7	AM
1	2022-12-01	0900	MJ	-	MAF
2	2022-12-02	0945	MS	-	MAF
3	2022-12-03	0920	YC	-	EF
4	2022-12-04	0950	Kam/ML	7	KO

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 7.6
Initial EC (µS/cm): 1740
Salinity (ppt): 2

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L (yes/no)

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	9.1	8.8			
Temp (°C) of 100%	16				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	8.1	7.8						
Day 4	7.9	8.2						
EC (uS/cm)								
Day 0	396	1883						
Day 4	387	1640						
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	8.8	8.8						
Day 4	8.6	8.6						
Temperature (°C) (range: 14-16°C)								
Day 0	15	15						
Day 4	16	16						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.7	0.4
2	3.0	0.2
3	3.6	0.3
4	3.6	0.3
5	3.5	0.3
6	3.7	0.4
7	4.0	0.5
8	3.4	0.3
9	3.6	0.4
10	3.3	0.2

Loading Density (g/L): 0.2 (must be ≤0.5 g/L)
Mean Length (cm): 3.5
Length Range (cm): 3.0-4.0
Mean Weight (g): 0.3 (Must be ≥0.3g)
Weight Range: (g): 0.2-0.5

Test Organism Information

Batch 20221028TR
Source Smoky Trout Farm
Tank # 11
Days Held at 15± 2°C 33 (must be ≥14 days)
Percent stock mortality 0.43 (7 days prior to test, must be <2%)
Test Volume (L) 18

Comments :
96 hr: PPT sides & bottom

Reviewed By: SS Date Reviewed: 20221121108

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS Client TEC 164 Reference 2223-0937-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/11/29	1445	KO/DM	2	ZC
1	2022/11/30	0910	nG	-	mat
2	2022/12/01	0850	YCICCIRO	2	DM

Sample Information

Initial pH: 7.6
Initial EC (µS/cm): 1740
Salinity (ppt): 2

Lab Code	CTL A	CTL B	CTL C	100 A	100 B	100 C				

pH (units) (range: 6.0-8.5)

day										
0	7.8	7.9	7.9	8.0	8.0	8.0				
2	8.1	8.1	8.1	8.4	8.4	8.4				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	356	348	347	1819	1917	1927				
2	382	364	362	1763	1858	1867				

DO (mg/L) (**40-100% saturation at test temp.**)

0	8.1	8.1	8.1	8.2	8.2	8.2				
2	8.1	8.1	8.1	8.1	8.1	8.1				

Temperature (°C) (range: **18-22 °C**)

0	19	19	19	18	18	18				
2	19	19	19	19	19	19				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar wed 05 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)

Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 33
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - 0%
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 9.8
DO % of sample prior to aeration: 120
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20min
Hardness (mg $CaCO_3$/L) of 100% : 926
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 336

Temperature (°C) of sample prior to aeration: 18
Is aeration required (<40% or >100%)? (Yes) or No
Filtered with 110um screen prior to testing Yes or (No)
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)

Dilution Water

Pail label / preparation date 6.11/23
Hardness of dilution water (mg/L) 150

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Comments/Observations:

0 HR No ppt
48 HRS ~~no ppt~~ "surficial ppt

Reviewed By: SS Date Reviewed: 2022/12/10'08

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC 164 Reference 2223-0937-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/11/29	1450	KO/DM	2	KC
1	2022/11/30	0755	AG	-	MAF
2	2022/12/01	0850	KC/CC/LC	2	DM

Sample Information

Initial pH: 7.6
Initial EC (µS/cm): 1740
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	7.9	7.9	7.9	8.0	8.0	8.0				
2	8.1	8.1	8.1	8.4	8.4	8.4				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	361	354	351	1842	1918	1946				
2	332	346	349	1785	1878	1915				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (l, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar: med D5 Jar(s) mortality 7 days prior to test (must be ≤25%): 0%

QA (previous month)
Days to first brood (≤12 days): 6
Average number of young produced (≥15 young): 33
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%): 0%

Sample
DO (mg/L) of sample prior to aeration: 11.4
DO % of sample prior to aeration: 121
Duration of aeration (37.5 +/- 12.5 mL/min/L): 20 min
Hardness (mg $CaCO_3$/L) of 100% : 926
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L): —
Alkalinity of 100% sample (mg $CaCO_3$/L): 336

Temperature (°C) of sample prior to aeration: 12
Is aeration required (<40% or >100%)? (Yes) or No
Filtered with 110um screen prior to testing Yes or (No)
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)

Dilution Water
Pail label / preparation date: 6:11/23
Hardness of dilution water (mg/L): 150

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

Comments/Observations:
0 HR NO ppt
48 HRS no ppt

Reviewed By: SS Date Reviewed: 2022/12/08

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS 20 Client TEC 164 Reference 2223-0937-02

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/11/29	1450	KO/DM	2	JC
1	2022/11/30	0745	KO	-	MAF
2	2022/12/01	0855	JC/CC/KO	2	DM

Sample Information

Initial pH: 7.6
Initial EC (µS/cm): 1740
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	7.8	7.8	7.9	7.9	7.9	7.9				
2	8.0	8.0	8.0	8.4	8.4	8.4				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	364	354	352	1878	1935	1943				
2	360	364	361	1805	1885	1880				

DO (mg/L) (**40-100% saturation at test temp.**)

0	8.1	8.1	8.1	8.2	8.2	8.2				
2	8.1	8.1	8.1	8.1	8.1	8.1				

Temperature (°C) (range: **18-22 °C**)

0	19	19	19	19	18	18				
2	19	19	19	19	19	19				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar Wed E4 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 28
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0%

Sample
DO (mg/L) of sample prior to aeration: 9.8
DO % of sample prior to aeration: 119
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20min
Hardness (mg $CaCO_3$/L) of 100% : 926
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 336

Temperature (°C) of sample prior to aeration: 18
Is aeration required (<40% or >100%)? (Yes) or No
Filtered with 110um screen prior to testing Yes or (No)
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)

Dilution Water
Pail label / preparation date 6.11/23
Hardness of dilution water (mg/L) 150

Antiscalant
Final Concentration in Sample: 20mg/L
Volume of sample: 500mL Volume of antiscalant: 156 µL

Comments/Observations:
0 HR No ppt
48 HRS no ppt

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Reviewed By: SS Date Reviewed: 20221121108

APPENDIX C – Chain-of-custody form

Teck

COC ID: FSF NAUTILUS 112822 | TURNAROUND TIME: Regular (default) | RUSH: NO

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name	F2 SRF			Lab Name	Nautilus			Report Format / Distribution		Excel	PDF	EDD
EQuIS Facility Code	FSF			Lab Contact	Jacklyn Poole			Email 1:	DL-EVO-SRF-LAB@teck.com	X	X	X
Project Manager	Brett Mason			Email	jacklyn@nautilusenvironmental.ca			Email 2:	Cole.Macgregor@teck.com	X	X	X
Email	brett.mason@teck.com			Address	10823 27th Street SE			Email 3:	TeckCoal@equisonline.com			X
Address	RR1 HWY 3							Email 4:				
City	Sparwood	Province	BC	City	Calgary	Province	AB	Email 5:				
Postal Code	V0B 2G0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada	Email 6:				
Phone Number	250 425 4837			Phone Number	403 253 7121			PO number	859537			

SAMPLE DETAILS / **ANALYSIS REQUESTED**

2022/11/29
10:30
Manitowlin
JC/JRS/AG
4x20L carboys
5x1L bottles
NaS/NaI
Good Condition

Please indicate Y below if Filtered

Sample ID 2223-0937	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	ANALYSIS: 48hr Daphnia magna Acute Toxicity 20C NAUT_48hr_DM_PF	48hr Daphnia magna Acute Toxicity 10C NAUT_48hr_DM_PF_MOD10	48hr Daphnia magna Acute Toxicity 20mg/L Antiscalant NAUT_48hr_DM_PF_20AS	96hr Rainbow Trout Acute Toxicity NAUT_96hr_RT_PF	48hr Daphnia magna Acute Toxicity 15C NAUT_48hr_DM_PF_MOD15									
F2_BPO_WG_2022-11-28_N -01	F2_BPO	WG		2022-11-28	08:10	G	8	2	2		4		<1.4°C								
F2_BPO_WG_2022-11-28_N-AS -02	F2_BPO	WG		2022-11-28	08:11	G	1			1			↓								

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	Date	Time	ACCEPTED BY/AFFILIATION	Date	Time
	[signature] Jeffrey	28-Nov-22				

SERVICE REQUEST (rush - subject to availability)					
Regular (default)	X	Sampler's Name	ABlock	Mobile #	
Priority (2-3 business days) - 50% surcharge					
Emergency (1 Business Day) - 100% surcharge		Sampler's Signature	AB	Date/Time	28-Nov-22
For Emergency <1 Day, ASAP or Weekend - Contact Nautilus					

END OF REPORT

Acute Toxicity Test Results

Samples collected November 29, 2022

Final Report

December 23, 2022

Submitted to: **Teck Coal Ltd.**
Sparwood, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates					
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation	*Daphnia magna* 5 mg/L antiscalant test initiation
EV_BC1_WS_2022-11-29_N-SRF/ 2223-0955-01	29-Nov-22 at 0830h	30-Nov-22 at 1010h	30-Nov-22 at 1445h	1-Dec-22 at 1345h	1-Dec-22 at 1350h	-
EV_BC1_WS_2022-11-29_N-SRF-AS/ 2223-0955-02	29-Nov-22 at 0831h	30-Nov-22 at 1010h	-	-	-	1-Dec-22 at 1355h
EV_GT1_WS_2022-11-29_N-SRF/ 2223-0955-03	29-Nov-22 at 0710h	30-Nov-22 at 1010h	30-Nov-22 at 1500h	1-Dec-22 at 1400h	1-Dec-22 at 1405h	-
EV_GT1_WS_2022-11-29_N-SRF-AS/ 2223-0955-04	29-Nov-22 at 0711h	30-Nov-22 at 1010h	-	-	-	1-Dec-22 at 1410h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
EV_BC1_WS_2022-11-29_N-SRF	3.0°C	1124	382
EV_BC1_WS_2022-11-29_N-SRF-AS	3.0°C	1124	382
EV_GT1_WS_2022-11-29_N-SRF	-1.6°C	1181	362
EV_GT1_WS_2022-11-29_N-SRF-AS	-1.6°C	1181	362

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)
- *Daphnia magna* 48-h single concentration screening test (conducted with 5 mg/L antiscalant)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample			
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* 5 mg/L antiscalant
EV_BC1_WS_2022-11-29_N-SRF	100	100	100	-
EV_BC1_WS_2022-11-29_N-SRF-AS	-	-	-	97
EV_GT1_WS_2022-11-29_N-SRF	100	100	100	-
EV_GT1_WS_2022-11-29_N-SRF-AS	-	-	-	100

Sample ID	Percent Immobility in 100 (% v/v)		
	Daphnia magna 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* 5 mg/L antiscalant
EV_BC1_WS_2022-11-29_N-SRF	0	3	-
EV_BC1_WS_2022-11-29_N-SRF-AS	-	-	3
EV_GT1_WS_2022-11-29_N-SRF	0	27	-
EV_GT1_WS_2022-11-29_N-SRF-AS	-	-	0

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
EV_BC1_WS_2022-11-29_N-SRF	Rainbow trout	Precipitate observed on the test vessel	None
	Daphnia magna	Surficial precipitate observed in both tests; precipitate observed on test vessel when conducted at 20°C	None
EV_BC1_WS_2022-11-29_N-SRF-AS	*Daphnia magna*	None	None
EV_GT1_WS_2022-11-29_N-SRF	Rainbow trout	Precipitate observed on the test vessel	None
	Daphnia magna	Surficial precipitate observed and precipitate observed on test vessel when conducted at 20°C;	None
EV_GT1_WS_2022-11-29_N-SRF-AS	*Daphnia magna*	None	None

QA/QC

QA/QC summary	Rainbow trout	***Daphnia magna***
Reference toxicant LC50 (95% CL)	3.7 (3.3-4.1) g/L KCl[1]	6.5 (6.2-6.7) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.8 (3.0-4.8) g/L KCl	6.2 (5.3-7.2) g/L NaCl
Reference toxicant CV	7.8%	5.1%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, December 5, 2022; [2] Test Date November 30, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation

Report By:
Maryam Lo, BSc
Laboratory Biologist

Reviewed By:
Emma Pedersen, BSc
Laboratory Biologist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	20 L plastic pails
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Control/dilution water for antiscalant test	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L), Na_2SeO_4 (2 µg Se/L) and 5 mg/L antiscalant
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14 with February 2016 amendments
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14 with February 2016 amendments
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC164 Reference 2223-0955-01 (Pails) Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022-11-30	1445 *	BS/ML	7	AM
1	2022-12-01	0850	MS	-	MAF
2	2022-12-02	0905	MS	-	MAF
3	2022-12-03	0920	KC	-	EF
4	2022-12-04	1015	Kerm/ML	7	KO

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 7.9
Initial EC (µS/cm): 1998
Salinity (ppt): 5

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L (yes/no)

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	8.0	8.9			
Temp (°C) of 100%	14				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	8.0	8.0						
Day 4	8.2	8.3						
EC (uS/cm)								
Day 0	394	1945						
Day 4	348	1635						
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	8.8	8.9						
Day 4	8.6	8.6						
Temperature (°C) (range: 14-16°C)								
Day 0	15	14						
Day 4	16	16						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.5	0.3
2	4.1	0.5
3	4.2	0.5
4	4.0	0.4
5	3.8	0.4
6	3.8	0.5
7	4.0	0.5
8	3.7	0.4
9	3.7	0.4
10	3.7	0.4

Loading Density (g/L): 0.4 (must be ≤0.5 g/L)
Mean Length (cm): 3.9
Length Range (cm): 3.5-4.2
Mean Weight (g): 0.4 (Must be ≥0.3g)
Weight Range: (g): 0.3-0.5

Test Organism Information

Batch 20221028TR
Source Smoky Trout Farm
Tank # 11
Days Held at 15± 2°C 33 (must be ≥14 days)
Percent stock mortality 0.43 (7 days prior to test, must be <2%)
Test Volume (L) 10 ~~10~~ mL

Comments :
96 hr: PAT Sides & bottom

Reviewed By: CW Date Reviewed: DEC 07 2022

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC164 Reference 2223-0955-03 ML Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022-11-30	1500 *	BS/ML	7	AM
1	2022-12-01	0915	MS	-	MAF
2	2022-12-02	1005	MS	-	MAF
3	2022-12-03	0920	YC	-	EP
4	2022-12-04	0950	Kam/ML	7	KD

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 8.2
Initial EC (µS/cm): 1920
Salinity (ppt): 5

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L (yes/no)

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	10.2	8.9			
Temp (°C) of 100%	14				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	7.9	8.2						
Day 4	8.3	8.7						
EC (uS/cm)								
Day 0	417	1854						
Day 4	406	1636						
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	8.8	8.9						
Day 4	8.6	8.8						
Temperature (°C) (range: 14-16°C)								
Day 0	15	14						
Day 4	15	15						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.4	0.7
2	3.6	0.4
3	3.7	0.4
4	4.0	0.6
5	3.3	0.3
6	3.4	0.3
7	3.9	0.4
8	4.0	0.5
9	4.0	0.5
10	3.3	0.3

Loading Density (g/L): 0.2 (must be ≤0.5 g/L)
Mean Length (cm): 3.8
Length Range (cm): 3.3-4.4
Mean Weight (g): 0.4 (Must be ≥0.3g)
Weight Range: (g): 0.3-0.7

Test Organism Information

Batch 20221028TR
Source Smoky Trout Farm
Tank # 11
Days Held at 15± 2°C 33 (must be ≥14 days)
Percent stock mortality 0.43 (7 days prior to test, must be <2%)
Test Volume (L) 18

Comments :
96 hr: Pit sides & bottom

Reviewed By: CW Date Reviewed: DEC 07 2022

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC 164 Reference 2223-0955-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/12/01	1350	AG/NA	2	CC
1	2022/12/02	0920	ZC	-	[illegible]
2	2022/12/03	0930	BS	2	NA

Sample Information

Initial pH: 7.9
Initial EC (µS/cm): 1998
Salinity (ppt): 5

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	7.9	7.9	7.9	8.2	8.2	8.3				
2	8.2	8.1	8.1	8.0	8.0	8.0				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	454	451	451	1993	1998	2080				
2	445	456	459	1845	1893	1912				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.7	7.7	7.7				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	21	21	21				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10(1i)	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar WED C2 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 33
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0%
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 9.1 Temperature (°C) of sample prior to aeration: 21
DO % of sample prior to aeration: 116% Is aeration required (<40% or >100%)? **Yes or No**
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20min Filtered with 110um screen prior to testing **Yes or (No)**
Hardness (mg $CaCO_3$/L) of 100% : 1124 Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or (No)**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 382

Dilution Water
Pail label / preparation date P3:11/28
Hardness of dilution water (mg/L) 165

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Comments/Observations:
0 hour: No ppt.
48 hour: Surficial ppt, ppt on jar

Reviewed By: CW Date Reviewed: DEC 07 2022

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC 164 Reference 2223-0955-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/12/01	1345	AG/NA	2	EC
1	2022/12/02	1000	YC	-	MAF
2	2022/12/03	0910	BS	2	NA

Sample Information

Initial pH: 7.9
Initial EC (µS/cm): 1998
Salinity (ppt): 5

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	7.8	7.8	7.8	8.2	8.2	8.2				
2	8.1	8.1	8.1	8.0	8.1	8.1				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	451	450	451	1953	1990	2090				
2	428	449	456	1850	1924	1950				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar WED C1 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)

Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 33
Were test treatments randomized on test tray? (Yes) No

Control Validity Criteria

Mean % mortality at 48 hours - 0%
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 10.9
Temperature (°C) of sample prior to aeration: 12
DO % of sample prior to aeration: 116%
Is aeration required (<40% or >100%)? (Yes) or No
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20min
Filtered with 110um screen prior to testing Yes or (No)
Hardness (mg $CaCO_3$/L) of 100% : 1124
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 382

Dilution Water

Pail label / preparation date P3:11/28
Hardness of dilution water (mg/L) 165

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C
4.0 to 10.0 mg/L at 9°C
3.9 to 9.8 mg/L at 10°C
3.8 to 9.6 mg/L at 11°C
3.7 to 9.4 mg/L at 12°C

Comments/Observations:

0 hour: No ppt.
48 hour: Superficial ppt.

Reviewed By: CW Date Reviewed: DEC 07 2022

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method: DAS AS 5 | Client: TEC 164 | Reference: 2223-0955-02

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/12/01	1355	AG/NA	2	EC
1	2022/12/02	0920	YC	-	MAP
2	2022/12/03	0935	BS	~~BS~~ 2	NA

Sample Information

Initial pH:	7.9
Initial EC (µS/cm):	1998
Salinity (ppt):	5

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	7.9	7.9	7.9	8.3	8.3	8.3				
2	8.0	8.0	8.0	8.4	8.4	8.4				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	449	451	450	1990	1995	2080				
2	441	454	453	1904	2090	2090				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.7	7.7	7.7				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	~~M.2021~~	21	21				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10(1i)	10	10				
2	10	10	10	9	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar: WED C2 — Jar(s) mortality 7 days prior to test (must be ≤25%): 0%

QA (previous month)

Days to first brood (≤12 days): 8

Average number of young produced (≥15 young): 33

Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - (must be ≤10%): 0%

Sample

DO (mg/L) of sample prior to aeration: 9.6 — Temperature (°C) of sample prior to aeration: 21

DO % of sample prior to aeration: 123% — Is aeration required (<40% or >100%)? (Yes) or No

Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20min — Filtered with 110um screen prior to testing (Yes) or No

Hardness (mg $CaCO_3$/L) of 100% : 1124 — Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L): —

Alkalinity of 100% sample (mg $CaCO_3$/L): 382

Dilution Water

Pail label / preparation date: P3:11/28

Hardness of dilution water (mg/L): 165

Antiscalant

Final Concentration in Sample: 5 mg/L

Volume of sample: 500 mL — Volume of antiscalant: 39.5 µL

Comments/Observations:

0 hour: No ppt.

48 hour: No ppt

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Reviewed By: CN — Date Reviewed: DEC 07 2022

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC 164 Reference 2223-0955-03

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/12/01	1405	AG/NA	2	CC
1	2022/12/02	0920	YC	-	MAF
2	2022/12/03	0910	BS	2	NA

Sample Information

Initial pH: 8.2
Initial EC (µS/cm): 1920
Salinity (ppt): 5

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	7.9	7.9	7.9	8.3	8.3	8.3				
2	8.1	8.2	8.2	8.1	8.1	8.1				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	444	449	451	1968	1970	1975				
2	438	480	454	1838	1941	1961				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.7	7.7	7.7				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	21	21	21				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10(4i)	10	10(4i)				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar WED C4 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 33
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0%
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 10.4
DO % of sample prior to aeration: 134%
Duration of aeration (37.5 +/- 12.5 mL/min/L): 20MIN
Hardness (mg $CaCO_3$/L) of 100% : 1181
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 362

Temperature (°C) of sample prior to aeration: 21
Is aeration required (<40% or >100%)? (Yes) or No
Filtered with 110um screen prior to testing Yes or (No)
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)

Dilution Water
Pail label / preparation date P3:11/28
Hardness of dilution water (mg/L) 165

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Comments/Observations:
0 hour: No ppt.
48 hour: Surficial ppt, ppt on jar

Reviewed By: CV Date Reviewed: DEC 07 2022

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC 164 Reference 2223-0955-03

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/12/01	1400	AG/NA	2	CC
1	2022/12/02	1000	YC	-	MAF
2	2022/12/03	0910	BS	2	NA

Sample Information

Initial pH: 8.2
Initial EC (µS/cm): 1920
Salinity (ppt): 5

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	7.9	7.9	7.9	8.3	8.3	8.3				
2	8.1	8.2	8.2	8.2	8.2	8.2				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	447	449	450	1971	1974	1973				
2	443	452	453	1834	1921	1940				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar WED C3 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)

Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 33
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - 0%
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 12.6 NA ~~10.4~~
Temperature (°C) of sample prior to aeration: 12
DO % of sample prior to aeration: 134%
Is aeration required (<40% or >100%)? (Yes) or No
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20min
Filtered with 110um screen prior to testing Yes or (No)
Hardness (mg $CaCO_3$/L) of 100% : 1181
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 362

Dilution Water

Pail label / preparation date P3:11/28
Hardness of dilution water (mg/L) 165

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C
4.0 to 10.0 mg/L at 9°C
3.9 to 9.8 mg/L at 10°C
3.8 to 9.6 mg/L at 11°C
3.7 to 9.4 mg/L at 12°C

Comments/Observations:

0 hour: No ppt.
48 hour: No ppt.

Reviewed By: CW Date Reviewed: DEC 07 2022

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method: DAS AS 5 | Client: TEC 164 | Reference: 2223-0955-04

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/12/01	1410	AG/NA	2	CC
1	2022/12/02	0920	LC	-	MAP
2	2022/12/03	0915	BS	2	NA

Sample Information

Initial pH:	8.2
Initial EC (µS/cm):	1920
Salinity (ppt):	5

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	7.9	7.9	7.9	8.3	8.3	8.3				
2	8.2	8.2	8.2	8.4	8.4	8.4				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	446	449	450	1966	1968	1978				
2	434	455	451	1947	1953	2090				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.7	7.7	7.7				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	21	21	21				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar: WED C5 — Jar(s) mortality 7 days prior to test (must be ≤25%): 0%

QA (previous month)

Days to first brood (≤12 days): 8

Average number of young produced (≥15 young): 33

Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - (must be ≤10%): 0%

Sample

DO (mg/L) of sample prior to aeration: 10.4 — Temperature (°C) of sample prior to aeration: 21

DO % of sample prior to aeration: 133% — Is aeration required (<40% or >100%)? (Yes) or No

Duration of aeration (37.5 +/- 12.5 mL/min/L): 20min — Filtered with 110um screen prior to testing: Yes or (No)

Hardness (mg $CaCO_3$/L) of 100%: 1181 — Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L): —

Alkalinity of 100% sample (mg $CaCO_3$/L): 362

Dilution Water

Pail label / preparation date: P3:11/28

Hardness of dilution water (mg/L): 165

Antiscalant

Final Concentration in Sample: 5 mg/L

Volume of sample: 500 mL — Volume of antiscalant: 39.5 µL

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Comments/Observations:

0 hour: No ppt.

48 hour: No ppt

Reviewed By: CW — Date Reviewed: DEC 07 2022

APPENDIX C – Chain-of-custody form

Teck

Page 1 of 1

COC ID: EVO NAUTILUS 112922 | TURNAROUND TIME: Regular (default) | RUSH: NO

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO			
Facility Name	Elkview Operation			Lab Name	Nautilus			Report Format / Distribution		Excel	PDF	EDD
EQuIS Facility Code	EVO			Lab Contact	Jacklyn Poole			Email 1:	DL-EVO-SRF-LAB@teck.com	X	X	X
Project Manager	Brett Mason			Email	jacklyn@nautilusenvironmental.ca			Email 2:	Cole.Macgregor@teck.com	X	X	X
Email	brett.mason@teck.com			Address	10823 27th Street SE			Email 3:	TeckCoal@equisonline.com			X
Address	RR1 HWY 3							Email 4:				
City	Sparwood	Province	BC	City	Calgary	Province	AB	Email 5:				
Postal Code	V0B 2G0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada	Email 6:				
Phone Number	250 425 4837			Phone Number	403 253 7121			PO number	859537			

SAMPLE DETAILS

2022/11/30
10:10
Manitoulin
DC/AG
8x10L carboys
4x20L carboys
10x1L bottles
NoS/N66
~~Good Condition~~

6/8 10L carboys for BC1 >50% frozen, 1/2 Unfrozen 10L carboys leaked 80% sample.
3/4 20L carboys for GT1 >80% frozen
Bottles fine.
Shipment Delivered in heated truck

ANALYSIS REQUESTED

Please indicate Y below if Filtered

Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	48hr Daphnia magna Acute Toxicity 20C	48hr Daphnia magna Acute Toxicity 10C	48hr Daphnia magna Acute Toxicity 5mg/L Antiscalant	96hr Rainbow Trout Acute Toxicity	48hr Daphnia magna Acute Toxicity 15C	
								NAUT_48hr_DM_PF	NAUT_48hr_DM_PF_MOD10	NAUT_48hr_DM_PF_SAS	NAUT_96hr_RT_PF	NAUT_48hr_DM_PF_MOD15	
2223-0965													
EV_BC1_WS_2022-11-29_N-SRF	-01	EV_BC1	WS		2022-11-29	08:30	G	12	2	2		8	3.0°C
EV_BC1_WS_2022-11-29_N-SRF-AS	-02	EV_BC1	WS		2022-11-29	08:31	G	1			1		↓
EV_GT1_WS_2022-11-29_N-SRF	-03	EV_GT1	WS		2022-11-29	07:10	G	8	2	2		4	4.6°C
EV_GT1_WS_2022-11-29_N-SRF-AS	-04	EV_GT1	WS		2022-11-29	07:11	G	1			1		

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	Date	Time	ACCEPTED BY/AFFILIATION	Date	Time
		29-Nov-22				

SERVICE REQUEST (rush - subject to availability)

Regular (default)	X
Priority (2-3 business days) - 50% surcharge	
Emergency (1 Business Day) - 100% surcharge	
For Emergency <1 Day, ASAP or Weekend - Contact Nautilus	

Sampler's Name		Mobile #	
Sampler's Signature		Date/Time	29-Nov-22

END OF REPORT

Acute Toxicity Test Results

Samples collected December 5, 2022

Final Report

January 5, 2023

Submitted to: **Teck Coal Ltd.**
Sparwood, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates					
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation	*Daphnia magna* 20 mg/L antiscalant test initiation
F2_BPO_WG_2022-12-05_N/ 2223-1003-01	5-Dec-22 at 0810h	6-Dec-22 at 1030h	6-Dec-22 at 1420h	6-Dec-22 at 1430h	6-Dec-22 at 1430h	-
F2_BPO_WG_2022-12-05_N-AS/ 2223-1003-02	5-Dec-22 at 0811h	6-Dec-22 at 1030h	-	-	-	6-Dec-22 at 1525h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
F2_BPO_WG_2022-12-05_N	6.6°C	1077	337
F2_BPO_WG_2022-12-05_N-AS	6.6°C	1077	337

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)
- *Daphnia magna* 48-h single concentration screening test (conducted with 20 mg/L antiscalant)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample			
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* 20 mg/L antiscalant
F2_BPO_WG_2022-12-05_N	100	100	100	-
F2_BPO_WG_2022-12-05_N-AS	-	-	-	100

Sample ID	Percent Immobility in 100 (% v/v)		
	Daphnia magna 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* 20 mg/L antiscalant
F2_BPO_WG_2022-12-05_N	0	0	-
F2_BPO_WG_2022-12-05_N-AS	-	-	0

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
F2_BPO_WG_2022-12-05_N	Rainbow trout	None	None
	Daphnia magna	None	None
F2_BPO_WG_2022-12-05_N-AS	*Daphnia magna*	None	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	3.6 (3.3-4.0) g/L KCl[1]	6.5 (6.2-6.7) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.8 (3.0-4.8) g/L KCl	6.2 (5.3-7.2) g/L NaCl
Reference toxicant CV	7.8%	5.1%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, November 25, 2022; [2] Test Date November 30, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation

Report By:
Christine Chanhao. BSc
Biologist

Reviewed By:
Emma Pedersen, BSc
Laboratory Biologist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Control/dilution water for antiscalant test	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L), Na_2SeO_4 (2 µg Se/L) and 20 mg/L antiscalant
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14 with February 2016 amendments
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14 with February 2016 amendments
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC164 Reference 2223-1003-01 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022-12-06	1120 *	BS/ML	7	JC
1	2022-12-07	0910	MS	-	MM
2	2022-12-08	0855	MS	-	EP
3	2022-12-09	0805	BS	-	MAF
4	2022-12-10	1030	DA/MS	7	EP

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 7.6
Initial EC (µS/cm): 1897
Salinity (ppt): 2

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L (yes/no)

	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
Preaeration time					
DO(mg/L) of 100%	10.0	8.9			
Temp (°C) of 100%	14				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	8.2	7.9						
Day 4	7.9	8.3						
EC (uS/cm)								
Day 0	418	1838						
Day 4	353	1607						
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	8.8	8.9						
Day 4	8.8	8.8						
Temperature (°C) (range: 14-16°C)								
Day 0	15	14						
Day 4	15	15						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	4.0	0.5
2	4.0	0.5
3	4.0	0.4
4	3.5	0.4
5	3.8	0.4
6	3.7	0.3
7	3.8	0.4
8	4.0	0.4
9	4.0	0.4
10	4.2	0.3

Loading Density (g/L): 0.2
(must be ≤0.5 g/L)
Mean Length (cm): 3.9
Length Range (cm): 3.5-4.2
Mean Weight (g): 0.4
(Must be ≥0.3g)
Weight Range: (g): 0.3-0.5

Test Organism Information

Batch 20221028TR
Source Smoky Trout Farm
Tank # 12
Days Held at 15± 2°C 39
(must be ≥14 days)
Percent stock mortality 0.37
(7 days prior to test, must be <2%)
Test Volume (L) 18

Comments :
96 hr: No ppt.

Reviewed By: CW Date Reviewed: DEC 14 2022

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS Client TEC 164 Reference 2223-1003-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/12/06	1430	AG/EP	2	YC
1	2022/12/07	1405	BS	-	DM
2	2022/12/08	0830	AG	2	DM

Sample Information

Initial pH: 7.6
Initial EC (µS/cm): 1897
Salinity (ppt): 2

Lab Code	CTL A	CTL B	CTL C	100 A	100 B	100 C				

pH (units) (range: 6.0-8.5)

day										
0	8.1	8.1	8.1	7.6	7.6	7.6				
2	8.0	8.0	7.9	8.3	8.3	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	413	404	407	1889	1991	2080				
2	435	414	413	1906	1958	2130				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.9	7.9	7.9				
2	7.9	7.9	7.9	7.9	7.9	7.8				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	20	20	20				
2	20	20	20	20	20	20				

Number Alive (l, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar Wed C4 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 25
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 8.2 Temperature (°C) of sample prior to aeration: 18
DO % of sample prior to aeration: 100 Is aeration required (<40% or >100%)? **Yes or (No)**
Duration of aeration (37.5 +/- 12.5 mL/min/L) : — Filtered with 110um screen prior to testing **Yes or (No)**
Hardness (mg $CaCO_3$/L) of 100% : 1077 Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or (No)**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 337

Dilution Water
Pail label / preparation date PL: 12/01
Hardness of dilution water (mg/L) 177

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Comments/Observations:
0 HR no ppt
48 HRS no ppt

Reviewed By: CW Date Reviewed: DEC 14 2022

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS10 Client TEC 164 Reference 2223-1003-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/12/06	1430	EP/AG	2	
1	2022/12/07	1050	BS	-	DM
2	2022/12/08	0755	AG	2	DM

Sample Information

Initial pH:	7.6
Initial EC (µS/cm):	1897
Salinity (ppt):	2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	8.1	8.1	8.0	7.6	7.6	7.6				
2	7.8	7.8	7.8	8.2	8.2	8.2				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	393	396	396	1967	2090	2100				
2	390	416	409	1883	1992	1982				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.6	9.6	9.6				
2	9.4	9.4	9.4	EP 9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	11	11	11				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar E2 Jar(s) mortality 7 days prior to test (must be ≤25%) 0 %.

QA (previous month)

Days to first brood (≤12 days) 8

Average number of young produced (≥15 young) 24

Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - (must be ≤10%) 0

Sample

DO (mg/L) of sample prior to aeration: 9.8 EP 8.2

DO % of sample prior to aeration: 100

Duration of aeration (37.5 +/- 12.5 mL/min/L) : —

Hardness (mg $CaCO_3$/L) of 100% : ~~NA~~ 1077

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —

Alkalinity of 100% sample (mg $CaCO_3$/L): 337

Temperature (°C) of sample prior to aeration: ~~12~~ CP 10

Is aeration required (<40% or >100%)? **Yes or (No)**

Filtered with 110um screen prior to testing **Yes or (No)**

Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or (No)**

Dilution Water

Pail label / preparation date P2: 12/01

Hardness of dilution water (mg/L) 177

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

Comments/Observations:

0 HR No precipitate

48 HRS no ppt

Reviewed By: [signature] Date Reviewed: DEC 14 2022

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS 20 Client TEC 164 Reference 2223-1003-02

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/12/06	1525	KO/AI	2	DM
1	2022/12/07	1105	BS	-	DM
2	2022/12/08	0820	AG	2	DM

Sample Information

Initial pH: 7.6
Initial EC (µS/cm): 1997
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	7.7	7.7	7.7	7.7	7.7	7.7				
2	7.9	7.9	7.9	8.3	8.4	8.4				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	359	391	388	1989	1968	1969				
2	434	441	410	1930	1977	1967				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	8.1	8.1	8.1				
2	7.9	7.9	7.9	7.4	7.4	7.4				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	19	19	19				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar Wed Cl — Jar(s) mortality 7 days prior to test (must be ≤25%) 10

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 25
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0

Sample
DO (mg/L) of sample prior to aeration: 9.0
DO % of sample prior to aeration: 107
Duration of aeration (37.5 +/- 12.5 mL/min/L): 20 min.
Hardness (mg $CaCO_3$/L) of 100% : 1077
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 337

Temperature (°C) of sample prior to aeration: 18
Is aeration required (<40% or >100%)? **Yes or No**
Filtered with 110um screen prior to testing **Yes or No**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Dilution Water
Pail label / preparation date P2:12/01
Hardness of dilution water (mg/L) 177

Antiscalant
Final Concentration in Sample: 20mg/L
Volume of sample: 500mL Volume of antiscalant: 158µL

Comments/Observations:
0 HR No ppt
48 HRS no ppt

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Reviewed By: CW Date Reviewed: DEC 14 2022

APPENDIX C – Chain-of-custody form

Teck

Page 1 of 1

COC ID: FSF NAUTILUS 120522 **TURNAROUND TIME:** Regular (default) **RUSH:** NO

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name	F2 SRF			Lab Name	Nautilus			Report Format / Distribution		Excel	PDF	EDD
EQuIS Facility Code	FSF			Lab Contact	Jacklyn Poole			Email 1:	DL-EVO-SRF-LAB@teck.com	X	X	X
Project Manager	Brett Mason			Email	jacklyn@nautilusenvironmental.ca			Email 2:	Cole.Macgregor@teck.com	X	X	X
Email	brett.mason@teck.com			Address	10823 27th Street SE			Email 3:	TeckCoal@equisonline.com			X
Address	RR1 HWY 3							Email 4:				
City	Sparwood	Province	BC	City	Calgary	Province	AB	Email 5:				
Postal Code	V0B 2G0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada	Email 6:				
Phone Number	250 425 4837			Phone Number	403 253 7121			PO number	859537			

SAMPLE DETAILS | **ANALYSIS REQUESTED**

Please indicate Y below if Filtered

Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	48hr Daphnia magna Acute Toxicity 20C (NAUT_48hr_DM_PF)	48hr Daphnia magna Acute Toxicity 10C (NAUT_48hr_DM_PF_MOD10)	48hr Daphnia magna Acute Toxicity 20mg/L Antiscalant (NAUT_48hr_DM_PF_20AS)	96hr Rainbow Trout Acute Toxicity (NAUT_96hr_RT_PF)	48hr Daphnia magna Acute Toxicity 15C (NAUT_48hr_DM_PF_MOD15)
-01 F2_BPO_WG_2022-12-05_N	F2_BPO	WG		2022-12-05	08:10	G	8 *	2	2		4	
-02 F2_BPO_WG_2022-12-05_N-AS	F2_BPO	WG		2022-12-05	08:[illegible]	G	1 *			1		
2223 - 1003												
2022/12/06												
10:30												
4x20L, 5x1L bottles												
AG/SRS												
NaS/NO I												
Good Condition												

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	Date	Time	ACCEPTED BY/AFFILIATION	Date	Time
	AL - TECK	5-Dec-22	1200			

SERVICE REQUEST (rush - subject to availability)

Regular (default)	X
Priority (2-3 business days) - 50% surcharge	
Emergency (1 Business Day) - 100% surcharge	
For Emergency <1 Day, ASAP or Weekend - Contact Nautilus	

Sampler's Name	James Ralar	**Mobile #**	
Sampler's Signature		**Date/Time**	5-Dec-22

END OF REPORT

Acute Toxicity Test Results

Samples collected December 12, 2022

Final Report

January 6, 2023

Submitted to: **Teck Coal Ltd.**
Sparwood, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates					
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation	*Daphnia magna* 5 mg/L antiscalant test initiation
EV_EC1_WS_2022-12-12_N-SRF/ 2223-1063-01	12-Dec-22 at 1000h	13-Dec-22 at 0950h	13-Dec-22 at 1510h	13-Dec-22 at 1530h	13-Dec-22 at 1535h	-
EV_EC1_WS_2022-12-12_N-SRF-AS/ 2223-1063-02	12-Dec-22 at 1001h	13-Dec-22 at 0950h	-	-	-	13-Dec-22 at 1520h
EV_ECOUT_WS_2022-12-12_N-SRF/ 2223-1063-03	12-Dec-22 at 1250h	13-Dec-22 at 0950h	13-Dec-22 at 1440h	13-Dec-22 at 1515h	13-Dec-22 at 1540h	-
EV_ECOUT_WS_2022-12-12_N-SRF-AS/ 2223-1063-04	12-Dec-22 at 1251h	13-Dec-22 at 0950h	-	-	-	13-Dec-22 at 1540h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
EV_EC1_WS_2022-12-12_N-SRF	2.3°C	1051	357
EV_EC1_WS_2022-12-12_N-SRF-AS	2.3°C	1051	357
EV_ECOUT_WS_2022-12-12_N-SRF	2.9°C	950	375
EV_ECOUT_WS_2022-12-12_N-SRF-AS	2.9°C	950	375

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)
- *Daphnia magna* 48-h single concentration screening test (conducted with 5 mg/L antiscalant)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample			
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* 5 mg/L antiscalant
EV_EC1_WS_2022-12-12_N-SRF	100	100	100	-
EV_EC1_WS_2022-12-12_N-SRF-AS	-	-	-	100
EV_ECOUT_WS_2022-12-12_N-SRF	100	100	100	-
EV_ECOUT_WS_2022-12-12_N-SRF-AS	-	-	-	100

Sample ID	Percent Immobility in 100 (% v/v)		
	Daphnia magna 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* 5 mg/L antiscalant
EV_EC1_WS_2022-12-12_N-SRF	0	0	-
EV_EC1_WS_2022-12-12_N-SRF-AS	-	-	0
EV_ECOUT_WS_2022-12-12_N-SRF	0	0	-
EV_ECOUT_WS_2022-12-12_N-SRF-AS	-	-	0

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
EV_EC1_WS_2022-12-12_N-SRF	Rainbow trout	Precipitate observed on test vessel	None
	Daphnia magna	Surficial precipitate observed in 20-degree test	None
EV_EC1_WS_2022-12-12_N-SRF-AS	*Daphnia magna*	None	None
EV_ECOUT_WS_2022-12-12_N-SRF	Rainbow trout	Precipitate observed on test vessel	None
	Daphnia magna	Surficial precipitate observed in 20-degree test	None
EV_ECOUT_WS_2022-12-12_N-SRF-AS	*Daphnia magna*	None	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	4.6 (4.2-5.1) g/L KCl[1]	6.8 (6.3-7.2) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.8 (3.0-4.9) g/L KCl	6.2 (5.3-7.3) g/L NaCl
Reference toxicant CV	8.2%	5.3%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, December 13, 2022; [2] Test Date December 19. 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation



Report By:
Lily Cole, B.Sc.
Laboratory Biologist



Reviewed By:
Emma Pedersen, BSc
Laboratory Biologist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Control/dilution water for antiscalant test	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L), Na_2SeO_4 (2 µg Se/L) and 5 mg/L antiscalant
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14 with February 2016 amendments
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14 with February 2016 amendments
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC164 Reference 2223-1063-01 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022/12/13	1510 *	AM/ML	7	CC
1	2022/12/14	0900	MS	-	AM
2	2022/12/15	0900	MS	-	EP
3	2022/12/16	0845	Karm	-	AM
4	2022/12/17	0955	MS/AM	7	EP

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 8.1
Initial EC (µS/cm): 1876
Salinity (ppt): 3

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L : **yes/no**

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	11.2	10.2	8.9		
Temp (°C) of 100%	14				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

	Conc.	CTL	100						
pH (units) (range: **5.5-8.5**)									
	Day 0	7.9	8.1						
	Day 4	8.1	8.1						
EC (uS/cm)									
	Day 0	390	1861						
	Day 4	456	1690						
DO (mg/L) (**70-100% saturation at test temp.**)									
	Day 0	8.8	8.9						
	Day 4	8.3	8.8						
Temperature (°C) (range: **14-16°C**)									
	Day 0	15	14						
	Day 4	15	15						
Number Alive (In brackets number stressed)									
	Day 0	10	10						
	Day 1	10	10						
	Day 2	10	10						
	Day 3	10	10						
	Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	4.1	0.5
2	4.1	0.5
3	4.0	0.4
4	4.0	0.4
5	5.0	1.1
6	4.5	0.6
7	4.2	0.6
8	4.9	0.9
9	4.7	0.8
10	4.0	0.5

Loading Density (g/L): 0.4
(must be ≤0.5 g/L)
Mean Length (cm): 4.4
Length Range (cm): 4.0-5.0
Mean Weight (g): 0.6
(Must be ≥0.3g)
Weight Range: (g): 0.4-1.1

Test Organism Information

Batch 20221012TR
Source Sam Livingston
Tank # 5
Days Held at 15± 2°C 21
(must be ≥14 days)
Percent stock mortality 0.34
(7 days prior to test, must be <2%)
Test Volume (L) 18

Comments :
96 hrs: ppt in 100% tank.

Reviewed By: ML Date Reviewed: 2022/12/20

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC164 Reference 2223-1063-03 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022/12/13	1440 *	AM/ML	7	CC
1	2022/12/14	0900	MS	-	AM
2	2022/12/15	0900	MS	-	EP
3	2022/12/16	0905	Kam	-	AM
4	2022/12/17	0955	MS/AM	7	EP

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 7.8
Initial EC (µS/cm): 1902
Salinity (ppt): 3

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L: **yes/no**

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	11.0	8.9			
Temp (°C) of 100%	14				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	7.9	7.9						
Day 4	7.9	8.0						
EC (uS/cm)								
Day 0	399	1948						
Day 4	422	1717						
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	8.8	8.9						
Day 4	9.3	8.8						
Temperature (°C) (range: 14-16°C)								
Day 0	15	14						
Day 4	15	15						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	4.5	0.6
2	3.3	0.5
3	4.7	0.9
4	3.7	0.3
5	4.0	0.5
6	3.6	0.3
7	4.2	0.4
8	3.9	0.3
9	3.7	0.4
10	4.0	0.5

Loading Density (g/L): 0.3 (must be ≤0.5 g/L)
Mean Length (cm): 3.9
Length Range (cm): 3.0-4.7
Mean Weight (g): 0.5 (Must be ≥0.3g)
Weight Range: (g): 0.3-0.9

Test Organism Information

Batch 20221012TR
Source Sam Livingston
Tank # 5
Days Held at 15± 2°C: 21 (must be ≥14 days)
Percent stock mortality: 0.34 (7 days prior to test, must be <2%)
Test Volume (L): 18

Comments :
96 hrs: ppt in 100% tank

Reviewed By: MB Date Reviewed: 2022/12/20

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC 164 Reference 2223-1063-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/12/13	1535	CC/KO	2	AI
1	2022/12/14	0920	AG	-	AI
2	2022/12/15	0930	AG/AM	2	AI

Sample Information

Initial pH: 8.1
Initial EC (µS/cm): 1876
Salinity (ppt): 3

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				
day	pH (units) (range: 6.0-8.5)									
0	7.8	7.8	7.8	8.0	8.0	8.0				
2	8.1	8.0	8.0	8.1	8.1	8.1				
	The pH of the sample was not adjusted prior to test setting, unless noted in the comments below									
	EC (uS/cm)									
0	384	396	396	1749	1809	1818				
2	432	410	413	1673	1746	1759				
	DO (mg/L) (**40-100% saturation at test temp.**)									
0	8.1	8.1	8.1	8.1	8.1	8.1				
2	8.1	8.1	8.1	8.1	8.1	8.1				
	Temperature (°C) (range: **18-22 °C**)									
0	19	19	19	19	19	19				
2	19	19	19	19	19	19				
	Number Alive (I, immobile)									
0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar Wed Cl Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 9
Average number of young produced (≥15 young) 32
Were test treatments randomized on test tray? Yes / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0

Sample
DO (mg/L) of sample prior to aeration: 9.7 Temperature (°C) of sample prior to aeration: 18°
DO % of sample prior to aeration: 118% Is aeration required (<40% or >100%)? **Yes or No**
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20 min. Filtered with 110um screen prior to testing **Yes or No**
Hardness (mg $CaCO_3$/L) of 100% : 1051 30 KO Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 357

Dilution Water
Pail label / preparation date 1/12/10
Hardness of dilution water (mg/L) 167

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Comments/Observations:
0hr: No ppt
48hr: Surficial ppt

Reviewed By: MG Date Reviewed: 2022/12/20

Daphnia 10°C Bench Sheet

Method: DAS 10 | Client: TEC 164 | Reference: 2223-1063-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/12/13	1530	CC/KO	2	AI
1	2022/12/14	0920	AG	-	AI
2	2022/12/15	0930	AG/AM	2	AI

Sample Information

Initial pH:	8.1
Initial EC (µS/cm):	1876
Salinity (ppt):	3

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				
day	pH (units) (range: 6.0-8.5)									
0	7.9	7.9	7.9	8.0	8.0	8.0				
2	8.2	8.19	7.9	8.0	8.2	8.2				
	The pH of the sample was not adjusted prior to test setting, unless noted in the comments below									
	EC (uS/cm)									
0	374	394	396	1704	1781	1796				
2	417	400	407	1680	1759	1690				
KO	9.4	9.4	9.4	DO (mg/L) (**40-100% saturation at test temp.**)						
0	~~8.1~~	~~8.1~~	~~8.1~~	9.4	9.4	9.4				
2	a.m	a.m	a.m	a.m	a.m	a.m				
KO	12	12	12	Temperature (°C) (range: **8-12 °C**)						
0	~~19~~	~~19~~	~~19~~	12	12	12				
2	12	12	12	12	12	12				
	Number Alive (I, immobile)									
0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar: Wed C3 — Jar(s) mortality 7 days prior to test (must be ≤25%): 0%

QA (previous month)

Days to first brood (≤12 days): 9

Average number of young produced (≥15 young): 32

Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - (must be ≤10%): 0

Sample

DO (mg/L) of sample prior to aeration: 12.0

DO % of sample prior to aeration: 118%

Duration of aeration (37.5 +/- 12.5 mL/min/L): 20 min.

Hardness (mg $CaCO_3$/L) of 100%: 1051

Temperature (°C) of sample prior to aeration: 9°

Is aeration required (<40% or >100%)? (Yes) or No

Filtered with 110um screen prior to testing Yes or (No)

Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L): —

Alkalinity of 100% sample (mg $CaCO_3$/L): 357

Dilution Water

Pail label / preparation date: 1117/16

Hardness of dilution water (mg/L): 167

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

Comments/Observations:

0hr: No ppt

48hr: no ppt

Reviewed By: MG — Date Reviewed: 2022/12/20

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS 5 Client TEC 164 Reference 2223-1063-02

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/12/13	1520	CC/KO	2	AI
1	2022/12/14	0920	AG	-	CC
2	2022/12/15	0930	AG/AM	2	AI

Sample Information

Initial pH: ~~105~~ 8.1 CC
Initial EC (µS/cm): 1876
Salinity (ppt): 3

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				
day				pH (units) (range: 6.0-8.5)						
0	7.7	7.7	7.7	8.1	8.1	8.1				
2	7.8	7.9	7.9	8.2	8.3	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

				EC (uS/cm)						
0	384	396	396	1790	1805	1804				
2	383	400	401	1683	1770	1786				

				DO (mg/L) (**40-100% saturation at test temp.**)						
0	8.1	8.1	8.1	8.1	8.1	8.1				
2	7.9	7.9	7.9	7.9	7.9	7.9				

				Temperature (°C) (range: **18-22 °C**)						
0	19	19	19	19	19	19				
2	20	20	20	20	20	20				

				Number Alive (I, immobile)						
0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar Wed C3 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 9
Average number of young produced (≥15 young) 32
Were test treatments randomized on test tray? Yes / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0

Sample
DO (mg/L) of sample prior to aeration: 10.1
Temperature (°C) of sample prior to aeration: 18°
DO % of sample prior to aeration: 123%
Is aeration required (<40% or >100%)? Yes or No
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20 min
Filtered with 110um screen prior to testing Yes or No
Hardness (mg $CaCO_3$/L) of 100% : 1051
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or No
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) -
Alkalinity of 100% sample (mg $CaCO_3$/L): 357

Dilution Water
Pail label / preparation date 1/12/10
Hardness of dilution water (mg/L) ~~167~~ CC 167

Antiscalant
Final Concentration in Sample: 5mg/L
Volume of sample: 500mL Volume of antiscalant: 39.5µL

Comments/Observations:
0hr: No ppt
48hr: no ppt

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Reviewed By: MG Date Reviewed: 2022/12/20

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC 164 Reference 2223-1063-03

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/12/13	1540	CC/KO	2	AI
1	2022/12/14	0920	DG	-	AI
2	2022/12/15	0915	AG/HM	2	AI

Sample Information

Initial pH: 7.8
Initial EC (µS/cm): 1902
Salinity (ppt): 3

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	7.9	7.9	7.9	7.9	7.9	7.9				
2	8.1	8.0	8.0	7.9	8.0	8.0				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	388	396	397	1846	1885	1887				
2	416	425	405	1685	1810	1792				

DO (mg/L) (**40-100% saturation at test temp.**)

0	8.2	8.2	8.2	8.1	8.1	8.1				
2	8.1	8.1	8.1	8.1	8.1	8.1				

Temperature (°C) (range: **18-22 °C**)

0	18	18	18	19	19	19				
2	19	19	19	19	19	19				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar (1) ed C3 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 9
Average number of young produced (≥15 young) 32
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 10.7
DO % of sample prior to aeration: 130%
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20min.
Hardness (mg $CaCO_3$/L) of 100% : 950
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 375

Temperature (°C) of sample prior to aeration: 18°
Is aeration required (<40% or >100%)? (Yes) or No
Filtered with 110um screen prior to testing Yes or (No)
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)

Dilution Water
Pail label / preparation date 1:12/10
Hardness of dilution water (mg/L) 167

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Comments/Observations:
0hr: NO ppt
48hr: Surficial ppt

Reviewed By: MG Date Reviewed: 2022/12/20

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC 164 Reference 2223-1063-03

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/12/13	1515	CC/KO	2	AI
1	2022/12/14	0920	AG	-	AI
2	2022/12/15	0935	AG/AM	2	AI

Sample Information

Initial pH: 7.8
Initial EC (µS/cm): 1902
Salinity (ppt): 3

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	7.9	7.9	7.9	7.9	7.9	7.9				
2	8.0	7.9	7.9	8.2	8.2	8.2				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	388	396	397	1845	1881	1892				
2	409	412	407	1766	1872	1881				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**) cc

0	12	12	12	~~18~~ 12	~~18~~ 12	12				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar Wed C 3 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 9
Average number of young produced (≥15 young) 32
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: AI ~~10.7~~ 12.2
Temperature (°C) of sample prior to aeration: AI ~~18~~ 12
DO % of sample prior to aeration: 130%
Is aeration required (<40% or >100%)? (Yes) or No
Duration of aeration (37.5 +/- 12.5 mL/min/L): 20 min.
Filtered with 110um screen prior to testing Yes or (No)
Hardness (mg $CaCO_3$/L) of 100% : 950
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 375

Dilution Water
Pail label / preparation date 12/10
Hardness of dilution water (mg/L) 167

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

Comments/Observations:
0hr: No ppt
48hr: no ppt

Reviewed By: MG Date Reviewed: 2022/12/20

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS 5 Client TEC 164 Reference 2223-1063-04

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/12/13	1540	CC/KO	2	AI
1	2022/12/14	0920	AG	-	AI
2	2022/12/15	0935	AG/AM	2	AI

Sample Information

Initial pH: 7.8
Initial EC (µS/cm): 1902
Salinity (ppt): 17 mg 3

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	7.7	7.7	7.7	7.8	7.8	7.8				
2	8.1	8.0	8.0	8.3	8.3	8.4				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	378	394	392	1813	1876	1882				
2	1004	416	404	1775	1843	1843				

DO (mg/L) (**40-100% saturation at test temp.**)

0	8.1	8.1	8.1	8.1	8.1	8.1				
2	8.1	8.1	8.1	8.1	8.1	8.1				

Temperature (°C) (range: **18-22 °C**)

0	19	19	19	19	19	19				
2	19	19	19	19	19	19				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar Wed E5 Jar(s) mortality 7 days prior to test (must be ≤25%) 5%

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 27
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0

Sample
DO (mg/L) of sample prior to aeration: 11.0
DO % of sample prior to aeration: 131%
Duration of aeration (37.5 +/- 12.5 mL/min/L): 20min.
Hardness (mg $CaCO_3$/L) of 100%: 950
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 375

Temperature (°C) of sample prior to aeration: 18°
Is aeration required (<40% or >100%)? (Yes) or No
Filtered with 110um screen prior to testing Yes or (No)
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)

Dilution Water
Pail label / preparation date 11/12/16
Hardness of dilution water (mg/L) 167

Antiscalant
Final Concentration in Sample: 5mg/L
Volume of sample: 500mL Volume of antiscalant: 39.5µL

Comments/Observations:
0hr: No ppt
48hr: no ppt

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Reviewed By: ML Date Reviewed: 2022/12/20

APPENDIX C – Chain-of-custody form

Teck

Page 1 of 1

COC ID: EVO NAUTILUS 121222 | TURNAROUND TIME: Regular (default) | RUSH: NO

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name	Elkview Operation			Lab Name	Nautilus			Report Format / Distribution		Excel	PDF	EDD
EQuIS Facility Code	EVO			Lab Contact	Jacklyn Poole			Email 1:	DL-EVO-SRF-LAB@teck.com	X	X	X
Project Manager	Brett Mason			Email	jacklyn@nautilusenvironmental.ca			Email 2:	Cole.Macgregor@teck.com	X	X	X
Email	brett.mason@teck.com			Address	10823 27th Street SE			Email 3:	TeckCoal@equisonline.com			X
Address	RR1 HWY 3							Email 4:				
City	Sparwood	Province	BC	City	Calgary	Province	AB	Email 5:				
Postal Code	V0B 2G0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada	Email 6:				
Phone Number	250 425 4837			Phone Number	403 253 7121			PO number	859537			

SAMPLE DETAILS | **ANALYSIS REQUESTED**

2022/12/13
09:50
Manitou/in
DC/SRS/ML
6x10L carboys
4x20L carboys
10x1L bottles
NoS/NoB
Good Condition

Please indicate Y below if Filtered

Sample ID 2225-1065	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	ANALYSIS: NAUT_48hr_DM_PF Daphnia magna Acute Toxicity 20C	NAUT_48hr_DM_PF_MOD10 Daphnia magna Acute Toxicity 10C	NAUT_48hr_DM_PF_5AS Daphnia magna Acute Toxicity 5mg/L Antifoulant	NAUT_96hr_RT_PF Rainbow Trout Acute Toxicity	NAUT_48hr_DM_PF_MOD15 Daphnia magna Acute Toxicity 15C	
EV_EC1_WS_2022-12-12_N-SRF -01	EV_EC1	WS		2022-12-12	10:00	G	12	2	2		8		2.3°C
EV_EC1_WS_2022-12-12_N-SRF-AS -02	EV_EC1	WS		2022-12-12	10:01	G	1			1			↓
EV_ECOUT_WS_2022-12-12_N-SRF -03	EV_ECOUT	WS		2022-12-12	12:50	G	8	2	2		4		2.9°C
EV_ECOUT_WS_2022-12-12_N-SRF-AS -04	EV_ECOUT	WS		2022-12-12	12:51	G	1			1			↓

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	Date	Time	ACCEPTED BY/AFFILIATION	Date	Time
	Aidan	12-Dec-22				

SERVICE REQUEST (rush - subject to availability)

Regular (default)	X
Priority (2-3 business days) - 50% surcharge	
Emergency (1 Business Day) - 100% surcharge	
For Emergency <1 Day, ASAP or Weekend - Contact Nautilus	

Sampler's Name	Carter Phillips	Mobile #	
Sampler's Signature	Carter Phillips	Date/Time	12-Dec-22

END OF REPORT

Acute Toxicity Test Results

Samples collected December 12, 2022

Final Report

January 4, 2023

Submitted to: **Teck Coal Ltd.**
Sparwood, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates					
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation	*Daphnia magna* 20 mg/L antiscalant test initiation
F2_BPO_WG_2022-12-12_N/ 2223-1064-01	12-Dec-22 at 0750h	13-Dec-22 at 0950h	14-Dec-22 at 1505h	14-Dec-22 at 1400h	14-Dec-22 at 1400h	-
F2_BPO_WG_2022-12-12_N-AS/ 2223-1064-02	12-Dec-22 at 0751h	13-Dec-22 at 0950h	-	-	-	14-Dec-22 at 1420h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
F2_BPO_WG_2022-12-12_N	3.4°C	1015	349
F2_BPO_WG_2022-12-12_N-AS	3.4°C	1015	349

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)
- *Daphnia magna* 48-h single concentration screening test (conducted with 20 mg/L antiscalant)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample			
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* 20 mg/L antiscalant
F2_BPO_WG_2022-12-12_N	100	100	100	-
F2_BPO_WG_2022-12-12_N-AS	-	-	-	100

Sample ID	Percent Immobility in 100 (% v/v)		
	Daphnia magna 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* 20 mg/L antiscalant
F2_BPO_WG_2022-12-12_N	0	0	-
F2_BPO_WG_2022-12-12_N-AS	-	-	0

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
F2_BPO_WG_2022-12-12_N	Rainbow trout	None	None
	Daphnia magna	None	None
F2_BPO_WG_2022-12-12_N-AS	*Daphnia magna*	None	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	4.6 (4.2-5.1) g/L KCl[1]	6.5 (6.2-6.7) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.8 (3.0-4.9) g/L KCl	6.2 (5.3-7.2) g/L NaCl
Reference toxicant CV	8.2%	5.1%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, December 13, 2022; [2] Test Date November 30, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation

Report By:
Maryam Lo, BSc
Laboratory Biologist

Reviewed By:
Emma Pedersen, BSc
Laboratory Biologist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Control/dilution water for antiscalant test	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L), Na_2SeO_4 (2 µg Se/L) and 20 mg/L antiscalant
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14 with February 2016 amendments
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14 with February 2016 amendments
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC164 Reference 2223-1064-01 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022-12-14	1505 *	BS/ML	7	AC
1	2022-12-15	0905	MS	-	EP
2	2022-12-16	0930	Karm	-	AM
3	2022-12-17	1140	MS	-	AC
4	2022-12-18	1000	ML/KD	7	NA

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 7.7
Initial EC (µS/cm): 1906
Salinity (ppt): 3

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L: **yes/no**

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	8.6	8.8			
Temp (°C) of 100%	16				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	7.7	7.7						
Day 4	7.7	8.3						
EC (uS/cm)								
Day 0	432	2030						
Day 4	423	1894						
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	8.9	8.8						
Day 4	8.8	8.8						
Temperature (°C) (range: 14-16°C)								
Day 0	14	15						
Day 4	15	15						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	4.1	0.6
2	3.8	0.4
3	3.5	0.3
4	3.8	0.4
5	3.6	0.3
6	3.5	0.3
7	3.9	0.5
8	3.6	0.4
9	3.6	0.4
10	3.6	0.4

Loading Density (g/L): 0.2 (must be ≤0.5 g/L)
Mean Length (cm): 3.7
Length Range (cm): 3.5 - 4.1
Mean Weight (g): 0.4 (Must be ≥0.3g)
Weight Range: (g): 0.3 - 0.6

Test Organism Information

Batch 20221012TR
Source Sam Livingston
Tank # 5
Days Held at 15± 2°C 22 (must be ≥14 days)
Percent stock mortality 0.58 (7 days prior to test, must be <2%)
Test Volume (L) 18

Comments :
96 hr: No ppt

Reviewed By: [illegible] Date Reviewed: 2022/12/19

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS Client TEC 164 Reference 2223-1064-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/12/14	1400	AI/AG	2	DM
1	2022/12/15	0800	KO	-	EP
2	2022/12/16	0820	RS	2	CC

Sample Information

Initial pH: 7.7
Initial EC (µS/cm): 1906
Salinity (ppt): 3

Lab Code	CTL A	CTL B	CTL C	100 A	100 B	100C

pH (units) (range: 6.0-8.5)

day										
0	7.9	7.8	7.8	7.5	7.5	7.5				
2	8.0	8.0	8.0	8.3	8.3	8.4				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	420	427	424	1868	1893	1896				
2	454	434	433	1964	1858	1866				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.9	7.9	7.9				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	20	20	20				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar WRd C5 Jar(s) mortality 7 days prior to test (must be ≤25%) 0

QA (previous month)

Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 25
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - 0%
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 8.1
DO % of sample prior to aeration: AI 9.1 100
Duration of aeration (37.5 +/- 12.5 mL/min/L) : -
Hardness (mg $CaCO_3$/L) of 100% : 1015
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) -
Alkalinity of 100% sample (mg $CaCO_3$/L): 349

Temperature (°C) of sample prior to aeration: 19
Is aeration required (<40% or >100%)? **Yes or No**
Filtered with 110um screen prior to testing **Yes or No**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Dilution Water

Pail label / preparation date P3:12/12
Hardness of dilution water (mg/L) 162

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Comments/Observations:

0 HR NO ppt
48 HRS No ppt

Reviewed By: W Date Reviewed: 2022/12/19

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC 164 Reference 2223-1064-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/12/14	1400	AI/AG	2	DM
1	2022/12/15	0800	KO	-	EP
2	2022/12/16	0800	BS	2	CC

Sample Information

Initial pH:	7-7
Initial EC (µS/cm):	1906
Salinity (ppt):	3

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	7-9	7-9	7-9	7-5	7-5	7-5				
2	7.9	7.9	7.9	8.2	8.2	8.2				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	427	428	427	1833	1892	1896				
2	424	434	433	1791	1855	1893				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar Wed CS — Jar(s) mortality 7 days prior to test (must be ≤25%) 0

QA (previous month)

Days to first brood (≤12 days) 8

Average number of young produced (≥15 young) 25

Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - 0% (must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 9.4 — Temperature (°C) of sample prior to aeration: 12

DO % of sample prior to aeration: 100 — Is aeration required (<40% or >100%)? **Yes or (No)**

Duration of aeration (37.5 +/- 12.5 mL/min/L) : — — Filtered with 110um screen prior to testing **Yes or (No)**

Hardness (mg $CaCO_3$/L) of 100% : 1015 — Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or (No)**

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —

Alkalinity of 100% sample (mg $CaCO_3$/L): 349

Dilution Water

Pail label / preparation date P3:12/12

Hardness of dilution water (mg/L) 162

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

Comments/Observations:

0 HR No ppt

48 HRS No ppt

Reviewed By: W — Date Reviewed: 10/12/12/19

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS 20 Client TEC 164 Reference 2223-1064-02

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/12/14	1420	AI/AG	2	DM
1	2022/12/15	0900	KO	-	EP
2	2022/12/16	0820	BS	2	ee

Sample Information

Initial pH: 7.7
Initial EC (µS/cm): 1906
Salinity (ppt): 3

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	7.9	7.9	7.9	7.9	8.0	8.0				
2	8.0	8.0	8.0	8.3	8.3	8.4				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	485	490	434	1504	1862	1870				
2	427	435	435	1753	1840	1852				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.9	7.9	7.9				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	20	20	20				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar Wed D3 Jar(s) mortality 7 days prior to test (must be ≤25%) 0

QA (previous month)
Days to first brood (≤12 days) 9
Average number of young produced (≥15 young) 38
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0%

Sample
DO (mg/L) of sample prior to aeration: 8.8
DO % of sample prior to aeration: 109
Duration of aeration (37.5 +/- 12.5 mL/min/L): 20min
Hardness (mg $CaCO_3$/L) of 100%: 1015
Temperature (°C) of sample prior to aeration: 20
Is aeration required (<40% or >100%)? **Yes or No**
Filtered with 110um screen prior to testing **Yes or No**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) -
Alkalinity of 100% sample (mg $CaCO_3$/L): 349

Dilution Water
Pail label / preparation date P3: 12/12
Hardness of dilution water (mg/L) 162

Antiscalant
Final Concentration in Sample: 20 mg/L
Volume of sample: 500mL Volume of antiscalant: 158.0uL

Comments/Observations:
0 HR No ppt
48 HRS No ppt

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Reviewed By: KO Date Reviewed: 2022/12/19

APPENDIX C – Chain-of-custody form

Teck

Page 1 of 1

COC ID: FSF NAUTILUS 121222 | TURNAROUND TIME: Regular (default) | RUSH: NO

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name	F2 SRF			Lab Name	Nautilus			Report Format / Distribution		Excel	PDF	EDD
EQuIS Facility Code	FSF			Lab Contact	Jacklyn Poole			Email 1:	DL-EVO-SRF-LAB@teck.com	X	X	X
Project Manager	Brett Mason			Email	jacklyn@nautilusenvironmental.ca			Email 2:	Cole.Macgregor@teck.com	X	X	X
Email	brett.mason@teck.com			Address	10823 27th Street SE			Email 3:	TeckCoal@equisonline.com			X
Address	RR1 HWY 3							Email 4:				
City	Sparwood	Province	BC	City	Calgary	Province	AB	Email 5:				
Postal Code	V0B 2G0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada	Email 6:				
Phone Number	250 425 4837			Phone Number	403 253 7121			PO number	859537			

SAMPLE DETAILS | **ANALYSIS REQUESTED**

2022/12/13
09:50
Manitou Lk
DC/SPAS/ML
4x20L carboys,
5x1L bottles
NoS/NoI
Good Condition

Please indicate Y below if Filtered

Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	ANALYSIS: NAUT_48hr_DM_PF Daphnia magna Acute Toxicity 20C	NAUT_48hr_DM_PF_MOD10 Daphnia magna Acute Toxicity 10C	NAUT_48hr_DM_PF_20AS Daphnia magna Acute Toxicity 20mg/L Antifoulant	NAUT_96hr_RT_PF 96hr Rainbow Trout Acute Toxicity	NAUT_48hr_DM_PF_MOD15 Daphnia magna Acute Toxicity 15C		
F2_BPO_WG_2022-12-12_N -01	F2_BPO	WG		2022-12-12	07:50	G	8	2	2		4		3.4°C	
F2_BPO_WG_2022-12-12_N-AS -02	F2_BPO	WG		2022-12-12	07:51	G	1			1			✓	

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	Date	Time	ACCEPTED BY/AFFILIATION	Date	Time
	Aiden	12-Dec-22				

SERVICE REQUEST (rush - subject to availability)

Regular (default)	X
Priority (2-3 business days) - 50% surcharge	
Emergency (1 Business Day) - 100% surcharge	
For Emergency <1 Day, ASAP or Weekend - Contact Nautilus	

Sampler's Name	Carter Phillips	Mobile #	
Sampler's Signature	Carter Phillips	Date/Time	12-Dec-22

END OF REPORT

Acute Toxicity Test Results

Samples collected December 13, 2022

Final Report

January 3, 2023

Submitted to: **Teck Coal Ltd.**
Sparwood, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates					
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation	*Daphnia magna* 5 mg/L antiscalant test initiation
EV_BC1_WS_2022-12-13_N-SRF/ 2223-1083-01	13-Dec-22 at 0750h	14-Dec-22 at 0918h	14-Dec-22 at 1515h	15-Dec-22 at 1430h	15-Dec-22 at 1430h	-
EV_BC1_WS_2022-12-13_N-SRF-AS/ 2223-1083-02	13-Dec-22 at 0751h	14-Dec-22 at 0918h	-	-	-	15-Dec-22 at 1425h
EV_GT1_WS_2022-12-13_N-SRF/ 2223-1083-03	13-Dec-22 at 0730h	14-Dec-22 at 0918h	14-Dec-22 at 1515h	15-Dec-22 at 1435h	15-Dec-22 at 1445h	-
EV_GT1_WS_2022-12-13_N-SRF-AS/ 2223-1083-04	13-Dec-22 at 0731h	14-Dec-22 at 0918h	-	-	-	15-Dec-22 at 1450h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
EV_BC1_WS_2022-12-13_N-SRF	-0.1°C	1159	343
EV_BC1_WS_2022-12-13_N-SRF-AS	-0.1°C	1159	343
EV_GT1_WS_2022-12-13_N-SRF	-2.4°C	968	336
EV_GT1_WS_2022-12-13_N-SRF-AS	-2.4°C	968	336

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)
- *Daphnia magna* 48-h single concentration screening test (conducted with 5 mg/L antiscalant)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample			
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* 5 mg/L antiscalant
EV_BC1_WS_2022-12-13_N-SRF	100	100	100	-
EV_BC1_WS_2022-12-13_N-SRF-AS	-	-	-	100
EV_GT1_WS_2022-12-13_N-SRF	100	100	100	-
EV_GT1_WS_2022-12-13_N-SRF-AS	-	-	-	100

Sample ID	Percent Immobility in 100 (% v/v)		
	Daphnia magna 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* 5 mg/L antiscalant
EV_BC1_WS_2022-12-13_N-SRF	0	0	-
EV_BC1_WS_2022-12-13_N-SRF-AS	-	-	0
EV_GT1_WS_2022-12-13_N-SRF	0	0	-
EV_GT1_WS_2022-12-13_N-SRF-AS	-	-	0

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
EV_BC1_WS_2022-12-13_N-SRF	Rainbow trout	Precipitate observed on the test vessel	None
	Daphnia magna	Surficial precipitate observed on 20-degree test vessel	None
EV_BC1_WS_2022-12-13_N-SRF-AS	*Daphnia magna*	None	None
EV_GT1_WS_2022-12-13_N-SRF	Rainbow trout	Precipitate observed on the test vessel	None
	Daphnia magna	Surficial precipitate observed on 20-degree test vessel	None
EV_GT1_WS_2022-12-13_N-SRF-AS	*Daphnia magna*	Surficial precipitate observed	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	4.6 (4.2-5.1) g/L KCl[1]	6.8 (6.4-7.1) g/L NaCl [2]
Reference toxicant historical mean (2 SD Range)	3.8 (3.0-4.9) g/L KCl	6.2 (5.3-7.3) g/L NaCl
Reference toxicant CV	8.2%	5.3%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, December 13, 2022; [2] Test Date December 19, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation

Report By:
Aishah Iqbal, BSc
Laboratory Biologist

Reviewed By:
Emma Pedersen, BSc
Laboratory Biologist

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APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Control/dilution water for antiscalant test	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L), Na_2SeO_4 (2 µg Se/L) and 5 mg/L antiscalant
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14 with February 2016 amendments
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14 with February 2016 amendments
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC164 Reference 2223-1083-01 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022-12-14	1515 *	BS/ML	7	JC
1	2022-12-15	0915	MS	-	EP
2	2022-12-16	0920	Karm	-	AM
3	2022-12-17	1155	MS	-	JC
4	2022-12-18	1030	ML/KD	7	um

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 8.1
Initial EC (µS/cm): 1951
Salinity (ppt): 2

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L (yes/no)

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	10.7	8.9			
Temp (°C) of 100%	14				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: **5.5-8.5**)								
Day 0	7.8	8.0						
Day 4	7.8	8.1						
EC (uS/cm)								
Day 0	460	1940						
Day 4	437	1809						
DO (mg/L) (**70-100% saturation at test temp.**)								
Day 0	8.9	8.9						
Day 4	8.8	8.8						
Temperature (°C) (range: **14-16°C**)								
Day 0	14	14						
Day 4	15	15						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.8	0.4
2	3.9	0.5
3	4.3	0.7
4	4.3	0.7
5	3.9	0.5
6	3.9	0.5
7	3.8	0.5
8	4.7	0.9
9	3.9	0.5
10	3.3	0.3

Loading Density (g/L): 0.3 (must be ≤0.5 g/L)
Mean Length (cm): 4.0
Length Range (cm): 3.3-4.7
Mean Weight (g): 0.6 (Must be ≥0.3g)
Weight Range: (g): 0.3-0.9

Test Organism Information

Batch 20221012TR
Source Sam Livingston
Tank # 5
Days Held at 15± 2°C 22 (must be ≥14 days)
Percent stock mortality 0.58 (7 days prior to test, must be <2%)
Test Volume (L) 18

Comments :
96 hr: ppt on bottom of tank

Reviewed By: LO Date Reviewed: 2022/12/19

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC164 Reference 2223-1083-03 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022-12-14	1515 *	BS/ML	7	JC
1	2022-12-15	0915	MS	-	EP
2	2022-12-16	0910	Kerm	-	AM
3	2022-12-17	1155	MS	-	JC
4	2022-12-18	1040	ML/KD	7	Kerm

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 8.3
Initial EC (µS/cm): 1889
Salinity (ppt): 2

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L **yes/no**

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	10.5	8.9			
Temp (°C) of 100%	14				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: **5.5-8.5**)								
Day 0	7.8	8.2						
Day 4	7.9	8.2						
EC (uS/cm)								
Day 0	424	1934						
Day 4	449	1833						
DO (mg/L) (**70-100% saturation at test temp.**)								
Day 0	8.9	8.9						
Day 4	8.5	8.5						
Temperature (°C) (range: **14-16°C**)								
Day 0	14	14						
Day 4	15	15						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	4.5	0.8
2	3.1	0.3
3	4.7	0.9
4	3.9	0.5
5	4.1	0.7
6	4.3	0.7
7	4.1	0.7
8	4.1	0.7
9	4.4	0.8
10	4.0	0.6

Loading Density (g/L): 0.4 (must be ≤0.5 g/L)
Mean Length (cm): 4.1
Length Range (cm): 3.1 - 4.7
Mean Weight (g): 0.7 (Must be ≥0.3g)
Weight Range: (g): 0.3 - 0.9

Test Organism Information

Batch 20221012TR
Source Sam Livingston
Tank # 5
Days Held at 15± 2°C 22 (must be ≥14 days)
Percent stock mortality 0.58 (7 days prior to test, must be <2%)
Test Volume (L) 16.5 ~~18~~ mL

Comments :
96 hr: ppt on bottom of tank

Reviewed By: W Date Reviewed: 2022/12/19

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC 164 Reference 2223-1083-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/12/15	1430	DM/AG	2	CC
1	2022/12/16	1150	BS	-	JC
2	2022/12/17	0905	BS	2	NA

Sample Information

Initial pH:	8.1
Initial EC (µS/cm):	1951
Salinity (ppt):	2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				
day				pH (units) (range: 6.0-8.5)						
0	7.9	7.9	7.9	8.0	8.0	8.0				
2	8.0	8.0	8.0	8.1	8.1	8.1				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

				EC (uS/cm)						
0	415	430	433	1816	1895	1908				
2	402	433	432	1813	1862	1871				

				DO (mg/L) (**40-100% saturation at test temp.**)						
0	7.9	7.9	7.9	7.9	7.9	7.9				
2	7.9	7.9	7.9	7.9	7.9	7.9				

				Temperature (°C) (range: **18-22 °C**)						
0	20	20	20	20	20	20				
2	20	20	20	20	20	20				

				Number Alive (I, immobile)						
0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar Med Cl Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)

Days to first brood (≤12 days) 8

Average number of young produced (≥15 young) 31

Were test treatments randomized on test tray? Yes / No

Control Validity Criteria

Mean % mortality at 48 hours - (must be ≤10%) 0%

Sample

DO (mg/L) of sample prior to aeration: 9.0

Temperature (°C) of sample prior to aeration: 21

DO % of sample prior to aeration: 112

Is aeration required (<40% or >100%)? Yes or No

Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20min

Filtered with 110um screen prior to testing Yes or No

Hardness (mg $CaCO_3$/L) of 100% : 1159

Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or No

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —

Alkalinity of 100% sample (mg $CaCO_3$/L): 343

Dilution Water

Pail label / preparation date 3:12/12

Hardness of dilution water (mg/L) 162

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C

3.2 to 8.1 mg/L at 19°C

3.2 to 7.9 mg/L at 20°C

3.1 to 7.7 mg/L at 21°C

3.0 to 7.6 mg/L at 22°C

Comments/Observations:

0 hrs: No ppt

~~96 hrs:~~ 48hrs: surficial ppt

AM

Reviewed By: W Date Reviewed: 2022/12/19

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC164 Reference 2223-1083-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/12/15	1430	DM/AG	2	CC
1	2022/12/16	1130	BS	-	YC
2	2022/12/17	0820	BS	2	NA

Sample Information

Initial pH: 8.1
Initial EC (µS/cm): 1951
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	7.9	7.9	7.9	8.0	8.0	8.0				
2	7.9	7.9	7.9	8.2	8.2	8.2				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	415	428	432	1838	1890	1908				
2	425	434	437	1837	1915	1922				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar: wedC1
Jar(s) mortality 7 days prior to test (must be ≤25%): 0%

QA (previous month)
Days to first brood (≤12 days): 6
Average number of young produced (≥15 young): 31
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0%
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 10.6
DO % of sample prior to aeration: 113
Duration of aeration (37.5 +/- 12.5 mL/min/L): 20min
Hardness (mg $CaCO_3$/L) of 100% : 1159
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L): —
Alkalinity of 100% sample (mg $CaCO_3$/L): 243

Temperature (°C) of sample prior to aeration: 12
Is aeration required (<40% or >100%)? Yes or No
Filtered with 110um screen prior to testing Yes or No
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)

Dilution Water
Pail label / preparation date: 3:12/12
Hardness of dilution water (mg/L): 162

DO Levels (40-100% saturation) - corrected for altitude -
4.1 to 10.3 mg/L at 8°C
4.0 to 10.0 mg/L at 9°C
3.9 to 9.8 mg/L at 10°C
3.8 to 9.6 mg/L at 11°C
3.7 to 9.4 mg/L at 12°C

Comments/Observations:
0 hrs: NOPPT
48 hrs: No ppt

Reviewed By: W Date Reviewed: 2022/12/19

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS 5 Client TEC164 Reference 2223-1083-02

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/12/15	1428	DM/AG	2	CC
1	2022/12/16	1445	BS	-	JC
2	2022/12/17	0920	BS	2	NA

Sample Information

Initial pH:	8.1
Initial EC (µS/cm):	1957
Salinity (ppt):	2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	7.9	7.9	7.9	8.0	8.0	8.0				
2	8.0	8.0	8.0	8.3	8.3	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	412	426	428	1795	1889	1910				
2	431	435	435	1834	1873	1904				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.9	7.9	7.9				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	20	20	20				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar: wed Cl — Jar(s) mortality 7 days prior to test (must be ≤25%): 0%

QA (previous month)

Days to first brood (≤12 days): 8

Average number of young produced (≥15 young): 31

Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - (must be ≤10%): 0%

Sample

DO (mg/L) of sample prior to aeration: 9.8 — Temperature (°C) of sample prior to aeration: 21

DO % of sample prior to aeration: 123 — Is aeration required (<40% or >100%)? (Yes) or No

Duration of aeration (37.5 +/- 12.5 mL/min/L): 20min — Filtered with 110um screen prior to testing Yes or (No)

Hardness (mg $CaCO_3$/L) of 100% : 1159 — Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L): —

Alkalinity of 100% sample (mg $CaCO_3$/L): 343

Dilution Water

Pail label / preparation date: 4:12/12

Hardness of dilution water (mg/L): 172

Antiscalant

Final Concentration in Sample: 5mg/L

Volume of sample: 500mL — Volume of antiscalant: 395µL

Comments/Observations:

0 hrs: NO ppt

48 hrs: No ppt

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Reviewed By: W — Date Reviewed: 2022/12/19

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method: DAS 20 | Client: TEC 164 | Reference: 2223-1083-03

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/12/15	1445	DMAG	2	CC
1	2022/12/16	1145	BS	-	YC
2	2022/12/17	0920	BS	2	NA

Sample Information

Initial pH:	8.3
Initial EC (µS/cm):	1899
Salinity (ppt):	2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	7.9	7.9	7.9	8.2	8.2	8.2				
2	8.1	8.0	8.0	8.2	8.2	8.2				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	407	430	433	1811	1884	1909				
2	437	440	439	1755	1847	1872				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.9	7.9	7.9				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	20	20	20				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar: wedC3 — Jar(s) mortality 7 days prior to test (must be ≤25%): 0%

QA (previous month)

Days to first brood (≤12 days): 8

Average number of young produced (≥15 young): 31

Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - (must be ≤10%): 0%

Sample

DO (mg/L) of sample prior to aeration: 9.7 — Temperature (°C) of sample prior to aeration: 21

DO % of sample prior to aeration: 122 — Is aeration required (<40% or >100%)? (Yes) or No

Duration of aeration (37.5 +/- 12.5 mL/min/L): 20min — Filtered with 110um screen prior to testing: Yes or (No)

Hardness (mg $CaCO_3$/L) of 100% : ~~370~~ 368 — Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L): —

Alkalinity of 100% sample (mg $CaCO_3$/L): ~~368~~ 336

Dilution Water

Pail label / preparation date: 4:12/12

Hardness of dilution water (mg/L): 172

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Comments/Observations:

0 hrs: No ppt

~~96 hrs:~~ 48hrs: Surficial ppt AM

Reviewed By: W — Date Reviewed: 2022/12/19

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC164 Reference 2223-1083-03

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/12/15	1435	DM/AG	2	CC
1	2022/12/16	1130	~~BS~~	-	~~AC~~
2	2022/12/17	0820	BS	2	NA

Sample Information

Initial pH: 8.3
Initial EC (µS/cm): ~~1899~~ 1899
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	7.9	7.9	7.9	8.2	8.2	8.2				
2	7.9	7.9	7.9	8.2	8.2	8.2				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	418	430	432	1944	1905	1909				
2	445	441	438	1816	1890	1911				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar MAC Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 4
Average number of young produced (≥15 young) 31
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0%
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 11.5 Temperature (°C) of sample prior to aeration: 12
DO % of sample prior to aeration: 122 Is aeration required (<40% or >100%)? (Yes) or No
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20min Filtered with 110um screen prior to testing Yes or (No)
Hardness (mg $CaCO_3$/L) of 100% : ~~336~~ 368 Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): ~~468~~ 336

Dilution Water
Pail label / preparation date 31/12/12
Hardness of dilution water (mg/L) 162

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

Comments/Observations:
0 hrs: NOPPT
48 hrs: NO PPT

Reviewed By: LO Date Reviewed: 2022/12/19

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS 5 Client TEC 164 Reference 2227-1083-04

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/12/15	1456	DM/AG	2	CC
1	2022/12/16	1145	BS	-	JC
2	2022/12/17	0920	BS	2	NA

Sample Information

Initial pH:	8.3
Initial EC (µS/cm):	1899
Salinity (ppt):	2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				
day				pH (units) (range: 6.0-8.5)						
0	7.9	7.9	7.9	8.2	8.2	8.2				
2	7.9	8.0	8.0	8.1	8.1	8.1				
				The pH of the sample was not adjusted prior to test setting, unless noted in the comments below						
				EC (uS/cm)						
0	422	432	432	1822	1891	1908				
2	410	429	435	1793	1846	1880				
				DO (mg/L) (**40-100% saturation at test temp.**)						
0	7.9	7.9	7.9	7.9	7.9	7.9				
2	7.9	7.9	7.9	7.9	7.9	7.9				
				Temperature (°C) (range: **18-22 °C**)						
0	20	20	20	20	20	20				
2	20	20	20	20	20	20				
				Number Alive (I, immobile)						
0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar wed C4 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 31
Were test treatments randomized on test tray? Yes / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0%

Sample
DO (mg/L) of sample prior to aeration: 9.7
DO % of sample prior to aeration: 121
Duration of aeration (37.5 +/- 12.5 mL/min/L): 20min
Hardness (mg $CaCO_3$/L) of 100%: ~~336~~ 968
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): ~~968~~ 336

Temperature (°C) of sample prior to aeration: 21
Is aeration required (<40% or >100%)? **Yes or No**
Filtered with 110um screen prior to testing **Yes or No**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Dilution Water
Pail label / preparation date 3/12/12
Hardness of dilution water (mg/L) 162

Antiscalant
Final Concentration in Sample: 5 mg/L
Volume of sample: 500mL Volume of antiscalant: 395NL

Comments/Observations:
0Hr: no ppt
48Hr: Surficial ppt

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Reviewed By: SS Date Reviewed: 2022/12/21

APPENDIX C – Chain-of-custody form

Teck

Page 1 of 1

COC ID: EVO NAUTILUS 121322 **TURNAROUND TIME:** Regular (default) **RUSH:** NO

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name	Elkview Operation			Lab Name	Nautilus			Report Format / Distribution		Excel	PDF	EDD
EQuIS Facility Code	EVO			Lab Contact	Jacklyn Poole			Email 1:	DL-EVO-SRF-LAB@teck.com	X	X	X
Project Manager	Brett Mason			Email	jacklyn@nautilusenvironmental.ca			Email 2:	Cole.Macgregor@teck.com	X	X	X
Email	brett.mason@teck.com			Address	10823 27th Street SE			Email 3:	TeckCoal@equisonline.com			X
Address	RR1 HWY 3							Email 4:				
City	Sparwood	Province	BC	City	Calgary	Province	AB	Email 5:				
Postal Code	V0B 2G0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada	Email 6:				
Phone Number	250 425 4837			Phone Number	403 253 7121			PO number	859537			

SAMPLE DETAILS / **ANALYSIS REQUESTED**

2022/12/14
09:18
Manitoulin
3CrSRS
8x20L carboys
10x1L bottles
NoS/NoE
Good Condition

Please indicate Y below if Filtered

Sample ID 2223-1083	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	ANALYSIS: NAUT_48hr_DM_PF Daphnia magna Acute Toxicity 20C	NAUT_48hr_DM_PF _MOD10 Daphnia magna Acute Toxicity 10C	NAUT_48hr_DM_PF _SAS Daphnia magna Acute Toxicity 5mg/L Antiscalant	NAUT_96hr_RT_PF Rainbow Trout Acute Toxicity	NAUT_48hr_DM_PF _MOD15 Daphnia magna Acute Toxicity 15C		
EV_BC1_WS_2022-12-13_N-SRF -01	EV_BC1	WS		2022-12-13	07:50	G	8	2	2		4		~0.1°C	
EV_BC1_WS_2022-12-13_N-SRF-AS -02	EV_BC1	WS		2022-12-13	07:51	G	1			1			↓	
EV_GT1_WS_2022-12-13_N-SRF -03	EV_GT1	WS		2022-12-13	07:30	G	8	2	2		4		~2.4°C	
EV_GT1_WS_2022-12-13_N-SRF-AS -04	EV_GT1	WS		2022-12-13	07:31	G	1			1			↓	

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	Date	Time	ACCEPTED BY/AFFILIATION	Date	Time
		13-Dec-22				

SERVICE REQUEST (rush - subject to availability)

Regular (default)	X
Priority (2-3 business days) - 50% surcharge	
Emergency (1 Business Day) - 100% surcharge	
For Emergency <1 Day, ASAP or Weekend - Contact Nautilus	

Sampler's Name	ABlock	Mobile #	
Sampler's Signature		Date/Time	13-Dec-22

END OF REPORT

Acute Toxicity Test Results

Samples collected December 19, 2022

Final Report

January 10, 2023

Submitted to: **Teck Coal Ltd.**
Sparwood, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates					
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation	*Daphnia magna* 20 mg/L antiscalant test initiation
F2_BPO_WG_2022-12-19_N/ 2223-1146-01	19-Dec-22 at 1025h	20-Dec-22 at 1200h	21-Dec-22 at 1455h	21-Dec-22 at 1420h	21-Dec-22 at 1435h	-
F2_BPO_WG_2022-12-19_N-AS/ 2223-1146-02	19-Dec-22 at 1025h	20-Dec-22 at 1200h	-	-	-	21-Dec-22 at 1435h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
F2_BPO_WG_2022-12-19_N	0.3°C	1092	373
F2_BPO_WG_2022-12-19_N-AS	0.3°C	1092	373

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)
- *Daphnia magna* 48-h single concentration screening test (conducted with 20 mg/L antiscalant)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample			
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* 20 mg/L antiscalant
F2_BPO_WG_2022-12-19_N	100	100	100	-
F2_BPO_WG_2022-12-19_N-AS	-	-	-	100

Sample ID	Percent Immobility in 100 (% v/v)		
	Daphnia magna 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* 20 mg/L antiscalant
F2_BPO_WG_2022-12-19_N	0	0	-
F2_BPO_WG_2022-12-19_N-AS	-	-	0

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
F2_BPO_WG_2022-12-19_N	Rainbow trout	None	None
	Daphnia magna	None	None
F2_BPO_WG_2022-12-19_N-AS	*Daphnia magna*	None	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	4.0 (3.4-4.5) g/L KCl[1]	6.8 (6.3-7.2) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.8 (3.0-4.9) g/L KCl	6.2 (5.3-7.3) g/L NaCl
Reference toxicant CV	8.1%	5.3%
Organism health history	Acceptable	Acceptable
Protocol deviations	See Below	See below
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, December 21, 2022; [2] Test Date December 19, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation

The sample was frozen upon receipt. Sample was brought to temperature and the tests were conducted as per the client's request.



Report By:
Lily Cole, B.Sc.
Laboratory Biologist



Reviewed By:
Emma Pedersen, BSc
Laboratory Biologist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Control/dilution water for antiscalant test	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L), Na_2SeO_4 (2 µg Se/L) and 20 mg/L antiscalant
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14 with February 2016 amendments
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14 with February 2016 amendments
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC164 Reference 2223-1146-01 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022-12-21	1455 *	BS/ML	7	MM
1	2022-12-22	0910	NZ	-	NC
2	2022-12-23	0835	MS	-	AM
3	2022-12-24	0850	NZ	-	EP
4	2022-12-25	0935	ML/HG/AJ	7	NA

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 7.5
Initial EC (µS/cm): 1783
Salinity (ppt): 4

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L : **yes/no**

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	9.3	8.9			
Temp (°C) of 100%	14				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: **5.5-8.5**)								
Day 0	7.9	7.7						
Day 4	7.6	8.3						
EC (uS/cm)								
Day 0	387	1872						
Day 4	378	1775						
DO (mg/L) (**70-100% saturation at test temp.**)								
Day 0	8.9	8.9						
Day 4	8.6	8.6						
Temperature (°C) (range: **14-16°C**)								
Day 0	14	14						
Day 4	16	16						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	4.2	0.6
2	4.0	0.5
3	4.3	0.6
4	4.1	0.5
5	4.1	0.5
6	3.7	0.4
7	3.7	0.4
8	4.0	0.5
9	3.9	0.5
10	3.3	0.3

Loading Density (g/L): 0.3 (must be ≤0.5 g/L)
Mean Length (cm): 3.9
Length Range (cm): 3.3-4.3
Mean Weight (g): 0.5 (Must be ≥0.3g)
Weight Range: (g): 0.3-0.6

Test Organism Information

Batch 20220921TR
Source Trout Lodge
Tank # 3
Days Held at 15± 2°C 69 (must be ≥14 days)
Percent stock mortality 0 (7 days prior to test, must be <2%)
Test Volume (L) 18

Comments :
96 hr: NO ppt

Reviewed By: [signature] Date Reviewed: DEC 28 2022

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS Client TEC 164 Reference 2223-1146-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/12/21	1435	AG/LC	2	CC
1	2022/12/22	1000	AG	-	LC
2	2022/12/23	0810	BS	2	LC

Sample Information

Initial pH: 7.5
Initial EC (µS/cm): 1783
Salinity (ppt): 4

Lab Code	CTL A	CTLB	CTL C	100 A	100 B	100 C

pH (units) (range: 6.0-8.5)

day										
0	7.8	7.8	7.8	7.9	7.9	7.9				
2	7.9	7.8	7.8	8.2	8.2	8.2				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	389	389	392	1835	1859	1860				
2	394	394	399	1779	1842	1851				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.9	7.9	7.9				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	20	20	20				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar wedE5 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 9
Average number of young produced (≥15 young) 24
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0%
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 10.1
DO % of sample prior to aeration: 123%
Duration of aeration (37.5 +/- 12.5 mL/min/L): 20mins
Hardness (mg $CaCO_3$/L) of 100% : 1092
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 373

Temperature (°C) of sample prior to aeration: 20°C
Is aeration required (<40% or >100%)? **Yes or No**
Filtered with 110um screen prior to testing **Yes or No**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Dilution Water
Pail label / preparation date pl: 12/19
Hardness of dilution water (mg/L) 163

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Comments/Observations:
0 HR No ppt
48 HRS No ppt

Reviewed By: CV Date Reviewed: DEC 28 2022

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC 164 Reference 2223-1146-02 LC-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/12/21	1420	AG/LC	2	CC
1	2022/12/22	1000	AG	-	LC
2	2022/12/23	0800	BS	2	LC

Sample Information

Initial pH: 7.5
Initial EC (µS/cm): 1783
Salinity (ppt): 4

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day											
0	7.8	7.8	7.8	7.8	7.8	7.8					
2	7.7	7.8	7.8	8.1	8.2	8.2					

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	405	395	394	1881	1894	1888					
2	381	400	406	1746	1871	1907					

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	10.5	10.5	10.5					
2	9.4	9.4	9.4	9.4	9.4	9.4					

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	ic 12.8	ic 12.8	ic 12.8					
2	12	12	12	12	12	12					

Number Alive (I, immobile)

0	10	10	10	10	10	10					
1	10	10	10	10	10	10					
2	10	10	10	10	10	10					

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar NaCl Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 23
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0%

Sample
DO (mg/L) of sample prior to aeration: 12.0
DO % of sample prior to aeration: 109.1
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20 mins
Hardness (mg $CaCO_3$/L) of 100% : 1092
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 373
Temperature (°C) of sample prior to aeration: 8°C
Is aeration required (<40% or >100%)? **Yes or No**
Filtered with 110um screen prior to testing **Yes or No**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Dilution Water
Pail label / preparation date P1: 12/19
Hardness of dilution water (mg/L) 163

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

Comments/Observations:
0 HR NO PPT
48 HRS NO PPT.

Reviewed By: CV Date Reviewed: DEC 28 2022

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS 20 Client TEC 164 Reference 2223-1146-02

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/12/21	1435	AG/LC	2	CC
1	2022/12/22	1000	AG	-	LC
2	2022/12/23	0910	BS	2	LC

Sample Information

Initial pH:	7.5
Initial EC (µS/cm):	1783
Salinity (ppt):	4

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	7.8	7.8	7.8	7.9	7.9	7.9				
2	7.9	7.9	7.8	8.2	8.2	8.2				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	428	394	394	1834	1863	1864				
2	404	412	399	1743	1831	1863				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.9	7.9	7.9				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	20	20	20				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar WPA001 Jar(s) mortality 7 days prior to test (must be ≤25%) 5:1.

QA (previous month)

Days to first brood (≤12 days) 8

Average number of young produced (≥15 young) 27

Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - (must be ≤10%) 0%

Sample

DO (mg/L) of sample prior to aeration: 10.1 Temperature (°C) of sample prior to aeration: 20°C

DO % of sample prior to aeration: 123.1. Is aeration required (<40% or >100%)? (Yes) or No

Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20mins Filtered with 110um screen prior to testing **Yes or (No)**

Hardness (mg $CaCO_3$/L) of 100% : 1042 Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or (No)**

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —

Alkalinity of 100% sample (mg $CaCO_3$/L): 373

Dilution Water

Pail label / preparation date P1: 12/19

Hardness of dilution water (mg/L) 163

Antiscalant

Final Concentration in Sample: 20mg/L

Volume of sample: 500mL Volume of antiscalant: 158

Comments/Observations:

0 HR no ppt

48 HRS No ppt

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Reviewed By: CW Date Reviewed: DEC 28 2022

APPENDIX C – Chain-of-custody form

Teck

COC ID: FSF NAUTILUS 121922 | TURNAROUND TIME: Regular (default) | RUSH: NO

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name	F2 SRF			Lab Name	Nautilus			Report Format / Distribution		Excel	PDF	EDD
EQuIS Facility Code	FSF			Lab Contact	Jacklyn Poole			Email 1:	DL-EVO-SRF-LAB@teck.com	X	X	X
Project Manager	Brett Mason			Email	jacklyn@nautilusenvironmental.ca			Email 2:	Cole.Macgregor@teck.com	X	X	X
Email	brett.mason@teck.com			Address	10823 27th Street SE			Email 3:	TeckCoal@equisonline.com			X
Address	RR1 HWY 3							Email 4:				
City	Sparwood	Province	BC	City	Calgary	Province	AB	Email 5:				
Postal Code	V0B 2G0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada	Email 6:				
Phone Number	250 425 4837			Phone Number	403 253 7121			PO number	859537			

SAMPLE DETAILS

2022/12/20
12:00
Manitoulin
JC
4x20L carboys, 5x1L bottles
NoS/NoJ
4/4 carboys >50% frozen, 5/5x 1L bottles >50% frozen

ANALYSIS REQUESTED

Please indicate Y below if Filtered

Sample ID 2223-1146	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	ANALYSIS: NAUT_48hr_DM_PF 48hr Daphnia magna Acute Toxicity 20C	NAUT_48hr_DM_PF_MOD10 48hr Daphnia magna Acute Toxicity 10C	NAUT_48hr_DM_PF_20AS 48hr Daphnia magna Acute Toxicity 20mg/L Antiscalant	NAUT_96hr_RT_PF 96hr Rainbow Trout Acute Toxicity	NAUT_48hr_DM_PF_MOD15 48hr Daphnia magna Acute Toxicity 15C									
F2_BPO_WG_2022-12-19_N -01	F2_BPO	WG		2022-12-19	10:25	G	8	2	2		4		8.3°C								
F2_BPO_WG_2022-12-19_N-AS -02	F2_BPO	WG		2022-12-19	10:25	G	1			1			↓								

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	Date	Time	ACCEPTED BY/AFFILIATION	Date	Time
	Nick Legarda - Teck	19-Dec-22	1400			

SERVICE REQUEST (rush - subject to availability)					
Regular (default)	X	Sampler's Name	James S Rotar	Mobile #	
Priority (2-3 business days) - 50% surcharge					
Emergency (1 Business Day) - 100% surcharge		Sampler's Signature		Date/Time	19-Dec-22
For Emergency <1 Day, ASAP or Weekend - Contact Nautilus					

END OF REPORT

Acute Toxicity Test Results

Samples collected December 27, 2022

Final Report

January 19, 2023

Submitted to: **Teck Coal Ltd.**
Sparwood, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates					
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation	*Daphnia magna* antiscalant test initiation
F2_BPO_WG_2022-12-27_N / 2223-1207-01	27-Dec-22 at 0820h	28-Dec-22 at 1510h	29-Dec-22 at 1415h	29-Dec-22 at 1425h	29-Dec-22 at 1420h	-
F2_BPO_WG_2022-12-27_N-AS / 2223-1207-02	27-Dec-22 at 0821h	28-Dec-22 at 1510h	-	-	-	29-Dec-22 at 1425h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
F2_BPO_WG_2022-12-27_N	5.5°C	1237	400
F2_BPO_WG_2022-12-27_N-AS	5.5°C	1237	400

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)
- *Daphnia magna* 48-h single concentration screening test (conducted with 20 mg/L antiscalant)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample			
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
F2_BPO_WG_2022-12-27_N	100	100	100	-
F2_BPO_WG_2022-12-27_N-AS	-	-	-	100

Sample ID	Percent Immobility in 100 (% v/v)		
	Daphnia magna 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
F2_BPO_WG_2022-12-27_N	0	0	-
F2_BPO_WG_2022-12-27_N-AS	-	-	0

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
F2_BPO_WG_2022-12-27_N	Rainbow trout	None	None
	Daphnia magna	Surficial precipitate and precipitate observed on test vessel in 20˚C test	Precipitate observed on carapace in 10˚C test
F2_BPO_WG_2022-12-27_N-AS	*Daphnia magna*	None	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	4.0 (3.4-4.5) g/L KCl[1]	6.8 (6.3-7.2) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.8 (3.0-4.9) g/L KCl	6.2 (5.3-7.3) g/L NaCl
Reference toxicant CV	8.1%	5.3%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date December 21, 2022; [2] Test date December 19, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation





Report By:
Kiara O'Shea, BSc
Laboratory Biologist

Reviewed By:
Leila Oosterbroek, P Biol
Environmental Scientist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5-gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Control/dilution water for antiscalant test	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L), Na_2SeO_4 (2 µg Se/L) and 20 mg/L antiscalant
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14 with February 2016 amendments
Statistical software	None
Test endpoints	Mean percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14 with February 2016 amendments
Statistical software	None
Test endpoints	Mean percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC164 Reference 2223-1207 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022-12-29	1415 *	BS/KCRM	7	MAF
1	2022-12-30	0930	KCRM	-	EP
2	2022-12-31	0920	NZ	-	EP
3	2023-01-01	0900	MAF	-	CC
4	2023-01-02	1020	KCRM/CC	7	MAF

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 7.8
Initial EC (µS/cm): 1857
Salinity (ppt): 2

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L : yes/no

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	8.9	8.9			
Temp (°C) of 100%	14				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	8.1	7.6						
Day 4	8.2	8.5						
EC (uS/cm)								
Day 0	465	1931						
Day 4	456	1828						
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	8.8 (KCRM 11.68)	8.9						
Day 4	8.8	8.8						
Temperature (°C) (range: 14-16°C)								
Day 0	15	14						
Day 4	15	15						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10(3)						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	4.1	0.6
2	4.1	0.6
3	4.0	0.5
4	4.2	0.7
5	4.0	0.5
6	4.1	0.6
7	4.6	0.8
8	3.8	0.5
9	3.7	0.5
10	4.6	0.8

Loading Density (g/L): 0.3 (must be ≤0.5 g/L)
Mean Length (cm): 4.1
Length Range (cm): 3.7-4.6
Mean Weight (g): 0.6 (Must be ≥0.3g)
Weight Range: (g): 0.5-0.8

Test Organism Information

Batch 20220921TR
Source Trout Lodge
Tank # 3
Days Held at 15± 2°C 77 (must be ≥14 days)
Percent stock mortality 0 (7 days prior to test, must be <2%)
Test Volume (L) 18

Comments :
96 hr: NZ buoyancy low buoyancy, dark coloration no ppt

Reviewed By: MAF Date Reviewed: 23/01/01

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC 164 Reference 2223-1207-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/12/29	1420	CC/DM	2	CC
1	2022/12/30	1030	DM	-	EP
2	2022/12/31	0850	AM	2	EP

Sample Information

Initial pH:	7.8
Initial EC (µS/cm):	1857
Salinity (ppt):	2

Lab Code	CTL A	CTL B	CTL C	100 A	100 B	100 C

pH (units) (range: 6.0-8.5)

day										
0	8.2	8.1	8.1	8.1	8.1	8.1				
2	7.9	8.1	8.1	8.2	AM 8.3	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	396	408	409	1739	1809	1827				
2	384	413	415	1666	1756	1781				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	8.1	8.1	8.1				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	19	19	19				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar wdC5 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)

Days to first brood (≤12 days) 8

Average number of young produced (≥15 young) 32

Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - 0%
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 9.2

DO % of sample prior to aeration: 112

Duration of aeration (37.5 +/- 12.5 mL/min/L): 20min

Hardness (mg $CaCO_3$/L) of 100% : 1237

Temperature (°C) of sample prior to aeration: 18

Is aeration required (<40% or >100%)? **Yes or No**

Filtered with 110um screen prior to testing **Yes or No**

Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —

Alkalinity of 100% sample (mg $CaCO_3$/L): 400

Dilution Water

Pail label / preparation date 21/12/23

Hardness of dilution water (mg/L) 185

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Comments/Observations:

0 Hr: NO ppt

48 Hr: ppt on ♀ + surficial ppt

Reviewed By: MAP Date Reviewed: 23/01/01

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC 164 Reference 2223-1207-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/12/29	1425	CC/DM	2	JC
1	2022/12/30	1025	AM	-	EP
2	2022/12/31	0810	AM/KLM	2	EP

Sample Information

Initial pH:	7.8
Initial EC (µS/cm):	1857
Salinity (ppt):	2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	8.1	8.1	8.1	7.6	7.5	7.6				
2	8.1	8.1	8.1	8.3	8.3	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	392	407	409	1780	1846	1862				
2	414	416	416	1785	1825	1827				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	*9	10	10	10	10				
2	10	9	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar wed C5 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)

Days to first brood (≤12 days) 8

Average number of young produced (≥15 young) 32

Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - 0%
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 9.4 Temperature (°C) of sample prior to aeration: 12

DO % of sample prior to aeration: 100 Is aeration required (<40% or >100%)? **Yes or (No)**

Duration of aeration (37.5 +/- 12.5 mL/min/L): - Filtered with 110um screen prior to testing **Yes or (No)**

Hardness (mg $CaCO_3$/L) of 100% : 1237 Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or (No)**

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) -

Alkalinity of 100% sample (mg $CaCO_3$/L): 400

Dilution Water

Pail label / preparation date 2;12/23

Hardness of dilution water (mg/L) 185

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

Comments/Observations:

0Hr: NOppt

48Hr: ppt on carapace.

*1 dried to jar. exclude from mortality.

Reviewed By: MAR Date Reviewed: 22/01/01

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method: DAS AS 20 | Client: TEC 164 | Reference: ~~2223-1205-02~~ CC 2223-1207-01-02 CC MM

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/12/29	1425	CC/DM	2	YC
1	2022/12/30	1020	DM	-	EP
2	2022/12/31	0900	AM	2	EP

Sample Information

Initial pH:	~~7.8~~	7.8
Initial EC (µS/cm):	~~1857~~	1857
Salinity (ppt):	~~2~~	2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	8.1	8.1	8.1	7.9	7.9	7.9				
2	8.2	8.1	8.1	8.4	8.5	8.5				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	397	407	412	1767	1827	1838				
2	407	421	422	1692	1796	1805				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	8.1	8.1	8.1				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	19	19	19				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar: wedC5 | Jar(s) mortality 7 days prior to test (must be ≤25%): 0%

QA (previous month)

Days to first brood (≤12 days): 8

Average number of young produced (≥15 young): 32

Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - (must be ≤10%): 0%

Sample

DO (mg/L) of sample prior to aeration: 9.3 | Temperature (°C) of sample prior to aeration: 18

DO % of sample prior to aeration: 113 | Is aeration required (<40% or >100%)? **Yes or No**

Duration of aeration (37.5 +/- 12.5 mL/min/L): 20min | Filtered with 110um screen prior to testing **Yes or No**

Hardness (mg $CaCO_3$/L) of 100%: ~~2578~~ 1237 | Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L): —

Alkalinity of 100% sample (mg $CaCO_3$/L): CC ~~546~~ 400

Dilution Water

Pail label / preparation date: 21.12/23

Hardness of dilution water (mg/L): 185

Antiscalant

Final Concentration in Sample: 20 mg/L

Volume of sample: 500 mL | Volume of antiscalant: 158.0NL

Comments/Observations:

0Hr: NO ppt

48Hr: no ppt

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Reviewed By: MAF | Date Reviewed: 2301/01

APPENDIX C – Chain-of-custody form

Teck

COC ID: FSF NAUTILUS 122722 **TURNAROUND TIME:** Regular (default) **RUSH:** NO

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name	F2 SRF			Lab Name	Nautilus			Report Format / Distribution		Excel	PDF	EDD
EQuIS Facility Code	FSF			Lab Contact	Jacklyn Poole			Email 1:	DL-EVO-SRF-LAB@teck.com	X	X	X
Project Manager	Brett Mason			Email	jacklyn@nautilusenvironmental.ca			Email 2:	Cole.Macgregor@teck.com	X	X	X
Email	brett.mason@teck.com			Address	10823 27th Street SE			Email 3:	TeckCoal@equisonline.com			X
Address	RR1 HWY 3							Email 4:				
City	Sparwood	Province	BC	City	Calgary	Province	AB	Email 5:				
Postal Code	V0B 2G0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada	Email 6:				
Phone Number	250 425 4837			Phone Number	403 253 7121			PO number	859537			

SAMPLE DETAILS / **ANALYSIS REQUESTED**

2022/12/28
1510
Nanitoulin
N2/B5
4x20L carboys
5x 1L bottles
No S/No I
Good Condition

Please indicate Y below if Filtered

Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	ANALYSIS: NAUT_48hr_DM_PF 48hr Daphnia magna Acute Toxicity 20C	NAUT_48hr_DM_PF_MOD10 48hr Daphnia magna Acute Toxicity 10C	NAUT_48hr_DM_PF_20AS 48hr Daphnia magna Acute Toxicity 20mg/L Antiscalant	NAUT_96hr_RT_PF 96hr Rainbow Trout Acute Toxicity	NAUT_48hr_DM_PF_MOD15 48hr Daphnia magna Acute Toxicity 15C									
F2_BPO_WG_2022-12-27_N -01	F2_BPO	WG		2022-12-27	08:20	G	8	2	2		4		5.5								
F2_BPO_WG_2022-12-27_N-AS -02	F2_BPO	WG		2022-12-27	08:21	G	1			1			5.5								
2223-1207																					

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	Date	Time	ACCEPTED BY/AFFILIATION	Date	Time
	Humberto Alvarado	27-Dec-22	16:20			

SERVICE REQUEST (rush - subject to availability)					
Regular (default)	X	Sampler's Name	Carter Phillips	Mobile #	
Priority (2-3 business days) - 50% surcharge					
Emergency (1 Business Day) - 100% surcharge		Sampler's Signature	Carter Phillips	Date/Time	27-Dec-22
For Emergency <1 Day, ASAP or Weekend - Contact Nautilus					

END OF REPORT

Acute Toxicity Test Results

Samples collected December 27, 2022

Final Report

January 19, 2023

Submitted to: **Teck Coal Ltd.**
Sparwood, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates					
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation	*Daphnia magna* antiscalant test initiation
EV_EC1_WS_2022-12-27_N-SRF/ 2223-1208-01	27-Dec-22 at 1040h	28-Dec-22 at 1515h	29-Dec-22 at 1425	29-Dec-22 at 1430h	29-Dec-22 at 1430h	-
EV_EC1_WS_2022-12-27_N-SRF-AS/ 2223-1208-02	27-Dec-22 at 1041h	28-Dec-22 at 1515h	-	-	-	29-Dec-22 at 1435h
EV_ECOUT_WS_2022-12-27_N-SRF/ 2223-1208-03	27-Dec-22 at 1400h	28-Dec-22 at 1515h	29-Dec-22 at 1420h	29-Dec-22 at 1425h	29-Dec-22 at 1435h	-
EV_ECOUT_WS_2022-12-27_N-SRF-AS/ 2223-1208-04	27-Dec-22 at 1401h	28-Dec-22 at 1515h	-	-	-	29-Dec-22 at 1440h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
EV_EC1_WS_2022-12-27_N-SRF	7.4°C	1148	372
EV_EC1_WS_2022-12-27_N-SRF-AS	4.6°C	1148	372
EV_ECOUT_WS_2022-12-27_N-SRF	7.4°C	1211	455
EV_ECOUT_WS_2022-12-27_N-SRF-AS	6.3°C	1211	455

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)
- *Daphnia magna* 48-h single concentration screening test (conducted with 5 mg/L antiscalant)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample			
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
EV_EC1_WS_2022-12-27_N-SRF	100	100	100	-
EV_EC1_WS_2022-12-27_N-SRF-AS	-	-	-	100
EV_ECOUT_WS_2022-12-27_N-SRF	100	100	100	-
EV_ECOUT_WS_2022-12-27_N-SRF-AS	-	-	-	100

Sample ID	Percent Immobility in 100 (% v/v)		
	Daphnia magna 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
EV_EC1_WS_2022-12-27_N-SRF	0	0	-
EV_EC1_WS_2022-12-27_N-SRF-AS	-	-	0
EV_ECOUT_WS_2022-12-27_N-SRF	0	0	-
EV_ECOUT_WS_2022-12-27_N-SRF-AS	-	-	0

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
EV_EC1_WS_2022-12-27_N-SRF	Rainbow trout	Precipitate observed on test vessel	None
	Daphnia magna	Surficial precipitate observed and precipitate observed on test vessel in 20-degree test	None
EV_EC1_WS_2022-12-27_N-SRF-AS	*Daphnia magna*	None	None
EV_ECOUT_WS_2022-12-27_N-SRF	Rainbow trout	Precipitate observed on test vessel	None
	Daphnia magna	Surficial precipitate observed and precipitate observed on test vessel in 10 and 20-degree test	Precipitate observed on carapace in 10 and 20-degree tests
EV_ECOUT_WS_2022-12-27_N-SRF-AS	*Daphnia magna*	Surficial precipitate observed	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	4.0 (3.4-4.5) g/L KCl[1]	6.8 (6.3-7.2) g/L NaCl [2]
Reference toxicant historical mean (2 SD Range)	3.8 (3.0-4.9) g/L KCl	6.2 (5.3-7.3) g/L NaCl
Reference toxicant CV	8.1%	5.3%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, December 21, 2022; [2] Test Date December 19, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation

Report By:
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Reviewed By:
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This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Control/dilution water for antiscalant test	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L), Na_2SeO_4 (2 µg Se/L) and 5 mg/L antiscalant
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14 with February 2016 amendments
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14 with February 2016 amendments
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC164 Reference 2223-1208-01 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022-12-29	1425 *	BS/KCRM	7	MAF
1	2022-12-30	0930	Kcrm	-	EP
2	2022-12-31	0920	NZ	-	EP
3	2023-01-01	0800	MAF	-	CC
4	2023-01-02	1025	Kcrm/CC	7	MAF

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 8.2
Initial EC (µS/cm): 1736
Salinity (ppt): 3

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L (yes?no)

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	10.7	8.9			
Temp (°C) of 100%	8.1				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	8.2	8.1						
Day 4	8.2	8.3						
EC (uS/cm)								
Day 0	467	1831						
Day 4	458	1709						
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	8.9	8.9						
Day 4	8.8	8.8						
Temperature (°C) (range: 14-16°C)								
Day 0	14	14						
Day 4	15	15						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	4.3	0.8
2	4.3	0.6
3	4.4	0.6
4	4.4	0.7
5	4.4	0.6
6	4.3	0.6
7	3.9	0.5
8	3.4	0.3
9	3.7	0.4
10	4.5	0.8

Loading Density (g/L): 0.3
(must be ≤0.5 g/L)
Mean Length (cm): 4.2
Length Range (cm): 3.4-4.5
Mean Weight (g): 0.6
(Must be ≥0.3g)
Weight Range: (g): 0.3-0.8

Test Organism Information

Batch 20220921TR
Source Trout Lodge
Tank # 3
Days Held at 15± 2°C 7 7
(must be ≥14 days)
Percent stock mortality 0
(7 days prior to test, must be <2%)
Test Volume (L) 18

Comments :
96 hr: PP+ Sides & bottom

Reviewed By: MAF Date Reviewed: 23/01/01

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC164 Reference 2223-1208-02/03 MAF Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022-12-29	1420 *	BS/KCRM	7	MAF
1	2022-12-30	0930	Karm	-	EP
2	2022-12-31	0910	N2	-	EP
3	2023-01-01	0800	MAF	-	CC
4	2023-01-02	1030	Karm/CC	7	MAF

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: Karm 8.2 7.9
Initial EC (µS/cm): 1730 Karm 1892
Salinity (ppt): 3

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L (yes)/no

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	10.3	8.9			
Temp (°C) of 100%	8				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	8.2	7.9						
Day 4	8.2	8.2						
EC (uS/cm)								
Day 0	449	1943						
Day 4	463	1746						
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	8.9	8.9						
Day 4	8.8	8.8						
Temperature (°C) (range: 14-16°C)								
Day 0	14	14						
Day 4	15	15						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	4.4	0.7
2	4.2	0.6
3	4.2	0.6
4	4.1	0.5
5	4.3	0.7
6	4.0	0.7
7	4.1	0.8
8	4.1	0.6
9	4.1	0.6
10	4.8	0.9

Loading Density (g/L): 0.4 (must be ≤0.5 g/L)
Mean Length (cm): 4.2
Length Range (cm): 4.0-4.8
Mean Weight (g): 0.7 (Must be ≥0.3g)
Weight Range: (g): 0.5-0.9

Test Organism Information

Batch 20220921TR
Source Trout Lodge
Tank # 3
Days Held at 15± 2°C 77 (must be ≥14 days)
Percent stock mortality 0 (7 days prior to test, must be <2%)
Test Volume (L) 18

Comments :
96 hr: PPT sides & bottom

Reviewed By: MAF Date Reviewed: 23/01/01

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC 164 Reference 2223-1208-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/12/29	1430	CC/DM	2	DC
1	2022/12/30	1020	DM	-	EP
2	2022/12/31	1015	AM	2	EP

Sample Information

Initial pH: 8.2
Initial EC (µS/cm): 1736
Salinity (ppt): 3

Lab Code	CTL A	CTL B	CTL C	100 A	100 B	100 C				

pH (units) (range: 6.0-8.5)

day										
0	8.1	8.1	8.1	8.1	8.1	8.1				
2	8.1	8.1	8.1	8.1	8.2	8.2				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	398	408	410	1677	1741	1764				
2	420	419	414	1630	1710	1745				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	8.2	8.2	8.2				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	18	18	18				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar WedC5 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 32
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0%
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 9.5
Temperature (°C) of sample prior to aeration: 18
DO % of sample prior to aeration: 116
Is aeration required (<40% or >100%)? **Yes or No**
Duration of aeration (37.5 +/- 12.5 mL/min/L): 20min
Filtered with 110um screen prior to testing **Yes or No**
Hardness (mg $CaCO_3$/L) of 100% : 1148
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L)
Alkalinity of 100% sample (mg $CaCO_3$/L): 372

Dilution Water
Pail label / preparation date 2:12/23
Hardness of dilution water (mg/L) 185

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Comments/Observations:
0 Hr: NOPPT
48 Hr: ppt on ice, surficial ppt

Reviewed By: MAF Date Reviewed: 23/01/01

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC 164 Reference 2223-1208-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/12/29	1430	CC/DM	2	CC
1	2022/12/30	1025	AM	-	EP
2	2022/12/31	0815	AM	2	EP

Sample Information

Initial pH: 8.2
Initial EC (µS/cm): 1736
Salinity (ppt): 3

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	8.1	8.1	8.1	8.1	8.1	8.1				
2	7.8	8.0	8.1	8.3	8.3	8.4				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	395	407	408	1690	1744	1760				
2	387	408	411	1664	1733	1749				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar wdc5 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 32
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0%
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 10.3 Temperature (°C) of sample prior to aeration: 12
DO % of sample prior to aeration: 110 Is aeration required (<40% or >100%)? (Yes) or No
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20min Filtered with 110um screen prior to testing Yes or (No)
Hardness (mg $CaCO_3$/L) of 100% : 1148 Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 372

Dilution Water
Pail label / preparation date 2:12/23
Hardness of dilution water (mg/L) 185

DO Levels (40-100% saturation) - corrected for altitude -
4.1 to 10.3 mg/L at 8°C
4.0 to 10.0 mg/L at 9°C
3.9 to 9.8 mg/L at 10°C
3.8 to 9.6 mg/L at 11°C
3.7 to 9.4 mg/L at 12°C

Comments/Observations:
0Hr: NO ppt
48Hr: NO ppt

Reviewed By: MAF Date Reviewed: 23/01/01

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS 5 Client TEC 164 Reference 2223-1208-02

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/12/29	1435	CC/DM	2	JC
1	2022/12/30	1020	DM	-	EP
2	2022/12/31	0935	AM	2	EP

Sample Information

Initial pH: 8.2
Initial EC (µS/cm): 1736
Salinity (ppt): 3

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

day	pH (units) (range: 6.0-8.5)									
0	8.1	8.1	8.1	8.0	8.1	8.1				
2	8.1	8.1	8.1	8.4	8.4	8.4				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

	EC (uS/cm)									
0	392	407	406	1647	1727	1742				
2	407	424	420	1693	1719	1742				

	DO (mg/L) (**40-100% saturation at test temp.**)									
0	7.9	7.9	7.9	8.1	8.1	8.1				
2	7.9	7.9	7.9	8.1	8.1	8.1				

	Temperature (°C) (range: **18-22 °C**)									
0	20	20	20	19	19	19				
2	20	20	20	19	19	19				

	Number Alive (l, immobile)									
0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar: medC5 Jar(s) mortality 7 days prior to test (must be ≤25%): 0%

QA (previous month)
Days to first brood (≤12 days): 8
Average number of young produced (≥15 young): 32
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%): 0%

Sample
DO (mg/L) of sample prior to aeration: 10.0
DO % of sample prior to aeration: 122
Duration of aeration (37.5 +/- 12.5 mL/min/L): 20 min
Hardness (mg $CaCO_3$/L) of 100% : 1148
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L): —
Alkalinity of 100% sample (mg $CaCO_3$/L): 372

Temperature (°C) of sample prior to aeration: 18
Is aeration required (<40% or >100%)? Yes or No
Filtered with 110um screen prior to testing Yes or (No)
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)

Dilution Water
Pail label / preparation date: 2.12/23
Hardness of dilution water (mg/L): 185

Antiscalant
Final Concentration in Sample: 5 mg/L
Volume of sample: 500 mL Volume of antiscalant: 39.5 mL

Comments/Observations:
0Hr: No ppt
48Hr: No ppt

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Reviewed By: [illegible] Date Reviewed: 23/01/01

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC 164 Reference 2223-1208-03

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/12/29	1435	CC/DM	2	YC
1	2022/12/30	1020	DM	-	EP
2	2022/12/31	1020	AM	2	EP

Sample Information

Initial pH: 7.9
Initial EC (µS/cm): 1842
Salinity (ppt): 3

Lab Code	CTL A	CTL B	CTL C	100 A	100 B	100 C				

pH (units) (range: 6.0-8.5)

day										
0	8.1	8.1	8.1	8.0	8.0	8.0				
2	8.1	8.1	8.1	8.1	8.1	8.1				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	396	407	409	1763	1832	1847				
2	402	423	429	1667	1771	1774				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	8.2	8.2	8.2				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	18	18	18				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar wedC5 Jar(s) mortality 7 days prior to test (must be ≤25%) 0 %

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) DM 32 ~~32~~
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0%
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 9.7
DO % of sample prior to aeration: 114
Duration of aeration (37.5 +/- 12.5 mL/min/L): 20 min
Hardness (mg $CaCO_3$/L) of 100% : ~~CC HZ~~ 1211
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 455

Temperature (°C) of sample prior to aeration: 18
Is aeration required (<40% or >100%)? **Yes or No**
Filtered with 110um screen prior to testing **Yes or No**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Dilution Water
Pail label / preparation date 21/12/23
Hardness of dilution water (mg/L) 185

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Comments/Observations:
0 Hr: NO ppt
48 Hr: ppt on ics, surficial ppt, ppt on carapace

Reviewed By: MAF Date Reviewed: 23/01/01

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC 164 Reference 2223-1208-03

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/12/29	1425	CC/DM	2	[illegible]
1	2022/12/30	1025	AM	-	EP
2	2022/12/31	0945	AM/KURM	2	EP

Sample Information

Initial pH: 7.9
Initial EC (µS/cm): 1842
Salinity (ppt): 3

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	8.1	8.1	8.1	7.8	7.8	7.8				
2	8.0	8.0	8.0	8.2	8.2	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	388	407	408	1785	1850	1866				
2	399	411	413	1778	1840	1846				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar wedC5 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)

Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 32
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - 0%
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 10.2
DO % of sample prior to aeration: 109
Duration of aeration (37.5 +/- 12.5 mL/min/L): 20 min
Hardness (mg $CaCO_3$/L) of 100% : 1211
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 455

Temperature (°C) of sample prior to aeration: 12
Is aeration required (<40% or >100%)? (Yes) or No
Filtered with 110um screen prior to testing Yes or (No)
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)

Dilution Water

Pail label / preparation date 12/23
Hardness of dilution water (mg/L) 185

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

Comments/Observations:

0Hr: NO ppt
48Hr: ppt on jar, ppt on carapace, surficial ppt

Reviewed By: MAF Date Reviewed: 23/01/01

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS 5 Client TEC 164 Reference 2223-1208-04

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/12/29	1440	CC/DM	2	CC
1	2022/12/30	1020	DM	-	EP
2	2022/12/31	0930	AM	2	EP

Sample Information

Initial pH:	7.9
Initial EC (µS/cm):	1842
Salinity (ppt):	3

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	8.1	8.1	8.1	7.9	7.9	7.9				
2	8.2	8.2	8.1	8.4	8.4	8.4				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	397	408	410	1766	1839	1852				
2	407	426	419	1726	1801	1816				

DO (mg/L) (**40-100% saturation at test temp**.)

0	7.9	7.9	7.9	8.1	8.1	8.1				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	19	19	19				
2	20	20	20	20	20	20				

Number Alive (l, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar Wed D5 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)

Days to first brood (≤12 days) 8

Average number of young produced (≥15 young) 26

Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - (must be ≤10%) 0%

Sample

DO (mg/L) of sample prior to aeration: 9.8

DO % of sample prior to aeration: 119

Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20min

Hardness (mg $CaCO_3$/L) of 100% : 1211

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —

Alkalinity of 100% sample (mg $CaCO_3$/L): 455

Temperature (°C) of sample prior to aeration: 18

Is aeration required (<40% or >100%)? (Yes) or No

Filtered with 110um screen prior to testing Yes or (No)

Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)

Dilution Water

Pail label / preparation date 2:1/2/23

Hardness of dilution water (mg/L) 285

Antiscalant

Final Concentration in Sample: 5 mg/L

Volume of sample: 500 mL Volume of antiscalant: 39.54L

Comments/Observations:

0Hr: NO ppt

48Hr: Surficial ppt

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Reviewed By: MAC Date Reviewed: 23/01/01

APPENDIX C – Chain-of-custody form

Teck

Page 1 of 1

COC ID: EVO NAUTILUS 122722 | TURNAROUND TIME: Regular (default) | RUSH: NO

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name	Elkview Operation			Lab Name	Nautilus			Report Format / Distribution		Excel	PDF	EDD
EQuIS Facility Code	EVO			Lab Contact	Jacklyn Poole			Email 1:	DL-EVO-SRF-LAB@teck.com	X	X	X
Project Manager	Brett Mason			Email	jacklyn@nautilusenvironmental.ca			Email 2:	Cole.Macgregor@teck.com	X	X	X
Email	brett.mason@teck.com			Address	10823 27th Street SE			Email 3:	TeckCoal@equisonline.com			X
Address	RR1 HWY 3							Email 4:				
City	Sparwood	Province	BC	City	Calgary	Province	AB	Email 5:				
Postal Code	V0B 2G0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada	Email 6:				
Phone Number	250 425 4837			Phone Number	403 253 7121			PO number	859537			

2022/12/28
@ ISIS
Manitoulin
BS/NE
8 x 20L carboys
10 x 1L bottles
No S/No I
Good Condition
2223 - 1208

Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	ANALYSIS: NAUT_48hr_DM_PF 48hr Daphnia magna Acute Toxicity 20C	NAUT_48hr_DM_PF_MOD10 48hr Daphnia magna Acute Toxicity 10C	NAUT_48hr_DM_PF_SAS 48hr Daphnia magna Acute Toxicity 5mg/L SAS Antioxidant	NAUT_96hr_RT_PF 96hr Rainbow Trout Acute Toxicity	NAUT_48hr_DM_PF_MOD15 48hr Daphnia magna Acute Toxicity 15C	Please indicate Y below if Filtered										
EV_EC1_WS_2022-12-27_N-SRF -01	EV_EC1	WS		2022-12-27	10:40	G	8	2	2		4		7.4											
EV_EC1_WS_2022-12-27_N-SRF-AS -02	EV_EC1	WS		2022-12-27	10:41	G	1			1			4.0											
EV_ECOUT_WS_2022-12-27_N-SRF -03	EV_ECOUT	WS		2022-12-27	14:00	G	8	2	2		4		7.4											
EV_ECOUT_WS_2022-12-27_N-SRF-AS -04	EV_ECOUT	WS		2022-12-27	14:01	G	1			1			6.3											

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	Date	Time	ACCEPTED BY/AFFILIATION	Date	Time
	Humberto Alvarado	27-Dec-22	16:20			

SERVICE REQUEST (rush - subject to availability)					
Regular (default)	X	Sampler's Name	Carter Phillips	Mobile #	
Priority (2-3 business days) - 50% surcharge					
Emergency (1 Business Day) - 100% surcharge		Sampler's Signature	Carter Phillips	Date/Time	27-Dec-22
For Emergency <1 Day, ASAP or Weekend - Contact Nautilus					

END OF REPORT

Acute Toxicity Test Results

Samples collected December 28, 2022

Final Report

January 19, 2023

Submitted to: **Teck Coal Ltd.**
Sparwood, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates					
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation	*Daphnia magna* 5 mg/L antiscalant test initiation
EV_BC1_WS_2022-12-28_N-SRF/ 2223-1213-01	28-Dec-22 at 0820h	29-Dec-22 at 0900h	30-Dec-22 at 1415h	30-Dec-22 at 1430h	30-Dec-22 at 1450h	-
EV_BC1_WS_2022-12-28_N-SRF-AS/ 2223-1213-02	28-Dec-22 at 0821h	29-Dec-22 at 0900h	-	-	-	30-Dec-22 at 1440h
EV_GT1_WS_2022-12-28_N-SRF/ 2223-1213-03	28-Dec-22 at 0720h	29-Dec-22 at 0900h	30-Dec-22 at 1440h	30-Dec-22 at 1450h	30-Dec-22 at 1450h	-
EV_GT1_WS_2022-12-28_N-SRF-AS/ 2223-1213-04	28-Dec-22 at 0721h	29-Dec-22 at 0900h	-	-	-	30-Dec-22 at 1500h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
EV_BC1_WS_2022-12-28_N-SRF	4.7°C	1227	365
EV_BC1_WS_2022-12-28_N-SRF-AS	4.7°C	1227	365
EV_GT1_WS_2022-12-28_N-SRF	6.6°C	1268	364
EV_GT1_WS_2022-12-28_N-SRF-AS	6.6°C	1268	364

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)
- *Daphnia magna* 48-h single concentration screening test (conducted with 5 mg/L antiscalant)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample			
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* 5 mg/L antiscalant
EV_BC1_WS_2022-12-28_N-SRF	100	100	100	-
EV_BC1_WS_2022-12-28_N-SRF-AS	-	-	-	100
EV_GT1_WS_2022-12-28_N-SRF	100	100	100	-
EV_GT1_WS_2022-12-28_N-SRF-AS	-	-	-	100

Sample ID	Percent Immobility in 100 (% v/v)		
	Daphnia magna 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* 5 mg/L antiscalant
EV_BC1_WS_2022-12-28_N-SRF	0	7	-
EV_BC1_WS_2022-12-28_N-SRF-AS	-	-	0
EV_GT1_WS_2022-12-28_N-SRF	0	0	-
EV_GT1_WS_2022-12-28_N-SRF-AS	-	-	0

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
EV_BC1_WS_2022-12-28_N-SRF	Rainbow trout	Precipitate observed on the test vessel	None
	Daphnia magna	Precipitate observed on surface and vessel in 20-degree test	None
EV_BC1_WS_2022-12-28_N-SRF-AS	*Daphnia magna*	None	None
EV_GT1_WS_2022-12-28_N-SRF	Rainbow trout	Precipitate observed on the test vessel	None
	Daphnia magna	Surficial precipitate observed on 20- and 10 -degree test. Precipitate observed on vessel in 20-degree test	None
EV_GT1_WS_2022-12-28_N-SRF-AS	*Daphnia magna*	None	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	4.0 (3.4-4.5) g/L KCl[1]	6.8 (6.3-7.2) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.8 (3.0-4.9) g/L KCl	6.2 (5.3-7.3) g/L NaCl
Reference toxicant CV	8.1%	5.3%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, December 21, 2022; [2] Test Date December 19, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation

Report By:
Aishah Iqbal, BSc
Laboratory Biologist

Reviewed By:
Emma Pedersen, BSc
Laboratory Biologist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Control/dilution water for antiscalant test	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L), Na_2SeO_4 (2 µg Se/L) and 5 mg/L antiscalant
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14 with February 2016 amendments
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14 with February 2016 amendments
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC164 Reference 2223-1213-01 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022-12-30	1415 *	KCRM/AM	7	MAF
1	2022-12-31	0920	NZ	-	EP
2	2023-01-01	0900	MAF	-	KCRM
3	2023-01-02	0950	EC/AG	-	MAF
4	2023-01-03	0930	EC/KCRM	7	AM

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 8.3
Initial EC (µS/cm): 1814
Salinity (ppt): 2

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L : yes/no

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	8.6	8.6			
Temp (°C) of 100%	16				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	8.2	8.1						
Day 4	~~7.9~~ 8.0	8.1						
EC (uS/cm)								
Day 0	372	1825						
Day 4	426	1845						
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	8.8	8.6						
Day 4	8.6	8.6						
Temperature (°C) (range: 14-16°C)								
Day 0	15	16						
Day 4	16	16						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.8	0.4
2	3.8	0.4
3	3.8	0.4
4	3.7	0.4
5	3.8	0.5
6	3.8	0.5
7	3.6	0.4
8	4.2	0.6
9	3.6	0.3
10	3.7	0.4

Loading Density (g/L): 0.2 (must be ≤0.5 g/L)
Mean Length (cm): 3.8
Length Range (cm): 3.6-4.2
Mean Weight (g): 0.4 (Must be ≥0.3g)
Weight Range: (g): 0.3-0.6

Test Organism Information

Batch 20220921TR
Source Trout Lodge
Tank # 4
Days Held at 15± 2°C 78 (must be ≥14 days)
Percent stock mortality 0.87 (7 days prior to test, must be <2%)
Test Volume (L) 18

Comments :
96HR: PPT on bottom

Reviewed By: MAF Date Reviewed: 23/01/04

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC164 Reference 2223-1213-03 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022-12-30	1040 *	KCRM/AM	7	MAF
1	2022-12-31	0910	NZ	-	EP
2	2023-01-01	0900	MAF	-	KCRM
3	2023-01-02	1015	AG/CC	-	MAF
4	2023-01-03	0935	CC/KCRM	7	AM

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 8.4
Initial EC (µS/cm): 1830
Salinity (ppt): 3

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L : yes/no

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	9.6	9.5	8.6		
Temp (°C) of 100%	16				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

	Conc.	CTL	100						
pH (units) (range: **5.5-8.5**)	Day 0	8.1	8.2						
	Day 4	8.1	8.3						
EC (uS/cm)	Day 0	369	1896						
	Day 4	415	1925						
DO (mg/L) (**70-100% saturation at test temp.**)	Day 0	8.8	8.6						
	Day 4	8.6	8.6						
Temperature (°C) (range: **14-16°C**)	Day 0	15	16						
	Day 4	16	16						
Number Alive (In brackets number stressed)	Day 0	10	10						
	Day 1	10	10(1)						
	Day 2	10	10						
	Day 3	10	10						
	Day 4	10(1)	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.7	0.4
2	3.7	0.4
3	4.0	0.5
4	4.0	0.4
5	4.0	0.5
6	3.8	0.4
7	3.9	0.5
8	3.1	0.3
9	3.7	0.4
10	3.8	0.4

Loading Density (g/L): 0.2 (must be ≤0.5 g/L)
Mean Length (cm): 3.8
Length Range (cm): 3.1-4.0
Mean Weight (g): 0.4 (Must be ≥0.3g)
Weight Range (g): 0.3-0.5

Test Organism Information

Batch 20220921TR
Source Trout Lodge
Tank # 4
Days Held at 15± 2°C 78 (must be ≥14 days)
Percent stock mortality 0.87 (7 days prior to test, must be <2%)
Test Volume (L) 18

Comments :
96HR: dark coloration (Day1) ppt on bottom

Reviewed By: MAF Date Reviewed: 23/01/04

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC 164 Reference 2223-1213-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/12/30	1450	CC/DM	2	MAF
1	2022/12/31	0930	EP	-	AMA
2	2023/01/01	0820	DM	2	CC

Sample Information

Initial pH: 8.3
Initial EC (µS/cm): 1814
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	8.0	8.0	8.0	8.1	8.1	8.1				
2	8.3	8.2	8.2	8.1	8.2	8.2				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	422	435	436	1696	1777	1789				
2	426	439	438	1645	1726	1732				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.9	7.9	7.9				
2	7.9	7.9	7.9	7.9	7.9	8.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	20	20	20				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10(1)	10(1)	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar: wed C5 — Jar(s) mortality 7 days prior to test (must be ≤25%): 0 %

QA (previous month)
Days to first brood (≤12 days): 8
Average number of young produced (≥15 young): 32
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0 %
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 9.0 — Temperature (°C) of sample prior to aeration: 21°
DO % of sample prior to aeration: 116 % — Is aeration required (<40% or >100%)? (Yes) or No
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20 min. — Filtered with 110um screen prior to testing Yes or (No)
Hardness (mg $CaCO_3$/L) of 100% : 1227 — Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L): —
Alkalinity of 100% sample (mg $CaCO_3$/L): 365

Dilution Water
Pail label / preparation date: 5:12/26
Hardness of dilution water (mg/L): 196

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Comments/Observations:
0hr: NO PPT
48hr: surficial ppt. ppt on jar.

Reviewed By: MAF Date Reviewed: 23/01/04

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC 164 Reference 2223-1213-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/12/30	1436	CC/DM	2	MMF
1	2022/12/31	0950	EP	-	AM
2	2023/01/01	0840	DM	2	CC

Sample Information

Initial pH: 8.3
Initial EC (µS/cm): 1814
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	8.0	8.0	8.0	8.1	8.1	8.1				
2	8.1	8.2	8.2	8.4	8.4	8.4				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	415	433	436	1764	1807	1815				
2	424	437	442	1736	1782	1847				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.6	9.6	9.6				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	11	11	11				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar wed D1 Jar(s) mortality 7 days prior to test (must be ≤25%) 5%

QA (previous month)

Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 24
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - 0%
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 9.6
Temperature (°C) of sample prior to aeration: 11° ~~12°~~
DO % of sample prior to aeration: 100%
Is aeration required (<40% or >100%)? **Yes or (No)**
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20 min.
Filtered with 110um screen prior to testing **Yes or (No)**
Hardness (mg $CaCO_3$/L) of 100% : 1227
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or (No)**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) -
Alkalinity of 100% sample (mg $CaCO_3$/L): 365

Dilution Water

Pail label / preparation date 5:12/26
Hardness of dilution water (mg/L) 196

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

Comments/Observations:

0hr: No ppt
48hr: No ppt

Reviewed By: MMF Date Reviewed: 23/01/04

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method: DAS AS 5 | Client: TEC 164 | Reference: 2223-1213-02

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/12/30	1440	CC/DM	2	MAF
1	2022/12/31	0945	EP	-	AM
2	2023/01/01	0900	DM	2	CC

Sample Information

Initial pH: 8.3
Initial EC (µS/cm): 1814
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	8.0	8.0	8.0	8.1	8.1	8.1				
2	8.3	8.2	8.2	8.4	8.5	8.5				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	414	433	436	1668	1763	1783				
2	427	437	440	1688	1753	1776				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.9	7.9	7.9				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	20	20	20				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar: wed D5 — Jar(s) mortality 7 days prior to test (must be ≤25%): 5%

QA (previous month)
Days to first brood (≤12 days): 8
Average number of young produced (≥15 young): 24
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%): 0%

Sample
DO (mg/L) of sample prior to aeration: 9.7
DO % of sample prior to aeration: 123%
Duration of aeration (37.5 +/- 12.5 mL/min/L): 20 min
Hardness (mg $CaCO_3$/L) of 100%: 1227
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L): —
Alkalinity of 100% sample (mg $CaCO_3$/L): 865

Temperature (°C) of sample prior to aeration: cc. 18° 19°
Is aeration required (<40% or >100%)? (Yes) or No
Filtered with 110um screen prior to testing: Yes or (No)
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)

Dilution Water
Pail label / preparation date: 5:12/26
Hardness of dilution water (mg/L): 196

Antiscalant
Final Concentration in Sample: 5mg/L
Volume of sample: 500mL — Volume of antiscalant: 395mL

Comments/Observations:
0hr: No ppt
48hr: No ppt

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Reviewed By: MAF — Date Reviewed: 23/01/04

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC 164 Reference 2223-1213-03

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/12/30	1456	CC/DM	2	MAF
1	2022/12/31	0930	EP	-	AM
2	2023/01/01	0840	D.M	2	CC

Sample Information

Initial pH: 8.4
Initial EC (µS/cm): 1830
Salinity (ppt): 3

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	8.0	8.0	8.0	8.2	8.2	8.2				
2	8.2	8.3	8.3	8.3	8.3	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	414	432	435	1732	1811	1829				
2	425	440	446	1668	1767	1772				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.9	7.9	7.9				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	20	20	20				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	9	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar wed01 Jar(s) mortality 7 days prior to test (must be ≤25%) 5%.

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 24
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 3%.
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 9.8 Temperature (°C) of sample prior to aeration: 19°
DO % of sample prior to aeration: 124% Is aeration required (<40% or >100%)? **Yes or No**
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20min. Filtered with 110um screen prior to testing **Yes or No**
Hardness (mg $CaCO_3$/L) of 100% : 1268 Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) -
Alkalinity of 100% sample (mg $CaCO_3$/L): 364

Dilution Water
Pail label / preparation date 5:12126
Hardness of dilution water (mg/L) 196

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Comments/Observations:
0hr: No ppt
48hr: Superficial ppt. ppt on jar.

Reviewed By: MAF Date Reviewed: 23/01/04

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC 164 Reference 2223-1213-03

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/12/30	1450	CC/DM	2	MAE
1	2022/12/31	0945	EP	-	AM
2	2023/01/01	0810	DM	2	CC

Sample Information

Initial pH:	8.4
Initial EC (µS/cm):	1830
Salinity (ppt):	3

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	8.0	8.0	8.0	8.2	8.2	8.2				
2	8.3	8.3	8.3	8.4	8.5	8.5				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	418	434	436	1735	1811	1839				
2	422	434	443	1728	1816	1842				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar wed D4 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)

Days to first brood (≤12 days) 8

Average number of young produced (≥15 young) 24

Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - (must be ≤10%) 0%

Sample

DO (mg/L) of sample prior to aeration: 10.0 Temperature (°C) of sample prior to aeration: 12°

DO % of sample prior to aeration: 107% Is aeration required (<40% or >100%)? **Yes or No**

Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20 min. Filtered with 110um screen prior to testing **Yes or No**

Hardness (mg $CaCO_3$/L) of 100% : 1268 Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) –

Alkalinity of 100% sample (mg $CaCO_3$/L): 364

Dilution Water

Pail label / preparation date 5:12/26

Hardness of dilution water (mg/L) 196

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

Comments/Observations:

0hr: No PPT

48hr: Surficial ppt

Reviewed By: MAE Date Reviewed: 23/01/04

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS 5 Client TEC 164 Reference 2223-1213-04

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/12/30	1500	CC/DM	2	MAF
1	2022/12/31	0940	EP	-	AM
2	2023/01/01	0900	DM	2	CC

Sample Information

Initial pH: 8.4
Initial EC (µS/cm): 1830
Salinity (ppt): 3

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	8.0	8.0	8.0	8.2	8.2	8.2				
2	8.0	8.1	8.1	8.4	8.5	8.5				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	418	434	437	1728	1812	1828				
2	411	433	436	1713	1768	1801				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.9	7.9	7.9				
2	8.9	7.9	7.9	7.9	8.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	20	20	20				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar: wed E2 Jar(s) mortality 7 days prior to test (must be ≤25%): 0%

QA (previous month)
Days to first brood (≤12 days): 8
Average number of young produced (≥15 young): 21
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%): 0%

Sample
DO (mg/L) of sample prior to aeration: 9.8
DO % of sample prior to aeration: 124%
Duration of aeration (37.5 +/- 12.5 mL/min/L): 20 min.
Hardness (mg $CaCO_3$/L) of 100%: 1268
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L): —
Alkalinity of 100% sample (mg $CaCO_3$/L): 364

Temperature (°C) of sample prior to aeration: 19°
Is aeration required (<40% or >100%)? (Yes) or No
Filtered with 110um screen prior to testing (Yes) or No
Is hardness adjustment required (<25 mg $CaCO_3$/L)? (Yes) or No

Dilution Water
Pail label / preparation date: 5:12/26
Hardness of dilution water (mg/L): 196

Antiscalant
Final Concentration in Sample: 5mg/L
Volume of sample: 500mL Volume of antiscalant: 39.5 mL

Comments/Observations:
0hr: No ppt
48hr: No ppt

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Reviewed By: MAF Date Reviewed: 23/01/04

APPENDIX C – Chain-of-custody form

Teck

COC ID: EVO NAUTILUS 122822 **TURNAROUND TIME:** Regular (default) **RUSH:** NO

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name	Elkview Operation			Lab Name	Nautilus			Report Format / Distribution		Excel	PDF	EDD
EQuIS Facility Code	EVO			Lab Contact	Jacklyn Poole			Email 1:	DL-EVO-SRF-LAB@teck.com	X	X	X
Project Manager	Brett Mason			Email	jacklyn@nautilusenvironmental.ca			Email 2:	Cole.Macgregor@teck.com	X	X	X
Email	brett.mason@teck.com			Address	10823 27th Street SE			Email 3:	TeckCoal@equisonline.com			X
Address	RR1 HWY 3							Email 4:				
City	Sparwood	Province	BC	City	Calgary	Province	AB	Email 5:				
Postal Code	V0B 2G0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada	Email 6:				
Phone Number	250 425 4837			Phone Number	403 253 7121			PO number	859537			

SAMPLE DETAILS / **ANALYSIS REQUESTED**

2223-1213
2022/12/29
09:00
Manitoulin
SRS/NZ
8x10 L Carboys ~~4~~ 10 x 1L bottles
Nos No I
Good Condition

Please indicate Y below if Filtered

	Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	ANALYSIS: 48hr Daphnia magna Acute Toxicity 20C NAUT_48hr_DM_PF	48hr Daphnia magna Acute Toxicity 10C NAUT_48hr_DM_PF_MOD10	48hr Daphnia magna Acute Toxicity 5mg/L Antiscalant NAUT_48hr_DM_PF_5AS	96hr Rainbow Trout Acute Toxicty NAUT_96hr_RT_PF	48hr Daphnia magna Acute Toxicity 15C NAUT_48hr_DM_PF_MOD15	
-01	EV_BC1_WS_2022-12-28_N-SRF	EV_BC1	WS		2022-12-28	08:20	G	12	2	2		8		4.7°C
-02	EV_BC1_WS_2022-12-28_N-SRF-AS	EV_BC1	WS		2022-12-28	08:21	G	1			1			
-03	EV_GT1_WS_2022-12-28_N-SRF	EV_GT1	WS		2022-12-28	07:20	G	8	2	2		4		6.6°C
-04	EV_GT1_WS_2022-12-28_N-SRF-AS	EV_GT1	WS		2022-12-28	07:21	G	1			1			

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	Date	Time	ACCEPTED BY/AFFILIATION	Date	Time
	[signature]	28-Dec-22	1345			

SERVICE REQUEST (rush - subject to availability)					
Regular (default)	X	Sampler's Name	Carter Phillips	Mobile #	
Priority (2-3 business days) - 50% surcharge					
Emergency (1 Business Day) - 100% surcharge		Sampler's Signature	[signature]	Date/Time	28-Dec-22
For Emergency <1 Day, ASAP or Weekend - Contact Nautilus					

END OF REPORT

Acute toxicity test results

Samples collected March 14, 2022

Final Report

April 6, 2022

Submitted to: **Teck Coal / Elkview Operations**
Elkford, BC

8664 Commerce Court, Burnaby, BC V5A 4N7

SAMPLE INFORMATION

Sample ID	Dates (2022)					
	Collected	Received[1]	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation	*Daphnia magna* antiscalant test initiation
EV_EC1_WS_2022-03-14_N-SRF	14-Mar-22 at 1040h	16-Mar-22 at 1120h	18-Mar-22 at 1750h	18-Mar-22 at 1425h	18-Mar-22 at 1430h	--
EV_EC1_WS_2022-03-14_N-SRF-AS	14-Mar-22 at 1041h	16-Mar-22 at 1120h	--	--	--	18-Mar-22 at 1425h
EV_ECOUT_WS_2022-03-14_N-SRF	14-Mar-22 at 1350h	16-Mar-22 at 1120h	18-Mar-22 at 1715h	18-Mar-22 at 1435h	18-Mar-22 at 1430h	--
EV_ECOUT_WS_2022-03-14_N-SRF-AS	14-Mar 22 at 1351h	16-Mar-22 at 1120h	--	--	--	18-Mar-22 at 1440h

[1]Date and time received at Nautilus Burnaby

Rainbow trout tests were performed at Nautilus Burnaby, *D. magna* tests were performed at Nautilus Calgary. The samples were received at Nautilus Calgary on March 18, 2022, at 0900h.

Sample chemistry

Sample ID	Receipt temperature (ºC)	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
EV_EC1_WS_2022-03-14_N-SRF	10.0 – 10.6 / 16.6[1]	1181	363
EV_EC1_WS_2022-03-14_N-SRF-AS	10.0 – 10.6 / 15.9[1]	1181	363
EV_ECOUT_WS_2022-03-14_N-SRF	7.9 – 8.0 / 15.5[1]	1296	429
EV_ECOUT_WS_2022-03-14_N-SRF-AS	7.9 – 8.0 / 15.2[1]	1296	429

[1]Sample receipt temperature at Nautilus Calgary

TESTS

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)
- *Daphnia magna* 48-h single concentration screening test (conducted with 5 mg/L antiscalant)

RESULTS

Toxicity test results

Sample ID	Percent mortality in 100% (v/v) sample			
	Rainbow trout	***Daphnia magna* 10 ˚C**	***Daphnia magna* 20 ˚C**	***Daphnia magna* antiscalent**
EV_EC1_WS_2022-03-14_N-SRF	0	0[1]	0[1]	--
EV_EC1_WS_2022-03-14_N-SRF-AS	--	--	--	3[2]
EV_ECOUT_WS_2022-03-14_N-SRF	0	0[1]	0[1]	--
EV_ECOUT_WS_2022-03-14_N-SRF-AS	--	--	--	0[1]

[1] 0% immobility, where mortality is considered immobility
[2] 17% immobility, where mortality is considered immobility

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
EV_EC1_WS_2022-03-14_N-SRF	Rainbow trout	Some precipitate observed on airlines and bottom of the tank	None
	Daphnia magna	Surficial precipitate observed and on test vessel (20˚C test)	None
		Surficial precipitate observed (10˚C test)	None
EV_EC1_WS_2022-03-14_N-SRF-AS	Rainbow trout	--	--
	Daphnia magna	Surficial precipitate observed and on test vessel	Precipitate observed on carapace
EV_ECOUT_WS_2022-03-14_N-SRF	Rainbow trout	Lots of precipitate observed on airline and bottom of the tank	None
	Daphnia magna	Surficial precipitate observed and on test vessel (20˚ C test)	None
		Surficial precipitate observed (10 ˚C test)	None
EV_ECOUT_WS_2022-03-14_N-SRF-AS	Rainbow trout	--	--
	Daphnia magna	Surficial precipitate observed and on test vessel	None

QA/QC

QA/QC summary	Rainbow trout*	*Daphnia magna**
Reference toxicant LC50 (95% CL)	1.1 (0.8 – 1.5) g/L KCl[1]	5.2 (4.9 – 5.6) g/L NaCl[2]
Reference toxicant historical mean (2 SD range)	1.6 (1.0 – 2.6) g/L KCl	6.5 (5.5 – 7.7) g/L NaCl
Reference toxicant CV	24%	6%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test Date: March 18, 2022, [2] Test Date: March 17, 2022, LC = Lethal Concentration, CL = Confidence Limits, SD = Standard Deviation, CV = Coefficient of Variation

*The reference toxicant LC50 value was slightly outside of 2SD, but within 3SD of the historical mean. This was most likely a variation in the point estimate falling outside a narrow warning limits due to the low coefficient of variation (CV=6%), and not an indication of inappropriate organism sensitivity.



Report By:
Sierra Klueppel, B.Sc.
Laboratory Supervisor



Reviewed By:
Edmund Canaria R.P. Bio.
Senior Analyst

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) single concentration test.

Test species	*Oncorhynchus mykiss*
Organism source	Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	20-L glass aquarium
Test volume	10 to 20 L (depending on size of fish)
Test solution depth	≥15 cm
Test concentrations	100% (undiluted) sample, plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	Dechlorinated Metro Vancouver municipal tapwater
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light / 8 hours dark
Aeration	6.5 ± 1 mL/min/L
Test measurements	Temperature, dissolved oxygen and pH measured daily; salinity measured in the undiluted sample at test initiation; conductivity measured at test initiation and termination; survival checked daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Test endpoint	Survival
Test acceptability criterion for controls	Survival ≥90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* single concentration test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24-hour old neonates
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	200 mL
Test solution depth	6 cm
Test concentrations	100% (undiluted) sample, plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	Moderately-hard reconstituted water + 2.5 µg/L Se
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light / 8 hours dark
Aeration	None
Test measurements	Temperature, dissolved oxygen and pH measured daily; salinity, hardness and alkalinity measured in the undiluted sample at test initiation; conductivity measured at test initiation and termination; survival checked daily
Test protocol	Environment Canada (2000), EPS 1/RM/14, with 2016 amendments
Test endpoint	Survival
Test acceptability criterion for controls	Survival ≥90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample, plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Test endpoints	Survial
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

Rainbow Trout Summary Sheet

Client: Teck Coal

Start Date/Time: 18 - March - 22 @ 1750h

Work Order No.: 220463

Test Species: *Oncorhynchus mykiss*

Sample Information:

Sample ID: EV_EC1_WS_2022-03-14_N-SRF
Sample Date: 14 - Mar - 22
Date Received: 16 - Mar - 22
Sample Volume: 8 x 20L
Other: -

Test Validity Criteria:
≥ 90% Control Survival
WQ Ranges:
T (°C) = 15 ± 1; DO (mg/L) = 7.0 to 10.3; pH = 5.5 to 8.5

Dilution Water:

Type: Dechlorinated Municipal Tap Water
Hardness (mg/L $CaCO_3$): 22
Alkalinity (mg/L $CaCO_3$): 22

Test Organism Information:

Batch No.: 030422b
Source: Lyndon Fish Hatchery
No. Fish/Volume (L): 10/12L
Loading Density (g/L): 0.33
Mean Length ± SD (mm): 36 ± 3 Range: 33 - 40
Mean Weight ± SD (g): 0.40 ± 0.13 Range: 0.24 - 0.59

KCl Reference Toxicant Results:

Reference Toxicant ID: RBTK17
Stock Solution ID: N/A
Date Initiated: Mar 18, 2022
96-h LC50 (95% CL) [g/L KCl]: 1.1 (0.8 - 1.5) g/l KCl

Reference Toxicant Mean and Historical Range [g/L KCl]: 1.6 (1.0 - 2.6) g/l KCl
Reference Toxicant CV (%): 24%

Test Results: 0 % mortality at 96 hours in the 100 % undiluted sample (v/v)

Reviewed by: [signature]

Date reviewed: April 5, 2022

96-Hour Rainbow Trout Toxicity Test Data Sheet

Client/Project#: Teck - Elkview Operations
Sample I.D. EV_EC1_WS_2022-03-14_N-SRF
W.O. # 220463
RBT Batch #: 030422b
Date Collected/Time: March 14, 2022; 1040h
Date Setup/Time: March 18, 2022; 1750h
CER #: 7
Sample Setup By: Inc

Thermometer: CER7
D.O. meter/probe: D02 / 2
Cond./Salinity meter/probe: C2 / 2
pH meter/probe: PS / 5

Number Fish/Volume: 10/12 L
7-d % Mortality: 0.80
Total Pre-aeration Time (mins): 120
Aeration rate adjusted to 6.5 ± 1 mL/min/L? (Y/N): Y

Undiluted Sample WQ			
Parameters	Initial WQ	Adjustment	30 min WQ
Temp °C	14.0		14.0
D.O. (mg/L)	11.4		11.3
pH	8.0		8.2
Cond. (µS/cm)	1954		1952
Salinity (ppt)	1.0		1.0

① 9.5

Concentration	# Survivors							Temperature (°C)					Dissolved Oxygen (mg/L)					pH					Conductivity (µS/cm)	
(% v/v)	1	2	4	24	48	72	96	0	24	48	72	96	0	24	48	72	96	0	24	48	72	96	0	96
Ctrl				10	10	10	10	14.0	14.5	15.0	15.0	15.5	10.1	10.0	9.9	9.8	~~9.6~~ ① 9.5	7.2	7.1	7.2	7.1	7.3 Inc	~~19~~ 57	~~64~~ BAM 59
100				10	10	10	10	14.0	14.5	15.0	15.0	15.5	10.2	10.1	10.0	9.9	9.7	8.1	8.2	8.2	8.2	8.0	1950	1838
Initials				Inc	HEC	PY	BAM	Inc	Inc	HEC	PY	BAM	Inc	Inc	HEC	PY	BAM	Inc	Inc	HEC	PY	BAM	Inc	BAM

Sample Description/Comments: Clear, colourless, odourless liquid w/ no particulates.

Fish Description at 96 h: All fish appear normal

Number of Stressed Fish at 96 h: 0

Other Observations: ~~Lots~~ Some of precipitate on air line & tank @ 96hr BAM

Reviewed by: [signature]

Date Reviewed: April 5, 2022

Version 2.5; Issued July 19, 2017

Nautilus Environmental Company Inc.

Rainbow Trout Summary Sheet

Client: Teck coal

Start Date/Time: 18 - March - 22 @ 1715h

Work Order No.: 220463

Test Species: *Oncorhynchus mykiss*

Sample Information:

Sample ID: EV_ECOUT_WS_2022-03-14_N-SRF
Sample Date: 14 - Mar - 22
Date Received: 16 - Mar - 22
Sample Volume: 4 x 20L
Other: -

Test Validity Criteria:
≥ 90% Control Survival
WQ Ranges:
T (°C) = 15 ± 1; DO (mg/L) = 7.0 to 10.3; pH = 5.5 to 8.5

Dilution Water:

Type: Dechlorinated Municipal Tap Water
Hardness (mg/L $CaCO_3$): 22
Alkalinity (mg/L $CaCO_3$): 22

Test Organism Information:

Batch No.: 030422b
Source: Lyndon fish Hatchury
No. Fish/Volume (L): 10/12L
Loading Density (g/L): 0.34
Mean Length ± SD (mm): 36 ± 2 Range: 34 - 38
Mean Weight ± SD (g): 0.40 ± 0.03 Range: 0.31 - 0.54

KCl Reference Toxicant Results:

Reference Toxicant ID: RBTK17
Stock Solution ID: N/A
Date Initiated: Mar 18, 2022
96-h LC50 (95% CL) [g/L KCl]: 1.1 (0.8 - 1.5) g/l KCl

Reference Toxicant Mean and Historical Range [g/L KCl]: 1.6 (1.0 - 2.6) g/l KCl
Reference Toxicant CV (%): 24%

Test Results: 0 % mortality at 96 hours in the 100 % undiluted sample (v/v)

Reviewed by: [signature]

Date reviewed: April 5, 2022

96-Hour Rainbow Trout Toxicity Test Data Sheet

Client/Project#: Teck - Elkview Operations
Sample I.D. EV_ECOUT_WS_2022-03-14_N-SRF
W.O. # 220463
RBT Batch #: 030422b
Date Collected/Time: March 14/22 ; 1350h
Date Setup/Time: March 18/22 ; 1715h
CER #: 7
Sample Setup By: Tve

Thermometer: CER7
D.O. meter/probe: DO21 2
Cond./Salinity meter/probe: C2 / 2
pH meter/probe: PS / 5

Number Fish/Volume: 10/12L
7-d % Mortality: 0.80
Total Pre-aeration Time (mins): Tve ~~120~~ 80
Aeration rate adjusted to 6.5 ± 1 mL/min/L? (Y/N): Y

Undiluted Sample WQ			
Parameters	Initial WQ	Adjustment	30 min WQ
Temp °C	14.0		14.0
D.O. (mg/L)	11.3		10.7
pH	7.6		7.9
Cond. (µS/cm)	2050		2040
Salinity (ppt)	1.0		1.0

Concentration	# Survivors							Temperature (°C)					Dissolved Oxygen (mg/L)					pH					Conductivity (µS/cm)	
(% v/v)	1	2	4	24	48	72	96	0	24	48	72	96	0	24	48	72	96	0	24	48	72	96	0	96
Ctrl				10	10	10	10	14.0	14.5	15.0	15.0	15.5	10.2	10.0	9.8	7.6	9.6	8.7	7.3	7.2	7.2	7.3	54	64
100				10	10	10	10	14.0	14.5	15.0	15.0	15.5	10.3	10.1	10.0	7.7	9.7	Tve 7.9	8.3	8.1	8.1	8.1	2040	1833
Initials				Tve	HEC	PK	BAM	Tve	Tve	HEC	PK	BAM	Tve	Tve	HEC	PK	BAM	Tve	Tve	HEC	PK	BAM	Tve	BAM

Sample Description/Comments: clear, colourless, odourless liquid w/ no particulates.

Fish Description at 96 h: All fish appear normal. Number of Stressed Fish at 96 h: 0

Other Observations: Lots of precipitate on airline Blank at 96 hr

Reviewed by: [signature] Date Reviewed: April 5, 2022

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

(EV_EC1 @ 20°C)

Method DAS20 Client TEC164 Reference 2122 - 1613 - 01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/03/18	1430	KTM/EP	2	ST
1	2022/03/19	0745	JCC	-	ST
2	2022/03/20	1220	CH	2	AV

Sample Information

Initial pH: 8.0
Initial EC (µS/cm): 1910
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	7.9	7.9	7.9	7.9	7.9	7.9				
2	8.1	8.1	8.1	8.1	8.1	8.1				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm) 1940 (1938)

0	448	445	443	1943 CP	1933 CP	1942 EP		* 1935		
2	440	445	442	1803	1853 *	1849				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.7	7.7	7.7	8.9	8.9	8.9				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	21	21	21	20	20	20				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar D1 Jar(s) mortality 7 days prior to test (must be ≤25%) 0/1

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 20
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 9.2 (~~9.13~~)
DO % of sample prior to aeration: (~~113~~) 116
Duration of aeration (37.5 +/- 12.5 mL/min/L): 20 min
Hardness (mg $CaCO_3$/L) of 100%: 1181
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 363

Temperature (°C) of sample prior to aeration: 20
Is aeration required (<40% or >100%)? (Yes) or No
Filtered with 110um screen prior to testing Yes or (No)
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)

Dilution Water
Pail label / preparation date 1:03/10
Hardness of dilution water (mg/L) 241

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Comments/Observations:
0Hrs: no ppt
48Hrs: surficial ppt, ppt on jar

Reviewed By: CB Date Reviewed: 2022/03/21

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

(EV-EC$\frac{1}{7d}$@10°C)

Method DAS10 Client TEC164 Reference 2122-1613-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/03/18	1425	KTM/EP	2	
1	2022/03/19	0910	JCC	-	
2	2022/03/20	0930	SL	2	

Sample Information

Initial pH: 8.0
Initial EC (µS/cm): 1016
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	8.0	8.0	8.0	7.9	7.9	7.9				
2	8.3	8.2	8.2	8.3	8.1	8.1				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	437	442	443	1943	1933	1942				
2	470	460	457	1905	1445	1952				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	8.9	8.9	8.9				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0 EP	~~20~~ 12	EP ~~20~~ 12	EP ~~20~~ 12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (l, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar D1 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 20
Were test treatments randomized on test tray? Yes / No

Control Validity Criteria
Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 9.4
DO % of sample prior to aeration: 100
Duration of aeration (37.5 +/- 12.5 mL/min/L) : —
Hardness (mg $CaCO_3$/L) of 100% : 1181
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 363

Temperature (°C) of sample prior to aeration: 12
Is aeration required (<40% or >100%)? Yes or No
Filtered with 110um screen prior to testing Yes or No
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or No

Dilution Water
Pail label / preparation date 1:03/10
Hardness of dilution water (mg/L) 274 (247 lab)

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

Comments/Observations:
0Hrs: no ppt
48Hrs: Initial ppt

Reviewed By: CB Date Reviewed: 2022/03/21

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NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS 5 Client TEC164 Reference 2122-1613-02 ~~(EV-ECOUT @ 20°C)~~ EV-EC1 w/ AS

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/03/18	1425	KTM/EP	2	ST
1	2022/03/19	0805	JCC	-	ST
2	2022/03/20	1210	CM	2	DW

Sample Information

Initial pH: 8.0
Initial EC (µS/cm): 1910
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				
pH (units) (range: 6.0-8.5)										
0	8.0	8.0	8.0	8.1	8.1	8.1				
2	8.2	8.1	8.1	8.1	8.2	8.2				
EC (uS/cm)										
0	~~437~~ 437	443	445	1929	1935	1940				
2	434	450	443	1808	1839	1839				
DO (mg/L) (40-100% saturation at test temp.)										
0	7.7	7.7	7.7	7.9	7.9	7.9				
2	7.7	7.7	7.7	7.7	7.7	7.7				
Temperature (°C) (range: 18-22 °C)										
0	21	21	21	20	20	20				
2	21	21	21	21	21	21				
Number Alive (I, immobile)										
0	10	10	10	10	10	10				
1	10	10	10	10	10	10(2I)				
2	10	10	10	10(1I)	10(1I)	8*(2I)				

*1 Daphnid dried to side of jar (& 1 dead)

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar C2 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 30
Were test treatments randomized on test tray? Yes / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0

Sample
DO (mg/L) of sample prior to aeration: 9.0
DO % of sample prior to aeration: 111%
Duration of aeration (37.5 +/- 12.5 mL/min/L): 10min
Hardness (mg $CaCO_3$/L) of 100%: 1181
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 363

Temperature (°C) of sample prior to aeration: 20
Is aeration required (<40% or >100%)? Yes or No
Filtered with 110um screen prior to testing Yes or No
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or No

Dilution Water
Pail label / preparation date 1:03/10
Hardness of dilution water (mg/L) 241

Antiscalant
Final Concentration in Sample: 5mg/L
Volume of sample: 500ml Volume of antiscalant: 39.5µL

Comments/Observations:
0Hrs: no ppt
48Hrs: surficial ppt, ppt on jar, ppt on coverpiece

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Reviewed By: CB Date Reviewed: 2022/03/21

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NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

(EV - ECOUT @10°C)

Method DAS10 Client TEC164 Reference 2122-1613-03

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/03/18	1435	KTM/EP	2	ST
1	2022/03/19	0810	JCC	-	ST
2	2022/03/20	0920	JC	2	NW

Sample Information

Initial pH: 7.7
Initial EC (µS/cm): 1989
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				
day				pH (units) (range: 6.0-8.5)						
0	8.0	7.9	7.9	7.7	7.7	7.7				
2	8.4	8.3	8.3	8.3	8.4	8.4				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

				EC (uS/cm)						
0	441	444	445	2080	2110	2110				
2	440	461	457	1487	1990	2080				
				DO (mg/L) (**40-100% saturation at test temp.**)						
0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				
				Temperature (°C) (range: **8-12 °C**)						
0	12	12	12	12	12	12				
2	12	12	12	12	12	12				
				Number Alive (I, immobile)						
0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar E1 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 18
Were test treatments randomized on test tray? Yes / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0

Sample
DO (mg/L) of sample prior to aeration: 9.4
Temperature (°C) of sample prior to aeration: 12
DO % of sample prior to aeration: 100
Is aeration required (<40% or >100%)? Yes or No
Duration of aeration (37.5 +/- 12.5 mL/min/L) : —
Filtered with 110um screen prior to testing Yes or No
Hardness (mg $CaCO_3$/L) of 100% : 1296
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or No
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 429

Dilution Water
Pail label / preparation date 1:03/10
Hardness of dilution water (mg/L) 241

DO Levels (40-100% saturation) - corrected for altitude -
4.1 to 10.3 mg/L at 8°C
4.0 to 10.0 mg/L at 9°C
3.9 to 9.8 mg/L at 10°C
3.8 to 9.6 mg/L at 11°C
3.7 to 9.4 mg/L at 12°C

Comments/Observations:
0Hrs: no ppt
48Hrs: surface ppt

Reviewed By: CB Date Reviewed: 2022/03/21

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

(EV_ECOUT_@20°C)

Method DAS20 Client TEC164 Reference 2122-1613-03

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/03/18	1430	KTM/EP	2	ST
1	2022/03/19	0740	JCC	-	ST
2	2022/03/20	1215	CH	2	DJ

Sample Information

Initial pH: 7.7
Initial EC (µS/cm): 1959
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	8.0	7.9	7.9	7.9	7.9	7.9				
2	8.0	8.0	8.0	8.1	8.1	8.1				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	476	446	444	2080	2090	2100				
2	435	447	443	1906	1897	1906				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.9	7.9	7.9				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	20	20	20				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar ES
Jar(s) mortality 7 days prior to test (must be ≤25%) 6 / 10

QA (previous month)
Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 18
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0

Sample
DO (mg/L) of sample prior to aeration: 9.0
DO % of sample prior to aeration: 111
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20 min
Hardness (mg $CaCO_3$/L) of 100% : 1296
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 429

Temperature (°C) of sample prior to aeration: 19
Is aeration required (<40% or >100%)? (Yes) or No
Filtered with 110um screen prior to testing Yes or (No)
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)

Dilution Water
Pail label / preparation date 1:C3116
Hardness of dilution water (mg/L) 241

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Comments/Observations:
0Hrs: no ppt
48Hrs: ppt on jar, surficial ppt

Reviewed By: CB Date Reviewed: 20220331

(EV_ECOUT W/AS)

6/6.

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS 5 Client TEC164 Reference 2122-1613-04

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/03/18	1440	KTM/EP	2	ST
1	2022/03/19	0900	JCC	-	ST
2	2022/03/20	1210	CH	2	ST

Sample Information

Initial pH: 7.7
Initial EC (µS/cm): 1489
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	7.9	7.9	7.9	7.8	7.8	7.8				
2	8.1	8.1	8.1	8.5	8.5	8.5				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	417	446	443	7090	7160	7180				
2	442	446	451	1958	1981	1985				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.7	7.7	7.7	8.4	8.4	8.4				
2	7.7	7.7	7.7	7.7	7.7	7.7				

Temperature (°C) (range: **18-22 °C**)

0	21	21	21	20	20	20				
2	21	21	21	21	21	21				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar G4 Jar(s) mortality 7 days prior to test (must be ≤25%) 5%

QA (previous month)
Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 19
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0

Sample
DO (mg/L) of sample prior to aeration: 9.6 Temperature (°C) of sample prior to aeration: 19
DO % of sample prior to aeration: 111% Is aeration required (<40% or >100%)? (Yes) or No
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20mm Filtered with 110um screen prior to testing **Yes or** (No)
Hardness (mg $CaCO_3$/L) of 100% : 1296 Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or** (No)
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 429

Dilution Water
Pail label / preparation date 11/03/16
Hardness of dilution water (mg/L) 241

Antiscalant
Final Concentration in Sample: 5mg/L
Volume of sample: 500mL Volume of antiscalant: 39.5mL

Comments/Observations:
0Hrs: NOPPT
48Hrs: SURFACIAL PPT, PPT ON BOT

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C 3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C 3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C

Reviewed By: CB Date Reviewed: 2022/03/21

APPENDIX C – Chain-of-custody form

Teck

Page 1 of 1

COC ID: **EVO NAUTILUS March 14 2022** | TURNAROUND TIME: | RUSH:

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO			
Facility Name / Job#	Elkview Operations			Lab Name	Nautilus Environmental - BC			Report Format / Distribution		Excel	PDF	EDD
Project Manager	Group 1; Brett Mason			Lab Contact				Email 1:	[redacted]	X	X	X
Email	Brett.Mason@teck.com			Email	jacklyn@nautilusenvironmental.ca			Email 2:	teckcoal@equisonline.com			X
Address	RR1 HWY 3			Address	10823 27th Street SE			Email 3:	DL-EVO-SRF-LAB@teck.com	X	X	X
								Email 4:	jacklyn@nautilusenvironmental.ca			
City	Sparwood	Province	BC	City	Calgary	Province	AB	Email 5:	ditty@nautilusenvironmental.ca			
								Email 6:				
								Email 7:				
								Email 8:				
								Email 9:				
								Email 10:				
								Email 11:				
								Email 12:				
								Email 13:				
Postal Code	V0B 2G0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada					
Phone Number	250-425-6179			Phone Number	403-253-7121			PO number	807270			

SAMPLE DETAILS								ANALYSIS REQUESTED												Filtered - F: Field, L: Lab, FL: Field & Lab, N: None
								FIL												
								PRESERV												
								ANALYSIS	48hr Daphnia Magna Single Concentration Acute Toxicity 20C 220460	48hr Daphnia Magna Single Concentration Acute Toxicity 10C 220461	48hr Daphnia Magna Single Concentration Acute Toxicity Anitscalent 220462	96hr Rainbow Trout Single Concentration Acute Toxicity (20 L Bladder) 220463	96hr Rainbow Trout Single Concentration Acute Toxicity (10 L Bladder) 220463	48hr Daphnia Magna Single Concentration Toxicity 15C						
Sample ID	Sample Location (sys_loc_code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.													
EV_EC1_WS_2022-03-14_N-SRF	EV_EC1	WS		2022/03/14	10:40	G	12		2	2			8						10.0	10.6
EV_EC1_WS_2022-03-14_N-SRF-AS	EV_EC1	WS		2022/03/14	10:41	G	1				1									↓
EV_ECOUT_WS_2022-03-14_N-SRF	EV_ECOUT	WS		2022/03/14	13:00	G	8		2	2		4							7.9	8.0
EV_ECOUT_WS_2022-03-14_N-SRF-AS	EV_ECOUT	WS		2022/03/14	13:00	G	1				1									↓

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME
Field Temperatures	Ariel - Teck	March 14, 2022	Tyrone Hamilton	Mar. 16/22 11:20
ECOUT:		1600.	Nautilus - Burnaby	

SERVICE REQUEST (rush - subject to availability)					
Regular (default)	X	Sampler's Name	Ariana Lewis	Mobile #	
Priority (2-3 business days) - 50% surcharge		Sampler's Signature		Date/Time	March 14, 2022
Emergency (1 Business Day) - 100% surcharge					
For Emergency <1 Day, ASAP or Weekend - Contact ALS					

Teck

COC ID: **EVO NAUTILUS March 14 2022** | TURNAROUND TIME: | RUSH:

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO			
Facility Name / Job#	Elkview Operations			Lab Name	Nautilus Environmental - BC			Report Format / Distribution		Excel	PDF	EDD
Project Manager	Group 1; Brett Mason			Lab Contact				Email 1:	[redacted]	X	X	X
Email	Brett.Mason@teck.com			Email	jacklyn@nautilusenvironmental.ca			Email 2:	teck.coal@equisonline.com			X
Address	RR1 HWY 3			Address	10823 27th Street SE			Email 3:	DL-EVO-SRF-LAB@teck.com	X	X	X
								Email 4:	jacklyn@nautilusenvironmental.ca			
City	Sparwood	Province	BC	City	Calgary	Province	AB	Email 5:	dirty@nautilusenvironmental.ca			
								Email 6:				
								Email 7:				
								Email 8:				
								Email 9:				
								Email 10:				
								Email 11:				
								Email 12:				
								Email 13:				
Postal Code	V0B 2G0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada					
Phone Number	250-425-6179			Phone Number	403-253-7121			PO number	807270			

2022/03/18
09:00
Manitoulin
SRS
8 X 1L bottles
WCS NoI
Good condition
2122-1613

SAMPLE DETAILS / **ANALYSIS REQUESTED**

Sample ID	Sample Location (sys_loc_code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	48hr Daphnia Magna Single Concentration Acute Toxicity 20C 220460	48hr Daphnia Magna Single Concentration Acute Toxicity 10C 220461	48hr Daphnia Magna Single Concentration Acute Toxicity Antiscalent 220462	96hr Rainbow Trout Single Concentration Acute Toxicity (20 L Bladder) 220463	96hr Rainbow Trout Single Concentration Acute Toxicity (10 L Bladder) 220463	48hr Daphnia Magna Single Concentration Toxicity 15C					
-01 EV_EC1_WS_2022-03-14_N-SRF	EV_EC1	WS		2022/03/14	10:40	G	12	2	2			8	16.1°C				10.0	10.62
-02 EV_EC1_WS_2022-03-14_N-SRF-AS	EV_EC1	WS		2022/03/14	10:41	G	1			1			15.9°C					↓
-03 EV_ECOUT_WS_2022-03-14_N-SRF	EV_ECOUT	WS		2022/03/14	13:30	G	8	2	2		4		15.5°C				7.9	8.0
-04 EV_ECOUT_WS_2022-03-14_N-SRF-AS	EV_ECOUT	WS		2022/03/14	13:30	G	1			1			15.7°C					↓

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME
Field Temperatures ECOUT:	ALL - Teck	March 14, 2022 ~1600.	Tyrone Hamilton Nautilus - Burnaby	Mar 16/22 11:20

SERVICE REQUEST (rush - subject to availability)					
Regular (default) X	Sampler's Name	Arianna Lewis	Mobile #		
Priority (2-3 business days) - 50% surcharge					
Emergency (1 Business Day) - 100% surcharge	Sampler's Signature		Date/Time	March 14, 2022	
For Emergency <1 Day, ASAP or Weekend - Contact ALS					

END OF REPORT

Acute Toxicity Test Results

Sample collected March 14, 2022

Final Report - revised

March 20, 2023

Submitted to: **Teck Coal Ltd.**
Elkford, BC

8664 Commerce Court, Burnaby, BC V5A 4N7

SAMPLE INFORMATION

Sample ID	Dates (2022)					
	Collected	Received[1]	Rainbow trout test initiation	*Daphnia magna* 20˚C test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* antiscalant test initiation
F2_BPO_WG_2022-03-14_N	14-Mar-22 at 0820h	16-Mar-22 at 1120h	18-Mar-22 at 1455h	18-Mar-22 at 1450h	18-Mar-22 at 1420h	-
F2_BPO_WG_2022-03-14_N-AS	14-Mar-22 at 0821h	16-Mar-22 at 1120h	-	-	-	18-Mar-22 at 1520h

[1]Date and time received at Nautilus Burnaby
Rainbow trout tests were performed at Nautilus Burnaby, *D. magna* tests were performed at Nautilus Calgary. The samples were received at Nautilus Calgary on March 18, 2022, at 0900h.

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
F2_BPO_WG_2022-03-14_N	6.2-6.3°C/14.9°C[1]	1137	524
F2_BPO_WG_2022-03-14_N-AS	6.2-6.3°C/16.6°C[1]	1137	524

[1]Sample receipt temperature at Nautilus Calgary

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)
- *Daphnia magna* 48-h single concentration screening test (conducted with 5mg/L antiscalant)

RESULTS

Toxicity test results

Sample ID	Percent mortality in 100% (v/v) sample			
	Rainbow trout	*Daphnia magna* 20˚C	*Daphnia magna* 10˚C	*Daphnia magna* antiscalant
F2_BPO_WG_2022-03-14_N	0	0[1]	0[1]	-
F2_BPO_WG_2022-03-14_N-AS	-	-	-	0[1]

[1]0% immobility in the undiluted sample

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
F2_BPO_WG_2022-03-14_N	Rainbow trout	Precipitate observed on airline and tank	None
	Daphnia magna 20˚C	Precipitate observed on the surface of test solutions and the test vessel	Yes
	Daphnia magna 10˚C	Precipitate observed on the surface of test solutions	None
F2_BPO_WG_2022-03-14_N-AS	*Daphnia magna* antiscalant	None	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	1.1 (0.8 – 1.5) g/L KCl[1]	5.2 (4.9 – 5.6) g/L NaCl[2*]
Reference toxicant historical mean (2 SD Range)	1.6 (1.0 – 2.6) g/L KCl	6.5 (5.5 – 7.7) g/L NaCl
Reference toxicant CV	24%	6%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1]Test date: March 18, 2022, [2] Test Date: March 17, 2022, LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation

*The reference toxicant LC50 value was slightly outside of 2SD, but within 3SD of the historical mean. This was most likely a variation in the point estimate falling outside a narrow warning limits due to the low coefficient of variation (CV=6%), and not an indication of inappropriate organism sensitivity.



Report By:
Gabriella Utomo, B.Sc.
Laboratory Biologist



Reviewed By:
Ditty Kakkassery, R.P.Bio
Laboratory Supervisor

This revised report was issued after an error in sample ID (FS_BPO_2022-03-14_N_0900 instead of F2_BPO_WG_2022-03-14_N) was noticed in the original report issued on April 5, 2022. This has been corrected in this revised version. No other changes were made.

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	20-L glass aquarium
Test volume	10 to 20 L (depending on size of fish)
Test solution depth	≥15 cm
Test concentrations	100% (undiluted) sample, plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	Dechlorinated Metro Vancouver municipal tapwater
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light / 8 hours dark
Aeration	6.5 ± 1 mL/min/L
Test measurements	Temperature, dissolved oxygen and pH measured daily; salinity measured in the undiluted sample at test initiation; conductivity measured at test initiation and termination; survival checked daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Test endpoint	Survival
Test acceptability criterion for controls	Survival ≥90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

Rainbow Trout Summary Sheet

Client: Teck Coal

Start Date/Time: 18 - March - 22 @ 1455h

Work Order No.: 220467

Test Species: *Oncorhynchus mykiss*

Sample Information:

Sample ID: F2_BPO_WG_2022-03-14_N
Sample Date: 14 - Mar - 22
Date Received: 16 - Mar - 22
Sample Volume: 4 x 20L
Other: -

Test Validity Criteria:
≥ 90% Control Survival
WQ Ranges:
T (°C) = 15 ± 1; DO (mg/L) = 7.0 to 10.3; pH = 5.5 to 8.5

Dilution Water:

Type: Dechlorinated Municipal Tap Water
Hardness (mg/L $CaCO_3$): 22
Alkalinity (mg/L $CaCO_3$): 22

Test Organism Information:

Batch No.: 030422b
Source: Lyndon Fish Hatchery
No. Fish/Volume (L): 10/12L
Loading Density (g/L): 0.34
Mean Length ± SD (mm): 35 ± 2 Range: 34 - 39
Mean Weight ± SD (g): 0.41 ± 0.08 Range: 0.28 - 0.54

KCl Reference Toxicant Results:

Reference Toxicant ID: RBTK17
Stock Solution ID: N/A
Date Initiated: Mar 18, 2022
96-h LC50 (95% CL) [g/L KCl]: 1.1 (0.8 - 1.5) g/l KCl

Reference Toxicant Mean and Historical Range [g/L KCl]: 1.6 (1.0 - 2.6) g/l KCl
Reference Toxicant CV (%): 24%

Test Results: 0 % mortality at 96 hours in the 100% undiluted sample (v/v)

Reviewed by: [signature]

Date reviewed: April 5, 2022

96-Hour Rainbow Trout Toxicity Test Data Sheet

Client/Project#: Teck - F2 SRF
Sample I.D. F2_BPO_NG_2022-03-14_N
W.O. # 220467
RBT Batch #: 030422b
Date Collected/Time: March 14/22; 0820h
Date Setup/Time: March 18, 2022; 1455 h
CER #: 2
Sample Setup By: SMH/ JR

Thermometer: CER # 2
D.O. meter/probe: DO-8 / 2
Cond./Salinity meter/probe: C-2 / 2
pH meter/probe: pH-5 / 5

Number Fish/Volume: 10/12L
7-d % Mortality: 0.80
Total Pre-aeration Time (mins): 75
Aeration rate adjusted to 6.5 ± 1 mL/min/L? (Y/N): Y

Undiluted Sample WQ			
Parameters	Initial WQ	Adjustment	30 min WQ
Temp °C	14.0		14.0
D.O. (mg/L)	10.2		10.4
pH	7.4		7.4
Cond. (µS/cm)	1970		1970
Salinity (ppt)	1.0		1.0

Concentration	# Survivors							Temperature (°C)					Dissolved Oxygen (mg/L)					pH					Conductivity (µS/cm)	
(% v/v)	1	2	4	24	48	72	96	0	24	48	72	96	0	24	48	72	96	0	24	48	72	96	0	96
Ctrl				10	10	10	10	14.0	14.5	14.5	14.5	15.0	9.9	9.7	10.2	10.0	10.0	7.2	7.2	7.1	7.3	7.4	57	63
100				10	10	10	10	14.0	14.5	14.5	14.5	14.5	10.3	9.9	10.2	10.1	10.0	7.8	8.0	8.2	8.2	8.1	1968	1779
Initials				SMH	HEC	PM	BAM	SMH	SMH	HEC	PM	BAM	SMH	SMH	HEC	PM	BAM	SMH	SMH	HEC	PM	BAM	SMH	BAM

Sample Description/Comments: Clear colourless odourless liquid w/ no particulates.

Fish Description at 96 h: All fish appear normal
Number of Stressed Fish at 96 h: 0

Other Observations: Lots of precipitate on air line & tank at 96h

Reviewed by: [signature]
Date Reviewed: April 5, 2022

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC164 Reference 2122-1615-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/03/18	1450	EP/KTM	2	ST
1	2022/03/19	0900	JCC	-	ST
2	2022/03/20	0930	JC	2	AW

Sample Information

Initial pH: 7.6
Initial EC (µS/cm): 1953
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	8.3	8.2	8.2	8.2	8.2	8.2				
2	8.3	8.2	8.2	8.2	8.2	8.2				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	440	443	442	2080	1997	2030				
2	480	455	440	1980	1849	1960				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.7	7.7	7.7	7.9	7.9	7.9				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	21	21	21	20	20	20				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar D2 Jar(s) mortality 7 days prior to test (must be ≤25%) 10%

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 20
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 8.9
DO % of sample prior to aeration: 110%
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20min
Hardness (mg $CaCO_3$/L) of 100% : 1137
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 524

Temperature (°C) of sample prior to aeration: 20
Is aeration required (<40% or >100%)? (Yes) or No
Filtered with 110um screen prior to testing Yes or (No)
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)

Dilution Water
Pail label / preparation date 1:03/10
Hardness of dilution water (mg/L) 241

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Comments/Observations:
0hr: no ppt
48hr: Surface ppt, ppt on jar, ppt on carapace

Reviewed By: _____ Date Reviewed: _____

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS10 Client TEC164 Reference 2122-1615-01

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/03/18	1420	KTM/EP	1	ST
1	2022/03/19	0915	JCC	-	ST
2	2022/03/20	0900	SC	2	ST

Sample Information

Initial pH: 7.60
Initial EC (µS/cm): 1953
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	8.0	8.0	8.0	7.5	7.5	7.5				
2	8.2	8.2	8.2	8.3	8.3	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	443	425	430	~~1978~~ 2080 EP	2090	2100				
2	433	466	460	1987	1950	1093				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar E1 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)

Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 18
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 9.4
DO % of sample prior to aeration: 100%
Duration of aeration (37.5 +/- 12.5 mL/min/L) : -
Hardness (mg $CaCO_3$/L) of 100% : 1137
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) -
Alkalinity of 100% sample (mg $CaCO_3$/L): 524

Temperature (°C) of sample prior to aeration: 12
Is aeration required (<40% or >100%)? **Yes or (No)**
Filtered with 110um screen prior to testing **Yes or (No)**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or (No)**

Dilution Water

Pail label / preparation date 1:03/16
Hardness of dilution water (mg/L) 241

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

Comments/Observations:

0Hrs: no ppt
48Hrs: slight ppt

Reviewed By: CS Date Reviewed: 2022/03/21

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS 20 Client TEC164 Reference 2122-1615-02

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/03/18	1520	CC/ST	8	JCC
1	2022/03/19	0755	JCC	-	ST
2	2022/03/20	1200	CH	2	AV

Sample Information

Initial pH: 7.6
Initial EC (µS/cm): 1953
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	8.1	8.1	8.1	8.0	8.0	8.0				
2	8.2	8.1	8.1	8.5	8.5	8.6				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	437	444	444	1965	2030	1965				
2	450	463	453	1918	1951	1991				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.7	7.7	7.7	7.6	7.6	7.6				
2	7.7	7.9	7.9	7.7	7.7	7.7				

Temperature (°C) (range: **18-22 °C**)

0	21	21	21	22	22	22				
2	21	20	20	21	21	21				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar D2 Jar(s) mortality 7 days prior to test (must be ≤25%) 10%.

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 20
Were test treatments randomized on test tray? Yes / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0

Sample
DO (mg/L) of sample prior to aeration: 8.7
DO % of sample prior to aeration: 115%
Duration of aeration (37.5 +/- 12.5 mL/min/L): 20
Hardness (mg $CaCO_3$/L) of 100%: 1137
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 524

Temperature (°C) of sample prior to aeration: 22
Is aeration required (<40% or >100%)? **Yes or No**
Filtered with 110um screen prior to testing **Yes or No**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Dilution Water
Pail label / preparation date 1;03/10
Hardness of dilution water (mg/L) 241

Antiscalant
Final Concentration in Sample: 20 mg/L
Volume of sample: 500mL Volume of antiscalant: 158uL

Comments/Observations:
0Hrs: No ppt
48Hrs: No ppt

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Reviewed By: CB Date Reviewed: 2022/03/24

APPENDIX C – Chain-of-custody form

Teck

COC ID: F2 NAUTILUS March 14 2022 | TURNAROUND TIME: | RUSH:

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO			
Facility Name / Job#	F2 SRF			Lab Name	Nautilus Environmental - BC			Report Format / Distribution	Excel	PDF	EDD
Project Manager	BRETT MASON			Lab Contact				Email 1: [redacted]	X	X	X
Email	BRETT.MASON@TECK.COM			Email	jacklyn@nautilusenvironmental.ca			Email 1: teckcoal@equisonline.com			X
Address	RR1 HWY 3			Address	10823 27th Street SE			Email 2: DL-EVO-SRF-LAB@teck.com	X	X	X
								Email 3: justin@nautilusenvironmental.ca			
City	Sparwood	Province	BC	City	Calgary	Province	AB	Email 4: kitty@nautilusenvironmental.ca			
								Email 5:			
								Email 6:			
								Email 7:			
								Email 8:			
								Email 10:			
								Email 11:			
								Email 12:			
								Email 13:			
Postal Code	V0B 2G0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada				
Phone Number	250-425-6179			Phone Number	403-253-7121			PO number	807270		

SAMPLE DETAILS / ANALYSIS REQUESTED (Filtered - F: Field, L: Lab, FL: Field & Lab, N: None)

Sample ID	Sample Location (sys_loc_code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	Filt.	ANALYSIS: 48hr Daphnia Magna Single Concentration Acute Toxicity 20C	48hr Daphnia Magna Single Concentration Acute Toxicity 10C	48hr Daphnia Magna Single Concentration Acute Toxicity Anitscalent	96hr Rainbow Trout Single Concentration Acute Toxicity (20L Bladders)	48hr Daphnia Magna Single Concentration Toxicity 15C						
F2_BPO_WG_2022-03-14_N	F2_BPO	WG		2022/03/14	8:20	G	8		2	2		4 *							6.2-6.3
F2_BPO_WG_2022-03-14_N-AS	F2_BPO	WG		2022/03/14	8:21	G	1				1								
									2204664 TM	2204665 TM	2204666 TM	2204667 TM							

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME
	RR1 - TECK	March 14, 2022 1600	Tyme Hamilton Nautilus - Burnby	Mar. 16/22 @ 11:20

SERVICE REQUEST (rush - subject to availability)

Regular (default)	X
Priority (2-3 business days) - 50% surcharge	
Emergency (1 Business Day) - 100% surcharge	
For Emergency <1 Day, ASAP or Weekend - Contact ALS	

Sampler's Name	Arianna Lewis	Mobile #	
Sampler's Signature		Date/Time	March 14, 2022

Teck

COC ID:	F2 NAUTILUS March 14 2022	TURNAROUND TIME:		RUSH:	

PROJECT/CLIENT INFO

Facility Name / Job#	F2 SRF
Project Manager	BRETT MASON
Email	BRETT.MASON@TECK.COM
Address	RR1 HWY 3
City	Sparwood
Province	BC
Postal Code	V0B 2G0
Country	Canada
Phone Number	250-425-6179

LABORATORY

Lab Name	Nautilus Environmental - BC
Lab Contact	
Email	jacklyn@nautilusenvironmental.ca
Address	10823 27th Street SE
City	Calgary
Province	AB
Postal Code	T2Z 3V9
Country	Canada
Phone Number	403-253-7121

OTHER INFO

Report Format / Distribution		Excel	PDF	EDD
Email 1:	Cole.Macgregor@teck.com	X	X	X
Email 1:	teckcoal@equisonline.com			X
Email 2:	DL-EVO-SRF-LAB@teck.com	X	X	X
Email 3:	jeslin@nautilusenvironmental.ca			
Email 4:	kitty@nautilusenvironmental.ca			
Email 5:				
Email 6:				
Email 7:				
Email 8:				
Email 10:				
Email 11:				
Email 12:				
Email 13:				
PO number	807270			

SAMPLE DETAILS

2022/03/18
09:00
Manitoulin
SRS
~~2x1 L bottle~~ SRS 3x1 L bottles
NoS NoI
Good Condition
2122-1615

ANALYSIS REQUESTED

Filtered - F: Field, L: Lab, FL: Field & Lab, N: None

	Sample ID	Sample Location (sys_loc_code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	48hr Daphnia Magna Single Concentration Acute Toxicity 20C	48hr Daphnia Magna Single Concentration Acute Toxicity 10C	48hr Daphnia Magna Single Concentration Acute Toxicity Anitscalent	96hr Rainbow Trout Single Concentration Acute Toxicity (20L Bladders)	48hr Daphnia Magna Single Concentration Toxicity 15C						
-01	F2_BPO_WG_2022-03-14_N	F2_BPO	WG		2022/03/14	8:20	G	8	2	2		4	14.9°C	2				6.2-6.3	
-02	F2_BPO_WG_2022-03-14_N-AS	F2_BPO	WG		2022/03/14	8:21	G	1			1		16.6°C	1					
									2204~~65~~64 TM	2204~~66~~65 TM	2204~~67~~66 TM	2204~~68~~67 TM							

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME
	ALI L - TCLC	March 14, 2022	Tyme Hamilton	Mar 16/22 @ 11:20
	[signature]	1600	Nautilus - Burnby	

SERVICE REQUEST (rush - subject to availability)

Regular (default)	X
Priority (2-3 business days) - 50% surcharge	
Emergency (1 Business Day) - 100% surcharge	
For Emergency <1 Day, ASAP or Weekend - Contact ALS	

Sampler's Name	Ariana Lewis	Mobile #	
Sampler's Signature	[signature]	Date/Time	March 14, 2022

END OF REPORT

Acute toxicity test results

Samples collected March 15, 2022

Final Report

April 6, 2022

Submitted to: **Teck Coal / Elkview Operations**
Elkford, BC

8664 Commerce Court, Burnaby, BC V5A 4N7

SAMPLE INFORMATION

Sample ID	Dates (2022)					
	Collected	Received[1]	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation	*Daphnia magna* antiscalant test initiation
EV_GT1_WS_2022-03-15_N-SRF	15-Mar-22 at 1310h	17-Mar-22 at 1206h	18-Mar-22 at 1613h	19-Mar-22 at 1440h	19-Mar-22 at 1425h	--
EV_BC1_WS_2022-03-15_N-SRF	15-Mar-22 at 1150h	17-Mar-22 at 1206h	18-Mar-22 at 1612h	19-Mar-22 at 1440h	19-Mar-22 at 1430h	--
EV_GT1_WS_2022-03-15_N-SR-AS	15-Mar-22 at 1151h	17-Mar-22 at 1206h	--	--	--	19-Mar-22 at 1450h
EV_BC1_WS_2022-03-15_N-SRF-AS	15-Mar-22 at 1311h	17-Mar-22 at 1206h	--	--	--	19-Mar-22 at 1445h

[1]Date and time received at Nautilus Burnaby

Rainbow trout tests were performed at Nautilus Burnaby, *D. magna* tests were performed at Nautilus Calgary. The samples were received at Nautilus Calgary on March 19, 2022, at 1348h.

Sample chemistry

Sample ID	Receipt temperature (ºC)	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
EV_GT1_WS_2022-03-15_N-SRF	3.9 – 6.2 / 15.2[1]	1069	302
EV_BC1_WS_2022-03-15_N-SRF	5.2 – 6.1 / 15.6[1]	1254	259
EV_GT1_WS_2022-03-15_N-SR-AS	3.9 – 6.2 / 15.2[1]	1069	302
EV_BC1_WS_2022-03-15_N-SRF-AS	5.2 – 6.1 / 15.3[1]	1254	259

[1]Sample receipt temperature at Nautilus Calgary

TESTS

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)
- *Daphnia magna* 48-h single concentration screening test (conducted with 5 mg/L antiscalant)

RESULTS

Toxicity test results

Sample ID	Percent mortality in 100% (v/v) sample			
	Rainbow trout	*Daphnia magna* 10 ˚C	*Daphnia magna* 20 ˚C	*Daphnia magna* antiscalant
EV_GT1_WS_2022-03-15_N-SRF	0	0[1]	0[1]	--
EV_BC1_WS_2022-03-15_N-SRF	0	0[1]	0[1]	--
EV_GT1_WS_2022-03-15_N-SR-AS	--	--	--	0[1]
EV_BC1_WS_2022-03-15_N-SRF-AS	--	--	--	0[1]

[1] 0% immobility, where mortality is considered immobility

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
EV_GT1_WS_2022-03-15_N-SRF	Rainbow trout	Some precipitate observed on airlines and bottom of the tank	None
	Daphnia magna	Surficial precipitate observed and on test vessel (20˚C test)	None
		Surficial precipitate observed and at bottom of test vessel (10˚C test)	None
EV_BC1_WS_2022-03-15_N-SRF	Rainbow trout	Some precipitate observed on airlines and bottom of the tank	None
	Daphnia magna	Surficial precipitate observed (20˚ C test)	None
		Precipitate observed at bottom of test vessel (10 ˚C test)	None
EV_GT1_WS_2022-03-15_N-SR-AS	Rainbow trout	--	--
	Daphnia magna	Precipitate observed at bottom of test vessel	None
EV_BC1_WS_2022-03-15_N-SRF-AS	Rainbow trout	--	--
	Daphnia magna	Precipitate observed at bottom of test vessel	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna**
Reference toxicant LC50 (95% CL)	1.1 (0.8 – 1.5) g/L KCl[1]	5.2 (4.9 – 5.6) g/L NaCl[2]
Reference toxicant historical mean (2 SD range)	1.6 (1.0 – 2.6) g/L KCl	6.5 (5.5 – 7.7) g/L NaCl
Reference toxicant CV	24%	6%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test Date: March 18, 2022, [2] Test Date: March 17, 2022, LC = Lethal Concentration, CL = Confidence Limits, SD = Standard Deviation, CV = Coefficient of Variation

*The reference toxicant LC50 value was slightly outside of 2SD, but within 3SD of the historical mean. This was most likely a variation in the point estimate falling outside a narrow warning limits due to the low coefficient of variation (CV=6%), and not an indication of inappropriate organism sensitivity.



Report By:
Sierra Klueppel, B.Sc.
Laboratory Supervisor



Reviewed By:
Edmund Canaria R.P. Bio.
Senior Analyst

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) single concentration test.

Test species	*Oncorhynchus mykiss*
Organism source	Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	20-L glass aquarium
Test volume	10 to 20 L (depending on size of fish)
Test solution depth	≥15 cm
Test concentrations	100% (undiluted) sample, plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	Dechlorinated Metro Vancouver municipal tapwater
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light / 8 hours dark
Aeration	6.5 ± 1 mL/min/L
Test measurements	Temperature, dissolved oxygen and pH measured daily; salinity measured in the undiluted sample at test initiation; conductivity measured at test initiation and termination; survival checked daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Test endpoint	Survival
Test acceptability criterion for controls	Survival ≥90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* single concentration test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24-hour old neonates
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	200 mL
Test solution depth	6 cm
Test concentrations	100% (undiluted) sample, plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	Moderately-hard reconstituted water + 2.5 µg/L Se
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light / 8 hours dark
Aeration	None
Test measurements	Temperature, dissolved oxygen, conductivity and pH measured at test initiation and termination; salinity, hardness and alkalinity measured in the undiluted sample at test initiation; survival checked daily
Test protocol	Environment Canada (2000), EPS 1/RM/14, with 2016 amendments
Test endpoint	Survival
Test acceptability criterion for controls	Survival ≥90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample, plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Test endpoints	Survial
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

Rainbow Trout Summary Sheet

Client: Teck Coal

Start Date/Time: 18 - March - 22 @ 1613h

Work Order No.: 220489

Test Species: *Oncorhynchus mykiss*

Sample Information:

Sample ID: EV_GTL_WS_2022-03-15_N-SRF
Sample Date: 15 - Mar - 22
Date Received: 17 - Mar - 22
Sample Volume: 4 x 20L
Other: -

Test Validity Criteria:
≥ 90% Control Survival
WQ Ranges:
T (°C) = 15 ± 1; DO (mg/L) = 7.0 to 10.3; pH = 5.5 to 8.5

Dilution Water:

Type: Dechlorinated Municipal Tap Water
Hardness (mg/L $CaCO_3$): 22
Alkalinity (mg/L $CaCO_3$): 22

Test Organism Information:

Batch No.: 030422b
Source: Lyndon Fish Hatchery
No. Fish/Volume (L): 10/12L
Loading Density (g/L): 0.34
Mean Length ± SD (mm): 34 ± 3 Range: 28 - 37
Mean Weight ± SD (g): 0.40 ± 0.11 Range: 0.27 - 0.54

KCl Reference Toxicant Results:

Reference Toxicant ID: RBTK17
Stock Solution ID: N/A
Date Initiated: Mar 18, 2022
96-h LC50 (95% CL) [g/L KCl]: 1.1 (0.8 - 1.5) g/l KCl

Reference Toxicant Mean and Historical Range [g/L KCl]: 1.6 (1.0 - 2.6) g/l KCl
Reference Toxicant CV (%): 24%

Test Results: 0 % mortality at 96 hours in the 100 % undiluted sample (v/v)

Reviewed by: [signature]

Date reviewed: April 6, 2022

96-Hour Rainbow Trout Toxicity Test Data Sheet

Client/Project#: Teck - Elkview Operation
Sample I.D. EV_GT1_WS_2022-03-15_N-SRF
W.O. # 220489
RBT Batch #: 030422b
Date Collected/Time: March 15, 2022 ; 1310h
Date Setup/Time: March 18, 2022 ; 1613h
CER #: 7
Sample Setup By: SAK / JtL

Thermometer: CER7
D.O. meter/probe: DO2 / 2
Cond./Salinity meter/probe: C2 / 2
pH meter/probe: P5 / 5

Number Fish/Volume: 10/12L
7-d % Mortality: 0.80
Total Pre-aeration Time (mins): 30
Aeration rate adjusted to 6.5 ± 1 mL/min/L? (Y/N): Y

Undiluted Sample WQ			
Parameters	Initial WQ	Adjustment	30 min WQ
Temp °C	14.5		14.5
D.O. (mg/L)	11.3		10.2
pH	8.2		8.2
Cond. (µS/cm)	1913		1913
Salinity (ppt)	1.0		1.0

Concentration	# Survivors							Temperature (°C)					Dissolved Oxygen (mg/L)					pH					Conductivity (µS/cm)	
(% v/v)	1	2	4	24	48	72	96	0	24	48	72	96	0	24	48	72	96	0	24	48	72	96	0	96
Control				10	10	10	10	14.0	14.5	15.0	15.0	15.5	10.2	9.9	9.8	9.6	9.5	7.2	7.0	7.2	7.1	7.3	52	76
100%				10	10	10	10	14.5	14.5	15.0	15.0	15.5	10.2	10.0	10.0	9.7	9.6	8.2	8.1	8.1	8.1	8.0	1913	1844
Initials				JtL	HEC	PM	BAM	JtL	JtL	HEC	PM	BAM	JtL	JtL	HEC	PM	BAM	JtL	JtL	HEC	PM	BAM	JtL	BAM

Sample Description/Comments: Clear, colourless, odourless liquid w/ brown particulates

Fish Description at 96 h: All fish appear normal
Number of Stressed Fish at 96 h: 0

Other Observations: Some precipitate on airline & tank @ 96hr

Reviewed by: [signature]
Date Reviewed: April 6, 2022

Rainbow Trout Summary Sheet

Client: Teck Coal

Start Date/Time: 18 - March - 22 @ 1612 h

Work Order No.: 220489

Test Species: *Oncorhynchus mykiss*

Sample Information:

Sample ID: EV_BCL_WS_220 (JW) 2022-03-15_N-SRF
Sample Date: 15 - Mar - 22
Date Received: 17 - Mar - 22
Sample Volume: 4 x 20L
Other: -

Test Validity Criteria:
≥ 90% Control Survival
WQ Ranges:
T (°C) = 15 ± 1; DO (mg/L) = 7.0 to 10.3; pH = 5.5 to 8.5

Dilution Water:

Type: Dechlorinated Municipal Tap Water
Hardness (mg/L $CaCO_3$): 22
Alkalinity (mg/L $CaCO_3$): 22

Test Organism Information:

Batch No.: 030422b
Source: Lyndon Fish Hatchery
No. Fish/Volume (L): 10/12L
Loading Density (g/L): 0.31
Mean Length ± SD (mm): 34 ± 2 Range: 30 - 37
Mean Weight ± SD (g): 0.37 ± 0.11 Range: 0.21 - 0.50

KCl Reference Toxicant Results:

Reference Toxicant ID: RBTK17
Stock Solution ID: N/A
Date Initiated: Mar 18, 2022
96-h LC50 (95% CL) [g/L KCl]: 1.1 (0.8 - 1.5) g/l KCl

Reference Toxicant Mean and Historical Range [g/L KCl]: 1.6 (1.0 - 2.6) g/l KCl
Reference Toxicant CV (%): 24%

Test Results: 0 % mortality at 96 hours in the 100% undiluted sample (v/v)

Reviewed by: 

Date reviewed: April 6, 2022

96-Hour Rainbow Trout Toxicity Test Data Sheet

Client/Project#: Teck - Elkview Operations
Sample I.D. EV_BCI_WS_2022-03-15_N-SRF
W.O. # 220489
RBT Batch #: 030422b
Date Collected/Time: March 15, 2022; 1150h
Date Setup/Time: March 18, 2022; 1612h
CER #: 7
Sample Setup By: SAK/JBL

Thermometer: CER7
D.O. meter/probe: DO2/2
Cond./Salinity meter/probe: C2/2
pH meter/probe: PS/5

Number Fish/Volume: 10/12 L
7-d % Mortality: 0.80
Total Pre-aeration Time (mins): 30
Aeration rate adjusted to 6.5 ± 1 mL/min/L? (Y/N): Y

Undiluted Sample WQ			
Parameters	Initial WQ	Adjustment	30 min WQ
Temp °C	14.0		14.0
D.O. (mg/L)	10.9		10.2
pH	7.9		8.1
Cond. (µS/cm)	2130		2130
Salinity (ppt)	1.1		1.1

Concentration	# Survivors							Temperature (°C)					Dissolved Oxygen (mg/L)					pH					Conductivity (µS/cm)	
(% v/v)	1	2	4	24	48	72	96	0	24	48	72	96	0	24	48	72	96	0	24	48	72	96	0	96
Ctrl				10	10	10	10	14.0	14.5	15.0	15.0	15.5	10.1	10.0	9.9	9.8	9.7	8.2	8.0	7.1	7.2	7.3	52	56
100				10	10	10	10	14.0	14.5	15.0	15.0	15.5	10.2	10.0	10.0	9.7	9.6	8.1	8.0	8.1	8.1	8.0	2130	2020
Initials				JBL	HEC	PM	BAM	JBL	JBL	HEC	PM	BAM	JBL	JBL	HEC	PM	BAM	JBL	JBL	HEC	PM	BAM	JBL	BAM

Sample Description/Comments: Clear, colourless, odourless liquid w/ brown particulates.

Fish Description at 96 h: All fish appear normal
Number of Stressed Fish at 96 h: 0

Other Observations: Some precipitate on airline & tank at 96hr

Reviewed by: [signature]
Date Reviewed: April 6, 2022

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS20 Client TEC164 Reference 2122-1629-01

(EV_GTI_WS_2022-03-15_N_SRF) (20°C)

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/03/19	1425	ST/EP	2	MF
1	2022/03/20	0840	[illegible]	-	MAF
2	2022/03/21	0830	CH	2	CE

Sample Information

Initial pH: 7.4
Initial EC (µS/cm): 1847
Salinity (ppt): 1

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				
day				pH (units) (range: 6.0-8.5)						
0	7.8	7.8	7.8	7.9	7.9	7.9				
2	8.2	8.1	8.1	8.1	8.1	8.1				
	The pH of the sample was not adjusted prior to test setting, unless noted in the comments below									
				EC (uS/cm)						
0	430	439	436	1906	1910	1909				
2	394	403	403	1640	1679	1678				
				DO (mg/L) (**40-100% saturation at test temp.**)						
0	7.9	7.9	7.9	8.1	8.1	8.1				
2	8.1	8.1	7.9	7.9	7.9	7.9				
				Temperature (°C) (range: **18-22 °C**)						
0	20	20	20	19	19	19				
2	19	19	20	20	20	20				
				Number Alive (I, immobile)						
0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar C1 Jar(s) mortality 7 days prior to test (must be ≤25%) 5%

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 28
Were test treatments randomized on test tray? Yes / No

Control Validity Criteria
Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 8.2
DO % of sample prior to aeration: 100
Duration of aeration (37.5 +/- 12.5 mL/min/L) : —
Hardness (mg $CaCO_3$/L) of 100% : 1069
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 302

Temperature (°C) of sample prior to aeration: 18
Is aeration required (<40% or >100%)? Yes or No
Filtered with 110um screen prior to testing Yes or No
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or No

Dilution Water
Pail label / preparation date 1:03/10
Hardness of dilution water (mg/L) 241

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Comments/Observations:
0hr: no ppt
48hr: ppt on jar, slight surficial ppt

Reviewed By: MG Date Reviewed: 2022/03/22

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS10 Client TEC164 Reference 2122-1629-01

EV_GT1_WS_2022-03-15_N_SRF (10°C)

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/03/19	1440	EP/ST	2	MAF
1	2022/03/20	0830	RW	-	MAC
2	2022/03/21	0910	CH	2	EC

Sample Information

Initial pH: EP ~~7.8~~ 7.4
Initial EC (µS/cm) EP ~~2150~~ 1847
Salinity (ppt): 1

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	8.0	7.9	7.9	8.0	8.0	8.0				
2	8.2	8.1	8.2	8.2	8.2	8.2				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	430	439	440	1874	1922	1910				
2	396	431	409	1740	1760	1795				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.6	9.6	9.6	9.6	9.6				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	11	11	11	11	11				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar D1 Jar(s) mortality 7 days prior to test (must be ≤25%) 6 / 10

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 20
Were test treatments randomized on test tray? (Yes) No

Control Validity Criteria
Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 9.4
DO % of sample prior to aeration: 100
Duration of aeration (37.5 +/- 12.5 mL/min/L): -
Hardness (mg $CaCO_3$/L) of 100% : EP ~~1254~~ 1069
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) -
Alkalinity of 100% sample (mg $CaCO_3$/L): EP ~~259~~ 302

Temperature (°C) of sample prior to aeration: 12
Is aeration required (<40% or >100%)? Yes or (No)
Filtered with 110um screen prior to testing Yes or (No)
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)

Dilution Water
Pail label / preparation date 1.03/10
Hardness of dilution water (mg/L) 241

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

Comments/Observations:
0hr: No ppt
48hr: ppt on bottom of jar, slight surficial ppt

Reviewed By: ML Date Reviewed: 2022/03/22

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS 5 Client TEC164 Reference 2122-1629-04

EV-GTI-WS-2022-03-15_N_SRF_AS

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/03/19	1450	ST/EP	2	MF
1	2022/03/20	0930	DN	-	MF
2	2022/03/21	0840	CH	2	CC

Sample Information

Initial pH: 7.4
Initial EC (µS/cm): 1847
Salinity (ppt): 1

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	8.0	8.0	8.0	7.9	7.9	7.9				
2	8.2	8.1	8.1	8.3	8.3	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	435	440	441	2130	2186	2190				
2	400	400	398	1843	1886	1877				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.9	7.9	7.9				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	20	19	19				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar D1 Jar(s) mortality 7 days prior to test (must be ≤25%) 6%

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 20
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0

Sample
DO (mg/L) of sample prior to aeration: 8.8
DO % of sample prior to aeration: 106
Duration of aeration (37.5 +/- 12.5 mL/min/L): 20 min
Hardness (mg $CaCO_3$/L) of 100%: 1069
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 302

Temperature (°C) of sample prior to aeration: 18
Is aeration required (<40% or >100%)? (Yes) or No
Filtered with 110um screen prior to testing Yes or (No)
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)

Dilution Water
Pail label / preparation date 1:03/10
Hardness of dilution water (mg/L) 241

Antiscalant
Final Concentration in Sample: 5mg/L
Volume of sample: 500mL Volume of antiscalant: 39.5µL

Comments/Observations:
0hr: WS ppt
48hr: ppt on bottom of jar

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Reviewed By: MG Date Reviewed: 2022/03/22

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS20 Client TEC164 Reference 2122-1629-02

EV_BCi_WS-2022-03-15_N_SRF (20°C)

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/03/19	1430	ST/EP	2	MF
1	2022/03/20	0840	DJ	-	MAC
2	2022/03/21	0830	CM	2	EC

Sample Information

Initial pH: 7.8
Initial EC (µS/cm): 2150
Salinity (ppt): 1

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	8.0	7.9	7.9	7.7	7.7	7.8				
2	8.2	8.1	8.1	8.1	8.1	8.1				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	424	438	439	2190	~~20~~ 2200	2200				
2	387	399	397	1831	EP 1860	1862				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	8.1	8.1	8.1				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	19	19	19				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar C2 Jar(s) mortality 7 days prior to test (must be ≤25%) 0/1

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 28
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 8.2 Temperature (°C) of sample prior to aeration: SJ 18
DO % of sample prior to aeration: 100 Is aeration required (<40% or >100%)? (Yes) or No
Duration of aeration (37.5 +/- 12.5 mL/min/L) : — Filtered with 110um screen prior to testing (Yes) or No
Hardness (mg $CaCO_3$/L) of 100% : 1254 Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 259

Dilution Water
Pail label / preparation date 1:03/10
Hardness of dilution water (mg/L) 241

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Comments/Observations:
0hr: no ppt
48hr: surficial ppt

Reviewed By: ML Date Reviewed: 2022/03/22

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS10 Client TEC164 Reference 2122-1629-02

EV-BC1_WS-2022-03-15_N_BRF (10°C)

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/03/19	1440	EP/ST	2	MF
1	2022/03/20	[illegible]	[illegible]	-	MAF
2	2022/03/21	0900	CH	2	CC

Sample Information

Initial pH:	7.8
Initial EC (µS/cm):	2150
Salinity (ppt):	1

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	8.0	7.9	7.9	7.8	7.8	7.8				
2	8.2	8.2	8.2	8.1	8.2	8.1				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	415	435	438	2190	2200	2200				
2	395	401	405	1851	1900	1906				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar C1 Jar(s) mortality 7 days prior to test (must be ≤25%) 5.1.

QA (previous month)

Days to first brood (≤12 days) 8

Average number of young produced (≥15 young) 28

Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - 0 (must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 9.4 Temperature (°C) of sample prior to aeration: 12

DO % of sample prior to aeration: 100 Is aeration required (<40% or >100%)? Yes or (No)

Duration of aeration (37.5 +/- 12.5 mL/min/L) : - Filtered with 110um screen prior to testing Yes or (No)

Hardness (mg $CaCO_3$/L) of 100% : 1254 Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) -

Alkalinity of 100% sample (mg $CaCO_3$/L): 259

Dilution Water

Pail label / preparation date 1:03/10

Hardness of dilution water (mg/L) 241

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

Comments/Observations:

0hr: No ppt

48hr: ppt on bottom of jar

Reviewed By: ML Date Reviewed: 2022/03/22

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS 5 Client TEC164 Reference 2122-1629-03

EV_BCI_WS_2022-03-15_W_SREAS

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/03/19	1445	ST/EP	2	MF
1	2022/03/20	0835	DJ	-	MAF
2	2022/03/21	0840	CH	2	CC

Sample Information

Initial pH: 7.8
Initial EC (µS/cm): 2150
Salinity (ppt): 1

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	8.10	8.0	8.0	8.0	8.0	8.1				
2	8.1	8.1	8.0	8.4	8.3	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	484	448	444	1875	1895	1896				
2	400	397	399	1668	1703	1703				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	8.1	8.1	8.1				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	19	19	19				
2	20	20	20	20	20	20				

Number Alive (l, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar C2 Jar(s) mortality 7 days prior to test (must be ≤25%) 0

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 28
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0

Sample
DO (mg/L) of sample prior to aeration: 8.8 Temperature (°C) of sample prior to aeration: 18
DO % of sample prior to aeration: 106 Is aeration required (<40% or >100%)? Yes or No
Duration of aeration (37.5 +/- 12.5 mL/min/L): 20 min Filtered with 110um screen prior to testing Yes or No
Hardness (mg $CaCO_3$/L) of 100%: 1254 Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or No
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 259

Dilution Water
Pail label / preparation date 1:03/10
Hardness of dilution water (mg/L) 241

Antiscalant
Final Concentration in Sample: 5mg/L
Volume of sample: 500 mL Volume of antiscalant: 39.5µL

Comments/Observations:
0hr: No PPT
48hr: PPT on bottom of jar

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Reviewed By: MG Date Reviewed: 2022/03/22

APPENDIX C – Chain-of-custody form

Teck

COC ID: EVO NAUTILUS March 15 2022 | TURNAROUND TIME: | RUSH:

PROJECT/CLIENT INFO				LABORATORY			
Facility Name / Job#	Elkview Operations			Lab Name	Nautilus Environmental - BC		
Project Manager	Group 1; Brett Mason			Lab Contact			
Email	Brett.Mason@teck.com			Email	jacklyn@nautilusenvironmental.ca		
Address	RR1 HWY 3			Address	10823 27th Street SE		
City	Sparwood	Province	BC	City	Calgary	Province	AB
Postal Code	V0B 2G0	Country	Canada	Postal Code	T2H 2K1	Country	Canada
Phone Number	250-425-6179			Phone Number	T2Z 3V9		

OTHER INFO				
Report Format / Distribution		Excel	PDF	EDD
Email 1:				
Email 2:				
Email 3:				
Email 4:				
Email 5:				
Email 6:				
Email 7:	teckcoal@equisonline.com			X
Email 8:	DL-EVO-SRF@teck.com	X	X	X
Email 9:	[redacted]	X	X	X
Email 10:				
Email 11:				
Email 12:				
Email 13:				
PO number	807270			

SAMPLE DETAILS / ANALYSIS REQUESTED

Filtered - F: Field, L: Lab, FL: Field & Lab, N: None

Sample ID	Sample Location (sys_loc_code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	Filtered	ANALYSIS: 48hr Daphnia Magna Single Concentration Acute Toxicity 20C	48hr Daphnia Magna Single Concentration Acute Toxicity 10C	48hr Daphnia Magna Single Concentration Acute Toxicity Anitscalent	96hr Rainbow Trout Single Concentration Acute Toxicity (20 L Bladder)	96hr Rainbow Trout Single Concentration Acute Toxicity (20 L Bladder)	48hr Daphnia Magna Single Concentration Toxicity 15C						
EV_GT1_WS_2022-03-15_N-SRF	EV_GT1	WS		2022/03/15	13:10	G	8		2	2			4						3.9-6.2	
EV_BC1_WS_2022-03-15_N-SRF	EV_BC1	WS		2022/03/15	11:50	G	8		2	2			4						5.2-6.1	
EV_BC1_WS_2022-03-15_N-SRF-AS	EV_BC1	WS		2022/03/15	11:5[illegible]	G	1				1									
EV_GT1_WS_2022-03-15_N-SRF-AS	EV_GT1	WS		2022/03/15	13:1[illegible]	G	1		220486	220487	220488		220489							

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS

Field Temperatures

RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME
James Winter - Teck	March 15, 2022 1555	Tyrone Hamilton Nautilus - Burnaby	Mar. 17/22 @ 12:06

SERVICE REQUEST (rush - subject to availability)

Regular (default)	X
Priority (2-3 business days) - 50% surcharge	
Emergency (1 Business Day) - 100% surcharge	
For Emergency <1 Day, ASAP or Weekend - Contact ALS	

Sampler's Name	Ariana Lewis	Mobile #	
Sampler's Signature	[signature]	Date/Time	March 15, 2022

Teck

Page 1 of 1

COC ID: EVO NAUTILUS March 15 2022 | TURNAROUND TIME: | RUSH:

PROJECT/CLIENT INFO

Facility Name / Job#	Elkview Operations		
Project Manager	Group 1; Brett Mason		
Email	Brett.Mason@teck.com		
Address	RR1 HWY 3		
City	Sparwood	Province	BC
Postal Code	V0B 2G0	Country	Canada
Phone Number	250-425-6179		

LABORATORY

Lab Name	Nautilus Environmental - BC		
Lab Contact			
Email	jacklyn@nautilusenvironmental.ca		
Address	10823 27th Street SE		
City	Calgary	Province	AB
Postal Code	T2H 2K1	Country	Canada
Phone Number	T2Z 3V9		

OTHER INFO

Report Format / Distribution	Excel	PDF	EDD
Email 1:			
Email 2:			
Email 3:			
Email 4:			
Email 5:			
Email 6:			
Email 7: teckcoal@equisonline.com			X
Email 8: DL-EVO-SRF@teck.com	X	X	X
Email 9: [redacted]	X	X	X
Email 10:			
Email 11:			
Email 12:			
Email 13:			

PO number: 807270

SAMPLE DETAILS

2022/03/19
13:48
Purolator
SRS
8 x 1 L bottles
No's No I
Good Condition
2122-1629

ANALYSIS REQUESTED

Filtered - F: Field, L: Lab, FL: Field & Lab, N: None

Sample ID	Sample Location (sys loc code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	PHC	ANALYSIS: 48hr Daphnia Magna Single Concentration Acute Toxicity 20C	48hr Daphnia Magna Single Concentration Acute Toxicity 10C	48hr Daphnia Magna Single Concentration Acute Toxicity Anitscalent	96hr Rainbow Trout Single Concentration Acute Toxicity (20 L Bladder)	96hr Rainbow Trout Single Concentration Acute Toxicity (20 L Bladder)	48hr Daphnia Magna Single Concentration Toxicity 15C						
-01 EV_GT1_WS_2022-03-15_N-SRF	EV_GT1	WS		2022/03/15	13:10	G	8		2	2			4	15.2°C	2				3.9	6.2
-02 EV_BC1_WS_2022-03-15_N-SRF	EV_BC1	WS		2022/03/15	11:50	G	8		2	2			4	15.6°C	2				5.2	6.1
-03 EV_BC1_WS_2022-03-15_N-SRF-AS	EV_BC1	WS		2022/03/15	11:5[illegible]	G	1				1			15.3°C						
-04 EV_GT1_WS_2022-03-15_N-SRF-AS	EV_GT1	WS		2022/03/15	13:1[illegible]	G	1							15.2°C						
									220486	220487	220488		220489							

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS

Field Temperatures

RELINQUISHED BY/AFFILIATION

James Winter - Teck

DATE/TIME

March 15, 2022
1555

ACCEPTED BY/AFFILIATION

Tyrone Hamilton
Nautilus - Burnaby

DATE/TIME

Mar. 17/22 @ 12:06

SERVICE REQUEST (rush - subject to availability)

Regular (default)	X
Priority (2-3 business days) - 50% surcharge	
Emergency (1 Business Day) - 100% surcharge	
For Emergency <1 Day, ASAP or Weekend - Contact ALS	

Sampler's Name	Ariana Lewis	Mobile #	
Sampler's Signature	[signature]	Date/Time	March 15, 2022

END OF REPORT

Acute Toxicity Test Results

Samples collected January 3, 2021

Final Report

January 20, 2022

Submitted to: **Teck Coal Ltd.**
Elkford, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates					
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation	*Daphnia magna* antiscalant test initiation
FS_BPO_2022-01-03_N_0900/ 2122-1029	3-Jan-22 at 0900h	5-Jan-22 at 1045h	5-Jan-22 at 1510h	5-Jan-22 at 1300h	5-Jan-22 at 1352h	5-Jan-22 at 1400h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
FS_BPO_2022-01-03_N_0900	1.0°C	1686	410

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)
- *Daphnia magna* 48-h single concentration screening test (conducted with 5 mg/L antiscalant)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample			
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
FS_BPO_2022-01-03_N_0900	100	100	100	100

Sample ID	Percent Immobility in 100 (% v/v)		
	Daphnia magna 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
FS_BPO_2022-01-03_N_0900	0	0	0

Precipitate observations

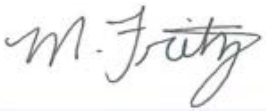
Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
FS_BPO_2022-01-03_N_0900	Rainbow trout	None	None
	Daphnia magna	None	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	3.3 (2.8-3.9) g/L KCl[1]	6.3 (5.9-6.7) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.4 (2.6-4.5) g/L KCl	6.4 (5.5-7.4) g/L NaCl
Reference toxicant CV	9.1%	5.1%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, December 30, 2021; [2] Test Date January 4, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation



Report By:
Michelle Fritz, BSc
Biologist



Reviewed By:
Courtney Bogstie, P. Biol.
Senior Biologist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Control/dilution water for antiscalant test	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L), Na_2SeO_4 (2 µg Se/L) and 5 mg/L antiscalant
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC164 Reference 2122-1029 Chamber 2

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022-01-05	1510 *	EP / CH / DW	1	
1	2022-01-06	1015	CH	-	
2	2022-01-07	1000	mAE	-	
3	2022-01-08	0855	cc	-	
4	2022-01-09	0900	KC/KK	1	

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 8.3
Initial EC (µS/cm): 2850
Salinity (ppt): 4

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L: **yes/no**

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	10.7	9.3	8.8		
Temp (°C) of 100%	16				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	8.0	8.0						
Day 4	8.0	8.5						
EC (uS/cm)								
Day 0	436	2580						
Day 4	450	2690						
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	8.4	8.3						
Day 4	8.0	8.6						
Temperature (°C) (range: 14-16°C)								
Day 0	15	15						
Day 4	15	15						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.5	0.4
2	3.4	0.4
3	3.6	0.5
4	3.2	0.3
5	3.4	0.4
6	2.8	0.3
7	3.4	0.4
8	2.9	0.2
9	3.0	0.3
10	2.8	0.2

Loading Density (g/L): 0.2 (must be ≤0.5 g/L)
Mean Length (cm): 3.2
Length Range (cm): 2.8 - 3.6
Mean Weight (g): 0.3 (Must be ≥0.3g)
Weight Range: (g): 0.2-0.5

Test Organism Information

Batch 20211214 TR
Source Smoky Trout ~~Lodge~~ Farm EP
Tank # 3
Days Held at 15± 2°C 23 (must be ≥14 days)
Percent stock mortality 0.25 (7 days prior to test, must be ≤2%)
Test Volume (L) 18

Comments : 96 hr no ppt

Reviewed By: SS Date Reviewed: 2022/01/13

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS Client TEC164 Reference 2122-1029

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/01/05	1352	CB/SC/CC	3	DW
1	2022/01/06	1000	AW/CC		STA
2	2022/01/07	0915	AW/CC	2	JCC

Sample Information

Initial pH: 8.3
Initial EC (µS/cm): 2850
Salinity (ppt): 4

Lab Code	CHA	CHB	CHC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	8.1	8.1	8.1	8.2	8.2	8.2				
2	8.4	8.4	8.4	8.6	8.6	8.6				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	427	429	428	2770	2840	2801				
2	450	441	433	2750	2790	2830				

DO (mg/L) (**40-100% saturation at test temp.**)

0	8.2	8.2	8.2	8.2	8.2	8.2				
2	8.2	8.2	8.2	8.2	8.2	8.2				

Temperature (°C) (range: **18-22 °C**)

0	18	18	18	18	18	18				
2	18	18	18	18	18	18				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar 21 Jar(s) mortality 7 days prior to test (must be ≤25%) 5

QA (previous month)
Days to first brood (≤12 days) 9
Average number of young produced (≥15 young) 26
Were test treatments randomized on test tray? Yes / No

Control Validity Criteria
Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 9.1 CB 9.0 CS Temperature (°C) of sample prior to aeration: 18
DO % of sample prior to aeration: 111 Is aeration required (<40% or >100%)? **Yes or No**
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20 mins Filtered with 110um screen prior to testing **Yes or No**
Hardness (mg $CaCO_3$/L) of 100% : 1686 Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 410

Dilution Water
Pail label / preparation date 2:12/27
Hardness of dilution water (mg/L) 216

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Comments/Observations:
0h: No ppt
48h: No ppt

Reviewed By: SS Date Reviewed: 2022/01/13

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS10 Client TEC164 Reference 2122-1029

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/01/05	1300	SC/GB	1	
1	2022/01/06	1000	AW	-	
2	2022/01/07	0910	DA/CC	2	JCC

Sample Information

Initial pH: 8.3
Initial EC (µS/cm): 2850
Salinity (ppt): 4

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				
day										
0	7.9	7.8	7.8	8.0	8.1	8.1				
2	8.3	8.3	8.3	8.7	8.6	8.6				

pH (units) (range: 6.0-8.5)

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	481	430	420	2440	2600	2650				
2	447	432	422	3130	3090	3180				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.8	9.8	9.8				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	10	10	10				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar EJ — Jar(s) mortality 7 days prior to test (must be ≤25%) 0

QA (previous month)
Days to first brood (≤12 days) 9
Average number of young produced (≥15 young) 26
Were test treatments randomized on test tray? Yes / No

Control Validity Criteria
Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 9.8
Temperature (°C) of sample prior to aeration: 10
DO % of sample prior to aeration: 100
Is aeration required (<40% or >100%)? **Yes or No**
Duration of aeration (37.5 +/- 12.5 mL/min/L) : -
Filtered with 110um screen prior to testing **Yes or No**
Hardness (mg $CaCO_3$/L) of 100% : 1686
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 410

Dilution Water
Pail label / preparation date 2:12/27
Hardness of dilution water (mg/L) 210

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

Comments/Observations:

0hr: no ppt
48hr: no ppt

Reviewed By: SS Date Reviewed: 2022/01/13

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DASAS Client TEC164 Reference 2122-~~1021-02~~ 1029 US

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/01/05	1400	CB/SC/CC	3	DN
1	2022/01/06	1000	AW/CL	-	DN
2	2022/01/07	0920	DN	2	JCC

Sample Information

Initial pH: 8.3
Initial EC (µS/cm): 2850
Salinity (ppt): 4

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	8.2	8.2	8.2	8.2	8.2	8.2				
2	8.3	8.3	8.3	8.3	8.6	8.6				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	421	424	431	2760	2800	2810				
2	425	413	422	2780	2760	2780				

DO (mg/L) (**40-100% saturation at test temp.**)

0	8.2	8.2	8.2	8.1	8.1	8.1				
2	8.1	8.1	8.2	8.1	8.1	8.1				

AW AW AW

Temperature (°C) (range: **18-22 °C**)

0	18	18	18	18	18	18				
2	19	19	19	19	19	19				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar 21 Jar(s) mortality 7 days prior to test (must be ≤25%) 5

QA (previous month)
Days to first brood (≤12 days) 9
Average number of young produced (≥15 young) 26
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0

Sample
DO (mg/L) of sample prior to aeration: 9.1 9.0
DO % of sample prior to aeration: 111
Duration of aeration (37.5 +/- 12.5 mL/min/L): 20min
Hardness (mg $CaCO_3$/L) of 100%: 1680
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 460
Temperature (°C) of sample prior to aeration: 18
Is aeration required (<40% or >100%)? **Yes or No**
Filtered with 110um screen prior to testing **Yes or No**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Dilution Water
Pail label / preparation date 2:12/27
Hardness of dilution water (mg/L) 2110

Antiscalant
Final Concentration in Sample: 5 20 US mg/L 39.5
Volume of sample: 500mL Volume of antiscalant: 158µL US

Comments/Observations:
0 hr: NO ppt
48 hr: no ppt

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Reviewed By: SS Date Reviewed: 2022/01/13

APPENDIX C – Chain-of-custody form

Teck

Page 1 of 1

COC ID: 2022-01-03_BPO **TURNAROUND TIME:** Regular (default) **RUSH: NO**

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name	FRS AWTF			Lab Name	Nautilus Environmental			Report Format / Distribution		Excel	PDF	EDD
Project Manager	Brett Mason			Lab Contact	Tamara Pomeroy			Email 1:	DL-FROS-Lab@teck.com	X	X	X
Email	brett.mason@teck.com			Email	tamara@nautilusenvironmental.ca			Email 2:	TeckCoal@equisonline.com			X
Address	29 km N of Elkford			Address	10823 27th Street SE			Email 3:				
								Email 4:				
City	Elkford	Province	BC	City	Calgary	Province	AB	Email 5:				
Postal Code	V0B 2H0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada	Email 6:				
Phone Number	250 865 6267			Phone Number	403 253 7121			PO number	VPO00786113			

SAMPLE DETAILS

2022/01/05
10:45
Manitoulin
OC
1x20L carboys, 3x1L bottles
N66/N61
Good Condition
1.0°C

ANALYSIS REQUESTED

Please indicate below Filtered, Perserved or both (F, P, F/P)

Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	ANALYSIS: NAUT_96Hr_RT_Single_Concentration_Toxicity Test	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 10C	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 20C	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 20C + Antiscalant
FS_BPO_2022-01-03_N_0900	FS_BPO	WS		1/3/2022	9:00	G	4	X	X	X	X

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	Date	Time	ACCEPTED BY/AFFILIATION	Date	Time
	44564	1/3/2022				

SERVICE REQUEST (rush - subject to availability)

Regular (default)	X
Priority (2-3 business days) - 50% surcharge	
Emergency (1 Business Day) - 100% surcharge	
For Emergency <1 Day, ASAP or Weekend - Contact ALS	

Sampler's Name	Clayton Perkins	**Mobile #**	
Sampler's Signature		**Date/Time**	3-Jan-22

END OF REPORT

Acute Toxicity Test Results

Sample collected January 10, 2022

Final Report

January 27, 2022

Submitted to: **Teck Coal Ltd.**
Elkford, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates					
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation	*Daphnia magna* antiscalant test initiation
FS_BPO_2022-01-10_N_0900/ 2122-1072	10-Jan-22 at 0900h	11-Jan-22 at 0900h	11-Jan-22 at 1520h	11-Jan-22 at 1525h	11-Jan-22 at 1530h	11-Jan-22 at 1530h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
FS_BPO_2022-01-10_N_0900	8.6°C	1993	407

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)
- *Daphnia magna* 48-h single concentration screening test (conducted with 5 mg/L antiscalant)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample			
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
FS_BPO_2022-01-10_N_0900	100	100	100	100

Sample ID	Percent Immobility in 100 (% v/v)		
	Daphnia magna 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
FS_BPO_2022-01-10_N_0900	0	0	0

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
FS_BPO_2022-01-10_N_0900	Rainbow trout	None	None
	Daphnia magna	None	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	3.3 (2.8-3.9) g/L KCl[1]	6.3 (5.9-6.7) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.4 (2.6-4.5) g/L KCl	6.4 (5.5-7.4) g/L NaCl
Reference toxicant CV	9.1%	5.1%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date December 30, 2021; [2] Test Date January 4, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation



Report By:
Jamie Craig
Biologist



Reviewed By:
Leila Oosterbroek, P Biol
Environmental Scientist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Control/dilution water for antiscalant test	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L), Na_2SeO_4 (2 µg Se/L) and 5 mg/L antiscalant
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS ENVIRONMENTAL

Trout Bench Sheet

Method TRS Client TEC164 Reference 2122-1072 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022/01/11	1590 *	CC/EP/CH	1	ST
1	2022/01/12	0930	MAF/CH	-	TP
2	2022/01/13	1200	EP/CH	-	TP
3	2022/01/14	1040	AN	-	TP
4	2022/01/15	0915	MAF/CC	1	DW

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 8.1
Initial EC (µS/cm): 2260 3260
Salinity (ppt): 4 DW

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L: **yes/no**

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	10.9	9.8	9.5	8.8	
Temp (°C) of 100%	15				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	8.1	8.1						
Day 4	8.3	8.5						
EC (uS/cm)								
Day 0	387	2440						
Day 4	461	3010						
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	8.8	8.8						
Day 4	8.8	8.8						
Temperature (°C) (range: 14-16°C)								
Day 0	15	15						
Day 4	15	15						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	2.4	0.1
2	2.7	0.2
3	3.3	0.5
4	3.3	0.4
5	3.3	0.4
6	3.9	0.6
7	3.0	0.3
8	2.5	0.2
9	3.5	0.5
10	3.1	0.3

Loading Density (g/L): 0.2 (must be ≤0.5 g/L)
Mean Length (cm): 3.1
Length Range (cm): 2.5-3.9
Mean Weight (g): 0.4 (Must be ≥0.3g)
Weight Range: (g): 0.1-0.6

Test Organism Information

Batch 20211214TR
Source Smoky Trout Farm
Tank # 3
Days Held at 15± 2°C 29 (must be ≥14 days)
Percent stock mortality 0.64 (7 days prior to test, must be ≤2%)
Test Volume (L) 18

Comments : 96 HRS: NCPDE

Reviewed By: TP Date Reviewed: 2022/01/17

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS20 Client TEC164 Reference 2122-1072

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/01/11	1530	DW/ST	3	ST
1	2022/01/12	0955	CC/MF	-	TP
2	2022/01/13	945	MAF	3	CB

Sample Information

Initial pH: 8.1
Initial EC (µS/cm): ~~2260~~ 3200
Salinity (ppt): 4

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				
day				pH (units) (range: 6.0-8.5)						
0	7.7	7.7	7.7	8.1	8.1	8.1				
2	8.1	8.1	8.1	8.4	8.4	8.4				
				The pH of the sample was not adjusted prior to test setting, unless noted in the comments below						
				EC (uS/cm)						
0	427	426	423	2920	2940	2910				
2	446	433	427	2820	2880 3MAF	2880				
				DO (mg/L) (**40-100% saturation at test temp.**)						
0	8.1	8.1	8.1	8.3	8.3	8.3				
2	7.9	7.9	7.9	7.9	7.9	7.9				
				Temperature (°C) (range: **18-22 °C**)						
0	19	19	19	20	20	20				
2	20	20	20	20	20	20				
				Number Alive (I, immobile)						
0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar CU/DU Jar(s) mortality 7 days prior to test (must be ≤25%) 0

QA (previous month)
Days to first brood (≤12 days) 9
Average number of young produced (≥15 young) 25
Were test treatments randomized on test tray? Yes / No

Control Validity Criteria
Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 10.2
Temperature (°C) of sample prior to aeration: 20
DO % of sample prior to aeration: 128
Is aeration required (<40% or >100%)? Yes or No
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20min
Filtered with 110um screen prior to testing Yes or No
Hardness (mg $CaCO_3$/L) of 100% : 1993
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or No
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 407

Dilution Water
Pail label / preparation date 2:01/09
Hardness of dilution water (mg/L) 223

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Comments/Observations: 0hrs: No ppt
48hrs: nappb

Reviewed By: TP Date Reviewed: 2022/01/17

Daphnia 10°C Bench Sheet

NAUTILUS ENVIRONMENTAL

Method DAS 10 Client TEC164 Reference 2122-1072

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/01/11	1515	DW/ST	3	ST
1	2022/01/12	1026	CC/MF	-	TP
2	2022/01/13	1005	MMF	3	

Sample Information

Initial pH: 8.1
Initial EC (µS/cm): 2860 3250
Salinity (ppt): 4

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	7.6	7.7	7.7	8.1	8.1	8.1				
2	8.0	8.1	8.1	8.3	8.4	8.4				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	434	433	435	2970	2980	2990				
2	454	448	443	2840	2970	3000				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.6	9.6	9.6 ST				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar C3 Jar(s) mortality 7 days prior to test (must be ≤25%) 0

QA (previous month)

Days to first brood (≤12 days) 9
Average number of young produced (≥15 young) 23
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 10.9 Temperature (°C) of sample prior to aeration: 8.2
DO % of sample prior to aeration: 117 Is aeration required (<40% or >100%)? **(Yes) or No**
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20min Filtered with 110um screen prior to testing **Yes or (No)**
Hardness (mg $CaCO_3$/L) of 100% : 1993 Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or (No)**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 418

Dilution Water

Pail label / preparation date 2:01/59
Hardness of dilution water (mg/L) 223

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

Comments/Observations: 0hrs: No ppt
48hrs: No ppt.

Reviewed By: ST Date Reviewed: 2022/01/17.

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS Client TEC164 Reference 2122-1072

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/01/11	1530	AN/ST	3	ST
1	2022/01/12	0955	CC/MF	-	TP
2	2022/01/13	940	MAF	3	—

Sample Information

Initial pH: 8.1
Initial EC (µS/cm): 2860 3200
Salinity (ppt): 4

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	7.7	7.7	7.7	8.1	8.1	8.1				
2	8.0	8.1	8.1	8.4	8.4	8.4				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	439	436	434	2440	2450	2410				
2	453	448	440	2900	2910	2910				

DO (mg/L) (**40-100% saturation at test temp.**)

0	8.2	8.2	8.2	8.3	8.3	8.3				
2	8.1	8.1	8.1	8.1	8.1	8.1				

Temperature (°C) (range: **18-22 °C**)

0	18	18	18	19	19	19				
2	19	19	19	19	19	19				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar C3 Jar(s) mortality 7 days prior to test (must be ≤25%) 0

QA (previous month)
Days to first brood (≤12 days) 9
Average number of young produced (≥15 young) 23
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0

Sample
DO (mg/L) of sample prior to aeration: 10.2 Temperature (°C) of sample prior to aeration: 20
DO % of sample prior to aeration: 129 Is aeration required (<40% or >100%)? **Yes or No**
Duration of aeration (37.5 +/- 12.5 mL/min/L): 20mm Filtered with 110um screen prior to testing **Yes or No**
Hardness (mg $CaCO_3$/L) of 100% : 1993 Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 457

Dilution Water
Pail label / preparation date 2:01/04
Hardness of dilution water (mg/L) 123

Antiscalant
Final Concentration in Sample: 5 mg/L
Volume of sample: 500mL Volume of antiscalant: 39.5 uL

Comments/Observations: 0hrs: No ppt
48hrs: NCPPT.

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Reviewed By: TP Date Reviewed: 2022/01/17.

APPENDIX C – Chain-of-custody form

Teck

Page 1 of 1

COC ID: 2022-01-10_BPO | TURNAROUND TIME: Regular (default) | RUSH: NO

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name	FRS AWTF			Lab Name	Nautilus Environmental			Report Format / Distribution		Excel	PDF	EDD
Project Manager	Brett Mason			Lab Contact	Tamara Pomeroy			Email 1:	DL-FROS-Lab@teck.com	X	X	X
Email	brett.mason@teck.com			Email	tamara@nautilusenvironmental.ca			Email 2:	TeckCoal@equisonline.com			X
Address	29 km N of Elkford			Address	10823 27th Street SE			Email 3:				
								Email 4:				
City	Elkford	Province	BC	City	Calgary	Province	AB	Email 5:				
Postal Code	V0B 2H0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada	Email 6:				
Phone Number	250 865 6267			Phone Number	403 253 7121			PO number	VPO00805137			

SAMPLE DETAILS

2022/01/11
09:00
Manitoulin
JC
2 1x20L carboys, 3x1L bottles
N06/N61
Good Condition

ANALYSIS REQUESTED

Please indicate below Filtered, Perserved or both (F, P, F/P)

Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	ANALYSIS	NAUT_96Hr_RT_Single_Concentration_Toxicity Test	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 10C	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 20C	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 20C + Antiscalant	
2122-1022													
FS_BPO_2022-01-10_N_0900	FS_BPO	WS		1/10/2022	9:00	G	4		X	X	X	X	8.8°C

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	Date	Time	ACCEPTED BY/AFFILIATION	Date	Time
	James Weinmeier	1/10/2022				

SERVICE REQUEST (rush - subject to availability)					
Regular (default)	X	Sampler's Name	Patrick Eckerman	Mobile #	
Priority (2-3 business days) - 50% surcharge					
Emergency (1 Business Day) - 100% surcharge		Sampler's Signature		Date/Time	10-Jan-22
For Emergency <1 Day, ASAP or Weekend - Contact ALS					

END OF REPORT

Acute Toxicity Test Results

Sample collected January 17, 2022

Final Report

January 28, 2022

Submitted to: **Teck Coal Ltd.**
Elkford, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates					
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation	*Daphnia magna* antiscalant test initiation
FS_BPO_2022-01-17_N_0900 / 2122-1134	17-Jan-22 at 0900h	19-Jan-22 at 0900h	19-Jan-22 at 1545h	19-Jan-22 at 1400h	19-Jan-22 at 1420h	19-Jan-22 at 1420h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
FS_BPO_2022-01-17_N_0900	12.4°C	1909	414

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)
- *Daphnia magna* 48-h single concentration screening test (conducted with 5 mg/L antiscalant)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample			
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
FS_BPO_2022-01-17_N_0900	100	100	100	100

Sample ID	Percent Immobility in 100 (% v/v)		
	Daphnia magna 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
FS_BPO_2022-01-17_N_0900	0	0	0

Precipitate observations

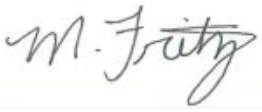
Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
FS_BPO_2022-01-17_N_0900	Rainbow trout	None	None
	Daphnia magna	None	None

QA/QC

QA/QC summary	Rainbow trout	***Daphnia magna***
Reference toxicant LC50 (95% CL)	3.3 (2.8-3.9) g/L KCl[1]	7.4 (7.1-7.6) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.4 (2.6-4.5) g/L KCl	6.5 (5.5-7.6) g/L NaCl
Reference toxicant CV	9.1%	5.2%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, December 30, 2021; [2] Test Date January 17, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation



Report By:
Michelle Fritz, BSc
Biologist



Reviewed By:
Sara Thiessen, BSc
Senior Biologist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Control/dilution water for antiscalant test	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L), Na_2SeO_4 (2 µg Se/L) and 5 mg/L antiscalant
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC164 Reference 2122-1134 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	1/19/2022	1545 *	MF / CH	1	ST
1	1/20/2022	1010	CH	-	TP
2	1/21/2022	0730	EP	-	TP
3	1/22/2022	0910	CC	-	AW
4	1/23/2022	0900	SF/NK	7	KTM

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 8.1
Initial EC (µS/cm): 3080
Salinity (ppt): 5

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L: **yes/no**

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	10.0	9.4	8.8		
Temp (°C) of 100%	15				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	8.2	8.2						
Day 4	8.0	8.5						
EC (uS/cm)								
Day 0	456	3980						
Day 4	455	3940						
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	8.9	8.8						
Day 4	8.8	8.8						
Temperature (°C) (range: 14-16°C)								
Day 0	15	15						
Day 4	15	15						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.7	0.6
2	3.3	0.4
3	3.0	0.3
4	2.7	0.2
5	2.9	0.2
6	3.2	0.2
7	3.0	0.3
8	3.2	0.3
9	3.1	0.3
10	2.8	0.2

Loading Density (g/L): 0.2 (must be ≤0.5 g/L)
Mean Length (cm): 3.2
Length Range (cm): 2.7-3.7
Mean Weight (g): 0.3 (Must be ≥0.3g)
Weight Range: (g): 0.2-0.6

Test Organism Information

Batch 20211214TR
Source Smoky Trout Farm
Tank # 4
Days Held at 15± 2°C 37 (must be ≥14 days)
Percent stock mortality 0.37 (7 days prior to test, must be ≤2%)
Test Volume (L) 18

Comments : 96 hr: NO PT

Reviewed By: CB Date Reviewed: 2022/01/25

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS Client TEC164 Reference 2122-1134

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/01/19	1420	MAF/KTM	3	MF
1	2022/01/20	0800	AW	-	TP
2	2022/01/21	0835	CC/MAF	3	AW

Sample Information

Initial pH: 8.1
Initial EC (µS/cm): 3080
Salinity (ppt): 5

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	8.1	8.1	8.1	8.1	8.1	8.2				
2	8.1	8.1	8.1	8.4	8.3	8.4				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	485	479	475	2900	2980	2960				
2	475	473	475	2820	2930	2910				

DO (mg/L) (**40-100% saturation at test temp.**)

0	8.2	8.2	8.2	9.3	9.3	9.3				
2	8.2	8.2	8.2	8.2	8.2	8.2				

Temperature (°C) (range: **18-22 °C**)

0	18	18	18	19	19	19				
2	18	18	18	18	18	18				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	9	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar D1

Jar(s) mortality 7 days prior to test (must be ≤25%) 0 MAF 5.1

QA (previous month)

Days to first brood (≤12 days) 8/9 MAF

Average number of young produced (≥15 young) 22

Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - 3%
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 9.5

Temperature (°C) of sample prior to aeration: 20

DO % of sample prior to aeration: 119%

Is aeration required (<40% or >100%)? **Yes or No**

Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20m

Filtered with 110um screen prior to testing **Yes or No**

Hardness (mg $CaCO_3$/L) of 100% : 1909

Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —

Alkalinity of 100% sample (mg $CaCO_3$/L): 414

Dilution Water

Pail label / preparation date 1:01/13

Hardness of dilution water (mg/L) 206

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Comments/Observations:

0h: nappt.
48h: no ppts

Reviewed By: CB Date Reviewed: 2022/01/25

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC164 Reference 2122-1134

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/01/19	1400	MAF/KTM	3	MF
1	2022/01/20	0810	AW	-	TP
2	2022/01/21	0815	MAF	3	DW

Sample Information

Initial pH: 8.1
Initial EC (µS/cm): 3080
Salinity (ppt): 5

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	8.0	8.0	8.0	8.2	8.2	8.2				
2	8.2	8.2	8.2	8.4	8.4	8.4				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	~~490~~ 471 MAF	470	473	2920	2960	3000				
2	488	481	482	2990	3000	3110				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	~~18~~ 12	~~18~~ 12	~~18~~ 12 MAF	12	12	12				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar WedD Jar(s) mortality 7 days prior to test (must be ≤25%) 5/.

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 33
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: ~~10.1~~ 9.6 MAF
Temperature (°C) of sample prior to aeration: 11
DO % of sample prior to aeration: 100%
Is aeration required (<40% or >100%)? **Yes or (No)**
Duration of aeration (37.5 +/- 12.5 mL/min/L) : —
Filtered with 110um screen prior to testing **Yes or (No)**
Hardness (mg $CaCO_3$/L) of 100% : 1909
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or (No)**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 414

Dilution Water

Pail label / preparation date 1:01/13
Hardness of dilution water (mg/L) 206

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

Comments/Observations: 0h: nappt.
48h: nappt.

Reviewed By: CB Date Reviewed: 2022/01/25

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method: DAS AS Client: TEC164 Reference: 2122-1134

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/01/19	1420	MF/KTM	3	MF
1	2022/01/20	0900	AW	-	TP
2	2022/01/21	0825	CC/MAF	3	AW

Sample Information

Initial pH: 8.1
Initial EC (µS/cm): 3080
Salinity (ppt): 5

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	8.0	8.0	8.0	8.1	8.2	8.2				
2	8.1	8.1	8.1	8.4	8.4	8.4				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	483	470	475	2890	2950	2980				
2	467	470	472	2840	2910	2910				

DO (mg/L) (**40-100% saturation at test temp.**)

0	8.1	8.1	8.2	9.0	9.0	9.0				
2	8.1	8.1	8.1	8.1	8.1	8.1				

Temperature (°C) (range: **18-22 °C**)

0	19	19	18	19	19	19				
2	19	19	19	19	19	19				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar: D1 Jar(s) mortality 7 days prior to test (must be ≤25%): 08: MF 1.

QA (previous month)
Days to first brood (≤12 days): 9
Average number of young produced (≥15 young): 22
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%): 0%

Sample
DO (mg/L) of sample prior to aeration: 9.5 Temperature (°C) of sample prior to aeration: 20
DO % of sample prior to aeration: 119% Is aeration required (<40% or >100%)? (Yes) or No
Duration of aeration (37.5 +/- 12.5 mL/min/L): 20m Filtered with 110um screen prior to testing Yes or (No)
Hardness (mg $CaCO_3$/L) of 100% : 1909 Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L): -
Alkalinity of 100% sample (mg $CaCO_3$/L): 414

Dilution Water
Pail label / preparation date: 1:01/13
Hardness of dilution water (mg/L): 206

Antiscalant
Final Concentration in Sample: 5 mg/L
Volume of sample: 500 ml Volume of antiscalant: 39.5 uL

Comments/Observations:
0h: nopt.
48h: no ppt

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Reviewed By: CB Date Reviewed: 2022/01/25

APPENDIX C – Chain-of-custody form

Teck

Page 1 of 1

COC ID: 2022-01-17_BPO **TURNAROUND TIME:** Regular (default) **RUSH:** NO

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO			
Facility Name	FRS AWTF			Lab Name	Nautilus Environmental			Report Format / Distribution		Excel	PDF	EDD
Project Manager	Brett Mason			Lab Contact	Tamara Pomeroy			Email 1:	DL-FROS-Lab@teck.com	X	X	X
Email	brett.mason@teck.com			Email	tamara@nautilusenvironmental.ca			Email 2:	TeckCoal@equisonline.com			X
Address	29 km N of Elkford			Address	10823 27th Street SE			Email 3:				
								Email 4:				
City	Elkford	Province	BC	City	Calgary	Province	AB	Email 5:				
Postal Code	V0B 2H0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada	Email 6:				
Phone Number	250 865 6267			Phone Number	403 253 7121			PO number	VPO00805137			

SAMPLE DETAILS / **ANALYSIS REQUESTED**

2022/01/19
09:00
Manitoulin
5C
2x20L carboys, 3x1L bottles
NOS/NOI
Good Condition

Please indicate below Filtered, Perserved or both (F, P, F/P)

Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	ANALYSIS: NAUT_96Hr_RT_Single_Concentration_Toxicity Test	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 10C	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 20C	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 20C + Antiscalant	
2122-1134												
FS_BPO_2022-01-17_N_0900	FS_BPO	WS		1/17/2022	9:00	G	4	X	X	X	X	12.4°C

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	Date	Time	ACCEPTED BY/AFFILIATION	Date	Time
	Tara Gentile	1/17/2022				

SERVICE REQUEST (rush - subject to availability)

Regular (default)	X
Priority (2-3 business days) - 50% surcharge	
Emergency (1 Business Day) - 100% surcharge	
For Emergency <1 Day, ASAP or Weekend - Contact ALS	

Sampler's Name	Patrick Bruton	**Mobile #**	
Sampler's Signature		**Date/Time**	17-Jan-22

END OF REPORT

Acute Toxicity Test Results

Sample collected January 24, 2022

Final Report

February 15, 2022

Submitted to: **Teck Coal Ltd.**
Elkford, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates					
	Collected	Received	Rainbow trout test initiation[1]	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation	*Daphnia magna* antiscalant test initiation
FS_BPO_2022-01-24_N_0900 / 2122-1192	24-Jan-22 at 0900h	25-Jan-22 at 0950h	27-Jan-22 at 1414h	25-Jan-22 at 1520h	25-Jan-22 at 1540h	25-Jan-22 at 1530h

[1]According to information provided by Nautilus Environmental (Burnaby, BC)

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
FS_BPO_2022-01-24_N_0900	9.6°C	1712	400

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)
- *Daphnia magna* 48-h single concentration screening test (conducted with 5 mg/L antiscalant)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample			
	Rainbow trout[1]	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
FS_BPO_2022-01-24_N_0900	100	100	100	100

[1]According to information provided by Nautilus Environmental (Burnaby, BC)

Sample ID	Percent Immobility in 100 (% v/v)		
	Daphnia magna 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
FS_BPO_2022-01-24_N_0900	0	0	0

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
FS_BPO_2022-01-24_N_0900	Rainbow trout[1]	None	None
	Daphnia magna	None	None

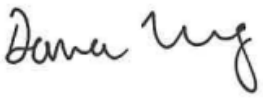
[1]According to information provided by Nautilus Environmental (Burnaby, BC)

QA/QC

QA/QC summary	Rainbow trout[3]	*Daphnia magna*
Reference toxicant LC50 (95% CL)	1.9 (1.3-2.4) g/L KCl[1]	7.1 (6.8-7.4) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	1.5 (1.0-2.4) g/L KCl	6.5 (5.6-7.6) g/L NaCl
Reference toxicant CV	22%	5.0%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, January 26, 2022; [2] Test Date February 2, 2022

[3]According to information provided by Nautilus Environmental (Burnaby, BC)
LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation



Report By:
Dana Wong, BSc
Biologist



Reviewed By:
Kayla Knol, P. Biol.
Senior Biologist

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APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.[1]

Test species	*Oncorhynchus mykiss*
Organism source	Fish hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 - 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

[1]According to information provided by Nautilus Environmental (Burnaby, BC)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Control/dilution water for antiscalant test	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L), Na_2SeO_4 (2 µg Se/L) and 5 mg/L antiscalant
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

Rainbow Trout Summary Sheet

Client: Nautilus

Start Date/Time: Jan 27/22 @ 1414h

Work Order No.: 220140

Test Species: *Oncorhynchus mykiss*

Sample Information:

Sample ID: 2122-1192
Sample Date: January 24, 2022
Date Received: January 26, 2022
Sample Volume: 1 x 20L
Other: —

Test Validity Criteria:
≥ 90% Control Survival
WQ Ranges:
T (°C) = 15 ± 1; DO (mg/L) = 7.0 to 10.3; pH = 5.5 to 8.5

Dilution Water:

Type: Dechlorinated Municipal Tap Water
Hardness (mg/L $CaCO_3$): 22
Alkalinity (mg/L $CaCO_3$): 11

Test Organism Information:

Batch No.: 010622
Source: Lyndon Fish Hatcheries
No. Fish/Volume (L): 10/12L
Loading Density (g/L): 0.28
Mean Length ± SD (mm): 35 ± 2 Range: 32 - 39
Mean Weight ± SD (g): 0.33 ± 0.05 Range: 0.26 - 0.41

KCl Reference Toxicant Results:

Reference Toxicant ID: RBTK06
Stock Solution ID: N/A
Date Initiated: January 26, 2022
96-h LC50 (95% CL) [g/L KCl]: 1.9 (1.3 - 2.4)

Reference Toxicant Mean and Historical Range [g/L KCl]: 1.5 (1.0 - 2.4)
Reference Toxicant CV (%): ~~23~~ 22

Test Results: 0% mortality at 96h in the 100% (v/v) undiluted sample.

Reviewed by: [signature]

Date reviewed: Feb 7, 2022

96-Hour Rainbow Trout Toxicity Test Data Sheet

Client/Project#: Nautilus
Sample I.D. 2122-1192
W.O. # 220140
RBT Batch #: 010622
Date Collected/Time: Jan 24/22 @ 0900h
Date Setup/Time: Jan 27/22 @ 14:14h
CER #: 7
Sample Setup By: HEC

Thermometer: CER7
D.O. meter/probe: DOS 15
Cond./Salinity meter/probe: C2/2
pH meter/probe: P2/2

Number Fish/Volume: 10/12L
7-d % Mortality: 0.49
Total Pre-aeration Time (mins): 120
Aeration rate adjusted to 6.5 ± 1 mL/min/L? (Y/N): Y

Undiluted Sample WQ			
Parameters	Initial WQ	Adjustment	30 min WQ
Temp °C	14.0		14.0
D.O. (mg/L)	10.7		10.6
pH	8.1		8.1
Cond. (µS/cm)	2970		2980
Salinity (ppt)	1.5		1.5

Concentration	# Survivors							Temperature (°C)					Dissolved Oxygen (mg/L)					pH					Conductivity (µS/cm)	
(% v/v)	1	2	4	24	48	72	96	0	24	48	72	96	0	24	48	72	96	0	24	48	72	96	0	96
Ctrl				10	10	10	10	14.0	14.0	14.0	14.5	14.5	10.3	9.9	10.0	10.1	9.4	7.1	7.1	7.2	7.1	7.0	50	54
100				10	10	10	10	14.0	14.0	14.0	14.5	14.5	10.4	10.0	10.0	10.3	9.6	8.2	8.5	8.6	8.6	8.6	2970	2960
Initials				[illegible]	[illegible]	PYN	PYN	HEC	[illegible]	[illegible]	HEC	PYN	HEC	[illegible]	[illegible]	HEC	PYN	HEC	BAM	[illegible]	HEC	PYN	HEC	PYN

Sample Description/Comments: Clear colourless odourless liquid w/o particulates.

Fish Description at 96 h: All fish appear normal

Number of Stressed Fish at 96 h: Ø

Other Observations: No precipitate at 96h

Reviewed by: [signature]

Date Reviewed: Feb. 7, 2022

Version 2.5; Issued July 19, 2017

Nautilus Environmental Company Inc.

Rainbow trout (Oncorhynchus mykiss) Length and Weight Sheet

Client: Nautilus
Sample ID: 2122-1192
W.O. #: 220140

Balance ID: Bal - 2
Date Initiated: Jan 27/22
Date Measured: Jan 31/22
Batch #: 010622

	Length (mm)	Weight (g)
1	36	0.39
2	39	0.41
3	36	0.35
4	36	0.34
5	34	0.29
6	36 ~~37~~	0.37
7	32	0.26
8	36	0.34
9	35	0.28
10	33	0.28
Total	353	3.31
Mean	35	0.33
Std. Dev.	2	0.05
Low	32	0.26
High	39	0.41

Volume Tested (L): 12

Loading Density (g/L): 0.28

Initials: PYK

Reviewed by: [signature] Date Reviewed: Feb. 7, 2022

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS20 Client TEC164 Reference 2122-1192

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/01/25	1540	CC/KK	3	MF
1	2022/01/26	0840	CC	-	TP
2	2022/01/27	1150	AV	2	KL

Sample Information

Initial pH: 8.0
Initial EC (µS/cm): 3190
Salinity (ppt): 5

Lab Code	CTL A	CTL B	CTL C	100 A	100 B	100 C				

pH (units) (range: 6.0-8.5)

day										
0	8.0	7.9	7.9	8.0	8.1	8.1				
2	7.9	8.0	8.0	8.3	8.4	8.4				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	470	484	486	3030	3150	3180				
2	446	457	482	3070	3100	3110				

DO (mg/L) (**40-100% saturation at test temp.**)

0	8.1	8.1	8.1	8.89	8.28	8.9				
2	8.1	8.1	8.1	8.1	8.1	8.1				

Temperature (°C) (range: **18-22 °C**)

0	19	19	19	18	18	18				
2	19	19	19	19	19	19				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar E1, 4cc, 5 MCN Jar(s) mortality 7 days prior to test (must be ≤25%) 5%

QA (previous month)

Days to first brood (≤12 days) 9
Average number of young produced (≥15 young) 35
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - (must be ≤10%) 0

Sample

DO (mg/L) of sample prior to aeration: 9.1
Temperature (°C) of sample prior to aeration: 18
DO % of sample prior to aeration: 112%
Is aeration required (<40% or >100%)? **Yes or No**
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20min
Filtered with 110um screen prior to testing **Yes or No**
Hardness (mg $CaCO_3$/L) of 100% : 1712
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 400

Dilution Water

Pail label / preparation date 2:01/17
Hardness of dilution water (mg/L) 180

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Comments/Observations:

0hr: no ppt
48hr: No ppt

Reviewed By: W Date Reviewed: 2022/02/14

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC164 Reference 2122-1192

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/01/25	1520	CC/KK	3	MF
1	2022/01/26	0910	CC	-	TP
2	2022/01/27	1140	AW	2	KL

Sample Information

Initial pH: 8.0 KH
Initial EC (µS/cm): 3190
Salinity (ppt): 5

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	7.9	7.9	7.9	8.0	8.0	8.0				
2	7.9	7.9	7.9	8.3	8.3	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	465	462	466	3190	3160	3180				
2	474	481	486	3100	3110	3130				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar MOM E11E2 Jar(s) mortality 7 days prior to test (must be ≤25%) 5/.

QA (previous month)
Days to first brood (≤12 days) 9
Average number of young produced (≥15 young) 35
Were test treatments randomized on test tray? (Yes) No

Control Validity Criteria
Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 10.3 Temperature (°C) of sample prior to aeration: CC 12.11
DO % of sample prior to aeration: 106.7 Is aeration required (<40% or >100%)? (Yes) or No
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20min Filtered with 110um screen prior to testing Yes or (No)
Hardness (mg $CaCO_3$/L) of 100% : 1712 Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 400

Dilution Water
Pail label / preparation date 2:01/17
Hardness of dilution water (mg/L) 186

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

Comments/Observations:
0hr: no ppt
48hr: no ppt

Reviewed By: KL Date Reviewed: 2022/01/14

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS 5 Client TEC164 Reference 2122-1192

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/01/25	1530	CC/KK	3	IMF
1	2022/01/26	0840	CC	-	JP
2	2022/01/27	1150	AW	3	KL

Sample Information

Initial pH: 8.0
Initial EC (µS/cm): 3970
Salinity (ppt): 5

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	8.0	7.9	7.9	8.1	8.1	8.1				
2	8.2	8.2	8.2	8.3	8.4	8.4				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	475	486	486	2980	3130	3170				
2	493	495	497	2950	3020	3100				

DO (mg/L) (**40-100% saturation at test temp.**)

0	8.1	8.1	8.1	8.2	8.2	8.2				
2	8.1	8.1	8.1	8.1	8.1	8.1				

Temperature (°C) (range: **18-22 °C**)

0	19	19	19	18	18	18				
2	19	19	19	19	19	19				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar ~~E5~~ CC E5 Jar(s) mortality 7 days prior to test (must be ≤25%) 5%

QA (previous month)

Days to first brood (≤12 days) 9

Average number of young produced (≥15 young) 35

Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - (must be ≤10%) 0

Sample

DO (mg/L) of sample prior to aeration: 9.1 Temperature (°C) of sample prior to aeration: 18

DO % of sample prior to aeration: 111% Is aeration required (<40% or >100%)? (Yes) or No

Duration of aeration (37.5 +/- 12.5 mL/min/L): 20min Filtered with 110um screen prior to testing Yes or (No)

Hardness (mg $CaCO_3$/L) of 100% : 1712 Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) -

Alkalinity of 100% sample (mg $CaCO_3$/L): 400

Dilution Water

Pail label / preparation date 2:01117

Hardness of dilution water (mg/L) 186

Antiscalant

Final Concentration in Sample: 5mg/L

Volume of sample: 400mL Volume of antiscalant: 39.5µL

Comments/Observations:

0hr: no ppt

48hr: no ppt

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Reviewed By: KL Date Reviewed: 2022/01/14

APPENDIX C – Chain-of-custody form

Teck

Page 1 of 1

COC ID: 2022-01-24_BPO **TURNAROUND TIME:** Regular (default) **RUSH:** NO

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name	FRS AWTF			Lab Name	Nautilus Environmental			Report Format / Distribution		Excel	PDF	EDD
Project Manager	Brett Mason			Lab Contact	Tamara Pomeroy			Email 1:	DL-FROS-Lab@teck.com	X	X	X
Email	brett.mason@teck.com			Email	tamara@nautilusenvironmental.ca			Email 2:	TeckCoal@equisonline.com			X
Address	29 km N of Elkford			Address	10823 27th Street SE			Email 3:				
								Email 4:				
City	Elkford	Province	BC	City	Calgary	Province	AB	Email 5:				
Postal Code	V0B 2H0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada	Email 6:				
Phone Number	250 865 6267			Phone Number	403 253 7121			PO number	VPO00805137			

SAMPLE DETAILS

2022/01/25
09:50
Manitoulin
JC
2x20L carboys, 3x1L bottles
Ned/Not
Good Condition
9.6°C

ANALYSIS REQUESTED

Please indicate below Filtered, Perserved or both (F, P, F/P)

Sample ID 2122-1192	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	ANALYSIS: NAUT_96Hr_RT_Single_Concentration_Toxicity Test	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 10C	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 20C	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 20C + Antiscalant
FS_BPO_2022-01-24_N_0900	FS_BPO	WS		1/24/2022	9:00	G	4	X	X	X	X

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	Date	Time	ACCEPTED BY/AFFILIATION	Date	Time
	James Weinmeier	1/24/2022				

SERVICE REQUEST (rush - subject to availability)					
Regular (default)	X	Sampler's Name	Brent Mitchell	Mobile #	
Priority (2-3 business days) - 50% surcharge					
Emergency (1 Business Day) - 100% surcharge		Sampler's Signature		Date/Time	24-Jan-22
For Emergency <1 Day, ASAP or Weekend - Contact ALS					

END OF REPORT

Acute Toxicity Test Results

Sample collected January 31, 2022

Final Report

February 22, 2022

Submitted to: **Teck Coal Ltd.**
Elkford, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates					
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation	*Daphnia magna* 5 mg/L antiscalant test initiation
FS_BPO_2022-01-31_N_0900/ 2122-1261	31-Jan-22 at 0900h	1-Feb-22 at 0900h	1-Feb-22 at 1530h	1-Feb-22 at 1520h	1-Feb-22 at 1510h	1-Feb-22 at 1520h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
FS_BPO_2022-01-31_N_0900	4.5°C	1953	388

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)
- *Daphnia magna* 48-h single concentration screening test (conducted with 5 mg/L antiscalant)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample			
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* 5 mg/L antiscalant
FS_BPO_2022-01-31_N_0900	100	100	100	100

Sample ID	Percent Immobility in 100 (% v/v)		
	Daphnia magna 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* 5 mg/L antiscalant
FS_BPO_2022-01-31_N_0900	0	0	0

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
FS_BPO_2022-01-31_N_0900	Rainbow trout	None	None
	Daphnia magna	None	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	2.9 (2.2-3.5) g/L KCl[1]	7.1 (6.8-7.4) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.4 (2.5-4.6) g/L KCl	6.5 (5.6-7.6) g/L NaCl
Reference toxicant CV	10.0%	5.0%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, January 29, 2022; [2] Test Date, February 2, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation



Report By:
Emma Pedersen, BSc
Biologist



Reviewed By:
Sara Thiessen, BSc
Senior Biologist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Control/dilution water for antiscalant test	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L), Na_2SeO_4 (2 µg Se/L) and 5 mg/L antiscalant
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC164 Reference 2122-1261 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022-02-01	1530 *	CC/CH	1	JCC
1	2022-02-02	0945	KM	-	TG
2	2022-02-03	0835	EC	-	JP
3	2022-02-04	0820	CC	-	TP
4	2022-02-05	0930	CC/AW	1	TC

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 8.0
Initial EC (µS/cm): 3130
Salinity (ppt): 4

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L : **yes/no**

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	10.0	8.6			
Temp (°C) of 100%	16				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	8.2	8.1						
Day 4	8.1	8.5						
EC (uS/cm)								
Day 0	480	3110						
Day 4	485	3000						
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	8.8	8.6						
Day 4	8.6	8.8						
Temperature (°C) (range: 14-16°C)								
Day 0	15	16						
Day 4	16	15						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.3	0.4
2	3.4	0.5
3	3.2	0.4
4	3.1	0.3
5	3.2	0.4
6	3.3	0.4
7	3.5	0.4
8	3.3	0.3
9	3.2	0.3
10	3.1	0.3

Loading Density (g/L): 0.2 (must be ≤0.5 g/L)
Mean Length (cm): 3.3
Length Range (cm): 3.1-3.5
Mean Weight (g): 0.4 (Must be ≥0.3g)
Weight Range: (g): 0.3-0.5

Test Organism Information

Batch 20211222TR
Source Troutlodge
Tank # 8
Days Held at 15± 2°C 18 (must be ≥14 days)
Percent stock mortality 0.3 (7 days prior to test, must be ≤2%)
Test Volume (L) 18

Comments : 96 Hrs: No ppt

Reviewed By: ST Date Reviewed: 2022/02/07

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS20 Client TEC164 Reference 2122-1261

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/02/01	1510	DW/JC	2	JC
1	2022/02/02	0855	MMF	-	TP
2	2022/02/03	0850	MF/KTM	3	MAE

Sample Information

Initial pH: 7.9
Initial EC (µS/cm): ~~3160~~ 3130 ST
Salinity (ppt): 4

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	7.7	7.7	7.7	8.0	7.9	8.0				
2	8.3	8.3	8.3	8.5	8.5	8.5				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	462	461	458	3210	3240	3240				
2	472	475	473	3116	3216	3256				

DO (mg/L) (**40-100% saturation at test temp.**)

0	8.1	8.1	8.1	8.2	8.2	8.2				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	19	19	19	18	18	18				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	8*	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar C5 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 31
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 10.7 Temperature (°C) of sample prior to aeration: 18
DO % of sample prior to aeration: 130 Is aeration required (<40% or >100%)? **Yes or No**
Duration of aeration (37.5 +/- 12.5 mL/min/L): 20min Filtered with 110um screen prior to testing **Yes or No**
Hardness (mg $CaCO_3$/L) of 100%: ~~175~~ 195 ST Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): ~~354~~ 388 ST

Dilution Water
Pail label / preparation date 2:01127
Hardness of dilution water (mg/L) 205

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Comments/Observations:
0 hr: no ppt
48 hr: no ppt ST
* two dried to side of vessel ↳ not included in mortality

Reviewed By: ST Date Reviewed: 2022/02/07

Daphnia 10°C Bench Sheet

NAUTILUS ENVIRONMENTAL

Method DAS10 Client TEC164 Reference 2122-~~1260~~ 1261 SC

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/02/01	1520	DWJCC	2	JC
1	2022/02/02	0900	MAR	-	TP
2	2022/02/03	0905	MF/KM	3	MAF

Sample Information

Initial pH: 7.9
Initial EC (µS/cm): ~~3160~~ 3130 ST
Salinity (ppt): 4

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	7.4	7.2	7.2	7.6	7.9	7.6				
2	8.2	8.2	8.1	8.4	8.4	8.4				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	481	470	474	3230	3260	3310				
2	495	493	497	3220	3290	3330				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (l, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar WED E1 Jar(s) mortality 7 days prior to test (must be ≤25%) 0

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 26
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0

Sample
DO (mg/L) of sample prior to aeration: 11.7
DO % of sample prior to aeration: 122
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20min
Hardness (mg $CaCO_3$/L) of 100% : 1735 1953 ST
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 382 388 ST
Temperature (°C) of sample prior to aeration: 12
Is aeration required (<40% or >100%)? (Yes) or No
Filtered with 110um screen prior to testing Yes or (No)
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)

Dilution Water
Pail label / preparation date 2:01127
Hardness of dilution water (mg/L) 205

DO Levels (40-100% saturation) - corrected for altitude -
4.1 to 10.3 mg/L at 8°C
4.0 to 10.0 mg/L at 9°C
3.9 to 9.8 mg/L at 10°C
3.8 to 9.6 mg/L at 11°C
3.7 to 9.4 mg/L at 12°C

Comments/Observations:
0 hr: no ppt
48 hr: no ppt

Reviewed By: ST Date Reviewed: 2022/02/07

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DASAS Client TEC164 Reference 2122- 1261

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/02/01	1520	[illegible]	2	JC
1	2022/02/02	0855	MAF	-	TP
2	2022/02/03	0850	MF/KM	3	MAF

Sample Information

Initial pH: 7.9
Initial EC (µS/cm): 3166 3216 3130
Salinity (ppt): 4

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	7.8	7.7	7.7	8.0	8.0	7.9				
2	8.3	8.3	8.3	8.5	8.5	8.4				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	413	465	457	3200	3220	3240				
2	480	475	472	3030	3166	3210				

DO (mg/L) (**40-100% saturation at test temp.**)

0	8.1	8.1	8.1	9.0	9.0	9.0				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	19	19	19	18	18	18				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar C4/E4 Jar(s) mortality 7 days prior to test (must be ≤25%) 2.5%

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 30
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 10.7 Temperature (°C) of sample prior to aeration: 18
DO % of sample prior to aeration: 130 Is aeration required (<40% or >100%)? (Yes) or No
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20min Filtered with 110um screen prior to testing Yes or (No)
Hardness (mg $CaCO_3$/L) of 100% : ~~135~~ 195 35 Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) –
Alkalinity of 100% sample (mg $CaCO_3$/L): ~~382~~ 388 51

Dilution Water
Pail label / preparation date 2:01/27
Hardness of dilution water (mg/L) 205

Antiscalant
Final Concentration in Sample: 5mg/L
Volume of sample: 800mL Volume of antiscalant: 35.5mL

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Comments/Observations:
0 hr: no ppt
48 hr: no ppt

Reviewed By: ST Date Reviewed: 20221021107

APPENDIX C – Chain-of-custody form

Teck

COC ID: 2022-01-31_BPO **TURNAROUND TIME:** Regular (default) **RUSH:** NO

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name	FRS AWTF			Lab Name	Nautilus Environmental			Report Format / Distribution		Excel	PDF	EDD
Project Manager	Brett Mason			Lab Contact	Tamara Pomeroy			Email 1:	DL-FROS-Lab@teck.com	X	X	X
Email	brett.mason@teck.com			Email	tamara@nautilusenvironmental.ca			Email 2:	TeckCoal@equisonline.com			X
Address	29 km N of Elkford			Address	10823 27th Street SE			Email 3:				
								Email 4:				
City	Elkford	Province	BC	City	Calgary	Province	AB	Email 5:				
Postal Code	V0B 2H0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada	Email 6:				
Phone Number	250 865 6267			Phone Number	403 253 7121			PO number	VPO00805137			

SAMPLE DETAILS / **ANALYSIS REQUESTED**

2022/02/01
9:00
Manitoulin
AC/AG
1x20L cubay, 3x1L bottles
nos/no I
good cond.
4.5°C

Please indicate below Filtered, Perserved or both (F, P, F/P)

Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	ANALYSIS	NAUT_96Hr_RT_Single_Concentration_Toxicity Test	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 10C	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 20C	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 20C + Antiscalant
FS_BPO_2022-01-31_N_0900	FS_BPO	WS		1/31/2022	9:00	G	4		X	X	X	X
2122-1261												

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	Date	Time	ACCEPTED BY/AFFILIATION	Date	Time
	Kristoff Iliou	1/31/2022				

SERVICE REQUEST (rush - subject to availability)					
Regular (default)	X	Sampler's Name	Brittany Campbell	Mobile #	
Priority (2-3 business days) - 50% surcharge					
Emergency (1 Business Day) - 100% surcharge		Sampler's Signature		Date/Time	31-Jan-22
For Emergency <1 Day, ASAP or Weekend - Contact ALS					

B

END OF REPORT

Acute Toxicity Test Results

Sample collected February 7, 2022

Final Report

March 3, 2022

Submitted to: **Teck Coal Ltd.**
Elkford, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates					
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation	*Daphnia magna* 5 mg/L antiscalant test initiation
FS_BPO_2022-02-07_N_0900/ 2122-1335	7-Feb-22 at 0900h	9-Feb-22 at 1100h	11-Feb-22 at 1500h	10-Feb-22 at 1600h	10-Feb-22 at 1610h	10-Feb-22 at 1550h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
FS_BPO_2022-02-07_N_0900	11.7°C	1947	371

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)
- *Daphnia magna* 48-h single concentration screening test (conducted with 5 mg/L antiscalant)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample			
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* 5 mg/L antiscalant
FS_BPO_2022-02-07_N_0900	100	100	100	100

Sample ID	Percent Immobility in 100 (% v/v)		
	Daphnia magna 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* 5 mg/L antiscalant
FS_BPO_2022-02-07_N_0900	0	0	0

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
FS_BPO_2022-02-07_N_0900	Rainbow trout	None	None
	Daphnia magna	None	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	2.9 (2.2-3.5) g/L KCl[1]	7.1 (6.8-7.4) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.4 (2.5-4.6) g/L KCl	6.5 (5.6-7.6) g/L NaCl
Reference toxicant CV	10.0%	5.0%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, January 29, 2022; [2] Test Date, February 2, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation

Report By:
Christine Chanhao, BSc
Biologist

Reviewed By:
Courtney Bogstie, P. Biol.
Senior Biologist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Control/dilution water for antiscalant test	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L), Na_2SeO_4 (2 µg Se/L) and 5 mg/L antiscalant
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC164 Reference 2122-1335 Chamber 2

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2/11/2022	1500 *	MAF/CH/CC	1	DJ
1	2/12/2022	0805	CC	-	DJ
2	2/13/2022	0815	JCC	-	ST
3	2/14/2022	0850	EP	-	JP
4	2/15/2022	1135	CC/CH	1	JCC

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 8.1
Initial EC (µS/cm): 3100
Salinity (ppt): 5

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L (yes/no)

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	9.0	8.8			
Temp (°C) of 100%	16				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	7.4	8.0						
Day 4	8.3	8.5						
EC (uS/cm)								
Day 0	478	3001						
Day 4	468	3060						
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	8.9	8.8						
Day 4	8.8	8.8						
Temperature (°C) (range: 14-16°C)								
Day 0	14	15						
Day 4	15	15						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.5	0.4
2	3.2	0.3
3	3.4	0.4
4	3.4	0.4
5	3.3	0.4
6	3.3	0.4
7	3.0	0.3
8	3.1	0.3
9	3.1	0.3
10	3.0	0.3

Loading Density (g/L): 0.2 (must be ≤0.5 g/L)
Mean Length (cm): 3.3
Length Range (cm): 3.0-3.5
Mean Weight (g): 0.4 (Must be ≥0.3g)
Weight Range: (g): 0.3-0.4

Test Organism Information

Batch 20211222TR
Source Troutlodge
Tank # X2
Days Held at 15± 2°C 28 (must be ≥14 days)
Percent stock mortality 0.28 (7 days prior to test, must be ≤2%)
Test Volume (L) 16

Comments : 96Hrs: NO PPT

Reviewed By: MG Date Reviewed: 2022/02/16

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC164 Reference 2122-1335

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/02/10	1610	MMFDW	3	
1	2022/02/11	0825	KTM		
2	2022/02/12	0825 0909	KTM	2	

Sample Information

Initial pH: 8.1
Initial EC (µS/cm): 3140
Salinity (ppt): 5

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	7.8	7.8	7.8	8.1	8.1	8.1				
2	8.0	8.0	8.0	8.4	8.4	8.4				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	467	456	455	3200	3150	3240				
2	451	454	450	3136	3210	3246				

DO (mg/L) (**40-100% saturation at test temp.**)

0	8.1	8.1	8.1	8.1	8.1	8.1				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	19	19	19	20	20	20				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar DS — Jar(s) mortality 7 days prior to test (must be ≤25%) 0

QA (previous month)

Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 32
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 9.9
DO % of sample prior to aeration: 121
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20m.n
Hardness (mg $CaCO_3$/L) of 100% : 1947
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 371

Temperature (°C) of sample prior to aeration: 18
Is aeration required (<40% or >100%)? **Yes or No**
Filtered with 110um screen prior to testing **Yes or No**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Dilution Water

Pail label / preparation date 2:02/07
Hardness of dilution water (mg/L) 202

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Comments/Observations:

0hr: nappt.
48hr: no ppt

Reviewed By: VG Date Reviewed: 2022/02/16

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC 164 Reference 2122-1335

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/02/10	1500	MAF/DW	3	SL
1	2022/02/11	0835	KTM	-	DP
2	2022/02/12	1035	KTM	2	AW

Sample Information

Initial pH:	8.1
Initial EC (µS/cm):	3100
Salinity (ppt):	5

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	7.8	7.8	7.8	8.1	8.1	8.1				
2	7.9	7.7	7.7	8.3	8.3	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	456	458	454	3250	3260	3270				
2	465	469	471	3320	3310	3280				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar D5 Jar(s) mortality 7 days prior to test (must be ≤25%) 11

QA (previous month)

Days to first brood (≤12 days) 8

Average number of young produced (≥15 young) 32

Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 10.7 Temperature (°C) of sample prior to aeration: 12

DO % of sample prior to aeration: 107 % Is aeration required (<40% or >100%)? **Yes or No**

Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20m Filtered with 110um screen prior to testing **Yes or No**

Hardness (mg $CaCO_3$/L) of 100% : 1947 Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —

Alkalinity of 100% sample (mg $CaCO_3$/L): 371

Dilution Water

Pail label / preparation date 2:02107

Hardness of dilution water (mg/L) 202

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

Comments/Observations:

0hr: ncppt.

48hr: no ppt

Reviewed By: MG Date Reviewed: 2022/02/16 2 MG

NAUTILUS ENVIRONMENTAL

Daphnia Antiscalant Bench Sheet

Method DAS AS Client TEC 164 Reference 2182-1335

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/02/10	1550	MAF/DW	3	
1	2022/02/11	1735	KTM		
2	2022/02/12	0940	KTM	2	

Sample Information

Initial pH: 8.1
Initial EC (µS/cm): 3100
Salinity (ppt): 5

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	7.9	7.9	7.9	8.0	8.0	8.0				
2	8.0	8.0	8.0	8.3	8.3	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	456	453	454	3190	3200	3240				
2	442	459	458	3160	3230	3170				

DO (mg/L) (**40-100% saturation at test temp.**)

0	8.1	8.1	8.1	8.4	8.4	8.4				
2	7.9	7.9	7.9	7.9	7.7	7.9				

Temperature (°C) (range: **18-22 °C**)

0	19	19	19	20	20	20				
2	20	20	20	20	20	20				

Number Alive (l, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar D1 Jar(s) mortality 7 days prior to test (must be ≤25%) 0

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 32
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0

Sample
DO (mg/L) of sample prior to aeration: 9.7
DO % of sample prior to aeration: 121
Duration of aeration (37.5 +/- 12.5 mL/min/L): 20m.A
Hardness (mg $CaCO_3$/L) of 100% : 1647
Temperature (°C) of sample prior to aeration: 20
Is aeration required (<40% or >100%)? Yes or No
Filtered with 110um screen prior to testing Yes or No
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or No
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 371

Dilution Water
Pail label / preparation date 2:02107
Hardness of dilution water (mg/L) 202

Antiscalant
Final Concentration in Sample: 5mg/L
Volume of sample: 500mL Volume of antiscalant: 845µL

Comments/Observations:
0hr: nappt.
48hr: nappt

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Reviewed By: MG Date Reviewed: 2022/02/16

APPENDIX C – Chain-of-custody form

Teck

Page 1 of 1

COC ID: 2022-02-07_BPO **TURNAROUND TIME:** Regular (default) **RUSH:** NO

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO			
Facility Name	FRS AWTF			Lab Name	Nautilus Environmental			Report Format / Distribution		Excel	PDF	EDD
Project Manager	Brett Mason			Lab Contact	Tamara Pomeroy			Email 1:	DL-FROS-Lab@teck.com	X	X	X
Email	brett.mason@teck.com			Email	tamara@nautilusenvironmental.ca			Email 2:	TeckCoal@equisonline.com			X
Address	29 km N of Elkford			Address	10823 27th Street SE			Email 3:				
								Email 4:				
City	Elkford	Province	BC	City	Calgary	Province	AB	Email 5:				
Postal Code	V0B 2H0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada	Email 6:				
Phone Number	250 865 6267			Phone Number	403 253 7121			PO number	VPO00805137			

SAMPLE DETAILS

2022/02/09
11:00
Manitoulin
OC/SRS
2x20L carboys, 3x1L bottles
NOS/NOI
Good Condition
11.7°C

Sample ID 2122-1335

ANALYSIS REQUESTED

Please indicate below Filtered, Perserved or both (F, P, F/P)

Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	ANALYSIS: NAUT_96Hr_RT_Single_Concentration_Toxicity Test	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 10C	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 20C	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 20C + Antiscalant
FS_BPO	WS		2/7/2022	9:00	G	4	X	X	X	X

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS

RELINQUISHED BY/AFFILIATION	Date	Time	ACCEPTED BY/AFFILIATION	Date	Time
Katrina Leboeuf	2/7/2022				

SERVICE REQUEST (rush - subject to availability)

Regular (default)	X
Priority (2-3 business days) - 50% surcharge	
Emergency (1 Business Day) - 100% surcharge	
For Emergency <1 Day, ASAP or Weekend - Contact ALS	

Sampler's Name	Daniel Idowu	**Mobile #**	
Sampler's Signature		**Date/Time**	7-Feb-22

END OF REPORT

Acute Toxicity Test Results

Sample collected February 14, 2022

Final Report

March 10, 2022

Submitted to: **Teck Coal Ltd.**
Elkford, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates				
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation
FS_BPO_2022-02-14_N_0900/ 2122-1401	14-Feb-22 at 0900h	15-Feb-22 at 1100h	16-Feb-22 at 1445h	16-Feb-22 at 1530h	16-Feb-22 at 1530h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
FS_BPO_2022-02-14_N_0900	9.6°C	1797	415

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample		
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C
FS_BPO_2022-02-14_N_0900	100	100	100

Sample ID	Percent Immobility in 100 (% v/v)	
	Daphnia magna 10˚C	*Daphnia magna* 20˚C
FS_BPO_2022-02-14_N_0900	0	3

Precipitate observations

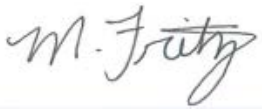
Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
FS_BPO_2022-02-14_N_0900	Rainbow trout	Precipitate observed on the bottom of test vessel	None
	Daphnia magna	None	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	2.9 (2.2-3.5) g/L KCl[1]	6.4 (6.2-6.6) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.4 (2.5-4.6) g/L KCl	6.5 (5.6-7.6) g/L NaCl
Reference toxicant CV	10.0%	5.0%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, January 29, 2022; [2] Test Date February 14, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation



Report By:
Michelle Fritz, BSc
Biologist



Reviewed By:
Courtney Bogstie, P. Biol.
Senior Biologist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC164 Reference 2122-1401 Chamber 2

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022-02-16	~~1445~~ *	EP / CH	1	MAF
1	2022-02-17	~~0810~~	CC	-	~~ST~~
2	2022-02-18	~~0800~~	~~KM~~	-	~~MAF~~
3	2022-02-19	~~0805~~	~~CC~~	-	~~CT~~
4	2022-02-20	0950	EP/JCC	7	~~ST~~

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 8.0
Initial EC (µS/cm): 3040
Salinity (ppt): 5

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L: **yes/no**

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	9.4	8.8			
Temp (°C) of 100%	15				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	7.8	7.9						
Day 4	7.9	8.2						
EC (uS/cm)								
Day 0	511	3120						
Day 4	491	3050						
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	8.8	8.8						
Day 4	8.8	8.8						
Temperature (°C) (range: 14-16°C)								
Day 0	15	15						
Day 4	15	15						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.5	0.5
2	3.3	0.3
3	3.6	0.6
4	3.0	0.3
5	3.1	0.4
6	3.0	0.3
7	3.6	0.6
8	3.7	0.5
9	3.1	0.4
10	3.4	0.4

Loading Density (g/L): 0.2 (must be ≤0.5 g/L)
Mean Length (cm): 3.3
Length Range (cm): 3.0-3.7
Mean Weight (g): 0.4 (Must be ≥0.3g)
Weight Range: (g): 0.3-0.6

Test Organism Information

Batch 20211222TR
Source Troutlodge
Tank # 1
Days Held at 15± 2°C: 33 (must be ≥14 days)
Percent stock mortality: 0.13 (7 days prior to test, must be ≤2%)
Test Volume (L): 18

Comments :
96hr: ppt on bottom of tank

Reviewed By: CB Date Reviewed: 2022/02/22

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC164 Reference 2122-1401

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/02/16	1530	MAF/DC	2	JC
1	2022/02/17	0916	KTM	-	ST
2	2022/02/18	1056	KTM	3	JCC

Sample Information

Initial pH: 8.0
Initial EC (µS/cm): 3040
Salinity (ppt): 5

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	8.1	8.1	8.1	8.1	8.1	8.1				
2	8.2	8.2	8.2	8.4	8.4	8.4				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	539	525	524	3000	3120	3140				
2	545	525	523	3070	~~3140~~ KTM	3140				

DO (mg/L) (**40-100% saturation at test temp.**)

0	8.1	8.1	8.1	8.6	8.6	8.6				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	19	19	19	20	20	20				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10(I)	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar D1 Jar(s) mortality 7 days prior to test (must be ≤25%) 11%.

QA (previous month)
Days to first brood (≤12 days) 9
Average number of young produced (≥15 young) 37
Were test treatments randomized on test tray? (Yes) No

Control Validity Criteria
Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 9.2. Temperature (°C) of sample prior to aeration: 21
DO % of sample prior to aeration: 117%. Is aeration required (<40% or >100%)? **Yes or No**
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20mins Filtered with 110um screen prior to testing **Yes or No**
Hardness (mg $CaCO_3$/L) of 100% : 1797 Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 415

Dilution Water
Pail label / preparation date 1:02/14
Hardness of dilution water (mg/L) 211

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C 3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C 3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C

Comments/Observations:
0hr: noppt.
48hr: noppt

Reviewed By: CB Date Reviewed: 2022/02/22

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC164 Reference 2122-1401

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/02/16	1530	MMF/DLD	2	DC
1	2022/02/17	0850	VTM	-	ST
2	2022/02/18	1055	VTM	3	JCC

Sample Information

Initial pH: 8.0
Initial EC (µS/cm): 3040
Salinity (ppt): 5

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	8.1	8.1	8.1	7.9	7.9	7.9				
2	8.2	8.1	8.2	8.3	8.3	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	555	529	524	3050	3160	3160				
2	512	534	533	3060	3150	3210				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.3	9.3	9.3				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar D1 Jar(s) mortality 7 days prior to test (must be ≤25%) 11%

QA (previous month)
Days to first brood (≤12 days) 9
Average number of young produced (≥15 young) 37
Were test treatments randomized on test tray? (Yes) No

Control Validity Criteria
Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 10.9
DO % of sample prior to aeration: 118
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20m
Hardness (mg $CaCO_3$/L) of 100% : 1797
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 415

Temperature (°C) of sample prior to aeration: 12
Is aeration required (<40% or >100%)? **Yes or No**
Filtered with 110um screen prior to testing **Yes or No**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Dilution Water

Pail label / preparation date 1:02/14
Hardness of dilution water (mg/L) 211

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

Comments/Observations:
0hr: ncppt.
48hr: ncppt

Reviewed By: CB Date Reviewed: 2022/02/22

APPENDIX C – Chain-of-custody form

Teck

Page 1 of 1

COC ID: 2022-02-14_BPO **TURNAROUND TIME:** Regular (default) **RUSH:** NO

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO			
Facility Name	FRS AWTF			Lab Name	Nautilus Environmental			Report Format / Distribution		Excel	PDF	EDD
Project Manager	Brett Mason			Lab Contact	Tamara Pomeroy			Email 1:	DL-FROS-Lab@teck.com	X	X	X
Email	brett.mason@teck.com			Email	tamara@nautilusenvironmental.ca			Email 2:	TeckCoal@equisonline.com			X
Address	29 km N of Elkford			Address	10823 27th Street SE			Email 3:				
								Email 4:				
City	Elkford	Province	BC	City	Calgary	Province	AB	Email 5:				
Postal Code	V0B 2H0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada	Email 6:				
Phone Number	250 865 6267			Phone Number	403 253 7121			PO number	VPO00805137			

SAMPLE DETAILS

2022/02/15
11:00
Manitanlin
JC
1x2 20x20L carboys, 3x1L bottles
NoSINoI
Good Condition

ANALYSIS REQUESTED

Please indicate below Filtered, Perserved or both (F, P, F/P)

Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	ANALYSIS: NAUT_96Hr_RT_Single_Concentration_Toxicity Test	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 10C	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 20C		
FS_BPO_2022-02-14_N_0900	FS_BPO	WS		2/14/2022	9:00	G	4	X	X	X	9.8°C	

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS

RELINQUISHED BY/AFFILIATION	Date	Time	ACCEPTED BY/AFFILIATION	Date	Time
Tara Gentile	2/14/2022				

SERVICE REQUEST (rush - subject to availability)

Regular (default)	X
Priority (2-3 business days) - 50% surcharge	
Emergency (1 Business Day) - 100% surcharge	
For Emergency <1 Day, ASAP or Weekend - Contact ALS	

Sampler's Name	Brittany Campbell	**Mobile #**	
Sampler's Signature		**Date/Time**	14-Feb-22

END OF REPORT

Acute Toxicity Test Results

Sample collected February 21, 2022

Final Report

March 14, 2022

Submitted to: **Teck Coal Ltd.**
Elkford, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates				
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation
FS_BPO_2022-02-21_N_0900 / 2122-1452	21-Feb-22 at 0900h	22-Feb-22 at 1400h	23-Feb-22 at 1600h	23-Feb-22 at 1535h	23-Feb-22 at 1530h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
FS_BPO_2022-02-21_N_0900	2.9°C	2153	399

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample		
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C
FS_BPO_2022-02-21_N_0900	100	100	100

Sample ID	Percent Immobility in 100 (% v/v)	
	Daphnia magna 10˚C	*Daphnia magna* 20˚C
FS_BPO_2022-02-21_N_0900	0	0

Precipitate observations

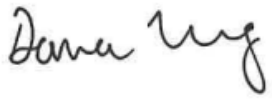
Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
FS_BPO_2022-02-21_N_0900	Rainbow trout	None	None
	Daphnia magna	None	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	3.8 (3.4-4.2) g/L KCl[1]	6.4 (6.2-6.6) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.4 (2.5-4.6) g/L KCl	6.5 (5.6-7.6) g/L NaCl
Reference toxicant CV	10.1%	4.9%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, March 1, 2022; [2] Test Date February 28, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation



Report By:
Dana Wong, BSc
Biologist



Reviewed By:
Leila Oosterbroek, P Biol
Environmental Scientist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC164 Reference 2122-1452 Chamber 2

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022-02-23	1600 *	CH/CC/KTM	1	AW
1	2022-02-24	0940	KTM	-	MAF
2	2022-02-25	0755	JCC	-	MAF
3	2022-02-26	0900	AE	-	AW
4	2022-02-27	1045	CH/DW	1	MAF

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 8.2
Initial EC (µS/cm): KTM 3260
Salinity (ppt): 0

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L: **yes/no**

	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
Preaeration time					
DO(mg/L) of 100%	10.61 KTM	9.7	9.5	9.4	8.8
Temp (°C) of 100%	15				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	8.3	8.3						
Day 4	8.3	8.4						
EC (uS/cm)								
Day 0	499	3090						
Day 4	490	3060						
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	8.9	8.8						
Day 4	8.8	8.8						
Temperature (°C) (range: 14-16°C)								
Day 0	14	15						
Day 4	15	15						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.6	0.6
2	3.7	0.6
3	3.6	0.6
4	3.9	0.7
5	3.4	0.4
6	3.6	0.6
7	3.5	0.6
8	3.7	0.7
9	3.4	0.4
10	3.5	0.5

Loading Density (g/L): 0.3 (must be ≤0.5 g/L)
Mean Length (cm): 3.6
Length Range (cm): 3.4-3.9
Mean Weight (g): 0.6 (Must be ≥0.3g)
Weight Range: (g): 0.4-0.8

Test Organism Information

Batch 20211222TR
Source Troutlodge
Tank # 7
Days Held at 15± 2°C 40 (must be ≥14 days)
Percent stock mortality 0.05 (7 days prior to test, must be ≤2%)
Test Volume (L) 18

Comments : 96hr: NOTPt

Reviewed By: SS Date Reviewed: 2022/03/08

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS20 Client TEC164 Reference 2122-1452

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/02/23	1530	DW/mcF	2	—
1	2022/02/24	0855	mcF	-	DW
2	2022/02/25	0820	JCC	2	DW

Sample Information

Initial pH: 8.2
Initial EC (µS/cm): 32600
Salinity (ppt): 6

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	8.2	8.2	8.2	8.2	8.2	8.2				
2	9.0	9.1	9.1	9.3	8.3	9.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	498	488	485	3140	3270	3300				
2	496	487	490	3160	3230	3290				

DO (mg/L) (**40-100% saturation at test temp.**)

0	8.1	8.1	8.1	9.6	9.6	9.6				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	19	19	19	19	19	19				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar D1 Jar(s) mortality 7 days prior to test (must be ≤25%) 5%

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 38
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 10.3
DO % of sample prior to aeration: 127
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20m
Hardness (mg $CaCO_3$/L) of 100% : 2153
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 399

Temperature (°C) of sample prior to aeration: 20
Is aeration required (<40% or >100%)? **Yes or No**
Filtered with 110um screen prior to testing **Yes or No**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Dilution Water
Pail label / preparation date 2:02/17
Hardness of dilution water (mg/L) 239

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Comments/Observations: 0hr: N ppt.
48hrs: no ppt

Reviewed By: SS Date Reviewed: 2022103108

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS10 Client TEC164 Reference 2122-1452

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/02/23	1535	DW/MAF	2	MA
1	2022/02/24	0905	MAF	-	DW
2	2022/02/25	0920	JCC	2	DW

Sample Information

Initial pH: 8.2
Initial EC (µS/cm): 3260
Salinity (ppt): 6

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	8.2	8.2	8.2	8.2	8.2	8.2				
2	8.1	8.1	8.1	8.3	8.3	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	500	491	490	3160	3270	3290				
2	501	493	495	3160	3250	3230				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.7	9.7				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar DS — Jar(s) mortality 7 days prior to test (must be ≤25%) 0%.

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 38
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0%.
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 12.0 — Temperature (°C) of sample prior to aeration: 12
DO % of sample prior to aeration: 128% — Is aeration required (<40% or >100%)? **Yes or No**
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20m — Filtered with 110um screen prior to testing **Yes or No**
Hardness (mg $CaCO_3$/L) of 100% : 2153 — Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 399

Dilution Water
Pail label / preparation date 2:02/17
Hardness of dilution water (mg/L) 239

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

Comments/Observations: 0hrs: No ppt
48hrs: no ppt

Reviewed By: SS Date Reviewed: 2022/03/08

APPENDIX C – Chain-of-custody form

Teck

Page 1 of 1

COC ID: 2022-02-21_BPO **TURNAROUND TIME:** Regular (default) **RUSH: NO**

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name	FRS AWTF			Lab Name	Nautilus Environmental			Report Format / Distribution		Excel	PDF	EDD
Project Manager	Brett Mason			Lab Contact	Tamara Pomeroy			Email 1:	DL-FROS-Lab@teck.com	X	X	X
Email	brett.mason@teck.com			Email	tamara@nautilusenvironmental.ca			Email 2:	TeckCoal@equisonline.com			X
Address	29 km N of Elkford			Address	10823 27th Street SE			Email 3:				
								Email 4:				
City	Elkford	Province	BC	City	Calgary	Province	AB	Email 5:				
Postal Code	V0B 2H0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada	Email 6:				
Phone Number	250 865 6267			Phone Number	403 253 7121			PO number	VPO00805137			

SAMPLE DETAILS

2022/02/22
14:00
Hotshot
JC
2x20L carboys, 3x1L bottles
NoS/NaI
Good Condition

ANALYSIS REQUESTED

Please indicate below Filtered, Perserved or both (F, P, F/P)

Sample ID 2122-1452	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	ANALYSIS: NAUT_96Hr_RT_Single_Concentration_Toxicity Test	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 10C	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 20C		
FS_BPO_2022-02-21_N_0900	FS_BPO	WS		2/21/2022	9:00	G	4	X	X	X	2.9°C	

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	Date	Time	ACCEPTED BY/AFFILIATION	Date	Time
	James Weinmeier	2/21/2022				

SERVICE REQUEST (rush - subject to availability)

Regular (default)	X
Priority (2-3 business days) - 50% surcharge	
Emergency (1 Business Day) - 100% surcharge	
For Emergency <1 Day, ASAP or Weekend - Contact ALS	

Sampler's Name	Joey Wills	**Mobile #**	
Sampler's Signature		**Date/Time**	21-Feb-22

END OF REPORT

Acute Toxicity Test Results

Samples collected February 28, 2022

Final Report

March 14, 2022

Submitted to: **Teck Coal Ltd.**
Elkford, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates				
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation
FS_BPO_2022-02-28_N_0900/ 2122-1495	28-Feb-22 at 0900h	1-Mar-22 at 0930h	2-Mar-22 at 1355h	2-Mar-22 at 1410h	2-Mar-22 at 1410h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
FS_BPO_2022-02-28_N_0900	9.1°C	2094	466

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample		
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C
FS_BPO_2022-02-28_N_0900	100	100	100

Sample ID	Percent Immobility in 100 (% v/v)	
	Daphnia magna 10˚C	*Daphnia magna* 20˚C
FS_BPO_2022-02-28_N_0900	0	0

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
FS_BPO_2022-02-28_N_0900	Rainbow trout	None	None
	Daphnia magna	None	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	3.8 (3.4-4.2) g/L KCl[1]	6.4 (6.2 - 6.6) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.4 (2.5 -4.6) g/L KCl	6.5 (5.6 - 7.6) g/L NaCl
Reference toxicant CV	10.1%	4.9%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, March 1, 2022; [2] Test Date February 28, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation



Report By:
Mia Fearey, BIT
Biologist



Reviewed By:
Courtney Bogstie, P. Biol.
Senior Biologist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC164 Reference 2122-1495 Chamber 2

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022-03-02	1355 *	MF EP	117	ST
1	2022-03-03	0820	EP	-	ST
2	2022-03-04	0410	JCC	-	ST
3	2022-03-05	0450	JCC	-	MF
4	2022-03-06	0850	JCC	-	MAE

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 8.1
Initial EC (µS/cm): 3040
Salinity (ppt): 3

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L: **yes/no**

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	10.1	8.8			
Temp (°C) of 100%	15				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	8.2	8.0						
Day 4	8.2	8.4						
EC (uS/cm)								
Day 0	538	3060						
Day 4	521	3020						
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	8.8	8.8						
Day 4	8.8	8.8						
Temperature (°C) (range: 14-16°C)								
Day 0	15	15						
Day 4	15	15						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.6	0.6
2	3.9	0.7
3	3.5	0.6
4	4.6	1.2
5	3.7	0.7
6	3.2	0.4
7	3.8	0.7
8	4.0	0.8
9	3.7	0.7
10	3.4	0.5

Loading Density (g/L): 0.4 (must be ≤0.5 g/L)
Mean Length (cm): 3.7
Length Range (cm): 3.2-4.6
Mean Weight (g): 0.7 (Must be ≥0.3g)
Weight Range: (g): 0.4-1.2

Test Organism Information

Batch 20211222TR
Source Troutlodge
Tank # 4
Days Held at 15± 2°C 47 (must be ≥14 days)
Percent stock mortality 0.09 (7 days prior to test, must be ≤2%)
Test Volume (L) 18

Comments : 96 hrs: no ppt

Reviewed By: [illegible] Date Reviewed: 2022/05/07

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS20 Client TEC164 Reference 2122-1495

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/03/02	1410	MAFISC	7	ST
1	2022/03/03	0845	CC	-	ST
2	2022/03/04	0930	CC	2	CC

Sample Information

Initial pH: 8.1
Initial EC (µS/cm): 3040
Salinity (ppt): 3

Lab Code	CTL A	CTL B	CTL C	100 A	100 B	100 C

pH (units) (range: 6.0-8.5)

day	CTL A	CTL B	CTL C	100 A	100 B	100 C
0	8.1	8.1	8.1	7.9	7.9	8.0
2	8.1	8.1	8.1	8.3	8.3	8.3

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	460	460	461	3220	3300	3310
2	465	473	471	3210	3220	3300

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	8.9	8.9	8.9
2	8.1	8.1	8.1	8.1	8.1	8.1

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	21	21	21
2	19	19	19	19	19	19

Number Alive (I, immobile)

0	10	10	10	10	10	10
1	10	10	10	10	10	10
2	10	10	10	10	10	10

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar E3 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 45
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0%
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 16.4 Temperature (°C) of sample prior to aeration: 21
DO % of sample prior to aeration: 131 Is aeration required (<40% or >100%)? **Yes or No**
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20min Filtered with 110um screen prior to testing **Yes or No**
Hardness (mg $CaCO_3$/L) of 100% : 2094 Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 466

Dilution Water
Pail label / preparation date 2.02.24.
Hardness of dilution water (mg/L) 237

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Comments/Observations:
0Hrs: ncppk
48Hrs: no ppt

Reviewed By: LO Date Reviewed: 2022/03/07

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS10 Client TEC164 Reference 2122-1495

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/03/02	1410	MAF/SC	2	ST
1	2022/03/03	0910	CC	-	ST
2	2022/03/04	0935	JC	2	CC

Sample Information

Initial pH: 8.1
Initial EC (µS/cm): 3040
Salinity (ppt): 3

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	8.1	8.1	8.1	7.9	7.9	7.9				
2	8.1	8.1	8.1	8.0	8.1	8.1				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	460	463	462	3240	3320	3340				
2	469	473	471	3210	3300	3330				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.7	9.7	9.7				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar E2 Jar(s) mortality 7 days prior to test (must be ≤25%) 8%.

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 45
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0%.
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 10.8
DO % of sample prior to aeration: 112
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20min
Hardness (mg $CaCO_3$/L) of 100% : 2094
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 466

Temperature (°C) of sample prior to aeration: 12
Is aeration required (<40% or >100%)? **Yes or No**
Filtered with 110um screen prior to testing **Yes or (No)**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or (No)**

Dilution Water
Pail label / preparation date 2:02/24.
Hardness of dilution water (mg/L) 237

DO Levels (40-100% saturation) - corrected for altitude -
4.1 to 10.3 mg/L at 8°C
4.0 to 10.0 mg/L at 9°C
3.9 to 9.8 mg/L at 10°C
3.8 to 9.6 mg/L at 11°C
3.7 to 9.4 mg/L at 12°C

Comments/Observations:
0Hrs: nappt.
48Hrs: NO PPT

Reviewed By: VO Date Reviewed: 2022/03/07

APPENDIX C – Chain-of-custody form

Teck

Page 1 of 1

COC ID: 2022-02-28_BPO **TURNAROUND TIME:** Regular (default) **RUSH: NO**

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO			
Facility Name	FRS AWTF			Lab Name	Nautilus Environmental			Report Format / Distribution		Excel	PDF	EDD
Project Manager	Brett Mason			Lab Contact	Tamara Pomeroy			Email 1:	DL-FROS-Lab@teck.com	X	X	X
Email	brett.mason@teck.com			Email	tamara@nautilusenvironmental.ca			Email 2:	TeckCoal@equisonline.com			X
Address	29 km N of Elkford			Address	10823 27th Street SE			Email 3:				
								Email 4:				
City	Elkford	Province	BC	City	Calgary	Province	AB	Email 5:				
Postal Code	V0B 2H0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada	Email 6:				
Phone Number	250 865 6267			Phone Number	403 253 7121			PO number	VPO00805137			

SAMPLE DETAILS

2022/03/01
09:30
Manitoulin
SC/SRS
2x20L cardboys, 2x1L bottles
NoS/NoT
Good Condition
8.3

ANALYSIS REQUESTED

Please indicate below Filtered, Perserved or both (F, P, F/P)

Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	ANALYSIS: NAUT_96Hr_RT_Single_Concentration_Toxicity Test	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 10C	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 20C	
FS_BPO_2022-02-28_N_0900	FS_BPO	WS		2/28/2022	9:00	G	4	X	X	X	9.1°C

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	Date	Time	ACCEPTED BY/AFFILIATION	Date	Time
	Tara Gentile	2/28/2022				

SERVICE REQUEST (rush - subject to availability)

Regular (default)	X
Priority (2-3 business days) - 50% surcharge	
Emergency (1 Business Day) - 100% surcharge	
For Emergency <1 Day, ASAP or Weekend - Contact ALS	

Sampler's Name	Clayton Perkins	**Mobile #**	
Sampler's Signature		**Date/Time**	28-Feb-22

END OF REPORT

Acute Toxicity Test Results

Samples collected March 7, 2022

Final Report

April 13, 2022

Submitted to: **Teck Coal Ltd.**
Elkford, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates				
	Collected	Received	Rainbow trout test initiation[1]	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation
FS_BPO_2022-03-07_N_0900/ 2122-1551	7-Mar-22 at 0900h	8-Mar-22 at 1215h	11-Mar-22 at 1516h	9-Mar-22 at 1530h	9-Mar-22 at 1440h

[1]According to information provided by Nautilus Environmental (Burnaby, BC)

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
FS_BPO_2022-03-07_N_0900	10.8°C	1642	484

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample		
	Rainbow trout[1]	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C
FS_BPO_2022-03-07_N_0900	100	100	100

[1]According to information provided by Nautilus Environmental (Burnaby, BC)

Sample ID	Percent Immobility in 100 (% v/v)	
	Daphnia magna 10˚C	*Daphnia magna* 20˚C
FS_BPO_2022-03-07_N_0900	0	0

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
FS_BPO_2022-03-07_N_0900	Rainbow trout[1]	None	None
	Daphnia magna	Surficial precipitate observed in 20 Degree test vessel	None

[1]According to information provided by Nautilus Environmental (Burnaby, BC)

QA/QC

QA/QC summary	Rainbow trout[3]	*Daphnia magna*
Reference toxicant LC50 (95% CL)	1.0 (0.6-1.4) g/L KCl[1]	6.4 (6.2-6.6) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	1.7 (1.1-2.6) g/L KCl	6.5 (5.6-7.6) g/L NaCl
Reference toxicant CV	22%	4.9%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, March 11, 2022; [2] Test Date February 28, 2022; [3]According to information provided by Nautilus Environmental (Burnaby, BC)

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation

Report By:
Emma Pedersen, BSc
Biologist

Reviewed By:
Courtney Bogstie, P. Biol.
Senior Biologist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.[1]

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

[1]According to information provided by Nautilus Environmental (Burnaby, BC)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

Rainbow Trout Summary Sheet

Client: Nautilus Environmental Calgary Start Date/Time: Mar 11/22 @ 1516 h

Work Order No.: 220383 Test Species: *Oncorhynchus mykiss*

Sample Information:

Sample ID: 2122-1551
Sample Date: Mar 7/22
Date Received: Mar 9/22
Sample Volume: 1 x 20 L
Other: —

Test Validity Criteria:
≥ 90% Control Survival
WQ Ranges:
T (°C) = 15 ± 1; DO (mg/L) = 7.0 to 10.3; pH = 5.5 to 8.5

Dilution Water:

Type: Dechlorinated Municipal Tap Water
Hardness (mg/L $CaCO_3$): 22
Alkalinity (mg/L $CaCO_3$): 22

Test Organism Information:

Batch No.: 022522
Source: Aqua Farms
No. Fish/Volume (L): 10/12 L
Loading Density (g/L): 0.30
Mean Length ± SD (mm): 37 ± 4 Range: 32 - 42
Mean Weight ± SD (g): 0.36 ± 0.16 Range: 0.18 - 0.64

KCl Reference Toxicant Results:

Reference Toxicant ID: RBTK16
Stock Solution ID: N/A
Date Initiated: Mar 11/22
96-h LC50 (95% CL) [g/L KCl]: 1.0 (0.6 - 1.4) g/l KCl

Reference toxicant LC50 value is slightly outside 2SD, but within 3SD of the historical range.

Reference Toxicant Mean and Historical Range [g/L KCl]: 1.7 (1.1 - 2.6) g/l KCl
Reference Toxicant CV (%): 22%

Test Results: 0 ~~100%~~ mortality ~~survival~~ at 96 h in the 100% (v/v) undiluted sample.

Reviewed by: [signature] Date reviewed: Mar 17/22

96-Hour Rainbow Trout Toxicity Test Data Sheet

Client/Project#: Nautilus Environmental Calgary
Sample I.D. 2122 - 1551
W.O. # 220383
RBT Batch #: 022522
Date Collected/Time: ~~03~~ - 07 - Mar - 22 @ 0900h
Date Setup/Time: 11 - Mar - 22 @ 1516 h
CER #: 2
Sample Setup By: SMH / JZL JR

Thermometer: CER # 2
D.O. meter/probe: DO-2 / 2
Cond./Salinity meter/probe: C-5 / 5
pH meter/probe: pH-5 / 5

Number Fish/Volume: 10 / 12L
7-d % Mortality: 0.93
Total Pre-aeration Time (mins): 30 min.
Aeration rate adjusted to 6.5 ± 1 mL/min/L? (Y/N): Y

Undiluted Sample WQ			
Parameters	Initial WQ	Adjustment	30 min WQ
Temp °C	14.0		15.0
D.O. (mg/L)	9.8		10.0
pH	8.1		8.1
Cond. (µS/cm)	2970		2990
Salinity (ppt)	1.5		1.5

Concentration	# Survivors							Temperature (°C)					Dissolved Oxygen (mg/L)					pH					Conductivity (µS/cm)	
(% v/v)	1	2	4	24	48	72	96	0	24	48	72	96	0	24	48	72	96	0	24	48	72	96	0	96
Control				10	10	10	10	14.0	14.5	14.0	14.0	14.5	9.9	9.7	9.8	9.9	9.9	7.1	7.3	7.0	7.1	7.0	52	56
100				10	10	10	10	15.0	14.5	14.5	14.0	14.5	10.0	9.7	9.8	9.9	9.9	8.1	8.4	8.5	8.5	8.3	2990	2900
Initials				KML	HEC	SMH	Tire	JZL	KML	HEC	SMH	Tire	JZL	KML	HEC	SMH	Tire	JZL	KML	HEC	SMH	Tire	JZL	Tire

Sample Description/Comments: Clear, colourless, odourless liquid w/ no particulates.

Fish Description at 96 h: All fish appear normal
Number of Stressed Fish at 96 h: Ø

Other Observations: No precipitate @ 96h

Reviewed by: A
Date Reviewed: Mar 17/22

Rainbow trout (Oncorhynchus mykiss) Length and Weight Sheet

Client: Nautilus Environmental Calgary
Sample ID: 2122 - 1551
W.O. #: 220383

Balance ID: Bal - 2
Date Initiated: Mar 11 /22
Date Measured: Mar 15 /22
Batch #: 022522

	Length (mm)	Weight (g)
1	41	0.64
2	42	0.50
3	32	0.18
4	35	0.30
5	33	0.19
6	33	0.20
7	40	0.45
8	36	0.31
9	36	0.35
10	40	0.50
Total	368	3.62
Mean	37	0.36
Std. Dev.	SMH 2 4	0.16
Low	32	0.18
High	42	0.64

Volume Tested (L): 12

Loading Density (g/L): 0.30

Initials: SMH

Reviewed by: _____ Date Reviewed: Mar 17/22

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS20 Client TEC164 Reference 2122-1551

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/03/09	1440	CB/KM	2	DN
1	2022/03/10	0800	CH	-	~~AAF~~ MAF
2	2022/03/11	1050	CC	2	ST

Sample Information

Initial pH: 8.1
Initial EC (µS/cm): 2990
Salinity (ppt): 4

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				
day				pH (units) (range: 6.0-8.5)						
0	8.0	8.0	8.0	8.1	8.1	8.1				
2	8.1	8.1	8.1	8.5	8.5	8.5				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

				EC (uS/cm)						
0	458	440	441	2920	3060	3080				
2	472	455	449	2810	3000	3000				
				DO (mg/L) (**40-100% saturation at test temp.**)						
0	8.2	8.2	8.2	7.9	7.9	7.9				
2	8.2	8.2	8.2	8.1	8.1	8.1				
				Temperature (°C) (range: **18-22 °C**)						
0	18	18	18	20	20	20				
2	18	18	18	19	19	19				
				Number Alive (l, immobile)						
0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	9	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar C2 Jar(s) mortality 7 days prior to test (must be ≤25%) 0

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 33
Were test treatments randomized on test tray? Yes / No

Control Validity Criteria
Mean % mortality at 48 hours - 3%
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 9.3 Temperature (°C) of sample prior to aeration: 21
DO % of sample prior to aeration: 116 Is aeration required (<40% or >100%)? **Yes or No**
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20mins Filtered with 110um screen prior to testing **Yes or No**
Hardness (mg $CaCO_3$/L) of 100% : 1642 Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 484

Dilution Water
Pail label / preparation date 1:03103
Hardness of dilution water (mg/L) 217

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Comments/Observations:
0hr: No ppt
48hr: Slight surficial ppt

Reviewed By: MG Date Reviewed: 2022/03/15

Daphnia 10°C Bench Sheet

Method DAS10 Client TEC164 Reference 2122-1551

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022-03-09	1530	MAF/CC	2	CC
1	2022-03-10	0850	MAF	-	MAF time CC
2	2022-03-11	1045	CC	2	ST

Sample Information

Initial pH: 8.1
Initial EC (µS/cm): 2990
Salinity (ppt): 4

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	8.1	8.1	8.1	8.1	8.1	8.1				
2	8.1	8.1	8.1	8.4	8.4	8.4				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	451	441	441	3070	3060	3110				
2	456	450	445	3066	3040	3066				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12 mm	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar E3 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 22
Were test treatments randomized on test tray? (Yes) No

Control Validity Criteria
Mean % mortality at 48 hours - 0%
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 9.4 Temperature (°C) of sample prior to aeration: 12
DO % of sample prior to aeration: 100% Is aeration required (<40% or >100%)? **Yes or No**
Duration of aeration (37.5 +/- 12.5 mL/min/L) : ~~16042~~ MAF Filtered with 110um screen prior to testing **Yes or No**
Hardness (mg $CaCO_3$/L) of 100% : 16042 Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) -
Alkalinity of 100% sample (mg $CaCO_3$/L): 484

Dilution Water
Pail label / preparation date 1;03/03
Hardness of dilution water (mg/L) 217

DO Levels (40-100% saturation) - corrected for altitude -
4.1 to 10.3 mg/L at 8°C
4.0 to 10.0 mg/L at 9°C
3.9 to 9.8 mg/L at 10°C
3.8 to 9.6 mg/L at 11°C
3.7 to 9.4 mg/L at 12°C

Comments/Observations:
0hr: neppt.
48hr: No ppt

Reviewed By: MG Date Reviewed: 2022/03/15

APPENDIX C – Chain-of-custody form

Teck

Page 1 of 1

COC ID: 2022-03-07_BPO **TURNAROUND TIME:** Regular (default) **RUSH: NO**

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO			
Facility Name	FRS AWTF			Lab Name	Nautilus Environmental			Report Format / Distribution		Excel	PDF	EDD
Project Manager	Brett Mason			Lab Contact	Tamara Pomeroy			Email 1:	DL-FROS-Lab@teck.com	X	X	X
Email	brett.mason@teck.com			Email	tamara@nautilusenvironmental.ca			Email 2:	TeckCoal@equisonline.com			X
Address	29 km N of Elkford			Address	10823 27th Street SE			Email 3:				
								Email 4:				
City	Elkford	Province	BC	City	Calgary	Province	AB	Email 5:				
Postal Code	V0B 2H0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada	Email 6:				
Phone Number	250 865 6267			Phone Number	403 253 7121			PO number	VPO00805137			

SAMPLE DETAILS — **ANALYSIS REQUESTED**

2022/03/08
12:15
Monitoring
SO/SRS
2x20L carboys, 2x1L bottles
N6S/N6T
Good Condition

Please indicate below Filtered, Perserved or both (F, P, F/P)

Sample ID 2122-1551	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	ANALYSIS	NAUT_96Hr_RT_Single_Concentration_Toxicity Test	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 10C	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 20C	10.8°C									
FS_BPO_2022-03-07_N_0900	FS_BPO	WS		3/7/2022	9:00	G	4		X	X	X										

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	Date	Time	ACCEPTED BY/AFFILIATION	Date	Time
	Daniel Idowu	3/7/2022				

SERVICE REQUEST (rush - subject to availability)

Regular (default)	X
Priority (2-3 business days) - 50% surcharge	
Emergency (1 Business Day) - 100% surcharge	
For Emergency <1 Day, ASAP or Weekend - Contact ALS	

Sampler's Name	Daniel Idowu	Mobile #	
Sampler's Signature		Date/Time	7-Mar-22

END OF REPORT

Acute Toxicity Test Results

Sample collected March 14, 2022

Final Report

April 5, 2022

Submitted to: **Teck Coal Ltd.**
Elkford, BC

8664 Commerce Court, Burnaby, BC V5A 4N7

SAMPLE INFORMATION

Sample ID	Dates (2022)				
	Collected	Received[1]	Rainbow trout test initiation	*Daphnia magna* 20˚C test initiation	*Daphnia magna* 10˚C test initiation
FS_BPO_2022-03-14_N_0900	14-Mar-22 at 0900h	16-Mar-22 at 1120h	18-Mar-22 at 1745h	18-Mar-22 at 1530h	18-Mar-22 at 1545h

[1]Date and time received at Nautilus Burnaby

Rainbow trout tests were performed at Nautilus Burnaby, *D. magna* tests were performed at Nautilus Calgary. The samples were received at Nautilus Calgary on March 18, 2022, at 0900h.

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
FS_BPO_2022-03-14_N_0900	10.9°C /14.9°C[1]	1987	485

[1]Sample receipt temperature at Nautilus Calgary

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)

RESULTS

Toxicity test results

Sample ID	Percent mortality in 100% (v/v) sample		
	Rainbow trout	*Daphnia magna* 20˚C	*Daphnia magna* 10˚C
FS_BPO_2022-03-14_N_0900	0	0[1]	0[1]

[1]0% immobility in the undiluted sample

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
FS_BPO_2022-03-14_N_0900	Rainbow trout	Precipitate observed in airline and test vessel	None
	Daphnia magna 20˚C	Precipitate observed on the surface of test solutions	None
	Daphnia magna 10˚C	None	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	1.1 (0.8 – 1.5) g/L KCl[1]	5.2 (4.9 – 5.6) g/L NaCl[2*]
Reference toxicant historical mean (2 SD Range)	1.6 (1.0 – 2.6) g/L KCl	6.5 (5.5 – 7.7) g/L NaCl
Reference toxicant CV	24%	6%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1]Test date: March 18, 2022, [2] Test Date: March 17, 2022, LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation

*The reference toxicant LC50 value was slightly outside of 2SD, but within 3SD of the historical mean. This was most likely a variation in the point estimate falling outside a narrow warning limits due to the low coefficient of variation (CV=6%), and not an indication of inappropriate organism sensitivity.



Report By:
Gabriella Utomo, B.Sc.
Laboratory Biologist



Reviewed By:
Edmund Canaria, R.P.Bio
Senior Analyst

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	20-L glass aquarium
Test volume	10 to 20 L (depending on size of fish)
Test solution depth	≥15 cm
Test concentrations	100% (undiluted) sample, plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	Dechlorinated Metro Vancouver municipal tapwater
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light / 8 hours dark
Aeration	6.5 ± 1 mL/min/L
Test measurements	Temperature, dissolved oxygen and pH measured daily; salinity measured in the undiluted sample at test initiation; conductivity measured at test initiation and termination; survival checked daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Test endpoint	Survival
Test acceptability criterion for controls	Survival ≥90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

Rainbow Trout Summary Sheet

Client: Teck Coal

Start Date/Time: 18 - March - 22 @ 1745h

Work Order No.: 220476

Test Species: *Oncorhynchus mykiss*

Sample Information:

Sample ID: FS - BPO - 2022 - 03 - 14 - N - 0900
Sample Date: 14 - Mar - 22
Date Received: 16 - Mar - 22
Sample Volume: 4 x 20L
Other: -

Test Validity Criteria:
≥ 90% Control Survival
WQ Ranges:
T (°C) = 15 ± 1; DO (mg/L) = 7.0 to 10.3; pH = 5.5 to 8.5

Dilution Water:

Type: Dechlorinated Municipal Tap Water
Hardness (mg/L $CaCO_3$): 22
Alkalinity (mg/L $CaCO_3$): 22

Test Organism Information:

Batch No.: 030422b
Source: Lyndon Fish Hatchery
No. Fish/Volume (L): 10/12L
Loading Density (g/L): 0.28
Mean Length ± SD (mm): 33 ± 3 Range: 29 - 38
Mean Weight ± SD (g): 0.33 ± 0.10 Range: 0.20 - 0.51

KCl Reference Toxicant Results:

Reference Toxicant ID: RBTK17
Stock Solution ID: N/A
Date Initiated: Mar 18, 2022
96-h LC50 (95% CL) [g/L KCl]: 1.1 (0.8 - 1.5) g/l KCl

Reference Toxicant Mean and Historical Range [g/L KCl]: 1.6 (1.0 - 2.6) g/l KCl
Reference Toxicant CV (%): 24%

Test Results: 0 % mortality at 96 hours in the 100 % undiluted sample (v/v)

Reviewed by: [signature]

Date reviewed: April 5, 2022

96-Hour Rainbow Trout Toxicity Test Data Sheet

Client/Project#: Teck - FRS AWTF
Sample I.D. FS_BPO_2022-03-14_N_0900
W.O. # ~~220475~~ 220476 JW
RBT Batch #: 030422b
Date Collected/Time: March 14, 2022; 0900h
Date Setup/Time: March 18, 2022; 1745h
CER #: 7
Sample Setup By: Tire

Thermometer: CER7
D.O. meter/probe: DO 2 / 2
Cond./Salinity meter/probe: C2 / 2
pH meter/probe: PS / 5

Number Fish/Volume: 10/12L
7-d % Mortality: 0.80
Total Pre-aeration Time (mins): 120
Aeration rate adjusted to 6.5 ± 1 mL/min/L? (Y/N): Y

Undiluted Sample WQ			
Parameters	Initial WQ	Adjustment	30 min WQ
Temp °C	14.0		14.0
D.O. (mg/L)	11.4		11.2
pH	7.9		8.2
Cond. (µS/cm)	3040		3040
Salinity (ppt)	1.6		1.6

Concentration	# Survivors							Temperature (°C)					Dissolved Oxygen (mg/L)					pH					Conductivity (µS/cm)	
(% v/v)	1	2	4	24	48	72	96	0	24	48	72	96	0	24	48	72	96	0	24	48	72	96	0	96
Control				10	10	10	10	14.0	14.5	15.0	15.0	15.0	9.2	9.7	10.1	9.8	9.7	7.1	7.0	7.3	7.2	7.4	57	72
100				10	10	10	10	14.0	14.5	15.0	15.0	15.0	9.9	10.0	10.1	9.8	9.8	8.1	8.2	8.4	8.4	8.4	3030	2936
Initials				Tire	HEC	PM	BAM	Tire	Bam	HEC	PM	BAM	Tire	Tire	HEC	PM	BAM	Tire	Tire	HEC	PM	BAM	Tire	BAM

Sample Description/Comments: Clear, colourless, odourless liquid w/ no particulates.

Fish Description at 96 h: All fish appear normal
Number of Stressed Fish at 96 h: 0

Other Observations: Some precipitate on airline & tank at 96hr

Reviewed by: [signature]
Date Reviewed: April 5, 2022

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS20 Client TEC164 Reference 2122-1616

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/03/18	1520	CC/ST	3	JCC
1	2022/03/19	0730	JCC	-	ST
2	2022/03/20	0930	JC	2	AV

Sample Information

Initial pH: 8.0
Initial EC (µS/cm): 3050
Salinity (ppt): 3

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	8.0 7.9 CC	8.0	8.0	8.0	8.0	8.0				
2	8.1	8.2	8.2	8.3	8.1	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	426	438	442	3060	3030	3060				
2	455	458	441	3000	3100	3040				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.6	7.6	7.6	7.6	7.6	7.6				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	22	22	22	22	22	22				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar D2 Jar(s) mortality 7 days prior to test (must be ≤25%) 10%

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 20
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 9.5
DO % of sample prior to aeration: 125%
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20
Hardness (mg $CaCO_3$/L) of 100% : 1987
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) -
Alkalinity of 100% sample (mg $CaCO_3$/L): 485

Temperature (°C) of sample prior to aeration: 22
Is aeration required (<40% or >100%)? (Yes) or No
Filtered with 110um screen prior to testing Yes or (No)
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)

Dilution Water
Pail label / preparation date 1:03/10
Hardness of dilution water (mg/L) 241

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Comments/Observations:
0Hrs: No ppt
48Hrs: Sufficient ppt

Reviewed By: MG Date Reviewed: 2022/03/21

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS10 Client TEC164 Reference 2122-1616

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/03/18	1545	CC/ST	3	JCC
1	2022/03/19	0920	JCC	-	ST
2	2022/03/20	0900	JC	2	AJ

Sample Information

Initial pH: 8.0
Initial EC (µS/cm): 3050
Salinity (ppt): 3

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	8.0	8.1	8.1	8.0	8.0	8.0				
2	8.0	8.0	8.0	8.3	8.3	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	423	439	442	3100	3100	3110				
2	457	440	442	3070	3100	3136				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	~~CC~~ 12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar D3 Jar(s) mortality 7 days prior to test (must be ≤25%) 10%

QA (previous month)

Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 20
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 8.8
Temperature (°C) of sample prior to aeration: 12
DO % of sample prior to aeration: 94%
Is aeration required (<40% or >100%)? Yes or (No)
Duration of aeration (37.5 +/- 12.5 mL/min/L) : —
Filtered with 110um screen prior to testing Yes or (No)
Hardness (mg $CaCO_3$/L) of 100% : 1987
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 485

Dilution Water

Pail label / preparation date 1;03/10
Hardness of dilution water (mg/L) 241

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

Comments/Observations:

0Hrs: No ppt
48Hrs: No ppt

Reviewed By: MG Date Reviewed: 2022/03/21

APPENDIX C – Chain-of-custody form

Teck

Page 1 of 1

COC ID: 2022-03-14_BPO | TURNAROUND TIME: Regular (default) | RUSH: NO

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO			
Facility Name	FRS AWTF			Lab Name	Nautilus Environmental			Report Format / Distribution		Excel	PDF	EDD
Project Manager	Brett Mason			Lab Contact	Tamara Pomeroy			Email 1:	DL-FROS-Lab@teck.com	X	X	X
Email	brett.mason@teck.com			Email	tamara@nautilusenvironmental.ca			Email 2:	TeckCoal@equisonline.com			X
Address	29 km N of Elkford			Address	10823 27th Street SE			Email 3:				
								Email 4:				
City	Elkford	Province	BC	City	Calgary	Province	AB	Email 5:				
Postal Code	V0B 2H0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada	Email 6:				
Phone Number	250 865 6267			Phone Number	403 253 7121			PO number	VPO00805137			

SAMPLE DETAILS / ANALYSIS REQUESTED

Please indicate below Filtered, Preserved or both (F, P, F/P)

Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	ANALYSIS: NAUT_96Hr_RT_Single_Concentration_Toxicity Test	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 10C	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 20C	
FS_BPO_2022-03-14_N_0900	FS_BPO	WS		2022-03-14	9:00	G	4	X	X	X	10.9
								6	7	8	
								7	7	7	
								4	4	4	
								0	0	0	
								2	2	2	
								2	2	2	

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	Date	Time	ACCEPTED BY/AFFILIATION	Date	Time
	Tara Gentile	2022-03-14		Tyrone Hamilton	Mar-16/22	11:20
				Nautilus - Burnaby		

SERVICE REQUEST (rush - subject to availability)					
Regular (default)	X	Sampler's Name	Patrick Bruton	Mobile #	
Priority (2-3 business days) - 50% surcharge					
Emergency (1 Business Day) - 100% surcharge		Sampler's Signature		Date/Time	14-Mar-22
For Emergency <1 Day, ASAP or Weekend - Contact ALS					

Teck

Page 1 of 1

COC ID: 2022-03-14_BPO

TURNAROUND TIME: Regular (default)

RUSH: NO

PROJECT/CLIENT INFO

Facility Name	FRS AWTF		
Project Manager	Brett Mason		
Email	brett.mason@teck.com		
Address	29 km N of Elkford		
City	Elkford	Province	BC
Postal Code	V0B 2H0	Country	Canada
Phone Number	250 865 6267		

LABORATORY

Lab Name	Nautilus Environmental		
Lab Contact	Tamara Pomeroy		
Email	tamara@nautilusenvironmental.ca		
Address	10823 27th Street SE		
City	Calgary	Province	AB
Postal Code	T2Z 3V9	Country	Canada
Phone Number	403 253 7121		

OTHER INFO

Report Format / Distribution		Excel	PDF	EDD
Email 1:	DL-FROS-Lab@teck.com	X	X	X
Email 2:	TeckCoal@equisonline.com			X
Email 3:				
Email 4:				
Email 5:				
Email 6:				

PO number: VPO00805137

SAMPLE DETAILS

2022/03/14
09:00
Manitoulin
SRS
2x1 L bottles
No5 NoE
Good condition
14.9°C
2122-1616

ANALYSIS REQUESTED

Please indicate below Filtered, Preserved or both (F, P, F/P)

Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	NAUT_96Hr_RT_Single_Concentration_Toxicity Test	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 10C	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 20C															
																									10.9
FS_BPO_2022-03-14_N_0900	FS_BPO	WS		2022-03-14	9:00	G	4	X	X	X	2														

END OF REPORT

Acute Toxicity Test Results

Sample collected March 21, 2022

Final Report

April 20, 2022

Submitted to: **Teck Coal Ltd.**
Elkford, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates				
	Collected	Received	Rainbow trout test initiation[1]	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation
FS_BPO_2022-03-21_N_0900 / 2122-1651	21-Mar-22 at 0900h	22-Mar-22 at 0920h	26-Mar-22 at 1345h	24-Mar-22 at 1430h	24-Mar-22 at 1450h

[1]Rainbow trout testing for the sample was performed by Nautilus Environmental (Point Edward, ON); results for this testing are provided in Appendix B

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
FS_BPO_2022-03-21_N_0900	8.8°C	2242	532

TEST TYPES

- Rainbow trout 96-h single concentration screening test, performed by Nautilus Environmental (Point Edward, ON)
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample		
	Rainbow trout[1]	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C
FS_BPO_2022-03-21_N_0900	100	100	100

[1]According to information provided by Nautilus Environmental (Point Edwards, ON)

Sample ID	Percent Immobility in 100 (% v/v)	
	Daphnia magna 10˚C	*Daphnia magna* 20˚C
FS_BPO_2022-03-21_N_0900	0	7

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
FS_BPO_2022-03-21_N_0900	Rainbow Trout	Not completed	Not completed
	Daphnia magna	Surficial precipitate observed in the 20 degree test vessel	None

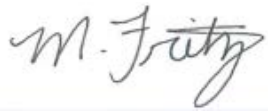
QA/QC

QA/QC summary	***Daphnia magna***
Reference toxicant LC50 (95% CL)	6.6 (6.0-7.2) g/L NaCl[1]
Reference toxicant historical mean (2 SD Range)	6.5 (5.5-7.7) g/L NaCl
Reference toxicant CV	5.7%
Organism health history	Acceptable
Protocol deviations	None
Water quality range deviations	None
Control performance	Acceptable
Test performance	Valid

[1] Test date, March 29, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation

Nautilus Environmental (Point Edward, ON) QA/QC information provided in Appendix B.



Report By:
Michelle Fritz, BSc
Biologist



Reviewed By:
Leila Oosterbroek, P Biol
Environmental Scientist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS ENVIRONMENTAL

Certificate of Analysis

ACUTE LETHALITY BIOASSAY REPORT
(Single-Concentration Test)

CLIENT:

Nautilus Environmental, 10823 27 Street SE, Calgary, AB, T2Z 3V9

TEST RESULTS:

Sample Name[1]	Sample Number	Date Collected	Date Received	Date Tested	Test Species[2]	Percent Mortality[3]	Method Deviations
2122-1651	1510-0012222	21-Mar-22	24-Mar-22	26-Mar-22	RBT	0%	No

1 - Results relate only to the sample tested. Tested as received from client.
2 - Test Type and Species RBT = Rainbow Trout 96-hour 100% Effluent Concentration Acute Lethality Test
3 - Most regulations regard ≤50% mortality to be a "pass". Check your applicable regulatory requirements.

TEST PROTOCOLS:

Environment Canada, "Biological Test Method: Reference Method for Determining Acute Lethality of Effluents to Rainbow Trout", Environmental Technology Centre, Ottawa, Ontario, Report EPS 1/RM/13 Second Edition - December 2000, including May 2007 and February 2016 Amendments. (Nautilus Test Method RT-SC-R1.7)

REFERENCE/HEALTH DATA:

Trout

Date Reference Test Initiated: 31-Mar-22 **Reference Chemical:** Phenol **Fish Lot #:** LF040322
96-Hour LC50: 9.33 mg/L **95% Confidence Limits:** 7.53 mg/L; 11.57 mg/L
Historic Geometric Mean LC50: 8.93 mg/L **Historic Warning Limits (± 2 SD):** 6.39 mg/L; 12.48 mg/L

TEST RESULTS APPROVED BY:

Date: April 7, 2022

C D'Andrea

Carol D'Andrea
Laboratory Supervisor

Y:\bioassays\2022\1000\1500-001\1510-0012222 T

704 Mara Street Point Edward, ON N7V 1X4
519-339-8787

NAUTILUS ENVIRONMENTAL RAINBOW TROUT TOXICITY TEST BENCH SHEET

Sample Information				Test Information				
Account	1510-001	Sample Method: Composite (Grab) Other		Test Type: (Single Concentration) LC50 TIE Screen				
Client	Nautilus ENV	Sample Number	1510-0012222	Date/Time Started	26-03-22 / 1345		Analyst Starting Test	JM
Person Collecting Sample		Sample Name	2122-16851	Date/Time Ended	30-03-22 / 1345		Fish Lot #	LF040322
Date/Time Collected	21-03-22 / NA	Temperature Upon Receipt	15.6 °C	Test Volume	20 L Per Vessel	Number of Fish Per Vessel 10	Number of Vessels Per Conc.	(1) 2
Date/Time Received in Lab	24-03-22 / 1115	Pre-Aeration	No (Yes)	Pre-Aeration Duration	30 min	Pre-Aeration Rate 6.5	±0.26 ml/min·L⁻¹	
Sample Description	clear, colourless	Sample Type Description	NA	Rate of Aeration During Test 6.5 ±0.26 ml/min·L⁻¹	Dilution Water Dechlor	Sample pH Adjustment	(No) Yes	
				Sample Point Description: MISA (Other)		Storage Temperature	4±2 °C	

Initial Sample Measurements Before Aeration - Cond.: 1766 µmhos D.O: 9.4 mg/L 93 % Temp: 14.5 °C pH: 7.9 Air Flow Meter Reading: ±150 L/min.
Instrument Identification- M/P #: 6/7 M/P #: 5/5 M/P #: 12/99 Meter #: 7

TOXICANT	CONC %	TOTAL NUMBER DEAD # OF HOURS FROM START OF TEST					Initial Measurements After Pre-Aeration					Meter/Probe			Initials	Final Measurements						Meter/ Probe		Initials
		—	24	48	72	96	Time	Cond (umhos)	D.O. (mg/L)/%		°C	pH (units)	Cond	D.O./ Temp	pH		Date	Time	°C	D.O. (mg/L)/%		pH (units)	D.O./ Temp	pH	
Control			0	0	0	0	1339	203	9.2	91	15.0	8.1	6/7	5/5	12/99	JM	30-03-22	1345	14.8	9.6	94	8.0	5/5	12/99	JM
(1)	100%		0	0	0	0	1	1783	10.2	99	14.2	7.9	1	1	1	1	1	1	14.8	9.6	94	8.2	1	1	1
Time Initials			0915 CS	1120 JM	0800 JM	1345 JM	Number of Control Fish Showing Atypical Behaviour: <24h: 0 24h: 0 48h: 0 72h: 0 96h: 0																		

Percent Mortality	0 %	LENGTH (mm)	WEIGHT (g)	Initials: JM	Holding Mortalities 7-days Preceding Test
LC50 (Lower; Upper Limit)	—	Mean (SD) 36.9 (3.1)	Mean (SD) 0.47 (0.13)		Number of Fish in Batch at Day (-)7 2000
Method	—	Min/Max 32 / 43	Min/Max 0.28 / 0.73		Number Dead (recorded daily for 7 days) 0+1+3+4+3+9+13 = 33
Verified By (initials)		Sample Size 10	Loading Density 0.24 g/L		Total Number Dead for 7 days Preceding Test
					7-Day Holding Mortality ([total number dead/number of fish in batch] x 100) 1.65%

Observations and notes:

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS Client TEC164 Reference 2122-1651

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/03/24	1450	CH/CC/EP	2	GM
1	2022/03/25	0910	JCC	-	ST
2	2022/03/26	0835	EP	2	ST

Sample Information

Initial pH: 8.1
Initial EC (µS/cm): 2840
Salinity (ppt): 3

Lab Code	CTL A	CTL B	CTL C	100 A	100 B	100 C

pH (units) (range: 6.0-8.5)

day										
0	8.2	8.2	8.2	8.2	8.2	8.2				
2	8.1	8.1	8.1	8.3	8.3	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	427	419	419	2620	2740	2750				
2	416	420	422	2660	2690	2670				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.7	7.7	7.7				
2	7.9	7.9	7.9	7.7	7.7	7.7				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	21	21	21				
2	20	20	20	21	21	21				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10(1I)	10(1I)	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar D5 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)

Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 23
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 9.3
Temperature (°C) of sample prior to aeration: 21
DO % of sample prior to aeration: 118 121
Is aeration required (<40% or >100%)? (Yes) or No
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20min
Filtered with 110um screen prior to testing Yes or (No)
Hardness (mg $CaCO_3$/L) of 100% : 2242
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 532

Dilution Water

Pail label / preparation date D2:20220319
Hardness of dilution water (mg/L) 211

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Comments/Observations:

0hr: no ppt
48hr: Surficial ppt

Reviewed By: CB Date Reviewed: 2022/03/30

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC164 Reference 2122-1651

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/03/24	1430	CH/CC/EP	2	KTM
1	2022/03/25	0925	JCC	-	SJ
2	2022/03/26	0840	EP	2	SJ

Sample Information

Initial pH: 8.1
Initial EC (µS/cm): 2840
Salinity (ppt): 3

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				
day	pH (units) (range: 6.0-8.5)									
0	8.2	8.2	8.2	8.1	8.1	8.1				
2	8.2	8.2	8.2	8.4	8.4	8.4				
	The pH of the sample was not adjusted prior to test setting, unless noted in the comments below									
	EC (uS/cm)									
0	439	422	419	2770	2780	2790				
2	427	417	420	2720	2770	2750				
	DO (mg/L) (**40-100% saturation at test temp.**)									
0	9.4	9.4	9.4	9.6	9.6	9.6				
2	9.4	9.4	9.4	9.4	9.4	9.4				
	Temperature (°C) (range: **8-12 °C**)									
0	12	12	12	12	12	12				
2	12	12	12	12	12	12				
	Number Alive (I, immobile)									
0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar ~~C/D~~ ST C1, C2, C3, D4 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) KTM ~~7/8~~ 8
Average number of young produced (≥15 young) KTM ~~29/23~~ 26
Were test treatments randomized on test tray? Yes / No

Control Validity Criteria
Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 11.5
Temperature (°C) of sample prior to aeration: 12
DO % of sample prior to aeration: ~~118~~ 122
Is aeration required (<40% or >100%)? Yes or No
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20min
Filtered with 110um screen prior to testing Yes or No
Hardness (mg $CaCO_3$/L) of 100% : 2242
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or No
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 532

Dilution Water
Pail label / preparation date D2:2022103119
Hardness of dilution water (mg/L) 211

DO Levels (40-100% saturation) - corrected for altitude -
4.1 to 10.3 mg/L at 8°C
4.0 to 10.0 mg/L at 9°C
3.9 to 9.8 mg/L at 10°C
3.8 to 9.6 mg/L at 11°C
3.7 to 9.4 mg/L at 12°C

Comments/Observations:
0hr: no ppt
48hr: no ppt

Reviewed By: CB Date Reviewed: 2022/03/30

APPENDIX C – Chain-of-custody form

Teck

Page 1 of 1

COC ID: 2022-03-21_BPO

TURNAROUND TIME: Regular (default)

RUSH: NO

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name	FRS AWTF			Lab Name	Nautilus Environmental			Report Format / Distribution		Excel	PDF	EDD
Project Manager	Brett Mason			Lab Contact	Tamara Pomeroy			Email 1:	DL-FROS-Lab@teck.com	X	X	X
Email	brett.mason@teck.com			Email	tamara@nautilusenvironmental.ca			Email 2:	TeckCoal@equisonline.com			X
Address	29 km N of Elkford			Address	10823 27th Street SE			Email 3:				
								Email 4:				
City	Elkford	Province	BC	City	Calgary	Province	AB	Email 5:				
Postal Code	V0B 2H0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada	Email 6:				
Phone Number	250 865 6267			Phone Number	403 253 7121			PO number	VPO00805137			

SAMPLE DETAILS

2022/03/22
09:20
Manitoulin
9C
2x20L carboys, 2x1L bottles
NOS/NOI
Good Cond.

ANALYSIS REQUESTED

Please indicate below Filtered, Perserved or both (F, P, F/P)

Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	NAUT_96Hr_RT_Single_Concentration_Toxicity Test	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 10C	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 20C	
FS_BPO_2022-03-21_N_0900	FS_BPO	WS		3/21/2022	9:00	G	4	X	X	X	8.8°C

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	Date	Time	ACCEPTED BY/AFFILIATION	Date	Time
	Tafi Mugadza	3/21/2022				

SERVICE REQUEST (rush - subject to availability)

Regular (default)	X
Priority (2-3 business days) - 50% surcharge	
Emergency (1 Business Day) - 100% surcharge	
For Emergency <1 Day, ASAP or Weekend - Contact ALS	

Sampler's Name	Azeez Adeniran	Mobile #	
Sampler's Signature		Date/Time	21-Mar-22

END OF REPORT

Acute Toxicity Test Results

Sample collected March 28, 2022

Final Report

April 28, 2022

Submitted to: **Teck Coal Ltd.**
Elkford, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates				
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation
FS_BPO_2022-03-28_N_0900 / 2122-1716	28-Mar-22 at 0900h	29-Mar-22 at 0930h	1-Apr-22 at 1620h	1-Apr-22 at 1525h	1-Apr-22 at 1515h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
FS_BPO_2022-03-28_N_0900	10.7°C	1791	516

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample		
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C
FS_BPO_2022-03-28_N_0900	100	100	100

Sample ID	Percent Immobility in 100 (% v/v)	
	Daphnia magna 10˚C	*Daphnia magna* 20˚C
FS_BPO_2022-03-28_N_0900	0	0

Precipitate observations

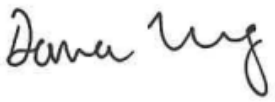
Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
FS_BPO_2022-03-28_N_0900	Rainbow trout	Precipitate observed on test vessel	None
	Daphnia magna	Surficial precipitate observed in 20˚C and 10˚C test vessels	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	3.1 (2.6-3.5) g/L KCl[1]	6.6 (6.0-7.2) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.3 (2.5-4.4) g/L KCl	6.5 (5.5-7.7) g/L NaCl
Reference toxicant CV	9.5%	5.7%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, April 4, 2022; [2] Test Date March 29, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation



Report By:
Dana Wong, BSc
Biologist



Reviewed By:
Leila Oosterbroek, P Biol
Environmental Scientist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC 164 Reference 2122-1716 Chamber 2

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022-04-01	1620 *	LC/EP/MAF	1	MF
1	2022-04-02	0840	MAF	-	EP
2	2022-04-03	0745	ktm	-	MAF
3	2022-04-04	1110	cc	-	ST
4	2022-04-05	1015	MAF/ktm/cc	1	MF

Note: *; time when the test was loaded with fish

Sample Information

Initial pH: 8.0
Initial EC (µS/cm): 7920
Salinity (ppt): 3

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L: yes/no

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	10.8	10.1	10.1	10.0	9.9
Temp (°C) of 100%	EP ~~15~~ 14				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	8.3	8.1						
Day 4	8.2	8.2						
EC (uS/cm)								
Day 0	470	2620						
Day 4	542	2480						
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	8.8	9.9						
Day 4	8.8	8.8						
Temperature (°C) (range: 14-16°C)								
Day 0	15	15						
Day 4	15	15						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.1	0.3
2	3.1	0.4
3	3.5	0.5
4	3.4	0.5
5	2.8	0.3
6	3.5	0.5
7	3.5	0.6
8	3.6	0.6
9	ktm 3.~~6~~3	0.5
10	3.5	0.4

Loading Density (g/L): 0.3
(must be ≤0.5 g/L)
Mean Length (cm): 3.3
Length Range (cm): 2.8-3.6
Mean Weight (g): 0.5
(Must be ≥0.3g)
Weight Range: (g): 0.3-0.6

Test Organism Information

Batch 20220309TR
Source Sam Livingston
Tank # ~~3~~ 9 MAF
Days Held at 15± 2°C (must be ≥14 days) 23
Percent stock mortality (7 days prior to test, must be ≤2%) ~~0.51~~ 0.73 MAF
Test Volume (L) 18

Comments :
96 hrs: ppt on sides + btm of tank

Reviewed By: MG Date Reviewed: 2022/04/07

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS Client TEC 164 Reference 2122-1716

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/03/31	1515	MAF/SC	2	MF
1	2022/04/01	0755	MAF	-	EP
2	2022/04/02	0845	MAF	2	SCC

Sample Information

Initial pH: 8.0
Initial EC (µS/cm): 2920
Salinity (ppt): 3

Lab Code	CTL A	CTL B	CTL C	100 A	100 B	100 C

pH (units) (range: 6.0-8.5)

day	CTL A	CTL B	CTL C	100 A	100 B	100 C
0	7.9	7.9	8.0	8.1	8.1	8.1
2	8.0	8.1	8.1	8.2	8.2	8.2

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	502	490	488	2950	2980/2980	
2	519	495, 490	2790	2870/2880		

DO (mg/L) (**40-100% saturation at test temp.**)

0 (MAF)	7.7	7.7	7.7	7.9	7.9	7.9
2	7.9	7.9	7.9	7.9	7.9	7.9

Temperature (°C) (range: **18-22 °C**)

0	21	21	21	20	20	20
2	20	20	20	20	20	20

Number Alive (I, immobile)

0	10	10	10	10	10	10
1	10	10	10	10	10	10
2	10	10	10	10	10	10

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar D3 Jar(s) mortality 7 days prior to test (must be ≤25%) 10/1.

QA (previous month)
Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 24
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 7.9
DO % of sample prior to aeration: 100/1.
Duration of aeration (37.5 +/- 12.5 mL/min/L) : —
Hardness (mg $CaCO_3$/L) of 100% : 1791
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 516

Temperature (°C) of sample prior to aeration: 20'
Is aeration required (<40% or >100%)? **Yes or No**
Filtered with 110um screen prior to testing **Yes or No**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Dilution Water
Pail label / preparation date 2: 03/27
Hardness of dilution water (mg/L) 227

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Comments/Observations: Chr: nappt.
96 hr: surface ppt.

Reviewed By: MG Date Reviewed: 2022/04/07

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC 164 Reference 2122-1716

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/03/31 01	1525	MAF/SK	2	MF
1	2022/04/01 02	0800	MAF	-	EP
2	2022/04/02 03	0850	MAF	2	JCC

Sample Information

Initial pH: 8.0
Initial EC (µS/cm): 2920
Salinity (ppt): 3

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	8.2	8.2	8.2	8.3	8.3	8.3				
2	8.2	8.2	8.2	8.1	8.2	8.2				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	503	490	488	3040	3100	3110				
2	513	498	492	2860	2980	3000				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar D1/13 Jar(s) mortality 7 days prior to test (must be ≤25%) 8%

QA (previous month)

Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 25
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - (must be ≤10%) 0

Sample

DO (mg/L) of sample prior to aeration: 9.4 Temperature (°C) of sample prior to aeration: 12
DO % of sample prior to aeration: 100% Is aeration required (<40% or >100%)? **Yes or No**
Duration of aeration (37.5 +/- 12.5 mL/min/L) : — Filtered with 110um screen prior to testing **Yes or No**
Hardness (mg $CaCO_3$/L) of 100% : 1791 Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 516

Dilution Water

Pail label / preparation date 2:03/27
Hardness of dilution water (mg/L) 227

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

Comments/Observations: ONR: nappl.
96 hr: surficial ppt.

Reviewed By: MG Date Reviewed: 2022/04/07

APPENDIX C – Chain-of-custody form

Teck

COC ID: 2022-03-28_BPO **TURNAROUND TIME:** Regular (default) **RUSH:** NO

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name	FRS AWTF			Lab Name	Nautilus Environmental			Report Format / Distribution		Excel	PDF	EDD
Project Manager	Brett Mason			Lab Contact	Tamara Pomeroy			Email 1:	DL-FROS-Lab@teck.com	X	X	X
Email	brett.mason@teck.com			Email	tamara@nautilusenvironmental.ca			Email 2:	TeckCoal@equisonline.com			X
Address	29 km N of Elkford			Address	10823 27th Street SE			Email 3:				
								Email 4:				
City	Elkford	Province	BC	City	Calgary	Province	AB	Email 5:				
Postal Code	V0B 2H0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada	Email 6:				
Phone Number	250 865 6267			Phone Number	403 253 7121			PO number	VPO00805137			

SAMPLE DETAILS / **ANALYSIS REQUESTED**

2022/03/29
09:30 Manitoulin
0C
~~3x~~ 3x20L carboys
NoS/NoL
Good Condition
10.7°C

Please indicate below Filtered, Perserved or both (F, P, F/P)

Sample ID 2122-1716	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	ANALYSIS	NAUT_96Hr_RT_Single_Concentration_Toxicity Test	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 10C	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 20C
FS_BPO_2022-03-28_N_0900	FS_BPO	WS		3/28/2022	9:00	G	4		X	X	X

~~ONE 20 L BLADDER~~

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	Date	Time	ACCEPTED BY/AFFILIATION	Date	Time
		3/28/2022				

SERVICE REQUEST (rush - subject to availability)					
Regular (default)	X	Sampler's Name	Jessica Bethune	Mobile #	
Priority (2-3 business days) - 50% surcharge					
Emergency (1 Business Day) - 100% surcharge		Sampler's Signature		Date/Time	28-Mar-22
For Emergency <1 Day, ASAP or Weekend - Contact ALS					

END OF REPORT

Acute Toxicity Test Results

Sample collected April 4, 2022

Final Report

April 26, 2022

Submitted to: **Teck Coal Ltd.**
Elkford, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates				
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation
FS_BPO_2022-04-04_N_0900/ 2122-1799	4-Apr-22 at 0900h	5-Apr-22 at 1400h	8-Apr-22 at 1450h	6-Apr-22 at 1505h	6-Apr-22 at 1505h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
FS_BPO_2022-04-04_N_0900	9.9°C	1362	448

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample		
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C
FS_BPO_2022-04-04_N_0900	100	100	100

Sample ID	Percent Immobility in 100 (% v/v)	
	Daphnia magna 10˚C	*Daphnia magna* 20˚C
FS_BPO_2022-04-04_N_0900	0	0

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
FS_BPO_2022-04-04_N_0900	Rainbow trout	Precipitate observed on test vessel	None
	Daphnia magna	Surficial precipitate observed in 10- and 20-degree test	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	3.1 (2.6-3.5) g/L KCl[1]	6.2 (5.9-6.5) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.3 (2.5-4.4) g/L KCl	6.5 (5.5-7.7) g/L NaCl
Reference toxicant CV	9.5%	5.7%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, April 4, 2022; [2] Test Date April 11, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation



Report By:
Katheryn Munson, BSc
Biologist



Reviewed By:
Leila Oosterbroek, P Biol
Environmental Scientist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC 164 Reference 2122-1799 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022-04-08	1450 *	CH/EPILC	17	JC
1	2022-04-09	0935	NA	-EP	MAC
2	2022-04-10	0930	DM	-	AW
3	2022-04-11	0840	ketm	-	AW
4	2022-04-12	1030	AW/CC/LC		ketm

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 8.3
Initial EC (µS/cm): 2960
Salinity (ppt): 5

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L: **yes/no**

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	9.5	8.8			
Temp (°C) of 100%	15				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	7.7	8.2						
Day 4	8.3	8.2						
EC (uS/cm)								
Day 0	575	3140						
Day 4	518	3040						
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	8.8	8.8						
Day 4	8.5	8.8						
Temperature (°C) (range: 14-16°C)								
Day 0	15	15						
Day 4	15	15						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10(1)						
Day 2	10	10(1)						
Day 3	10	10(1)						
Day 4	10	10(1)						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.1	0.3
2	3.9	0.5
3	3.1	0.4
4	3.3	0.4
5	3.2	0.3
6	3.3	0.4
7	3.1	0.3
8	3.7	0.6
9	3.8	0.5
10	3.1	0.3

Loading Density (g/L): 0.2 (must be ≤0.5 g/L)
Mean Length (cm): 3.3
Length Range (cm): 3.1 - 3.8
Mean Weight (g): 0.4 (Must be ≥0.3g)
Weight Range: (g): 0.3 - 0.6

Test Organism Information

Batch 20220309TR
Source STAN LIVINGSTON
Tank # 3
Days Held at 15± 2°C 30 (must be ≥14 days)
Percent stock mortality 0.88 (7 days prior to test, must be ≤2%)
Test Volume (L) 18

Comments : 96 hr: AM collecting sides + bottom of tank

Reviewed By: LC Date Reviewed: 2022/04/13

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS20 Client TEC164 Reference 2122-1799

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/04/06	1505	CC/KTM	2	SC
1	2022/04/07	0745	EP	-	MAF
2	2022/04/08	0835	MF		MAF

Sample Information

Initial pH: 8.3
Initial EC (µS/cm): 2960
Salinity (ppt): 5

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	8.3	8.2	8.3	8.2	8.3	8.3				
2	8.3	8.2	8.3	8.2	8.3	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	532	534	539	3020	3050	3000				
2	555	540	540	2920	2940	2910				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	8.7	8.7	8.7				
2	7.7	7.7	7.7	7.7	7.7	7.7				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	21	21	21				
2	21	21	21	21	21	21				

Number Alive (l, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar C3 Jar(s) mortality 7 days prior to test (must be ≤25%) 0/.

QA (previous month)
Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 29
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 9.9 Temperature (°C) of sample prior to aeration: 21
DO % of sample prior to aeration: 124 Is aeration required (<40% or >100%)? (Yes) or No
Duration of aeration (37.5 +/- 12.5 mL/min/L): 20min Filtered with 110um screen prior to testing Yes or (No)
Hardness (mg $CaCO_3$/L) of 100% : 1362 Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 448

Dilution Water
Pail label / preparation date 1:C4/C1
Hardness of dilution water (mg/L) 231

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Comments/Observations:
0HRS: normal
48HRS: surficial ppt

Reviewed By: LO Date Reviewed: 2022/04/13

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS10 Client TEC164 Reference 2122-1799

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/04/06	1505	CC/GTM	2	JC
1	2022/04/07	0810	EP	-	mnf
2	2022/04/08	0900	MF	2	mnf

Sample Information

Initial pH: 8.3
Initial EC (µS/cm): 2966
Salinity (ppt): 5

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	8.2	8.2	8.2	8.3	8.2	8.3				
2	8.3	8.3	8.3	8.5	8.6	8.6				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	534	534	539	3000	3030	3050				
2	541	542	548	2910	3010	3040				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (l, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar C3 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 29
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 10.8 Temperature (°C) of sample prior to aeration: 12
DO % of sample prior to aeration: 115% Is aeration required (<40% or >100%)? **Yes or No**
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20min Filtered with 110um screen prior to testing **Yes or No**
Hardness (mg $CaCO_3$/L) of 100% : 1362 Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 448

Dilution Water
Pail label / preparation date 1:04/01
Hardness of dilution water (mg/L) 231

DO Levels (40-100% saturation) - corrected for altitude -
4.1 to 10.3 mg/L at 8°C
4.0 to 10.0 mg/L at 9°C
3.9 to 9.8 mg/L at 10°C
3.8 to 9.6 mg/L at 11°C
3.7 to 9.4 mg/L at 12°C

Comments/Observations:
0hrs: nappt
48hrs: slight surficial ppt

Reviewed By: CO Date Reviewed: 2022/04/15

APPENDIX C – Chain-of-custody form

Teck

Page 1 of 1

COC ID: 2022-04-04_BPO | TURNAROUND TIME: Regular (default) | RUSH: NO

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name	FRS AWTF			Lab Name	Nautilus Environmental			Report Format / Distribution		Excel	PDF	EDD
Project Manager	Brett Mason			Lab Contact	Tamara Pomeroy			Email 1:	DL-FROS-Lab@teck.com	X	X	X
Email	brett.mason@teck.com			Email	tamara@nautilusenvironmental.ca			Email 2:	TeckCoal@equisonline.com			X
Address	29 km N of Elkford			Address	10823 27th Street SE			Email 3:				
								Email 4:				
City	Elkford	Province	BC	City	Calgary	Province	AB	Email 5:				
Postal Code	V0B 2H0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada	Email 6:				
Phone Number	250 865 6267			Phone Number	403 253 7121			PO number	VPO00823090			

SAMPLE DETAILS

2022/04/05
14:00
Manitoulin
SC
2x20L cartoons, 4x 500mL bottles
N6S/N6I
Good Condition

ANALYSIS REQUESTED

Please indicate below Filtered, Perserved or both (F, P, F/P)

Sample ID 2122-1799	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	ANALYSIS: NAUT_96Hr_RT_Single_Concentration_Toxicity Test	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 10C	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 20C												
FS_BPO_2022-04-04_N_0900	FS_BPO	WS		4/4/2022	9:00	G	4	X	X	X	9.9°C											

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	Date	Time	ACCEPTED BY/AFFILIATION	Date	Time
	Tafi Mugadza	4/4/2022				

SERVICE REQUEST (rush - subject to availability)					
Regular (default)	X	Sampler's Name	Steven Goebel	Mobile #	250-308-4631
Priority (2-3 business days) - 50% surcharge					
Emergency (1 Business Day) - 100% surcharge		Sampler's Signature		Date/Time	4-Apr-22
For Emergency <1 Day, ASAP or Weekend - Contact ALS					

END OF REPORT

Acute Toxicity Test Results

Sample collected April 11, 2022

Final Report

May 9, 2022

Submitted to: **Teck Coal Ltd.**
Elkford, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates				
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation
FS_BPO_2022-04-11_N_0900/ 2122-1872	11-April-22 at 0900h	12-April-22 at 1000h	15-April-22 at 1415h	15-April-22 at 1425h	15-April-22 at 1430h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
FS_BPO_2022-04-11_N_0900	11.2°C	1579	517

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample		
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C
FS_BPO_2022-04-11_N_0900	100	100	100

Sample ID	Percent Immobility in 100 (% v/v)	
	Daphnia magna 10˚C	*Daphnia magna* 20˚C
FS_BPO_2022-04-11_N_0900	0	10

Precipitate observations

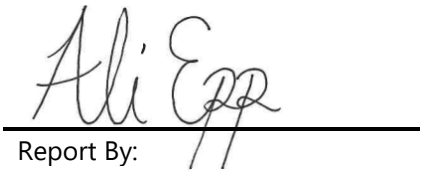
Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
FS_BPO_2022-04-11_N_0900	Rainbow trout	Precipitate observed on test vessel	None
	Daphnia magna	Surficial precipitate observed in 20-degree test	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*	*Daphnia magna*
Reference toxicant LC50 (95% CL)	3.9 (3.5-4.4) g/L KCl[1]	6.3 (5.9-6.6) g/L NaCl[2]	6.2 (5.9-6.5) g/L NaCl[3]
Reference toxicant historical mean (2 SD Range)	3.3 (2.5 -4.5) g/L KCl	6.5 (5.5-7.7) g/L NaCl	6.5 (5.5-7.7) g/L NaCl
Reference toxicant CV	9.7%	5.7%	5.7%
Organism health history	Acceptable	Acceptable	Acceptable
Protocol deviations	None	None	None
Water quality range deviations	None	None	None
Control performance	Acceptable	Acceptable	Acceptable
Test performance	Valid	Valid	Valid

[1] Test date, April 11, 2022; [2] Test Date April 13, 2022 ; [3] Test Date April 11, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation



Report By:
Ali Epp
Biologist



Reviewed By:
Leila Oosterbroek, P Biol
Environmental Scientist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC 164 Reference 2122-1872 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022-04-15	1415 *	CH / EP	1	JCC
1	2022-04-16	0900	NA	-	AN
2	2022-04-17	0946	DM	-	JCC
3	2022-04-18	0805	CC	-	ML
4	2022-04-19	1130	CC/KO/EP	1	MD

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 8.2
Initial EC (µS/cm): 2900
Salinity (ppt): 5

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L : **yes/no**

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	8.6	8.8			
Temp (°C) of 100%	16				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	7.6	8.0						
Day 4	7.3	8.2						
EC (uS/cm)								
Day 0	471	2870						
Day 4	434	2370						
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	8.9	8.8						
Day 4	8.6	8.8						
Temperature (°C) (range: 14-16°C)								
Day 0	14	15						
Day 4	16	16						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.3	0.4
2	3.4	0.4
3	3.0	0.3
4	3.4	0.4
5	3.0	0.3
6	3.0	0.3
7	3.5	0.4
8	3.4	0.4
9	3.0	0.3
10	3.3	0.3

Loading Density (g/L): 0.2 (must be ≤0.5 g/L)
Mean Length (cm): 3.2
Length Range (cm): 3.0-3.5
Mean Weight (g): 0.4 (Must be ≥0.3g)
Weight Range: (g): 0.3-0.4

Test Organism Information

Batch 20220224TR
Source Troutlodge
Tank # 10
Days Held at 15± 2°C 23 (must be ≥14 days)
Percent stock mortality 0.07 (7 days prior to test, must be ≤2%)
Test Volume (L) 18

Comments : 96 hr:
ppt on bottom and sides

Reviewed By: SS Date Reviewed: 20220411 21

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC164 Reference 2122-1872

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/04/15	1430	JCC/MAF	2	SC
1	2022/04/16	0747	EP	-	A.P
2	2022/04/17	0910	JCC	2	K.TM

Sample Information

Initial pH: 8.2
Initial EC (µS/cm): 2900
Salinity (ppt): 5

Lab Code	CTL A	CTL B	CTL C	100 A	100 B	100 C

pH (units) (range: 6.0-8.5)

day										
0	8.2	8.2	8.2	8.0	8.0	8.0				
2	8.2	8.3	8.2	8.0	8.0	8.0				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	498	471	470	2630	2730	2740				
2	499	481	474	2510	2630	2610				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.7	7.7	7.7				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	21	21	21				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10 (3I)	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar E1 Jar(s) mortality 7 days prior to test (must be ≤25%) 10%.

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 27
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 8.9
DO % of sample prior to aeration: 111%
Duration of aeration (37.5 +/- 12.5 mL/min/L): 2 Cm
Hardness (mg $CaCO_3$/L) of 100% : 1579
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 517

Temperature (°C) of sample prior to aeration: 21
Is aeration required (<40% or >100%)? (Yes) or No
Filtered with 110um screen prior to testing Yes or (No)
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)

Dilution Water
Pail label / preparation date 1:04/11
Hardness of dilution water (mg/L) 209

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Comments/Observations:
48hrs: ONLY nCppt
48 hrs: surface ppt

Reviewed By: SS Date Reviewed: 2022 04 21

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC164 Reference 2122-1872

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/04/15	1425	JCC/MAF	2	SC
1	2022/04/16	0802	EP	-	DW
2	2022/04/17	0920	JCC	2	[illegible]

Sample Information

Initial pH: 8.2
Initial EC (µS/cm): 2900
Salinity (ppt): 5

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				
day	pH (units) (range: 6.0-8.5)									
0	8.2	8.2	8.2	8.0	8.0	8.1				
2	8.3	8.3	8.3	8.4	8.4	8.4				
	The pH of the sample was not adjusted prior to test setting, unless noted in the comments below									
	EC (uS/cm)									
0	475	470	473	2580	2730	2760				
2	474	468	474	2510	2620	2680				
	DO (mg/L) (**40-100% saturation at test temp.**)									
0	9.4	9.4	9.4	9.6	9.6	9.6				
2	9.4	9.4	9.4	9.4	9.4	9.4				
	Temperature (°C) (range: **8-12 °C**)									
0	12	12	12	12	12	12				
2	12	12	12	12	12	12				
	Number Alive (I, immobile)									
0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar Wed C1 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 9
Average number of young produced (≥15 young) 31
Were test treatments randomized on test tray? Yes / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0

Sample
DO (mg/L) of sample prior to aeration: 10.3
Temperature (°C) of sample prior to aeration: 12
DO % of sample prior to aeration: 110
Is aeration required (<40% or >100%)? **Yes or No**
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20m.
Filtered with 110um screen prior to testing **Yes or No**
Hardness (mg $CaCO_3$/L) of 100% : 1579
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 517

Dilution Water
Pail label / preparation date 1:04/11
Hardness of dilution water (mg/L) 209

DO Levels (40-100% saturation) - corrected for altitude -
4.1 to 10.3 mg/L at 8°C
4.0 to 10.0 mg/L at 9°C
3.9 to 9.8 mg/L at 10°C
3.8 to 9.6 mg/L at 11°C
3.7 to 9.4 mg/L at 12°C

Comments/Observations:
48hrs: no ppt
0hrs: no ppt.

Reviewed By: SS Date Reviewed: 2022/04/21

APPENDIX C – Chain-of-custody form

Teck

Page 1 of 1

COC ID: 2022-04-11_BPO **TURNAROUND TIME:** Regular (default) **RUSH: NO**

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name	FRS AWTF			Lab Name	Nautilus Environmental			Report Format / Distribution		Excel	PDF	EDD
Project Manager	Brett Mason			Lab Contact	Tamara Pomeroy			Email 1:	DL-FROS-Lab@teck.com	X	X	X
Email	brett.mason@teck.com			Email	tamara@nautilusenvironmental.ca			Email 2:	TeckCoal@equisonline.com			X
Address	29 km N of Elkford			Address	10823 27th Street SE			Email 3:				
								Email 4:				
City	Elkford	Province	BC	City	Calgary	Province	AB	Email 5:				
Postal Code	V0B 2H0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada	Email 6:				
Phone Number	250 865 6267			Phone Number	403 253 7121			PO number	VPO00823090			

SAMPLE DETAILS / **ANALYSIS REQUESTED**

2022/04/12
10:00
Manitoulin
5C
2x20L carboys, 2x1L bottles
NGS/NoL
Good Condition

Please indicate below Filtered, Perserved or both (F, P, F/P)

Sample ID 2122-1672	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont	ANALYSIS	NAUT_96Hr_RT_Single_Concentration_Toxicity Test	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 10C	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 20C	
FS_BPO_2022-04-11_N_0900	FS_BPO	WS		4/11/2022	9:00	G	4		X	X	X	11.2°C

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	Date	Time	ACCEPTED BY/AFFILIATION	Date	Time
	Kristoff Iliou	4/11/2022				

SERVICE REQUEST (rush - subject to availability)

Regular (default)	X	Sampler's Name	Patrick Bruton	Mobile #	
Priority (2-3 business days) - 50% surcharge					
Emergency (1 Business Day) - 100% surcharge		Sampler's Signature		Date/Time	11-Apr-22
For Emergency <1 Day, ASAP or Weekend - Contact ALS					

END OF REPORT

Acute Toxicity Test Results

Sample collected April 18, 2022

Final Report

May 17, 2022

Submitted to: **Teck Coal Ltd.**
Elkford, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates				
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation
FS_BPO_2022-04-18_N_0900/ 2122-1939	18-Apr-22 at 0900h	19-Apr-22 at 0915h	21-Apr-22 at 1425h	20-Apr-22 at 1435h	20-Apr-22 at 1430h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
FS_BPO_2022-04-18_N_0900	10.1°C	1741	432

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample		
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C
FS_BPO_2022-04-18_N_0900	100	100	100

Sample ID	Percent Immobility in 100 (% v/v)	
	Daphnia magna 10˚C	*Daphnia magna* 20˚C
FS_BPO_2022-04-18_N_0900	0	63

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
FS_BPO_2022-04-18_N_0900	Rainbow trout	Precipitate observed on test vessel	None
	Daphnia magna	Surficial precipitate observed in 10 and 20 degree tests; precipitate observed on the test vessel in 20 degree test	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	3.9 (3.5-4.4) g/L KCl[1]	6.5 (6.0-7.0) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.3 (2.5-4.5) g/L KCl	6.5 (5.5-7.7) g/L NaCl
Reference toxicant CV	9.7%	5.7%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date April 11, 2022; [2] Test Date April 25, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation



Report By:
Jamie Craig, B.Sc.
Biologist



Reviewed By:
Leila Oosterbroek, P Biol
Environmental Scientist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC 164 Reference 2122-1939 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022-04-21	1425*	CH / KO	1	EP
1	2022-04-22	0750	CH	-	ME
2	2022-04-23	0745	CH	-	maf
3	2022-04-24	0930	JCC	-	DJ
4	2022-04-25	0936	CC/KO	1	DJ

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 8.2
Initial EC (µS/cm): 2510
Salinity (ppt): 2

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L: **yes/no**

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	8.6	8.8			
Temp (°C) of 100%	16				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	7.6	8.2						
Day 4	8.2	8.2						
EC (uS/cm)								
Day 0	421	2550						
Day 4	473	2350						
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	8.9	8.8						
Day 4	8.6	8.5						
Temperature (°C) (range: 14-16°C)								
Day 0	14	15						
Day 4	16	15						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.4	0.4
2	3.3	0.3
3	2.9	0.2
4	3.3	0.3
5	3.1	0.3
6	3.9	0.6
7	3.6	0.4
8	3.6	0.4
9	3.5	0.4
10	3.4	0.4

Loading Density (g/L): 0.2 (must be ≤0.5 g/L)
Mean Length (cm): 3.4
Length Range (cm): 2.9-3.9
Mean Weight (g): 0.4 (Must be ≥0.3g)
Weight Range: (g): 0.2-0.6

Test Organism Information

Batch 20220224TR
Source Troutlodge
Tank # 7
Days Held at 15± 2°C 29 (must be ≥14 days)
Percent stock mortality 0.15 (7 days prior to test, must be ≤2%)
Test Volume (L) 18

Comments :
96hr: ppt on bottom & side of tank

Reviewed By: MH Date Reviewed: 2022/05/02

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 2C Client TEC 164 Reference 2122-1939

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/04/20	1430	EP/LC	2	CC
1	2022/04/21	0850	LC	-	EP
2	2022/04/22	0930	EP/LC	2	CC

Sample Information

Initial pH:	8.2
Initial EC (µS/cm):	7516
Salinity (ppt):	7

Lab Code	CTL A	CTL B	CTL C	100 A	100 B	100 C

pH (units) (range: 6.0-8.5)

day										
0	7.8	7.8	7.8	7.7	7.7	7.7				
2	8.0	8.1	8.1	7.8	7.9	7.8				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	449	456	459	2560	2560	2460				
2	444	453	457	2730	2540	2830				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	8.6	8.6	8.6				
2	7.9	7.9	7.9	7.7	7.7	7.7				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	18	18	18				
2	20	20	20	21	21	21				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10(2I)	10(5I)	10(6I)				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar D1 Jar(s) mortality 7 days prior to test (must be ≤25%) 5%

QA (previous month)

Days to first brood (≤12 days) 7

Average number of young produced (≥15 young) 30

Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 9.6 Temperature (°C) of sample prior to aeration: 18

DO % of sample prior to aeration: 116% Is aeration required (<40% or >100%)? (Yes) or No

Duration of aeration (37.5 +/- 12.5 mL/min/L): 20mn Filtered with 110um screen prior to testing Yes or (No)

Hardness (mg $CaCO_3$/L) of 100% : 1741 Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —

Alkalinity of 100% sample (mg $CaCO_3$/L): 432

Dilution Water

Pail label / preparation date 1:C4/19

Hardness of dilution water (mg/L) 199

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Comments/Observations:

0hr: heppt

48hr: Surficial ppt, ppt on bottom of jar

Reviewed By: ML Date Reviewed: 2022/05/02

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC 164 Reference 2122-1939

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/04/20	1435	KTM/LC	2	CC
1	2022/04/21	0905	LC	-	EP
2	2022/04/22	0925	EP/LC	2	CH

Sample Information

Initial pH:	8.2
Initial EC (µS/cm):	2510
Salinity (ppt):	2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	7.9	7.9	7.9	8.0	8.0	8.0				
2	7.9	8.1	8.1	8.4	8.4	8.4				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	4600	4589	4600	2770	2760	2790				
2	4554	4662	4667	2710	2760	2790				

DO (mg/L) (**40-100% saturation at test temp.**)

0	~~7.9~~ 9.4	~~7.9~~ 9.4	~~7.9~~ 9.4	~~8.1~~ 9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	~~20~~ 12	~~20~~ 12	~~20~~ 12	~~19~~ 12	~~19~~ 12	~~19~~ 12				
2	12	12	12	12	12	12				

Number Alive (l, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar C2 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)

Days to first brood (≤12 days) 8

Average number of young produced (≥15 young) 27

Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 11.4

DO % of sample prior to aeration: 121%

Duration of aeration (37.5 +/- 12.5 mL/min/L) : 2min

Hardness (mg $CaCO_3$/L) of 100% : 1741

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —

Alkalinity of 100% sample (mg $CaCO_3$/L): 432

Temperature (°C) of sample prior to aeration: 12

Is aeration required (<40% or >100%)? (Yes) or No

Filtered with 110um screen prior to testing Yes or (No)

Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)

Dilution Water

Pail label / preparation date 1:04/19

Hardness of dilution water (mg/L) 199

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

Comments/Observations:

0hr: Hppt

48hr: Slight surficial ppt

Reviewed By: MG Date Reviewed: 2022/05/02

APPENDIX C – Chain-of-custody form

Teck

Page 1 of 1

COC ID: 2022-04-18_BPO **TURNAROUND TIME:** Regular (default) **RUSH:** NO

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO			
Facility Name	FRS AWTF			Lab Name	Nautilus Environmental			Report Format / Distribution		Excel	PDF	EDD
Project Manager	Brett Mason			Lab Contact	Tamara Pomeroy			Email 1:	DL-FROS-Lab@teck.com	X	X	X
Email	brett.mason@teck.com			Email	tamara@nautilusenvironmental.ca			Email 2:	TeckCoal@equisonline.com			X
Address	29 km N of Elkford			Address	10823 27th Street SE			Email 3:				
								Email 4:				
City	Elkford	Province	BC	City	Calgary	Province	AB	Email 5:				
Postal Code	V0B 2H0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada	Email 6:				
Phone Number	250 865 6267			Phone Number	403 253 7121			PO number	VPO00823090			

SAMPLE DETAILS

2022/04/19
09:15
Manitoulin
SRS
4 X 20 L carboys
No S No I
Good Condition

ANALYSIS REQUESTED

Please indicate below Filtered, Preserved or both (F, P, F/P)

Sample ID 2122-1939	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	ANALYSIS: NAUT_96Hr_RT_Single_Concentration_Toxicity Test	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 10C	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 20C	10.1°C
FS_BPO_2022-04-18_N_0900	FS_BPO	WS		2022/04/18	9:00	G	4	X	X	X	

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	Date	Time	ACCEPTED BY/AFFILIATION	Date	Time
	Amith Gopurathingal	2022/04/18				

SERVICE REQUEST (rush - subject to availability)

Regular (default)	X
Priority (2-3 business days) - 50% surcharge	
Emergency (1 Business Day) - 100% surcharge	
For Emergency <1 Day, ASAP or Weekend - Contact ALS	

Sampler's Name	Errin DeBoer	**Mobile #**	
Sampler's Signature		**Date/Time**	18-Apr-22

END OF REPORT

Acute Toxicity Test Results

Sample collected April 25, 2022

Final Report

May 27, 2022

Submitted to: **Teck Coal Ltd.**
Elkford, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates				
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation
FS_BPO_2022-04-25_N_0900/ 2122-2009	25-Apr-22 at 0900h	26-Apr-22 at 1100h	27-Apr-22 at 1425h	29-Apr-22 at 1530h	27-Apr-22 at 1520h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
FS_BPO_2022-04-25_N_0900	10.0°C	1765	491

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample		
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C
FS_BPO_2022-04-25_N_0900	100	100	100

Sample ID	Percent Immobility in 100 (% v/v)	
	Daphnia magna 10˚C	*Daphnia magna* 20˚C
FS_BPO_2022-04-25_N_0900	0	3

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
FS_BPO_2022-04-25_N_0900	Rainbow trout	Precipitate observed on bottom and sides of test vessel	None
	Daphnia magna	Surficial precipitate and on bottom of test vessel observed in 20 degree test vessel	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	3.9 (3.5-4.4) g/L KCl[1]	6.5 (6.0-7.0) g/L NaCl[2] 6.8 (6.5-7.1) g/L NaCl[3]
Reference toxicant historical mean (2 SD Range)	3.3 (2.5-4.5) g/L KCl	6.5 (5.5-7.7) g/L NaCl 6.5 (5.5-7.6) g/L NaCl
Reference toxicant CV	9.7%	5.7% 5.4%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, April 11, 2022; [2] Test Date April 25, 2022; [3]Test Date May 3, 2022

Report By:
Christine Chanhao, BSc
Biologist

Reviewed By:
Courtney Bogstie, P. Biol.
Senior Biologist

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APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS ENVIRONMENTAL

Trout Bench Sheet

Method TRS Client TEC 164 Reference 2122-2009 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022/04/27	1425 *	KO/CH	1	DW
1	20221104128	0812	EP	-	MF
2	20221104129	0750	EP	-	SC
3	20221104130	0910	CH	-	MAF
4	20221105101	1005	CC/EP/DM	1	JCC

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 8.3
Initial EC (µS/cm): 2840
Salinity (ppt): 3

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L : **yes/no**

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	8.8	8.8			
Temp (°C) of 100%	15				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	7.6	8.4						
Day 4	8.3	8.4						
EC (uS/cm)								
Day 0	458	2840						
Day 4	520	2710						
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	8.8	8.8						
Day 4	8.8	8.8						
Temperature (°C) (range: 14-16°C)								
Day 0	15	15						
Day 4	15	15						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	2.8	0.2
2	2.9	0.3
3	3.2	0.4
4	2.9	0.3
5	2.8	0.3
6	2.7	0.2
7	2.9	0.2
8	3.2	0.4
9	2.7	0.2
10	2.5	0.2

Loading Density (g/L): 0.2 (must be ≤0.5 g/L)
Mean Length (cm): 2.9
Length Range (cm): 2.5-3.2
Mean Weight (g): 0.3 (Must be ≥0.3g)
Weight Range: (g): 0.2-0.4

Test Organism Information

Batch 20220224TR
Source Trout Lodge
Tank # 8
Days Held at 15± 2°C 35 (must be ≥14 days)
Percent stock mortality 0.2 (7 days prior to test, must be ≤2%)
Test Volume (L) 17 ~~18~~ CM

Comments :
96h: ppt on bottom and sides of tank

Reviewed By: SS Date Reviewed: 2022105109

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC 164 Reference 2122-2009-~~01~~ CH

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/04/27	1520	CC/KTM	3	DJ
1	2022/04/28	0840	AE/MAF	-	MF
2	2022/04/29	1100	KTM/KO	3	CH

Sample Information

Initial pH: cc ~~7~~ 8.3
Initial EC (µS/cm): 2840
Salinity (ppt): 3

Lab Code	CTL A	CTL B	CTL C	100 A	100 B	100 C				
day				pH (units) (range: 6.0-8.5)						
0	8.3	8.3	8.3	8.3	8.4	8.4				
2	8.1	8.1	8.1	8.5	8.4	8.5				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

				EC (uS/cm)						
0	427	432	433	2820	2860	2870				
2	437	443	438	2700	2680	2780				
				DO (mg/L) (**40-100% saturation at test temp.**)						
0	7.9	7.9	7.9	7.7	7.7	7.7				
2	7.7	7.7	7.7	7.7	7.6	7.6				
				Temperature (°C) (range: **18-22 °C**)						
0	20	20	20	21	21	21				
2	21	21	21	21	21	21				
				Number Alive (I, immobile)						
0	10	10	10	10	10	10				
1	10(2I)	10	10	10(2I)	10	10(1I)				
2	9*	10	10	10(1I)	10	8*				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar Wed Cl Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 29
Were test treatments randomized on test tray? Yes / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0

Sample
DO (mg/L) of sample prior to aeration: 9.0
Temperature (°C) of sample prior to aeration: cc ~~21~~ 22
DO % of sample prior to aeration: 117%
Is aeration required (<40% or >100%)? Yes or No
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20 min.
Filtered with 110um screen prior to testing Yes or No
Hardness (mg $CaCO_3$/L) of 100% : 1765
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or No
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 491

Dilution Water
Pail label / preparation date 1.04/19
Hardness of dilution water (mg/L) 199

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Comments/Observations:
0hr: No ppt
48hr: surficial ppt and ppt on bottom of jar
*1 killed by tech, stuck to side of jar
*2 killed by tech, " "

Reviewed By: SS Date Reviewed: 2022105109

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC 164 Reference 2122-2009

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/04/29	1520	MAF KM	2	MF
1	2022/04/30	0815	MAF	-	CM
2	2022/05/01	0845	ICH CC	3	CM

Sample Information

Initial pH: 8.3
Initial EC (µS/cm): 2840
Salinity (ppt): 3

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				
day	pH (units) (range: 6.0-8.5)									
0	8.1	8.1	8.1	8.3	8.3	8.3				
2	8.2	8.2	8.2	8.2	8.3	8.3				
	The pH of the sample was not adjusted prior to test setting, unless noted in the comments below									
	EC (uS/cm)									
0	450	451	448	2960	3010	3050				
2	440	447	448	2780	2900	2910				
	DO (mg/L) (**40-100% saturation at test temp.**)									
0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				
	Temperature (°C) (range: **8-12 °C**)									
0	12	12	12	12	12	12				
2	12	12	12	12	12	12				
	Number Alive (I, immobile)									
0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar C4 Jar(s) mortality 7 days prior to test (must be ≤25%) 0

QA (previous month)

Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 20
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 9.5
DO % of sample prior to aeration: 92
Duration of aeration (37.5 +/- 12.5 mL/min/L) : —
Hardness (mg $CaCO_3$/L) of 100% : 1765
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 491

Temperature (°C) of sample prior to aeration: 10.8 MAF
Is aeration required (<40% or >100%)? **Yes or No**
Filtered with 110um screen prior to testing **Yes or No**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Dilution Water

Pail label / preparation date 2:04/22
Hardness of dilution water (mg/L) 240

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C
4.0 to 10.0 mg/L at 9°C
3.9 to 9.8 mg/L at 10°C
3.8 to 9.6 mg/L at 11°C
3.7 to 9.4 mg/L at 12°C

Comments/Observations:

0h: ncppt
48h: no ppt

Reviewed By: SS Date Reviewed: 2022/05/09

APPENDIX C – Chain-of-custody form

Teck

COC ID: 2022-04-25_BPO **TURNAROUND TIME:** Regular (default) **RUSH:** NO

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name	FRS AWTF			Lab Name	Nautilus Environmental			Report Format / Distribution		Excel	PDF	EDD
Project Manager	Brett Mason			Lab Contact	Tamara Pomeroy			Email 1:	DL-FROS-Lab@teck.com	X	X	X
Email	brett.mason@teck.com			Email	tamara@nautilusenvironmental.ca			Email 2:	TeckCoal@equisonline.com			X
Address	29 km N of Elkford			Address	10823 27th Street SE			Email 3:				
								Email 4:				
City	Elkford	Province	BC	City	Calgary	Province	AB	Email 5:				
Postal Code	V0B 2H0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada	Email 6:				
Phone Number	250 865 6267			Phone Number	403 253 7121			PO number	VPO00823090			

SAMPLE DETAILS / **ANALYSIS REQUESTED**

2022/04/25
11:00
Manitoulin
JC
1 ~~2~~x20L carboys, 2x1L bottles
NGS/NOI
Good Condition

Please indicate below Filtered, Perserved or both (F, P, F/P)

Sample ID 2122-2009	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	ANALYSIS	NAUT_96Hr_RT_Single_Concentration_Toxicity Test	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 10C	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 20C	
FS_BPO_2022-04-25_N_0900	FS_BPO	WS		4/25/2022	9:00	G	4		X	X	X	10.0°C

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	Date	Time	ACCEPTED BY/AFFILIATION	Date	Time
		4/25/2022				

SERVICE REQUEST (rush - subject to availability)					
Regular (default)	X	Sampler's Name		Mobile #	
Priority (2-3 business days) - 50% surcharge					
Emergency (1 Business Day) - 100% surcharge		Sampler's Signature		Date/Time	25-Apr-22
For Emergency <1 Day, ASAP or Weekend - Contact ALS					

END OF REPORT

Acute Toxicity Test Results

Sample collected May 2, 2022

Final Report

June 6, 2022

Submitted to: **Teck Coal Ltd.**
Elkford, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates				
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation
FS_BPO_2022-05-02_N_0900 / 2122-2085	2-May-22 at 0800h	3-May-22 at 1255h	4-May-22 at 1505h	4-May-22 at 1525h	4-May-22 at 1530h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
FS_BPO_2022-05-02_N_0900	11.9°C	1999	419

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample		
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C
FS_BPO_2022-05-02_N_0900	100	90	100

Sample ID	Percent Immobility in 100 (% v/v)	
	Daphnia magna 10˚C	*Daphnia magna* 20˚C
FS_BPO_2022-05-02_N_0900	10	0

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
FS_BPO_2022-05-02_N_0900	Rainbow trout	Precipitate observed on the test vessel	None
	Daphnia magna	None	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	3.9 (3.5-4.4) g/L KCl[1]	6.3 (5.9-6.6) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.3 (2.5-4.5) g/L KCl	6.5 (5.6-7.6) g/L NaCl
Reference toxicant CV	9.7%	5.2%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, April 11, 2022; [2] Test Date May 10, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation



Report By:
Lily Cole, B.Sc.
Laboratory Biologist



Reviewed By:
Leila Oosterbroek, P Biol
Environmental Scientist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS ENVIRONMENTAL

Trout Bench Sheet

Method TRS Client TEC164 Reference 2122-2085 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022/05/04	1505 *	CC/NA/KCRM	1	KRM
1	2022/05/05	1020	NA	-	NA
2	2022/05/06	0900	KC/MAF	-	MF
3	2022/05/07	0930	CC	-	MAF
4	2022/05/08	0920	CC/DM	1	JCC

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 8.1
Initial EC (µS/cm): 2903
Salinity (ppt): 3

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L: (yes)/no

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	8.8	8.8			
Temp (°C) of 100%	15				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	8.2	8.2						
Day 4	8.1	8.5						
EC (uS/cm)								
Day 0	431	2830						
Day 4	440	2830						
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	8.8	8.8						
Day 4	8.6	8.6						
Temperature (°C) (range: 14-16°C)								
Day 0	15	15						
Day 4	16	16						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10(1)						
Day 4	10	10(1)						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.0	0.3
2	3.5	0.4
3	3.0	0.3
4	3.0	0.3
5	3.7	0.5
6	3.4	0.4
7	3.5	0.4
8	3.4	0.3
9	3.4	0.4
10	2.8	0.2

Loading Density (g/L): 0.2 (must be ≤0.5 g/L)
Mean Length (cm): 3.3
Length Range (cm): 2.8-3.7
Mean Weight (g): 0.4 (Must be ≥0.3g)
Weight Range: (g): 0.2-0.5

Test Organism Information

Batch 20220224TR
Source Troutlodge
Tank # 8
Days Held at 15± 2°C 42 (must be ≥14 days)
Percent stock mortality 0.82 (7 days prior to test, must be <2%)
Test Volume (L) 16 ~~18~~ NA

Comments :

96HRS: ppt present on bottom of tank

Reviewed By: EV Date Reviewed: 2022/05/19

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC164 Reference 2122-2085

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/05/04	1530	EP/KJM	2	CC
1	2022/05/05	0755	CH	-	
2	2022/05/06	1045	KJM	2	HCH

Sample Information

Initial pH: 8.1
Initial EC (µS/cm): 2903
Salinity (ppt): 3

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	8.0	8.0	7.9	8.0	8.0	8.0				
2	8.2	8.2	8.1	8.4	8.4	8.5				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	434	444	447	2870	2890	2880				
2	438	458	453	2820	2860	2920				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.7	7.7	7.7				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	21	21	21				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar wed D2 Jar(s) mortality 7 days prior to test (must be ≤25%) 0 %

QA (previous month)
Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 36
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 7.7 Temperature (°C) of sample prior to aeration: 21
DO % of sample prior to aeration: 100 Is aeration required (<40% or >100%)? **Yes or (No)**
Duration of aeration (37.5 +/- 12.5 mL/min/L) : - Filtered with 110um screen prior to testing **Yes or (No)**
Hardness (mg $CaCO_3$/L) of 100% : ~~392~~ 1999 Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or (No)**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) -
Alkalinity of 100% sample (mg $CaCO_3$/L): EP ~~442~~ 419

Dilution Water
Pail label / preparation date 1:04/29
Hardness of dilution water (mg/L) 179

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Comments/Observations:
48hr. NOPPT
0Hr: No ppt

Reviewed By: EV Date Reviewed: 2022/05/19

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC164 Reference 2122-2085

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/05/04	1525	EP/KTM	2	CU
1	2022/05/05	0745	CM	-	CM
2	2022/05/06	1120	KTM	2	CM

Sample Information

Initial pH: 8.1
Initial EC (µS/cm): 2903
Salinity (ppt): .3

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	7.9	7.9	7.9	8.0	8.0	8.0				
2	7.9	8.0	8.0	8.3	8.4	8.4				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	425	444	440	2800	2920	2910				
2	429	458	457	2860	2880	2900				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10(2I)	10(4I)	10(3I)				
2	10	10	10	9	10	8				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar wed D1 Jar(s) mortality 7 days prior to test (must be ≤25%) 5%

QA (previous month)
Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 36
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 9.4
Temperature (°C) of sample prior to aeration: 12
DO % of sample prior to aeration: 100
Is aeration required (<40% or >100%)? **Yes or (No)**
Duration of aeration (37.5 +/- 12.5 mL/min/L) : -
Filtered with 110um screen prior to testing **Yes or (No)**
Hardness (mg $CaCO_3$/L) of 100% EP 392 1999
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or (No)**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) -
Alkalinity of 100% sample (mg $CaCO_3$/L): EP 412 419

Dilution Water
Pail label / preparation date 1:04/29
Hardness of dilution water (mg/L) 179

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

Comments/Observations:
48hr. happ+
0hr: no ppt

Reviewed By: EV Date Reviewed: 2022/05/19

APPENDIX C – Chain-of-custody form

Teck

Page 1 of 1

COC ID: 2022-05-02_BPO **TURNAROUND TIME:** Regular (default) **RUSH: NO**

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name	FRS AWTF			Lab Name	Nautilus Environmental			Report Format / Distribution		Excel	PDF	EDD
Project Manager	Brett Mason			Lab Contact	Tamara Pomeroy			Email 1:	DL-FROS-Lab@teck.com	X	X	X
Email	brett.mason@teck.com			Email	tamara@nautilusenvironmental.ca			Email 2:	TeckCoal@equisonline.com			X
Address	29 km N of Elkford			Address	10823 27th Street SE			Email 3:				
								Email 4:				
City	Elkford	Province	BC	City	Calgary	Province	AB	Email 5:				
Postal Code	V0B 2H0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada	Email 6:				
Phone Number	250 865 6267			Phone Number	403 253 7121			PO number	VPO00823090			

SAMPLE DETAILS — **ANALYSIS REQUESTED**

2022/05/03
12:55
Manitanlin
JC/SRS/AC
2x20L carboys, 2x1L bottles
N6S/N6I
Good Condition
11.9°C

Please indicate below Filtered, Perserved or both (F, P, F/P)

Sample ID 2122-2086	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	ANALYSIS: NAUT_96Hr_RT_Single_Concentration_Toxicity Test	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 10C	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 20C
FS_BPO_2022-05-02_N_0900	FS_BPO	WS		5/2/2022	8:00	G	4	X	X	X

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	Date	Time	ACCEPTED BY/AFFILIATION	Date	Time
	Tafi Mugadza	5/2/2022				

SERVICE REQUEST (rush - subject to availability)

Regular (default)	X
Priority (2-3 business days) - 50% surcharge	
Emergency (1 Business Day) - 100% surcharge	
For Emergency <1 Day, ASAP or Weekend - Contact ALS	

Sampler's Name	Derek Standing	Mobile #	
Sampler's Signature		Date/Time	2-May-22

END OF REPORT

Acute Toxicity Test Results

Sample collected May 9, 2022

Final Report

June 20, 2022

Submitted to: **Teck Coal Ltd.**
Elkford, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates				
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation
FS_BPO_2022-05-09_N_0900/ 2122-2164	9-May-22 at 0900h	10-May-22 at 1000h	12-May-22 at 1035h	12-May-22 at 1405h	12-May-22 at 1400h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
FS_BPO_2022-05-09_N_0900	9.4°C	1292	323

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample		
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C
FS_BPO_2022-05-09_N_0900	100	100	100

Sample ID	Percent Immobility in 100 (% v/v)	
	Daphnia magna 10˚C	*Daphnia magna* 20˚C
FS_BPO_2022-05-09_N_0900	0	3

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
FS_BPO_2022-05-09_N_0900	Rainbow trout	None	None
FS_BPO_2022-05-09_N_0900	*Daphnia magna*	None	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	3.4 (3.0-3.9) g/L KCl[1]	5.9 (5.6-6.2) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.3 (2.5-4.4) g/L KCl	6.5 (5.6-7.6) g/L NaCl
Reference toxicant CV	9.4%	5.0%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date May 5, 2022; [2] Test Date May 18, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation

Report By:
Kiara O'Shea, BSc
Laboratory Biologist

Reviewed By:
Courtney Bogstie, P. Biol.
Senior Biologist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	Moderately-hard reconstituted water supplemented with B12 (2 µg/L)
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	Moderately-hard reconstituted water supplemented with B12 (2 µg/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC164 Reference 2122-2164 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022/05/12	1035 *	JCC/LC	1	MF
1	2022/05/13	0845	CB	-	MF
2	2022/05/14	0930	KM	-	MF
3	2022/05/15	1225	DM	-	DN
4	2022/05/16	1120	AE/LC	7	DN

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 8.1
Initial EC (µS/cm): 2,180
Salinity (ppt): 2

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L : **yes/no**

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	8.9	8.8			
Temp (°C) of 100%	15				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	7.9	8.1						
Day 4	8.2	8.2						
EC (uS/cm)								
Day 0	446	2450						
Day 4	417	2250						
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	8.4	8.4						
Day 4	8.7	8.7						
Temperature (°C) (range: 14-16°C)								
Day 0	15	15						
Day 4	15	15						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.5	0.4 AE
2	3.6	0.6
3	3.1	0.3
4	3.3	0.5
5	3.2	0.4
6	3.0	0.3
7	3.1	0.3
8	3.2	0.3
9	3.3	0.5
10	3.0	0.3

Loading Density (g/L): 0.2 (must be ≤0.5 g/L)
Mean Length (cm): 3.2
Length Range (cm): 3.0-3.6
Mean Weight (g): 0.4 (Must be ≥0.3g)
Weight Range: (g): 0.3-0.6

Test Organism Information

Batch 20220413TR
Source Smoky Trout Farm
Tank # 6
Days Held at 15± 2°C 29 (must be ≥14 days)
Percent stock mortality 0.05 (7 days prior to test, must be <2%)
Test Volume (L) 18

Comments :

96hrs: NO PPT

Reviewed By: SS Date Reviewed: 2022/05/30

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC164 Reference 2122-2164

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/05/12	1400	CC/CH	2	JCC
1	2022/05/13	0745	MAF	-	EP
2	2022/05/14	0800	MAF	2	EP

Sample Information

Initial pH: 8.1
Initial EC (µS/cm): 2180
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	7.8	7.8	7.8	8.0	8.0	8.0				
2	8.0	8.1	8.1	8.3	8.3	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	385	395	396	2110	2210	2230				
2	405	402	399	2110	2210	2240				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.9	7.9	7.9				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	20	20	20				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10(I)	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar Wed C1 Jar(s) mortality 7 days prior to test (must be ≤25%) 0-1

QA (previous month)
Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 36
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0

Sample
DO (mg/L) of sample prior to aeration: 8.3
DO % of sample prior to aeration: 106%
Duration of aeration (37.5 +/- 12.5 mL/min/L): 20
Hardness (mg $CaCO_3$/L) of 100% : 1292
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) -
Alkalinity of 100% sample (mg $CaCO_3$/L): 323

Temperature (°C) of sample prior to aeration: 21
Is aeration required (<40% or >100%)? (Yes) or No
Filtered with 110um screen prior to testing Yes or (No)
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)

Dilution Water
Pail label / preparation date 1105/06
Hardness of dilution water (mg/L) 187

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Comments/Observations:
0Hrs: No ppt
48Hrs: No ppt.

Reviewed By: SS Date Reviewed: 2022/05/30

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC164 Reference 2122-2164

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/05/12	1405	SC/CH	2	JCC
1	2022/05/13	0820	MAF	-	EP
2	2022/05/14	0815	MAF	2	EP

Sample Information

Initial pH: 8.1
Initial EC (µS/cm): 2180
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	7.8	7.9	7.9	8.0	8.0	8.6				
2	8.1	8.1	8.1	8.4	8.4	8.4				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	402	397	396	2120	2210	2236				
2	425	412	403	2190	2230	2240				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	8.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar Wed EZ Jar(s) mortality 7 days prior to test (must be ≤25%) 5%

QA (previous month)
Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 26
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 10.0 cc ~~8.3~~
DO % of sample prior to aeration: 106 %
Duration of aeration (37.5 +/- 12.5 mL/min/L): 20
Hardness (mg $CaCO_3$/L) of 100%: 1292
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 323
Temperature (°C) of sample prior to aeration: cc 21 12°
Is aeration required (<40% or >100%)? Yes or No
Filtered with 110um screen prior to testing Yes or (No)
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)

Dilution Water
Pail label / preparation date 1105/06
Hardness of dilution water (mg/L) 187

DO Levels (40-100% saturation) - corrected for altitude -
4.1 to 10.3 mg/L at 8°C
4.0 to 10.0 mg/L at 9°C
3.9 to 9.8 mg/L at 10°C
3.8 to 9.6 mg/L at 11°C
3.7 to 9.4 mg/L at 12°C

Comments/Observations:
0Hrs: No ppt
48Hrs: ncppt.

Reviewed By: SS Date Reviewed: 2022/05/30

APPENDIX C – Chain-of-custody form

Teck

COC ID: 2022-05-09_BPO **TURNAROUND TIME:** Regular (default) **RUSH:** NO

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name	FRS AWTF			Lab Name	Nautilus Environmental			Report Format / Distribution		Excel	PDF	EDD
Project Manager	Brett Mason			Lab Contact	Tamara Pomeroy			Email 1:	DL-FROS-Lab@teck.com	X	X	X
Email	brett.mason@teck.com			Email	tamara@nautilusenvironmental.ca			Email 2:	TeckCoal@equisonline.com			X
Address	29 km N of Elkford			Address	10823 27th Street SE			Email 3:				
								Email 4:				
City	Elkford	Province	BC	City	Calgary	Province	AB	Email 5:				
Postal Code	V0B 2H0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada	Email 6:				
Phone Number	250 865 6267			Phone Number	403 253 7121			PO number	VPO00823090			

SAMPLE DETAILS / **ANALYSIS REQUESTED**

2022/05/10
10:00
Manitoulin
JC
2x20L carboys, 2x1L bottles
NaS/NaI
Good Condition
9.4°C

Please indicate below Filtered, Perserved or both (F, P, F/P)

Sample ID 2122-2164	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	ANALYSIS	NAUT_96Hr_RT_Single_Concentration_Toxicity Test	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 10C	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 20C
FS_BPO_2022-05-09_N_0900	FS_BPO	WS		5/9/2022	9:00	G	4		X	X	X

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	Date	Time	ACCEPTED BY/AFFILIATION	Date	Time
	Tara Gentile	5/9/2022				

SERVICE REQUEST (rush - subject to availability)

Regular (default)	X
Priority (2-3 business days) - 50% surcharge	
Emergency (1 Business Day) - 100% surcharge	
For Emergency <1 Day, ASAP or Weekend - Contact ALS	

Sampler's Name	Cole Vogel	**Mobile #**	
Sampler's Signature		**Date/Time**	9-May-22

END OF REPORT

Acute Toxicity Test Results

Sample collected May 16, 2022

Final Report

June 20, 2022

Submitted to: **Teck Coal Ltd.**
Elkford, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates				
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation
FS_BPO_2022-05-16_N_0900/ 2122-2236	16-May-22 at 0900h	17-May-22 at 1000h	18-May-22 at 1510h	19-May-22 at 1555h	19-May-22 at 1605h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
FS_BPO_2022-05-16_N_0900	9.4°C	1580	354

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample		
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C
FS_BPO_2022-05-16_N_0900	100	100	100

Sample ID	Percent Immobility in 100 (% v/v)	
	Daphnia magna 10˚C	*Daphnia magna* 20˚C
FS_BPO_2022-05-16_N_0900	0	7

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
FS_BPO_2022-05-16_N_0900	Rainbow trout	None	None
	Daphnia magna	None	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	3.8 (3.3 - 4.3) g/L KCl[1]	5.9 (5.6 - 6.2) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.4 (2.6 - 4.4) g/L KCl	6.5 (5.6 - 7.6) g/L NaCl
Reference toxicant CV	8.7%	5.0%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, May 17, 2022; [2] Test Date May 18, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation



Report By:
Ali Epp, B.Sc.
Biologist



Reviewed By:
Courtney Bogstie, P. Biol.
Senior Biologist

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APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	Moderately-hard reconstituted water supplemented with B12 (2 µg/L)
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	Moderately-hard reconstituted water supplemented with B12 (2 µg/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS ENVIRONMENTAL

Trout Bench Sheet

Method TRS Client TEC164 Reference 2122-2236 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022/05/18	1570 *	CC/AM	1	EP
1	2022/05/19	1045	AM	-	MF
2	2022/05/20	0855	AM	-	MF
3	2022/05/21	0845	NA	-	MF
4	2022/05/22	0925	NA/DM	1	MF

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 8.0
Initial EC (µS/cm): 2440
Salinity (ppt): 3

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L : yes/no

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	9.2	8.6			
Temp (°C) of 100%	16				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	7.7	8.1						
Day 4	8.1	8.5						
EC (uS/cm)								
Day 0	406	2310						
Day 4	407	2240						
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	8.8	8.6						
Day 4	8.8	8.8						
Temperature (°C) (range: 14-16°C)								
Day 0	15	16						
Day 4	15	15						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.8	0.3
2	3.4	0.4
3	3.2	0.4
4	3.2	0.4
5	3.3	0.4
6	3.2	0.4
7	3.0	0.3
8	3.4	0.4
9	3.2	0.4
10	3.2	0.4

Loading Density (g/L): 0.2 (must be ≤0.5 g/L)
Mean Length (cm): 3.2
Length Range (cm): 2.8-3.4
Mean Weight (g): 0.4 (Must be ≥0.3g)
Weight Range: (g): 0.3-0.4

Test Organism Information

Batch 20220428TR
Source LSL
Tank # 3
Days Held at 15± 2°C 20 (must be ≥14 days)
Percent stock mortality 0.3 (7 days prior to test, must be <2%)
Test Volume (L) 18

Comments :
96Hrs: no ppt.

Reviewed By: SS , Date Reviewed: 2022105125

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC164 Reference 2122-2236

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/05/19	1605	KTM/NA	3	AR
1	2022/05/20	0920	CH	-	MAP
2	2022/05/21	1030	LC	3	CH

Sample Information

Initial pH: 8.0
Initial EC (µS/cm): 2440
Salinity (ppt): 3

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	7.8	7.9	7.8	8.0	8.0	8.0				
2	7.9	8.0	8.0	8.4	8.4	8.5				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	405	417	414	2330	2330	2340				
2	424	422	416	2240	2300	2370				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.9	7.9	7.9				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	20	20	20				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10(1i)	10				
2	10	10	10	10	10(1i)	10(1i)				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar WRD 03 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 18
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 9.8
DO % of sample prior to aeration: 117%
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20min
Hardness (mg $CaCO_3$/L) of 100% : 1580
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) -
Alkalinity of 100% sample (mg $CaCO_3$/L): 354

Temperature (°C) of sample prior to aeration: 18
Is aeration required (<40% or >100%)? **Yes or No**
Filtered with 110um screen prior to testing **Yes or (No)**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or (No)**

Dilution Water
Pail label / preparation date 2:05/10
Hardness of dilution water (mg/L) 184

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Comments/Observations:
0 hr: no ppt
48 hr: no ppt

Reviewed By: SS Date Reviewed: 2022105125

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC164 Reference 2122-2236

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/05/19	1555	KTM/NA	3	DW
1	2022/05/20	0920	CH	-	MAF
2	2022/05/21	1042	LC	3	CH

Sample Information

Initial pH: 8.0
Initial EC (µS/cm): 2440
Salinity (ppt): 3

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				
day				pH (units) (range: 6.0-8.5)						
0	7.8	7.8	7.8	7.9	7.9	8.0				
2	8.0	8.0	8.1	8.4	8.4	8.4				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

				EC (uS/cm)						
0	392	412	414	2340	2350	2370				
2	427	428	420	2280	2220	2320				

				DO (mg/L) (**40-100% saturation at test temp.**)						
0	9.4	9.4	9.4	9.9	9.9	9.9				
2	9.4	9.4	9.4	9.4	9.4	9.4				

				Temperature (°C) (range: **8-12 °C**)						
0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

				Number Alive (I, immobile)						
0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar wedM Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 18
Were test treatments randomized on test tray? Yes / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0

Sample
DO (mg/L) of sample prior to aeration: 10.1
Temperature (°C) of sample prior to aeration: 12
DO % of sample prior to aeration: 108%
Is aeration required (<40% or >100%)? Yes or No
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20min
Filtered with 110um screen prior to testing Yes or No
Hardness (mg $CaCO_3$/L) of 100% : 1580
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or No
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 354

Dilution Water
Pail label / preparation date 2:05/10
Hardness of dilution water (mg/L) 184

DO Levels (40-100% saturation) - corrected for altitude -
4.1 to 10.3 mg/L at 8°C
4.0 to 10.0 mg/L at 9°C
3.9 to 9.8 mg/L at 10°C
3.8 to 9.6 mg/L at 11°C
3.7 to 9.4 mg/L at 12°C

Comments/Observations:
0 hr: no ppt
48 hr: no ppt

Reviewed By: SS Date Reviewed: 2022/05/25

APPENDIX C – Chain-of-custody form

Teck

COC ID: 2022-05-16_BPO **TURNAROUND TIME:** Regular (default) **RUSH: NO**

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name	FRS AWTF			Lab Name	Nautilus Environmental			Report Format / Distribution		Excel	PDF	EDD
Project Manager	Brett Mason			Lab Contact	Tamara Pomeroy			Email 1:	DL-FROS-Lab@teck.com	X	X	X
Email	brett.mason@teck.com			Email	tamara@nautilusenvironmental.ca			Email 2:	TeckCoal@equisonline.com			X
Address	29 km N of Elkford			Address	10823 27th Street SE			Email 3:				
								Email 4:				
City	Elkford	Province	BC	City	Calgary	Province	AB	Email 5:				
Postal Code	V0B 2H0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada	Email 6:				
Phone Number	250 865 6267			Phone Number	403 253 7121			PO number	VPO00823090			

SAMPLE DETAILS / **ANALYSIS REQUESTED**

2022/~~05~~05/17
10:00
Manitoulin
OC/SRS
~~9x20L~~ 2x20L carboys. 2x1L bottles
NOS/NOT
Good Cond.

Please indicate below Filtered, Perserved or both (F, P, F/P)

Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	ANALYSIS: NAUT_96Hr_RT_Single_Concentration_Toxicity Test	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 10C	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 20C	
2022-2286											
FS_BPO_2022-05-16_N_0900	FS_BPO	WS		5/16/2022	9:00	G	4	X	X	X	9.4°C

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	Date	Time	ACCEPTED BY/AFFILIATION	Date	Time
	Julia Johnson	5/16/2022				

SERVICE REQUEST (rush - subject to availability)

Regular (default)	X
Priority (2-3 business days) - 50% surcharge	
Emergency (1 Business Day) - 100% surcharge	
For Emergency <1 Day, ASAP or Weekend - Contact ALS	

Sampler's Name	Joey Wills	**Mobile #**	
Sampler's Signature		**Date/Time**	16-May-22

END OF REPORT

Acute Toxicity Test Results

Sample collected May 23, 2022

Final Report

July 14, 2022

Submitted to: **Teck Coal Ltd.**
Elkford, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates				
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation
FS_BPO_2022-05-23_N_0900 / 2122-2299	23-May-22 at 0900h	24-May-22 at 1630h	25-May-22 at 1545h	26-May-22 at 1440h	26-May-22 at 1435h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
FS_BPO_2022-05-23_N_0900	4.4°C	1460	379

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample		
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C
FS_BPO_2022-05-23_N_0900	100	100	100

Sample ID	Percent Immobility in 100 (% v/v)		
	Daphnia magna 10˚C	*Daphnia magna* 20˚C	*Daphnia magna* antiscalant
FS_BPO_2022-05-23_N_0900	0	0	0

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
FS_BPO_2022-05-23_N_0900	Rainbow trout	None	None
	Daphnia magna	None	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	3.8 (3.3 - 4.3) g/L KCl[1]	5.7 (5.4-5.9) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.4 (2.6 - 4.4) g/L KCl	6.5 (5.5-7.6) g/L NaCl
Reference toxicant CV	8.7%	5.4%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, May 17, 2022; [2] Test Date June 1, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation



Report By:
Mia Fearey, BIT
Biologist



Reviewed By:
Leila Oosterbroek, P Biol
Environmental Scientist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	Moderately hard water amended with B12 (2 µg/L)
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	Moderately hard water amended with B12 (2 µg/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC164 Reference 2122-2299 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022-05-25	1545*	CC /AM	1	AE
1	2022-05-26	0800	KLM	-	MAF
2	2022-05-27	0800	CM	-	MAF
3	2022-05-28	0810	CH	-	MAF
4	2022-05-29	0840	DM/LC/NA	1	AW

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 8.1
Initial EC (µS/cm): 2280
Salinity (ppt): 3

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L : **yes/no**

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	9.7	9.6	8.6		
Temp (°C) of 100%	16				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	7.7	7.2						
Day 4	8.3	8.7						
EC (uS/cm)								
Day 0	434	2270						
Day 4	425	2280						
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	8.8	8.6						
Day 4	8.2	8.3						
Temperature (°C) (range: 14-16°C)								
Day 0	15	16						
Day 4	16	16						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	2.8	0.3
2	2.8	0.3
3	3.0	0.3
4	2.8	0.3
5	2.4	0.1
6	3.0	0.3
7	3.2	0.4
8	3.2	0.4
9	3.5	0.6
10	3.5	0.5

Loading Density (g/L): 0.2 (must be ≤0.5 g/L)
Mean Length (cm): 3.0
Length Range (cm): 2.4-3.5
Mean Weight (g): 0.3 (Must be ≥0.3g)
Weight Range: (g): 0.1-0.6

Test Organism Information

Batch 20220428TR
Source LSL
Tank # 3
Days Held at 15± 2°C 27 (must be ≥14 days)
Percent stock mortality 0.22 (7 days prior to test, must be <2%)
Test Volume (L) 18

Comments: * NO PPT IN 100%.
96Hrs:

Reviewed By: CB Date Reviewed: 2022/05/30

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC 164 Reference 2122-2299

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/05/26	1435	CH/CC	2	AE
1	2022/05/27	0900	CH	-	MAE
2	2022/05/28	0905	CC	2	MAE

Sample Information

Initial pH: 8.1
Initial EC (µS/cm): 2280
Salinity (ppt): 3

Lab Code	CTL A	CTL B	CTL C	100 A	100 B	100 C

pH (units) (range: 6.0-8.5)

day										
0	7.7	7.7	7.6	8.2	8.2	8.2				
2	7.7	7.7	7.7	8.4	8.5	8.5				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	261	285	287	2250	2350	2380				
2	284	297	297	2260	2410	2400				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.9	7.9	7.9				
2	8.1	8.1	8.1	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	20	20	20				
2	19	19	19	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar Wed D2 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 9
Average number of young produced (≥15 young) 34
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0%
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 9.0
DO % of sample prior to aeration: 115%
Duration of aeration (37.5 +/- 12.5 mL/min/L): 20m
Hardness (mg $CaCO_3$/L) of 100% : 1460
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 379

Temperature (°C) of sample prior to aeration: 21
Is aeration required (<40% or >100%)? **Yes or No**
Filtered with 110um screen prior to testing **Yes or No**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Dilution Water
Pail label / preparation date (MHRW) D2: 05/20
Hardness of dilution water (mg/L) 84

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Comments/Observations:
0h: NO PPT
48h: NO PPT

Reviewed By: CB Date Reviewed: 2022/05/30

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC 164 Reference 2122-2299

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/05/26	1440	CH/CC	2	AE
1	2022/05/27	0910	CH	-	MAF
2	2022/05/28	0930	CC	2	MAF

Sample Information

Initial pH:	8.1
Initial EC (µS/cm):	2280
Salinity (ppt):	3

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5) — 7.7 CH

day										
0	~~8.0~~	7.7	7.6	8.1	8.1	8.2				
2	8.0	7.9	7.9	8.4	8.4	8.4				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	283	287	287	2290	2380	2400				
2	283	292	289	2260	2380	2380				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar Wed D2 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)

Days to first brood (≤12 days) 9

Average number of young produced (≥15 young) 34

Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - 0% (must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 10.7

DO % of sample prior to aeration: 115%

Duration of aeration (37.5 +/- 12.5 mL/min/L): 20m

Hardness (mg $CaCO_3$/L) of 100% : 1460

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —

Alkalinity of 100% sample (mg $CaCO_3$/L): 379

Temperature (°C) of sample prior to aeration: 12

Is aeration required (<40% or >100%)? **Yes or No**

Filtered with 110um screen prior to testing **Yes or No**

Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Dilution Water

Pail label / preparation date (MOTHER) D2: 05/20

Hardness of dilution water (mg/L) 84

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

Comments/Observations:

0h: NO PPT

48h: NO PPT

Reviewed By: CB Date Reviewed: 2022/05/30

APPENDIX C – Chain-of-custody form

Teck

Page 1 of 1

COC ID: 2022-05-23_BPO

TURNAROUND TIME: Regular (default)

RUSH: NO

PROJECT/CLIENT INFO

Facility Name	FRS AWTF		
Project Manager	Brett Mason		
Email	brett.mason@teck.com		
Address	29 km N of Elkford		
City	Elkford	Province	BC
Postal Code	V0B 2H0	Country	Canada
Phone Number	250 865 6267		

LABORATORY

Lab Name	Nautilus Environmental		
Lab Contact	Tamara Pomeroy		
Email	tamara@nautilusenvironmental.ca		
Address	10823 27th Street SE		
City	Calgary	Province	AB
Postal Code	T2Z 3V9	Country	Canada
Phone Number	403 253 7121		

OTHER INFO

Report Format / Distribution		Excel	PDF	EDD
Email 1:	DL-FROS-Lab@teck.com	X	X	X
Email 2:	TeckCoal@equisonline.com			X
Email 3:				
Email 4:				
Email 5:				
Email 6:				

PO number: VPO00823090

SAMPLE DETAILS

2022/05/24
16:30
Manitoulin
SC
2x20L carboys, 2x1L bottles
N65/NaI
Good Condition

ANALYSIS REQUESTED

Please indicate below Filtered, Perserved or both (F, P, F/P)

Sample ID 2122-2299	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	ANALYSIS: NAUT_96Hr_RT_Single_Concentration_Toxicity Test	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 10C	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 20C	
FS_BPO_2022-05-23_N_0900	FS_BPO	WS		5/23/2022	9:00	G	4	X	X	X	4.4°C

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS

RELINQUISHED BY/AFFILIATION

Date	Time
5/23/2022	

ACCEPTED BY/AFFILIATION

Date	Time

SERVICE REQUEST (rush - subject to availability)

Regular (default)	X
Priority (2-3 business days) - 50% surcharge	
Emergency (1 Business Day) - 100% surcharge	
For Emergency <1 Day, ASAP or Weekend - Contact ALS	

Sampler's Name		Mobile #	
Sampler's Signature		Date/Time	23-May-22

END OF REPORT

Acute Toxicity Test Results

Sample collected May 30, 2022

Final Report

July 13, 2022

Submitted to: **Teck Coal Ltd.**
Elkford, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates				
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation
FS_BPO_2022-05-30_N_9000 / 2122-2360	30-May-22 at 0900h	31-May-22 at 0925h	1-Jun-22 at 1410h	1-Jun-22 at 1420h	1-Jun-22 at 1415h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
FS_BPO_2022-05-30_N_9000	8.5°C	1461	421

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample		
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C
FS_BPO_2022-05-30_N_9000	100	100	100

Sample ID	Percent Immobility in 100 (% v/v)	
	Daphnia magna 10˚C	*Daphnia magna* 20˚C
FS_BPO_2022-05-30_N_9000	0	0

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
FS_BPO_2022-05-30_N_9000	Rainbow trout	None	None
	Daphnia magna	None	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	3.8 (3.3-4.3) g/L KCl[1]	5.7 (5.4-5.9) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.4 (2.6-4.4) g/L KCl	6.5 (5.5-7.6) g/L NaCl
Reference toxicant CV	8.7%	5.4%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, May 17, 2022; [2] Test Date June 1, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation



Report By:
Lily Cole, B.Sc.

Laboratory Biologist



Reviewed By:
Ebi Lari, P. Biol., Ph.D.

Laboratory Manager and
Environmental Scientist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	Moderately-hard reconstituted water supplemented with B12 (2 µg/L)
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	Moderately-hard reconstituted water supplemented with B12 (2 µg/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC164 Reference 2122-2360 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022/06/01	1410 *	AM/KO	1	CC
1	2022/06/02	1145	KC/RM	-	MF
2	2022/06/03	0830	KO	-	MF
3	2022/06/04	0830	CM	-	KM
4	2022/06/05	0930	KO	1	KM

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 8.2
Initial EC (µS/cm): 2560
Salinity (ppt): 4

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L : yes/no

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	9.2	8.6			
Temp (°C) of 100%	16				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	7.9	7.9						
Day 4	8.2	8.4						
EC (uS/cm)								
Day 0	475	2540						
Day 4	467	2430						
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	8.6	7.6						
Day 4	8.6	8.6						
Temperature (°C) (range: 14-16°C)								
Day 0	16	16						
Day 4	16	16						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.4	0.4
2	3.7	0.7
3	2.7	0.2
4	2.7	0.2
5	2.9	0.3
6	3.6	0.5
7	3.5	0.5
8	2.9	0.3
9	2.6	0.2
10	3.1	0.3

Loading Density (g/L): 0.2
(must be ≤0.5 g/L)
Mean Length (cm): 3.1
Length Range (cm): 2.6-3.7
Mean Weight (g): 0.4
(Must be ≥0.3g)
Weight Range: (g): 0.2-0.7

Test Organism Information

Batch 20220428TR
Source LSL
Tank # 4
Days Held at 15± 2°C 34
(must be ≥14 days)
Percent stock mortality 0.6
(7 days prior to test, must be <2%)
Test Volume (L) 18 KO 16L

Comments :
96 hrs: no ppt

Reviewed By: MG Date Reviewed: 2022/06/08

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC 164 Reference 2122-2360

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/06/01	1415	CH/LC	2	wm
1	2022/06/02	0940	CH	-	MAP
2	2022/06/03	1045	DH/AE	3	MAP

Sample Information

Initial pH: 8.2
Initial EC (µS/cm): 2560
Salinity (ppt): 4

Lab Code	CTL A	CTL B	CTL C	100 A	100 B	100 C

pH (units) (range: 6.0-8.5)

day	CTL A	CTL B	CTL C	100 A	100 B	100 C
0	8.0	7.9	7.9	8.1	8.1	8.1
2						

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	304	312	312	2460	2570	2590
2						

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.9	7.9	7.9
2						

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	20	20	20
2						

Number Alive (I, immobile)

0	10	10	10	10	10	10
1	10	10	10	10	10	10
2	10	10	10	10	10	10

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar Wed E2 Jar(s) mortality 7 days prior to test (must be ≤25%) 15%

QA (previous month)
Days to first brood (≤12 days) 9
Average number of young produced (≥15 young) 28
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 9.0
Temperature (°C) of sample prior to aeration: 21
DO % of sample prior to aeration: 114%
Is aeration required (<40% or >100%)? **Yes or No**
Duration of aeration (37.5 +/- 12.5 mL/min/L): 20m
Filtered with 110um screen prior to testing **Yes or No**
Hardness (mg $CaCO_3$/L) of 100% : 146
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 421

Dilution Water
Pail label / preparation date (MATRIX) D3:05128
Hardness of dilution water (mg/L) 80

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Comments/Observations:
0hr: NO PPE
48hr: NO PPE

Reviewed By: MG Date Reviewed: 2022/06/08

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC 164 Reference 2122-2360

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/06/01	1420	CH/LC	2	KTM
1	2022/06/02	0945	CH	-	MAF
2	2022/06/03	1050	DH/AE	2	CC

Sample Information

Initial pH: 8.2
Initial EC (µS/cm): 2560
Salinity (ppt): 4

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	7.9	7.8	7.8	8.1	8.1	8.1				
2	8.0	8.0	7.9	8.3	8.4	8.4				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	307	312	313	2470	2580	2600				
2	295	314	311	2460	2580	2660				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.7	9.7	9.6	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	10	10	10	10	10	10				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar Wed E2 Jar(s) mortality 7 days prior to test (must be ≤25%) 15%

QA (previous month)
Days to first brood (≤12 days) 9
Average number of young produced (≥15 young) 28
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 10.7
DO % of sample prior to aeration: 114%
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20m
Hardness (mg $CaCO_3$/L) of 100% : 146
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 421

Temperature (°C) of sample prior to aeration: 12
Is aeration required (<40% or >100%)? Yes or No
Filtered with 110um screen prior to testing Yes or No
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)

Dilution Water
Pail label / preparation date (MHRW) D3:05/28
Hardness of dilution water (mg/L) 80

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

Comments/Observations:
0hr: NO ppt
48hr: NO ppt

Reviewed By: MG Date Reviewed: 2022/06/08

APPENDIX C – Chain-of-custody form

Teck

COC ID: 2022-05-30_BPO | TURNAROUND TIME: Regular (default) | RUSH: NO

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name	FRS AWTF			Lab Name	Nautilus Environmental			Report Format / Distribution		Excel	PDF	EDD
Project Manager	Brett Mason			Lab Contact	Tamara Pomeroy			Email 1:	DL-FROS-Lab@teck.com	X	X	X
Email	brett.mason@teck.com			Email	tamara@nautilusenvironmental.ca			Email 2:	TeckCoal@equisonline.com			X
Address	29 km N of Elkford			Address	10823 27th Street SE			Email 3:				
								Email 4:				
City	Elkford	Province	BC	City	Calgary	Province	AB	Email 5:				
Postal Code	V0B 2H0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada	Email 6:				
Phone Number	250 865 6267			Phone Number	403 253 7121			PO number	VPO00823090			

SAMPLE DETAILS

2022/05/31
09:25
Manitoulin

2x20L carboys
2x1L bottles

SRS/RM ~~SRS~~ SRAC
Nos No I
Good Condition
8.5°C

ANALYSIS REQUESTED

Please indicate below Filtered, Perserved or both (F, P, F/P)

Sample ID 2122-2360	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	ANALYSIS: NAUT_96Hr_RT_Single_Concentration_Toxicity Test	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 10C	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 20C
FS_BPO_2022-05-30_N_0900	FS_BPO	WS		5/30/2022	9:00	G	4	X	X	X

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	Date	Time	ACCEPTED BY/AFFILIATION	Date	Time
	Tafi Mugadza	5/30/2022				

SERVICE REQUEST (rush - subject to availability)	
Regular (default)	X
Priority (2-3 business days) - 50% surcharge	
Emergency (1 Business Day) - 100% surcharge	
For Emergency <1 Day, ASAP or Weekend - Contact ALS	

Sampler's Name	Daniel Idowu	Mobile #	
Sampler's Signature	[signature]	Date/Time	30-May-22

END OF REPORT

Acute Toxicity Test Results

Sample collected June 6, 2022

Final Report

July 20, 2022

Submitted to: **Teck Coal Ltd.**
Elkford, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates				
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation
FS_BPO_2022-06-06_N_0900 / 2122-2439	6-Jun-22 at 0900h	6-Jun-22 at 1530h	10-Jun-22 at 1040h	8-Jun-22 at 1440h	8-Jun-22 at 1435h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
FS_BPO_2022-06-06_N_0900	13.0°C	1571	482

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample		
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C
FS_BPO_2022-06-06_N_0900	100	100	100

Sample ID	Percent Immobility in 100 (% v/v)	
	Daphnia magna 10˚C	*Daphnia magna* 20˚C
FS_BPO_2022-06-06_N_0900	0	3

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
FS_BPO_2022-06-06_N_0900	Rainbow trout	None	None
	Daphnia magna	None	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	3.5 (3.0-4.0) g/L KCl[1]	5.6 (5.1-6) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.4 (2.6-4.4) g/L KCl	6.4 (5.4-7.6) g/L NaCl
Reference toxicant CV	8.7%	5.7%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	See below
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date June 13, 2022; [2] Test Date June 17, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation

The Control A test vessel in *Daphnia magna* 20˚C test was loaded with 11 organisms at test initiation.



Report By:
Kiara O'Shea, BSc

Laboratory Biologist



Reviewed By:
Ebi Lari, P. Biol., Ph.D.
Laboratory Manager and
Environmental Scientist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	Moderately hard reconstituted water supplemented with B12 (2 µg/L)
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	Moderately hard reconstituted water supplemented with B12 (2 µg/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC164 Reference 2122-2439 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022/06/10	1040 *	AM/ML	1	ER
1	2022/06/11	0800	CH	-	MAC
2	2022/06/12	0930	NA	-	RJ
3	2022/06/13	0830	ML	-	AF
4	2022/06/14	1150	AM/ML/NA/KCRM	1	CH

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 8.3
Initial EC (µS/cm): 3740
Salinity (ppt): 5

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L : **yes/no**

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	8.6	8.6			
Temp (°C) of 100%	16				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	7.5	8.1						
Day 4	8.0	8.3						
EC (uS/cm)								
Day 0	473	2590						
Day 4	475	4500						
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	8.6	8.6						
Day 4	8.6	8.6						
Temperature (°C) (range: 14-16°C)								
Day 0	16	16						
Day 4	16	16						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.4	0.5
2	3.0	0.3
3	2.7	0.2
4	2.8	0.2
5	3.1	0.3
6	3.4	0.5
7	2.9	0.3
8	3.1	0.3
9	3.2	0.4
10	3.3	0.4

Loading Density (g/L): 0.2
(must be ≤0.5 g/L)
Mean Length (cm): 3.1
Length Range (cm): 2.7-3.4
Mean Weight (g): 0.3
(Must be ≥0.3g)
Weight Range: (g): 0.2-0.5

Test Organism Information

Batch 20220526TR
Source LSL
Tank # 2
Days Held at 15± 2°C 15
(must be ≥14 days)
Percent stock mortality 0.92
(7 days prior to test, must be <2%)
Test Volume (L) 18

Comments :
96 hrs: no PPT

Reviewed By: CS Date Reviewed: 2022/06/14

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC 164 Reference 2122-2439

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/06/08	1430	CH/DM	2	
1	2022/06/09	0905	EP	-	
2	2022/06/10	955	DM	2	EP

Sample Information

Initial pH: 8.3
Initial EC (µS/cm): 2740
Salinity (ppt): 5

Lab Code	CTL A	CTL B	CTL C	100 A	100 B	100 C				

pH (units) (range: 6.0-8.5)

day										
0	7.9	7.9	7.9	8.2	8.2	8.2				
2	7.8	7.8	7.8	8.4	8.4	8.4				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	299	310	311	2700	2780	2830				
2	301	314	312	2760	2810	2750				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.7	7.7	7.7	7.7	7.7				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	21	21	21	21	21				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	*	~~10~~ EP 11	10	10	10	10	10				
1		11	10	10	10	10	10				
2		11	10	10	10	10(10)	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar Wed D4 Jar(s) mortality 7 days prior to test (must be ≤25%) 5% CH

QA (previous month)
Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 28
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0%
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 8.7 Temperature (°C) of sample prior to aeration: 21
DO % of sample prior to aeration: 111% Is aeration required (<40% or >100%)? **Yes or No**
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20m Filtered with 110um screen prior to testing **Yes or No**
Hardness (mg $CaCO_3$/L) of 100% : 1571 Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 482

Dilution Water
Pail label / preparation date MHRW D2: 06101
Hardness of dilution water (mg/L) 80

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Comments/Observations:
0hr: NO PPT
48hr: NO ppt
* misloaded w/ 11 organisms verified w/ DM

Reviewed By: CB Date Reviewed: 2022/06/14

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC 164 Reference 2122-2439

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/06/08	1440	CH/DM	2	AN
1	2022/06/09	910	DM	-	KEM
2	2022/06/10	1005	DM	2	AN

Sample Information

Initial pH:	8.3
Initial EC (µS/cm):	2740
Salinity (ppt):	5

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	8.1	8.0	7.9	8.2	8.2	8.2				
2	7.9	7.9	7.9	8.5	8.5	8.5				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	310	312	313	2680	2780	2820				
2	322	318	321	2770	2850	2840				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (l, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar Wed D4 Jar(s) mortality 7 days prior to test (must be ≤25%) 5%

QA (previous month)

Days to first brood (≤12 days) 7

Average number of young produced (≥15 young) 28

Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - 0%
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 10.4

Temperature (°C) of sample prior to aeration: 12

DO % of sample prior to aeration: 111%

Is aeration required (<40% or >100%)? **Yes or No**

Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20m

Filtered with 110um screen prior to testing **Yes or No**

Hardness (mg $CaCO_3$/L) of 100% : 1571

Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —

Alkalinity of 100% sample (mg $CaCO_3$/L): 482

Dilution Water

Pail label / preparation date MHRW D2: 0610

Hardness of dilution water (mg/L) 80

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

Comments/Observations:

0hr: NO PPT

48hr: No ppt

Reviewed By: CB Date Reviewed: 2022/06/14

APPENDIX C – Chain-of-custody form

Teck

COC ID: 2022-06-06_BPO **TURNAROUND TIME:** Regular (default) **RUSH:** NO

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name	FRS AWTF			Lab Name	Nautilus Environmental			Report Format / Distribution		Excel	PDF	EDD
Project Manager	Brett Mason			Lab Contact	Tamara Pomeroy			Email 1:	DL-FROS-Lab@teck.com	X	X	X
Email	brett.mason@teck.com			Email	tamara@nautilusenvironmental.ca			Email 2:	TeckCoal@equisonline.com			X
Address	29 km N of Elkford			Address	10823 27th Street SE			Email 3:				
								Email 4:				
City	Elkford	Province	BC	City	Calgary	Province	AB	Email 5:				
Postal Code	V0B 2H0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada	Email 6:				
Phone Number	250 865 6267			Phone Number	403 253 7121			PO number	VPO00823090			

SAMPLE DETAILS / **ANALYSIS REQUESTED**

2022/06/06
15:30
manitoulin
AC
2x20L carboys, 2x1L bottles
no S/no I
good cond.

Please indicate below Filtered, Perserved or both (F, P, F/P)

Sample ID 2122-2439	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	ANALYSIS	NAUT_96Hr_RT_Single_Concentration_Toxicity Test	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 10C	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 20C	
FS_BPO_2022-06-06_N_0900	FS_BPO	WS		6/6/2022	9:00	G	4		X	X	X	13.0°C

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	Date	Time	ACCEPTED BY/AFFILIATION	Date	Time
	Tara Gentile	6/6/2022				

SERVICE REQUEST (rush - subject to availability)					
Regular (default)	X	Sampler's Name	Connor Gratton	Mobile #	
Priority (2-3 business days) - 50% surcharge					
Emergency (1 Business Day) - 100% surcharge		Sampler's Signature		Date/Time	6-Jun-22
For Emergency <1 Day, ASAP or Weekend - Contact ALS					

END OF REPORT

Acute Toxicity Test Results

Sample collected June 13, 2022

Final Report

July 19, 2022

Submitted to: **Teck Coal Ltd.**
Elkford, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates				
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation
FS_BPO_2022-06-13_N_0900 / 2122-2526	13-Jun-22 at 0900h	14-Jun-22 at 0945h	17-Jun-22 at 1450h	17-Jun-22 at 1455h	17-Jun-22 at 1510h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
FS_BPO_2022-06-13_N_0900	10.4°C	1322	412

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample		
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C
FS_BPO_2022-06-13_N_0900	100	100	100

Sample ID	Percent Immobility in 100 (% v/v)	
	Daphnia magna 10˚C	*Daphnia magna* 20˚C
FS_BPO_2022-06-13_N_0900	0	0

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
FS_BPO_2022-06-13_N_0900	Rainbow trout	None	None
	Daphnia magna	Surficial precipitate observed, as well as precipitate on test vessels in 20˚C test	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	3.5 (3.0 - 4.0) g/L KCl[1]	6.3 (6.0 – 6.5) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.4 (2.6 - 4.4) g/L KCl	6.4 (5.5-7.6) g/L NaCl
Reference toxicant CV	8.7%	5.3%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, June 13, 2022; [2] Test Date June 20, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation



Report By:
Mia Fearey, BIT
Biologist



Reviewed By:
Jacklyn Poole, BSc
Laboratory and Quality Manager

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC 164 Reference 2122-2526 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022-06-14	1450 *	KO/ML	1	KTM
1	2022-06-15	1100	ML	-	KTM
2	2022-06-16	1140	ML	-	KTM
3	2022-06-17	0830	ML	-	EP
4	2022-06-18	0945	CC/KO	1	CH

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 8.1
Initial EC (µS/cm): 2770
Salinity (ppt): 4

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L (yes)/no

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	8.5	8.9			
Temp (°C) of 100%	14				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	7.4	8.1						
Day 4	8.0	8.4						
EC (uS/cm)								
Day 0	446	2500						
Day 4	428	2430						
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	9.6	8.9						
Day 4	8.6	8.6						
Temperature (°C) (range: 14-16°C)								
Day 0	16	14						
Day 4	16	16						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	2.9	0.3
2	3.7	0.6
3	3.1	0.3
4	2.9	0.3
5	2.6	0.2
6	3.1	0.4
7	3.2	0.4
8	3.1	0.4
9	3.6	0.6
10	4.3	0.9

Loading Density (g/L): 0.3 (must be ≤0.5 g/L)
Mean Length (cm): 3.3
Length Range (cm): 2.6-4.3
Mean Weight (g): 0.4 (Must be ≥0.3g)
Weight Range: (g): 0.2-0.9

Test Organism Information

Batch 20220526TR
Source LSL
Tank # 1
Days Held at 15± 2°C 19 (must be ≥14 days)
Percent stock mortality 0.74 (7 days prior to test, must be <2%)
Test Volume (L) 17 (+0)

Comments :
96h: No ppt

Reviewed By: EV Date Reviewed: 2022/06/21

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC 164 Reference 2122-2526

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/06/17	1510	CH/CC	2	AE
1	2022/06/18	0945	MAF	-	CH
2	2022/06/19	0930	AE	~~AE~~ 2 AE	DJ

Sample Information

Initial pH: 8.1
Initial EC (µS/cm): 2790
Salinity (ppt): 4

Lab Code	CTL A	CTL B	CTL C	100 A	100 B	100 C

pH (units) (range: 6.0-8.5)

day	CTL A	CTL B	CTL C	100 A	100 B	100 C
0	8.0	8.0	8.0	8.1	8.1	8.1
2	8.0	8.2	8.2	8.2	8.4	8.4

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	498	510	510	2730	2830	2860
2	452	508	510	2540	2740	2770

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	8.2	8.2	8.2
2	7.9	7.9	7.8	7.8	7.8	7.8

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	18	18	18
2	20	20	20	20	20	20

Number Alive (l, immobile)

0	10	10	10	10	10	10
1	10	10	10	10	10	10
2	10	10	10	10	10	10

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar MON E1 Jar(s) mortality 7 days prior to test (must be ≤25%) 5%.

QA (previous month)
Days to first brood (≤12 days) 10
Average number of young produced (≥15 young) 23
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0

Sample
DO (mg/L) of sample prior to aeration: 9.2
DO % of sample prior to aeration: 112%
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20m
Hardness (mg $CaCO_3$/L) of 100% : 1322
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 412

Temperature (°C) of sample prior to aeration: 18
Is aeration required (<40% or >100%)? **Yes or No**
Filtered with 110um screen prior to testing **Yes or No**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Dilution Water
Pail label / preparation date (TAP) DI:06113
Hardness of dilution water (mg/L) 218

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Comments/Observations:
0h: NO PPT
48h: Surficial PPT, PPT on bottom

Reviewed By: EV Date Reviewed: 2022/06/21

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC 164 Reference 2122-2526

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/06/17	1455	CHCC	2	AE
1	2022/06/18	0855	MAF	-	CM
2	2022/06/19	0930	AE	2	AE

Sample Information

Initial pH: 8.1
Initial EC (µS/cm): 2770
Salinity (ppt): 4

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	8.0	7.9	7.9	8.0	8.0	8.0				
2	8.0	8.0	8.0	8.3	8.3	8.4				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	492	508	511	2750	2860	2870				
2	501	517	523	2720	2860	2880				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.6	9.6	9.6	9.6	9.6	9.5				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	11	11	11	11	11	11				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar MON E1 Jar(s) mortality 7 days prior to test (must be ≤25%) 5%

QA (previous month)
Days to first brood (≤12 days) 10
Average number of young produced (≥15 young) 23
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 10.4
DO % of sample prior to aeration: 106%
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20m
Hardness (mg $CaCO_3$/L) of 100% : 1322
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) -
Alkalinity of 100% sample (mg $CaCO_3$/L): 412

Temperature (°C) of sample prior to aeration: 10
Is aeration required (<40% or >100%)? **Yes or No**
Filtered with 110um screen prior to testing **Yes or (No)**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or (No)**

Dilution Water
Pail label / preparation date (TAP) DI:06113
Hardness of dilution water (mg/L) 218

DO Levels (40-100% saturation) - corrected for altitude -
4.1 to 10.3 mg/L at 8°C
4.0 to 10.0 mg/L at 9°C
3.9 to 9.8 mg/L at 10°C
3.8 to 9.6 mg/L at 11°C
3.7 to 9.4 mg/L at 12°C

Comments/Observations:
0h: NO PPT
48h: NO PPT

Reviewed By: FV Date Reviewed: 2022/06/21

APPENDIX C – Chain-of-custody form

Teck

Page 1 of 1

COC ID: 2022-06-13_BPO **TURNAROUND TIME:** Regular (default) **RUSH:** NO

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name	FRS AWTF			Lab Name	Nautilus Environmental			Report Format / Distribution		Excel	PDF	EDD
Project Manager	Brett Mason			Lab Contact	Tamara Pomeroy			Email 1:	DL-FROS-Lab@teck.com	X	X	X
Email	brett.mason@teck.com			Email	tamara@nautilusenvironmental.ca			Email 2:	TeckCoal@equisonline.com			X
Address	29 km N of Elkford			Address	10823 27th Street SE			Email 3:				
								Email 4:				
City	Elkford	Province	BC	City	Calgary	Province	AB	Email 5:				
Postal Code	V0B 2H0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada	Email 6:				
Phone Number	250 865 6267			Phone Number	403 253 7121			PO number		VPO00823090		

SAMPLE DETAILS

2022/06/14
Manitoulin
~~4 x 20L carboys~~ 2 X 20L carboys
SRS
MOS/NOI
Good Condition
2 X 1 L bottles

ANALYSIS REQUESTED

Please indicate below Filtered, Perserved or both (F, P, F/P)

Sample ID 2122-2526	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	ANALYSIS: NAUT_96Hr_RT_Single_Concentration_Toxicity Test	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 10C	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 20C	
FS_BPO_2022-06-13_N_0900	FS_BPO	WS		2022/06/13	9:00	G	4	X	X	X	10.4°C

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	Date	Time	ACCEPTED BY/AFFILIATION	Date	Time
	Amith Gopurathingal	2022/06/13				

SERVICE REQUEST (rush - subject to availability)

Regular (default)	X
Priority (2-3 business days) - 50% surcharge	
Emergency (1 Business Day) - 100% surcharge	
For Emergency <1 Day, ASAP or Weekend - Contact ALS	

Sampler's Name	Joey Wills	Mobile #	
Sampler's Signature		Date/Time	13-Jun-22

END OF REPORT

Acute Toxicity Test Results

Sample collected June 20, 2022

Final Report

July 19, 2022

Submitted to: **Teck Coal Ltd.**
Elkford, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates				
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation
FS_BPO_2022-06-20_N_0900 / 2122-2627	20-Jun-22 at 0900h	21-Jun-22 at 0930h	22-Jun-22 at 1440h	22-Jun-22 at 1630h	22-Jun-22 at 1650h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
FS_BPO_2022-06-20_N_0900	12.3°C	1608	400

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample		
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C
FS_BPO_2022-06-20_N_0900	100	100	100

Sample ID	Percent Immobility in 100 (% v/v)	
	Daphnia magna 10˚C	*Daphnia magna* 20˚C
FS_BPO_2022-06-20_N_0900	0	0

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
FS_BPO_2022-06-20_N_0900	Rainbow trout	None	None
	Daphnia magna	Surficial precipitate observed in 10°C test	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	3.5 (3.1-4.0) g/L KCl[1]	6.3 (6.0-6.5) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.4 (2.6-4.4) g/L KCl	6.4 (5.5-7.6) g/L NaCl
Reference toxicant CV	8.7%	5.3%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date June 20, 2022; [2] Test Date June 20, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation

Report By:
Kiara O'Shea, BSc
Laboratory Biologist

Reviewed By:
Jacklyn Poole, BSc
Laboratory and Quality Manager

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	Moderately hard reconstituted water supplemented with B12 (2 µg/L)
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	Moderately hard reconstituted water supplemented with B12 (2 µg/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC164 Reference 2122-2627 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022/06/22	1440 *	AM/ML	1	
1	2022/06/23	0845	ML	-	
2	2022/06/24	0845	AM	-	
3	2022/06/25	0825	NA	-	
4	2022/06/26	1000	ML	1	

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 7.9
Initial EC (µS/cm): ~~247~~ AM 2380
Salinity (ppt): 0

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L : yes/no

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	8.6	8.6			
Temp (°C) of 100%	16				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	7.3	8.1						
Day 4	8.1	8.4						
EC (uS/cm)								
Day 0	355	2440						
Day 4	422	2280						
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	8.6	8.6						
Day 4	8.6	8.6						
Temperature (°C) (range: 14-16°C)								
Day 0	16	16						
Day 4	16	16						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.8	0.3
2	3.2	0.4
3	3.2	0.4
4	3.3	0.4
5	3.6	0.5
6	3.2	0.3
7	3.0	0.3
8	3.1	0.3
9	2.7	0.2
10	3.3	0.4

Loading Density (g/L): 0.2 (must be ≤0.5 g/L)
Mean Length (cm): 3.2
Length Range (cm): 2.7-3.6
Mean Weight (g): 0.4 (Must be ≥0.3g)
Weight Range: (g): 0.2-0.5

Test Organism Information

Batch 20220506TR
Source Trout Lodge
Tank # 4
Days Held at 15± 2°C 24 (must be ≥14 days)
Percent stock mortality 0.07 (7 days prior to test, must be <2%)
Test Volume (L) 18

Comments :
96 hrs: NO ppt

Reviewed By: EV Date Reviewed: 2022/06/28

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS20 Client TEC164 Reference 2122-2627

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/06/22	1650	AI/KTH	3	CC
1	2022/06/23	0730	PE		RW
2	2022/06/24	1030	DM	2	NA

Sample Information

Initial pH: 7.9
Initial EC (µS/cm): 2380
Salinity (ppt): 0

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	7.8	7.8	7.8	8.1	8.1	8.1				
2	7.4	7.7	7.7	8.4	8.4	8.4				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	285	283	286	2370	2460	2480				
2	290	296	294	2420	2500	2470				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.7	7.7	7.7	7.7	7.7	7.7				
2	7.9	7.7	7.7	7.7	7.7	7.7				

Temperature (°C) (range: **18-22 °C**)

0	21	21	21	21	21	21				
2	20	21	21	21	21	21				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar Wed C3 Jar(s) mortality 7 days prior to test (must be ≤25%) 0

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 35
Were test treatments randomized on test tray? Yes / No

Control Validity Criteria
Mean % mortality at 48 hours - 0%
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 8.6
DO % of sample prior to aeration: 108
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20
Hardness (mg $CaCO_3$/L) of 100% : 1600
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 400

Temperature (°C) of sample prior to aeration: 21
Is aeration required (<40% or >100%)? **Yes or No**
Filtered with 110um screen prior to testing **Yes or No**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Dilution Water
Pail label / preparation date 2: 06/15 (UHRW)
Hardness of dilution water (mg/L) 81

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Comments/Observations:
0h: 0 ppt
48h: 0 ppt

Reviewed By: EV Date Reviewed: 2022/06/28

Daphnia 10°C Bench Sheet

NAUTILUS ENVIRONMENTAL

Method DAS10 Client TEC164 Reference 2122-2627

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/06/22	1630	DM/KTH/A	2	
1	2022/06/23	0730	AE	-	AWC
2	2022/06/24	1115	AH/DM	2	NA

Sample Information

Initial pH:	7.9
Initial EC (µS/cm):	2350
Salinity (ppt):	0

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	7.9	7.9	7.9	8.0	8.1	8.1				
2	7.8	7.8	7.7	8.4	8.4	8.4				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	278	282	284	2390	2470	2490				
2	285	293	291	2320	2460	2430				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	8.8	8.8				
2	9.4	9.5	9.6	9.6	9.5	9.6				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar: Wed C2 — Jar(s) mortality 7 days prior to test (must be ≤25%): 0%

QA (previous month)

Days to first brood (≤12 days): 8

Average number of young produced (≥15 young): 35

Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - (must be ≤10%): 0

Sample

DO (mg/L) of sample prior to aeration: 9.6

DO % of sample prior to aeration: 104

Duration of aeration (37.5 +/- 12.5 mL/min/L): 20

Hardness (mg $CaCO_3$/L) of 100%: 1608

Temperature (°C) of sample prior to aeration: 13

Is aeration required (<40% or >100%)? **Yes or No**

Filtered with 110um screen prior to testing **Yes or (No)**

Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or (No)**

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L): —

Alkalinity of 100% sample (mg $CaCO_3$/L): 400

Dilution Water

Pail label / preparation date: 2.06.15 OMHRW

Hardness of dilution water (mg/L): 81

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

Comments/Observations:

0h: Noppt

48h: surficial ppt

Reviewed By: EV Date Reviewed: 2022/06/28

APPENDIX C – Chain-of-custody form

Teck

Page 1 of 1

COC ID: 2022-06-20_BPO **TURNAROUND TIME:** Regular (default) **RUSH:** NO

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name	FRS AWTF			Lab Name	Nautilus Environmental			Report Format / Distribution		Excel	PDF	EDD
Project Manager	Brett Mason			Lab Contact	Tamara Pomeroy			Email 1:	DL-FROS-Lab@teck.com	X	X	X
Email	brett.mason@teck.com			Email	tamara@nautilusenvironmental.ca			Email 2:	TeckCoal@equisonline.com			X
Address	29 km N of Elkford			Address	10823 27th Street SE			Email 3:				
								Email 4:				
City	Elkford	Province	BC	City	Calgary	Province	AB	Email 5:				
Postal Code	V0B 2H0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada	Email 6:				
Phone Number	250 865 6267			Phone Number	403 253 7121			PO number	VPO00823090			

SAMPLE DETAILS | **ANALYSIS REQUESTED**

2022/06/21
09:30
Manitoulin
JC/GRS/RM
2x20L carboys, 2x1L bottles
NoS/NGL
Good Condition
12.3°C

Please indicate below Filtered, Preserved or both (F, P, F/P)

Sample ID 2022-2627	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	ANALYSIS	NAUT_96Hr_RT_Single_Concentration_Toxicity Test	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 10C	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 20C
FS_BPO_2022-06-20_N_0900	FS_BPO	WS		6/20/2022	9:00	G	4		X	X	X

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	Date	Time	ACCEPTED BY/AFFILIATION	Date	Time
		6/20/2022				

SERVICE REQUEST (rush - subject to availability)					
Regular (default)	X	Sampler's Name		Mobile #	
Priority (2-3 business days) - 50% surcharge					
Emergency (1 Business Day) - 100% surcharge		Sampler's Signature		Date/Time	20-Jun-22
For Emergency <1 Day, ASAP or Weekend - Contact ALS					

END OF REPORT

Acute Toxicity Test Results

Sample collected June 27, 2022

Final Report

July 22, 2022

Submitted to: **Teck Coal Ltd.**
Elkford, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

			Dates		
Sample ID/ Internal ID	**Collected**	**Received**	**Rainbow trout test initiation**	***Daphnia magna* 10˚C test initiation**	***Daphnia magna* 20˚C test initiation**
FS_BPO_2022-06-27_N_0900/ 2122-2717	27-Jun-22 at 0900h	28-Jun-22 at 08485h	29-Jun-22 at 1420h	29-Jun-22 at 1400h	29-Jun-22 at 1400h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
FS_BPO_2022-06-27_N_0900	13.9°C	1467	412

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample		
	Rainbow trout	***Daphnia magna* 10˚C**	***Daphnia magna* 20˚C**
FS_BPO_2022-06-27_N_0900	100	100	100

Sample ID	Percent Immobility in 100 (% v/v)	
	***Daphnia magna* 10˚C**	***Daphnia magna* 20˚C**
FS_BPO_2022-06-27_N_0900	0	0

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
FS_BPO_2022-06-27_N_0900	Rainbow trout	None	None
	Daphnia magna	None	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	3.5 (3.1 - 4.0) g/L KCl[1]	5.7 (5.4 - 5.9) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.4 (2.6 - 4.4) g/L KCl	6.4 (5.4 - 7.6) g/L NaCl
Reference toxicant CV	8.7%	5.6%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, June 20, 2022; [2] Test Date June 28, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation



Report By:
Kristin McKenzie
Biologist



Reviewed By:
Jacklyn Poole, BSc
Laboratory and Quality Manager

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	Moderately-hard reconstituted water supplemented with B12 (2 µg/L)
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	Moderately-hard reconstituted water supplemented with B12 (2 µg/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC 164 Reference 2122-2717 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022/06/29	1420 *	KO/AM	1	EP
1	2022/06/30	0840	NA	-	mmf
2	2022/07/01	0800	ML	-	maf
3	2022/07/02	0745	ML	-	maf
4	2022/07/03	0845	ML	1	VAM

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 8.0
Initial EC (µS/cm): 2320
Salinity (ppt): 2

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L (yes/no)

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	9.6	8.6			
Temp (°C) of 100%	15				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	8.2	8.0						
Day 4	8.2	8.5						
EC (uS/cm)								
Day 0	348	2260						
Day 4	395	2210						
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	8.6	8.6						
Day 4	8.6	8.6						
Temperature (°C) (range: 14-16°C)								
Day 0	16	15						
Day 4	16	16						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.6	0.6
2	3.0	0.4
3	3.3	0.4
4	3.3	0.4
5	4.2	0.9
6	3.2	0.4
7	3.0	0.3
8	3.0	0.3
9	2.9	0.3
10	3.5	0.6

Loading Density (g/L): 0.3 (must be ≤0.5 g/L)
Mean Length (cm): 3.3
Length Range (cm): 2.9-4.2
Mean Weight (g): 0.5 (Must be ≥0.3g)
Weight Range: (g): 0.3-0.9

Test Organism Information

Batch 20220506TR
Source Trout Lodge
Tank # 3
Days Held at 15± 2°C 31 (must be ≥14 days)
Percent stock mortality 0 (7 days prior to test, must be <2%)
Test Volume (L) 18

Comments :
96h: No ppt

Reviewed By: EV Date Reviewed: 2022/07/06

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC 164 Reference 2122-2717

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/06/29	1400	EP/DM	2	DJ
1	2022/06/30	0840	AH	-	maf
2	2022/06/31 07/01	0750	N/A	2	LL

Sample Information

Initial pH: 8.0
Initial EC (µS/cm): 2320
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	7.9	7.4	7.8	8.0	8.0	8.0				
2	8.0	7.9	7.9	8.4	8.4	8.4				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	297	310	310	2240	2350	2360				
2	316	318	315	2310	2340	2340				

7.7 7.7

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.7	7.7	7.7	7.7	~~8.3~~	~~8.3~~	DM			
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	21	21	21	21	21	21				
2	20	20	20	20	20	20				

Number Alive (l, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar: Wed D1 — Jar(s) mortality 7 days prior to test (must be ≤25%): 5%

QA (previous month)
Days to first brood (≤12 days): 9
Average number of young produced (≥15 young): 33
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%): 0%

Sample
DO (mg/L) of sample prior to aeration: 7.7
DO % of sample prior to aeration: 100 %
Duration of aeration (37.5 +/- 12.5 mL/min/L) : —
Hardness (mg $CaCO_3$/L) of 100% : 1467
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L): —
Alkalinity of 100% sample (mg $CaCO_3$/L): 412

Temperature (°C) of sample prior to aeration: 21
Is aeration required (<40% or >100%)? **Yes or (No)**
Filtered with 110um screen prior to testing **Yes or (No)**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or (No)**

Dilution Water
Pail label / preparation date: 3:06/20
Hardness of dilution water (mg/L): 80

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Comments/Observations:
0hr: No ppt
48hr: no ppt.

Reviewed By: EV Date Reviewed: 2022/07/06

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC 164 Reference 2122-2717

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/06/29	1400	EP/DM	2	DM
1	2022/06/30	0920	AI	-	MAF
2	2022/06/31 07/01	0755	NA	2	LL

Sample Information

Initial pH:	8.0
Initial EC (µS/cm):	2320
Salinity (ppt):	2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	8.0	7.9	7.9	6.0	8.0	8.0				
2	7.9	7.8	7.8	8.3	8.3	8.4				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm) (2310)

0	300	310	312	2230	~~2340~~ 2310	2360				
2	312	311	316	2280	2300	2310				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.1	9.0	9.0				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar Med D3 Jar(s) mortality 7 days prior to test (must be ≤25%) 5%

QA (previous month)

Days to first brood (≤12 days) 8

Average number of young produced (≥15 young) 33

Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - 0%
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 8.8

DO % of sample prior to aeration: 92 %

Duration of aeration (37.5 +/- 12.5 mL/min/L) : -

Hardness (mg $CaCO_3$/L) of 100% : 1467

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) -

Alkalinity of 100% sample (mg $CaCO_3$/L): 412

Temperature (°C) of sample prior to aeration: 12

Is aeration required (<40% or >100%)? **Yes or (No)**

Filtered with 110um screen prior to testing **Yes or (No)**

Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or (No)**

Dilution Water

Pail label / preparation date 3:06/20

Hardness of dilution water (mg/L) 80

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

Comments/Observations:

0hr: NO ppt

48hr: no ppt.

Reviewed By: EV Date Reviewed: 2022/07/06

APPENDIX C – Chain-of-custody form

Teck

Page 1 of 1

COC ID: 2022-06-27_BPO **TURNAROUND TIME:** Regular (default) **RUSH:** NO

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name	FRS AWTF			Lab Name	Nautilus Environmental			Report Format / Distribution		Excel	PDF	EDD
Project Manager	Brett Mason			Lab Contact	Tamara Pomeroy			Email 1:	DL-FROS-Lab@teck.com	X	X	X
Email	brett.mason@teck.com			Email	tamara@nautilusenvironmental.ca			Email 2:	TeckCoal@equisonline.com			X
Address	29 km N of Elkford			Address	10823 27th Street SE			Email 3:				
								Email 4:				
City	Elkford	Province	BC	City	Calgary	Province	AB	Email 5:				
Postal Code	V0B 2H0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada	Email 6:				
Phone Number	250 865 6267			Phone Number	403 253 7121			PO number	VPO00823090			

SAMPLE DETAILS

2022/06/28
08:45
Manitoulin
JC/SRS
2x20L carboys, 2x1L bottles
NoS/NoI
Good Condition
17.9°C

ANALYSIS REQUESTED

Please indicate below Filtered, Preserved or both (F, P, F/P)

Sample ID 2122-2717	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	ANALYSIS	NAUT_96Hr_RT_Single_Concentration_Toxicity Test	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 10C	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 20C
FS_BPO_2022-06-27_N_0900	FS_BPO	WS		2022/06/27	9:00	G	4		X	X	X

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	Date	Time	ACCEPTED BY/AFFILIATION	Date	Time
	Tanmay Lonandkar	2022/06/27				

SERVICE REQUEST (rush - subject to availability)

Regular (default)	X	**Sampler's Name**	Daniel Idowu	**Mobile #**	
Priority (2-3 business days) - 50% surcharge					
Emergency (1 Business Day) - 100% surcharge		**Sampler's Signature**		**Date/Time**	27-Jun-22
For Emergency <1 Day, ASAP or Weekend - Contact ALS					

END OF REPORT

Acute Toxicity Test Results

Sample collected June 29, 2022

Final Report

July 20, 2022

Submitted to: **Teck Coal Ltd.**
Elkford, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates				
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation
FS_BPO_2022-06-29_N_1545 / 2122-2766	29-Jun-22 at 1545h	2-Jul-22 at 1130h	2-Jul-022 at 1500h	2-Jul-22 at 1335h	2-Jul-22 at 1340h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
FS_BPO_2022-06-29_N_1545	16.1°C	1563	462

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample		
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C
FS_BPO_2022-06-29_N_1545	100	100	100

Sample ID	Percent Immobility in 100 (% v/v)	
	Daphnia magna 10˚C	*Daphnia magna* 20˚C
FS_BPO_2022-06-29_N_1545	0	0

Precipitate observations

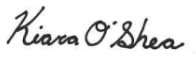
Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
FS_BPO_2022-06-29_N_1545	Rainbow trout	Precipitate observed on the bottom of the test vessel	None
	Daphnia magna	Surficial precipitate observed in 20˚C test vessel	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	3.5 (3.1-4.0) g/L KCl[1]	6.3 (6.0-6.5) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.4 (2.6-4.4) g/L KCl	6.5 (5.5-7.6) g/L NaCl
Reference toxicant CV	8.7%	5.3%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test Date June 20, 2022; [2] Test Date July 3, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation



Report By:
Kiara O'Shea, BSc
Laboratory Biologist



Reviewed By:
Jacklyn Poole, BSc
Laboratory and Quality Manager

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC 164 Reference 2122-2766 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022-07-02	1500 *	ML/ LC	1	MAF
1	2022-07-03	0730	ML	-	EP
2	2022-07-04	0730	ML	-	EP
3	2022-07-05	0830	AM	-	EP
4	2022-07-06	0900	KC/MM	NO 1	MM

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 8.0
Initial EC (µS/cm): 2370
Salinity (ppt): 3

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L (yes/no)

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	7.9	8.6			
Temp (°C) of 100%	16				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: **5.5-8.5**)								
Day 0	8.2	8.9						
Day 4	8.2	8.4						
EC (uS/cm)								
Day 0	356	2280						
Day 4	342	2200						
DO (mg/L) (**70-100% saturation at test temp.**)								
Day 0	8.6	8.6						
Day 4	8.7	8.5						
Temperature (°C) (range: **14-16°C**)								
Day 0	16	16						
Day 4	16	16						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10(2)						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.2	0.4
2	3.4	0.5
3	3.8	0.6
4	3.1	0.4
5	3.5	0.5
6	3.6	0.5
7	3.4	0.5
8	3.1	0.4
9	3.5	0.5
10	3.4	0.5

Loading Density (g/L): 0.3 (must be ≤0.5 g/L)
Mean Length (cm): 3.4
Length Range (cm): 3.1 - 3.8
Mean Weight (g): 0.5 (Must be ≥0.3g)
Weight Range: (g): 0.4 - 0.6

Test Organism Information

Batch 20220506TR
Source Trout Lodge
Tank # 9
Days Held at 15± 2°C (must be ≥14 days) 34
Percent stock mortality (7 days prior to test, must be <2%) 0.02
Test Volume (L) 18

Comments :
96 hrs PPt on bottom of tank

Reviewed By: EV Date Reviewed: 2022/07/07

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC 164 Reference 2122-2766

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/07/02	1340	LC/	2	NA
1	2022/07/03	0820	EP	-	[illegible]
2	2022/07/04	0910	AI	2	[illegible]

Sample Information

Initial pH: 8.0
Initial EC (µS/cm): 2370
Salinity (ppt): 3

Lab Code	CTL A	CTL B	CTL C	100 A	100 B	100 C				
day				pH (units) (range: 6.0-8.5)						
0	7.9	8.0	8.0	8.1	8.1	8.1				
2	8.2	8.2	8.3	8.4	8.5	8.5				
	The pH of the sample was not adjusted prior to test setting, unless noted in the comments below									
				EC (uS/cm)						
0	356	375	372	2390	2410	2420				
2	~~377~~ EV 77	~~395~~ EV 5	~~391~~ AI 408	~~626~~ AI EV ~~2370~~ 2370	2460	2490				
				DO (mg/L) (**40-100% saturation at test temp.**)						
0	7.7	7.7	7.7	7.9	7.9	7.9				
2	~~8.1~~ 7.7 AI	~~7.9~~ 7 AI	~~7.9~~ 7 AI	~~7.9~~ 7.7 AI	7.7	7.7				
				Temperature (°C) (range: **18-22 °C**)						
0	21	21	21	20	20	20				
2	AI ~~19~~ 21	~~20~~ 21 AI	~~20~~ 21 AI	~~20~~ 21 AI	21	21				
				Number Alive (I, immobile)						
0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar MONCL Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 41
Were test treatments randomized on test tray? Yes / No

Control Validity Criteria
Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 8.5
Temperature (°C) of sample prior to aeration: 19°C
DO % of sample prior to aeration: 105%
Is aeration required (<40% or >100%)? **Yes or No**
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20 mins
Filtered with 110um screen prior to testing **Yes or No**
Hardness (mg $CaCO_3$/L) of 100% : 1563
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 462

Dilution Water
Pail label / preparation date drum 1:06/29
Hardness of dilution water (mg/L) 135

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Comments/Observations:
0HR: no ppt
48HR: surficial ppt

Reviewed By: EV Date Reviewed: 2022/07/07

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC 164 Reference 2122-2766

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/07/02	1335	LC/	2	NA
1	2022/07/03	0820	EP	-	
2	2022/07/04	0920	AH	2	

Sample Information

Initial pH:	8.0
Initial EC (µS/cm):	2370
Salinity (ppt):	3

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	7.8	7.9	7.9	7.9	7.9	7.9				
2	7.7	7.9	8.0	8.3	8.4	8.4				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	370	376	376	2390	2430	2430				
2	388	397	397	2390	2500	2530				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	~~21~~ 12 (ic)	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (l, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar MON C1 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)

Days to first brood (≤12 days) 8

Average number of young produced (≥15 young) 41

Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - 0

(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 9.4

DO % of sample prior to aeration: 100%

Duration of aeration (37.5 +/- 12.5 mL/min/L) : —

Hardness (mg $CaCO_3$/L) of 100% : 1563

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —

Alkalinity of 100% sample (mg $CaCO_3$/L): 462

Temperature (°C) of sample prior to aeration: 12°C

Is aeration required (<40% or >100%)? **Yes or (No)**

Filtered with 110um screen prior to testing **Yes or (No)**

Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or (No)**

Dilution Water

Pail label / preparation date drum1 06129

Hardness of dilution water (mg/L) 135

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

Comments/Observations:

0HR: no ppt

48HR: no ppt

Reviewed By: EV Date Reviewed: 2022/07/07

APPENDIX C – Chain-of-custody form

Teck

Page 1 of 1

COC ID: 2022-06-29_BPO **TURNAROUND TIME:** Regular (default) **RUSH: NO**

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name	FRS AWTF			Lab Name	Nautilus Environmental			Report Format / Distribution		Excel	PDF	EDD
Project Manager	Brett Mason			Lab Contact	Tamara Pomeroy			Email 1:	DL-FROS-Lab@teck.com	X	X	X
Email	brett.mason@teck.com			Email	tamara@nautilusenvironmental.ca			Email 2:	TeckCoal@equisonline.com			X
Address	29 km N of Elkford			Address	10823 27th Street SE			Email 3:				
								Email 4:				
City	Elkford	Province	BC	City	Calgary	Province	AB	Email 5:				
Postal Code	V0B 2H0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada	Email 6:				
Phone Number	250 865 6267			Phone Number	403 253 7121			PO number	VPO00823090			

SAMPLE DETAILS / **ANALYSIS REQUESTED**

2022/07/02
11:30
Manitoulin
2x 20 L carboys, 2x 1 L bottles
SRS
NOS NOI
Good Condition

Please indicate below Filtered, Preserved or both (F, P, F/P)

Sample ID 2122-2766	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	ANALYSIS: NAUT_96Hr_RT_Single_Concentration_Toxicity Test	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 10C	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 20C	16.1°C
FS_BPO_2022-06-29_N_1545	FS_BPO	WS		6/29/2022	15:45	G	4	X	X	X	

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	Date	Time	ACCEPTED BY/AFFILIATION	Date	Time
	Tanmay Lonandkar	6/29/2022				

SERVICE REQUEST (rush - subject to availability)					
Regular (default)	X	Sampler's Name	Daniel Idowu	Mobile #	
Priority (2-3 business days) - 50% surcharge					
Emergency (1 Business Day) - 100% surcharge		Sampler's Signature		Date/Time	29-Jun-22
For Emergency <1 Day, ASAP or Weekend - Contact ALS					

END OF REPORT

Acute Toxicity Test Results

Sample collected July 4, 2022

Final Report

August 24, 2022

Submitted to: **Teck Coal Ltd.**
Elkford, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates				
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation
FS_BPO_2022-07-04_N_0900/ 2122-2792	4-Jul-22 at 0900h	5-Jul-22 at 0920h	5-Jul-22 at 1440h	6-Jul-22 at 1435h	6-Jul-22 at 1440h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
FS_BPO_2022-07-04_N_0900	14.4°C	1592	422

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample		
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C
FS_BPO_2022-07-04_N_0900	100	100	100

Sample ID	Percent Immobility in 100 (% v/v)	
	Daphnia magna 10˚C	*Daphnia magna* 20˚C
FS_BPO_2022-07-04_N_0900	0	0

Precipitate observations

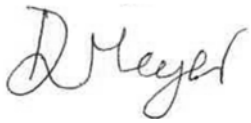
Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
FS_BPO_2022-07-04_N_0900	Rainbow trout	None	None
	Daphnia magna	None	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	3.5 (3.1-4.0) g/L KCl[1]	5.4 (5.2-5.6) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.4 (2.6-44) g/L KCl	6.3 (5.3-7.5) g/L NaCl
Reference toxicant CV	8.7%	5.5%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, June 20, 2022; [2] Test Date July 13, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation



Report By:
Daisy Meyer, BSc

Laboratory Biologist



Reviewed By:
Ebi Lari, P. Biol., Ph.D.
Laboratory Manager and
Environmental Scientist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	Moderately-hard reconstituted water supplemented with B12 (2 µg/L)
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	Moderately-hard reconstituted water supplemented with B12 (2 µg/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC164 Reference 2122-2792 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022/07/05	1440 *	AM/KO	1	KTM
1	2022/07/06	0945	KTM	-	MAF
2	2022/07/07	0730	ML	-	NA
3	2022/07/08	0730	ML	-	MAF
4	2022/07/09	1100	ML	1	MAF

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 8.2
Initial EC (µS/cm): 2620
Salinity (ppt): 3

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L (yes/no)

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	8.6	8.6			
Temp (°C) of 100%	16				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	8.4	8.2						
Day 4	8.1	8.4						
EC (uS/cm)								
Day 0	373	2460						
Day 4	404	2410						
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	8.6	8.6						
Day 4	8.6	8.6						
Temperature (°C) (range: 14-16°C)								
Day 0	16	16						
Day 4	16	16						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	2.9	0.3
2	2.6	0.2
3	3.1	0.3
4	3.4	0.4
5	2.7	0.2
6	3.4	0.4
7	3.3	0.3
8	3.3	0.4
9	2.6	0.2
10	2.7	0.2

Loading Density (g/L): 0.2 (must be ≤0.5 g/L)
Mean Length (cm): 3.0
Length Range (cm): 2.6-3.4
Mean Weight (g): 0.3 (Must be ≥0.3g)
Weight Range (g): 0.2-0.4

Test Organism Information

Batch 20220506TR
Source Trout Lodge
Tank # 10
Days Held at 15± 2°C: 37 (must be ≥14 days)
Percent stock mortality: 0 (7 days prior to test, must be <2%)
Test Volume (L): 18

Comments :
96 hrs: NO ppt

Reviewed By: SS Date Reviewed: 2022/07/11

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC164 Reference 2122-2792

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/07/06	1440	CC/NA	2	DJ
1	2022/07/07	830	DM/ML	-	NA
2	2022/07/08	0930	PM	2	CC

Sample Information

Initial pH: 8.2
Initial EC (µS/cm): 2620
Salinity (ppt): 3

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	7.7	7.7	7.8	8.0	8.0	8.0				
2	8.0	7.8	7.7	8.3	8.3	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	299	304	308	2600	2680	2650				
2	310	314	311	2500	2630	2620				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.9	7.9	7.9				
2	7.7	7.7	7.7	7.7	7.7	7.7				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	20	20	20				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	~~9~~ 10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar WED C1 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 41
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0%
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 7.7
DO % of sample prior to aeration: 100%
Duration of aeration (37.5 +/- 12.5 mL/min/L) : —
Hardness (mg $CaCO_3$/L) of 100% : 1592
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 422

Temperature (°C) of sample prior to aeration: 21°
Is aeration required (<40% or >100%)? **Yes or No**
Filtered with 110um screen prior to testing **Yes or No**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Dilution Water
Pail label / preparation date 210624 (MHRW)
Hardness of dilution water (mg/L) 80

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Comments/Observations:
0 hr: No ppt
48 hr: No ppt
~~Wild daphnia present~~ "

Reviewed By: SS Date Reviewed: 2022/07/11

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC164 Reference 2122-2792

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/07/06	1435	CC/NA	2	
1	2022/07/07	930	DM/ML	-	NA
2	2022/07/08	0930	AH	3	NA

Sample Information

Initial pH: 8.2
Initial EC (µS/cm): 2620
Salinity (ppt): 3

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	7.8	7.8	7.8	8.1	8.1	8.1				
2	7.9	7.8	7.9	8.4	8.4	8.4				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	304	306	303	2590	2670	2640				
2	310	316	316	2450	2660	2670				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar WED C1 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 41
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 10.1
Temperature (°C) of sample prior to aeration: 12°
DO % of sample prior to aeration: 108%
Is aeration required (<40% or >100%)? (Yes) or No
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20 min.
Filtered with 110um screen prior to testing Yes or (No)
Hardness (mg $CaCO_3$/L) of 100% : 1592
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 422

Dilution Water
Pail label / preparation date 2:0624 (MH/RW)
Hardness of dilution water (mg/L) 80

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

Comments/Observations:
0 hr: No ppt.
48 hr: No ppt

Reviewed By: SS Date Reviewed: 2022/07/11

APPENDIX C – Chain-of-custody form

Teck

Page 1 of 1

COC ID: 2022-07-04_BPO **TURNAROUND TIME:** Regular (default) **RUSH:** NO

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO			
Facility Name	FRS AWTF			Lab Name	Nautilus Environmental			Report Format / Distribution		Excel	PDF	EDD
Project Manager	Brett Mason			Lab Contact	Tamara Pomeroy			Email 1:	DL-FROS-Lab@teck.com	X	X	X
Email	brett.mason@teck.com			Email	tamara@nautilusenvironmental.ca			Email 2:	TeckCoal@equisonline.com			X
Address	29 km N of Elkford			Address	10823 27th Street SE			Email 3:				
								Email 4:				
City	Elkford	Province	BC	City	Calgary	Province	AB	Email 5:				
Postal Code	V0B 2H0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada	Email 6:				
Phone Number	250 865 6267			Phone Number	403 253 7121			PO number	VPO00842641			

SAMPLE DETAILS

2022/07/05
9:20
Manitoulin
4x 20 L carboys, 2x 1 L bottle
SRS/RM
No5 No I
Good condition

ANALYSIS REQUESTED

Please indicate below Filtered, Perserved or both (F, P, F/P)

Sample ID 2122-2792	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	ANALYSIS: NAUT_96Hr_RT_Single_Concentration_Toxicity Test	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 10C	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 20C												
FS_BPO_2022-07-04_N_0900	FS_BPO	WS		7/4/2022	9:00	G	4	X	X	X	14.	4°C										

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	Date	Time	ACCEPTED BY/AFFILIATION	Date	Time
	Tara Gentile	7/4/2022				

SERVICE REQUEST (rush - subject to availability)

Regular (default)	X
Priority (2-3 business days) - 50% surcharge	
Emergency (1 Business Day) - 100% surcharge	
For Emergency <1 Day, ASAP or Weekend - Contact ALS	

Sampler's Name	Cole Vogel	**Mobile #**	
Sampler's Signature		**Date/Time**	4-Jul-22

END OF REPORT

Acute Toxicity Test Results

Sample collected July 11, 2022

Final Report

August 31, 2022

Submitted to: **Teck Coal Ltd.**
Elkford, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates				
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation
FS_BPO_2022-07-11_N_0900/ 2122-2873	11-Jul-22 at 0900h	12-Jul-22 at 1000h	13-Jul-22 at 1440h	12-Jul-22 at 1510h	12-Jul-22 at 1510h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
FS_BPO_2022-07-11_N_0900	15.7°C	1619	773

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample		
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C
FS_BPO_2022-07-11_N_0900	100	100	100

Sample ID	Percent Immobility in 100 (% v/v)	
	Daphnia magna 10˚C	*Daphnia magna* 20˚C
FS_BPO_2022-07-11_N_0900	0	0

Precipitate observations

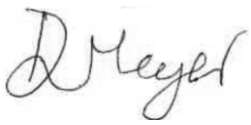
Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
FS_BPO_2022-07-11_N_0900	Rainbow trout	Precipitate observed on bottom and sides of test vessel	None
	Daphnia magna	Surficial precipitate observed in the 20˚C test	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	3.5 (3.1-4.0) g/L KCl[1]	5.7 (5.4-5.9) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.4 (2.6-4.4) g/L KCl	6.4 (5.4-7.6) g/L NaCl
Reference toxicant CV	8.7%	5.6%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, June 20, 2022; [2] Test date, June 28, 2022

LC = Lethal Concentration; CL = Confidence Limit; SD = Standard Deviation; CV = Coefficient of Variation



Report By:
Daisy Meyer, BSc
Laboratory Biologist



Reviewed By:
Emma Marus, BSc
Biologist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	Moderately-hard reconstituted water supplemented with B12 (2 µg/L)
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	Moderately-hard reconstituted water supplemented with B12 (2 µg/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC 164 Reference 2122-2873 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022-07-13	1440 *	KO/AM	1	IC
1	2022-07-14	0930	ML	-	C.C
2	2022-07-15	0900	ML	-	MAF
3	2022-07-16	0900	ML	-	MAF
4	2022-07-17	0945	ML	1	MAF

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 8.1
Initial EC (µS/cm): 2550
Salinity (ppt): 2

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L (yes/no)

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	8.1	8.6			
Temp (°C) of 100%	16				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	7.7	8.2						
Day 4	8.2	8.2						
EC (uS/cm)								
Day 0	373	2520						
Day 4	404	2350						
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	8.6	8.6						
Day 4	8.6	8.6						
Temperature (°C) (range: 14-16°C)								
Day 0	16	16						
Day 4	16	16						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	4.1	0.8
2	3.4	0.7
3	3.7	0.5
4	4.1	0.8
5	3.5	0.5
6	3.8	0.7
7	3.7	0.6
8	3.6	0.6
9	3.5	0.5
10	4.3	0.9

Loading Density (g/L): 0.4 (must be ≤0.5 g/L)
Mean Length (cm): 3.8
Length Range (cm): 3.5-4.3
Mean Weight (g): 0.7 (Must be ≥0.3g)
Weight Range: (g): 0.5-0.9

Test Organism Information

Batch 20220506TR
Source Trout Lodge
Tank # 8
Days Held at 15± 2°C 45 (must be ≥14 days)
Percent stock mortality 0.38 (7 days prior to test, must be <2%)
Test Volume (L) 17.5 18 AM

Comments :
96h: ppt at bottom & sides of tank

Reviewed By: MG Date Reviewed: 2022/07/19

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC 164 Reference 2122-2873

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/07/12	1510	NA/LC	2	
1	2022/07/13	0900	AH	-	MDF
2	2022/07/14	1100 AH	AH	2	DM

Sample Information

Initial pH: 8.1
Initial EC (µS/cm): 2550
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day	CTLA	CTLB	CTLC	100A	100B	100C
0	7.8	7.8	7.8	8.1	8.1	8.1
2	7.8	7.7	7.7	8.4	8.4	8.4

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm) 2600 NA

0	290	290	291	2560	2590	256
2	300	298	293	2510	2620	2610

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.7	7.7	7.7
2	7.4	7.9	7.9	7.9	7.4	7.9

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	21	21	21
2	20	20	20	20	20	20

Number Alive (I, immobile)

0	10	10	10	10	10	10
1	10	10	10	10	10	10
2	10	10	10	10	10	10

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar WED C1 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 48
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 7.6
DO % of sample prior to aeration: 100%
Duration of aeration (37.5 +/- 12.5 mL/min/L) : —
Hardness (mg $CaCO_3$/L) of 100% : 1619
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 773

Temperature (°C) of sample prior to aeration: 22
Is aeration required (<40% or >100%)? **Yes or (No)**
Filtered with 110um screen prior to testing **Yes or (No)**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or (No)**

Dilution Water
Pail label / preparation date 3:07/04
Hardness of dilution water (mg/L) 80

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Comments/Observations:
0hr: No ppt.
48hr: surficial ppt

Reviewed By: MG Date Reviewed: 2022/07/19

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC 164 Reference 2122-2873

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/07/12	1510	NA/LC	2	AJ
1	2022/07/13	0830	AI	-	MAF
2	2022/07/14	1130	AI	2	DM

Sample Information

Initial pH:	8.1
Initial EC (µS/cm):	2550
Salinity (ppt):	2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	7.8	7.8	7.8	8.1	8.1	8.1				
2	7.9	7.8	7.8	8.4	8.5	8.5				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	290	292	292	2590	2620	2600				
2	296	294	293	2530	2630	2600				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (l, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar WED C1 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)

Days to first brood (≤12 days) 7

Average number of young produced (≥15 young) 48

Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - (must be ≤10%) 0

Sample

DO (mg/L) of sample prior to aeration: 9.4

DO % of sample prior to aeration: 100%

Duration of aeration (37.5 +/- 12.5 mL/min/L) : —

Hardness (mg $CaCO_3$/L) of 100% : 1619

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —

Alkalinity of 100% sample (mg $CaCO_3$/L): 773

Temperature (°C) of sample prior to aeration: 12

Is aeration required (<40% or >100%)? **Yes or No**

Filtered with 110um screen prior to testing **Yes or No**

Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Dilution Water

Pail label / preparation date 3:07/04

Hardness of dilution water (mg/L) 80

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

Comments/Observations:

0hr: NO ppt.

48hr: no ppt

Reviewed By: MG Date Reviewed: 2022/07/19

APPENDIX C – Chain-of-custody form

Teck

Page 1 of 1

COC ID: 2022-07-11_BPO **TURNAROUND TIME:** Regular (default) **RUSH:** NO

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name	FRS AWTF			Lab Name	Nautilus Environmental			Report Format / Distribution		Excel	PDF	EDD
Project Manager	Brett Mason			Lab Contact	Tamara Pomeroy			Email 1:	DL-FROS-Lab@teck.com	X	X	X
Email	brett.mason@teck.com			Email	tamara@nautilusenvironmental.ca			Email 2:	TeckCoal@equisonline.com			X
Address	29 km N of Elkford			Address	10823 27th Street SE			Email 3:				
								Email 4:				
City	Elkford	Province	BC	City	Calgary	Province	AB	Email 5:				
Postal Code	V0B 2H0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada	Email 6:				
Phone Number	250 865 6267			Phone Number	403 253 7121			PO number	VPO00842641			

SAMPLE DETAILS / **ANALYSIS REQUESTED**

2022/07/12
10:00
Manitoulin
2 x 20 L carboys, 2 x 1 L bottles
SRS / AC / NZ
Nos No I
Good Condition

Please indicate below Filtered, Perserved or both (F, P, F/P)

Sample ID 2122-2873	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	ANALYSIS	NAUT_96Hr_RT_Single_Concentration_Toxicity Test	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 10C	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 20C	
FS_BPO_2022-07-11_N_0900	FS_BPO	WS		7/11/2022	9:00	G	4		X	X	X	15, 20C

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	Date	Time	ACCEPTED BY/AFFILIATION	Date	Time
	Tanmay Lonandkar	7/11/2022				

SERVICE REQUEST (rush - subject to availability)

Regular (default)	X
Priority (2-3 business days) - 50% surcharge	
Emergency (1 Business Day) - 100% surcharge	
For Emergency <1 Day, ASAP or Weekend - Contact ALS	

Sampler's Name	Joey Wills	**Mobile #**	
Sampler's Signature		**Date/Time**	11-Jul-22

END OF REPORT

Acute Toxicity Test Results

Sample collected July 18, 2022

Final Report

September 11, 2022

Submitted to: **Teck Coal Ltd.**
Elkford, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates				
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation
FS_BPO_2022-07-18_N_0900 / 2122-2932	18-Jul-22 at 0900h	19-Jul-22 at 0845h	19-Jul-22 at 1510h	19-Jul-22 at 1545h	19-Jul-22 at 1550h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
FS_BPO_2022-07-18_N_0900	13.5°C	1217	504

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample		
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C
FS_BPO_2022-07-18_N_0900	100	100	100

Sample ID	Percent Immobility in 100 (% v/v)	
	Daphnia magna 10˚C	*Daphnia magna* 20˚C
FS_BPO_2022-07-18_N_0900	0	0

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
FS_BPO_2022-07-18_N_0900	Rainbow trout	Precipitate observed on bottom of test vessel	None
	Daphnia magna	Surficial precipitate and precipitate in test vessels observed in the 20˚C test	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	4.2 (3.9-4.6) g/L KCl[1]	5.4 (5.2-5.6) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.4 (2.6-4.5) g/L KCl	6.3 (5.3-7.5) g/L NaCl
Reference toxicant CV	8.9%	5.9%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date July 18, 2022; [2] Test date, July 13, 2022

LC = Lethal Concentration; CL = Confidence Limit; SD = Standard Deviation; CV = Coefficient of Variation



Report By:
Kiara O'Shea, BSc
Laboratory Biologist



Reviewed By:
Emma Marus, BSc
Biologist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	Moderately hard reconstituted water supplemented with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	Moderately hard reconstituted water supplemented with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC164 Reference 2122-2932 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022/07/19	1570 *	AM/KO	1	LC
1	2022/07/20	0845	AM	-	EP
2	2022/07/21	0745	ML	-	LC
3	2022/07/22	0901	ML	-	LC
4	2022/07/23	1030	KO/ML	1	EP

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 8.1
Initial EC (µS/cm): 1706
Salinity (ppt): 0

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L **yes/no**

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	10.6	8.6			
Temp (°C) of 100%	16				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	8.2	8.1						
Day 4	8.3	8.4						
EC (uS/cm)								
Day 0	328	1733						
Day 4	372	1939						
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	8.6	8.6						
Day 4	8.6	8.6						
Temperature (°C) (range: 14-16°C)								
Day 0	16	16						
Day 4	16	16						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	4.0	0.8
2	4.0	0.9
3	3.5	0.6
4	4.4	1.1
5	4.5	1.2
6	4.3	1.1
7	3.3	0.8
8	3.9	1.0
9	3.7	0.6
10	3.3	0.5

Loading Density (g/L): 0.5 (must be ≤0.5 g/L)
Mean Length (cm): 3.9
Length Range (cm): 3.3-4.5
Mean Weight (g): 0.9 (Must be ≥0.3g)
Weight Range: (g): 0.5-1.2

Test Organism Information

Batch 20220621TR
Source LSL
Tank # 2
Days Held at 15± 2°C 28 (must be ≥14 days)
Percent stock mortality 0.73 (7 days prior to test, must be <2%)
Test Volume (L) 18

Comments :
96 hrs: ppt on bottom of tank

Reviewed By: CW Date Reviewed: 2022-07-26

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC 164 Reference 2122-2932

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/07/19	1545	LC/DM	3	NA
1	2022/07/20	0800	AH	-	EP
2	2022/07/21	0900	DM	2	NA

Sample Information

Initial pH: 8.1
Initial EC (µS/cm): 1906
Salinity (ppt): 0

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	7.7	7.6	7.6	8.0	6.0	6.0				
2	7.9	7.8	7.8	8.3	8.3	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	283	290	290	1752	1814	1825				
2	295	294	294	1738	1802	1818				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar Wed PM Jar(s) mortality 7 days prior to test (must be ≤25%) 5%

QA (previous month)
Days to first brood (≤12 days) 9
Average number of young produced (≥15 young) 41
Were test treatments randomized on test tray? (Yes) No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0%

Sample
DO (mg/L) of sample prior to aeration: 11.9
Temperature (°C) of sample prior to aeration: 12.
DO % of sample prior to aeration: 133
Is aeration required (<40% or >100%)? **Yes or No**
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20min
Filtered with 110um screen prior to testing **Yes or No**
Hardness (mg $CaCO_3$/L) of 100% : 1217
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 504

Dilution Water
Pail label / preparation date 21/07/10
Hardness of dilution water (mg/L) 80

DO Levels (40-100% saturation) - corrected for altitude -
4.1 to 10.3 mg/L at 8°C
4.0 to 10.0 mg/L at 9°C
3.9 to 9.8 mg/L at 10°C
3.8 to 9.6 mg/L at 11°C
3.7 to 9.4 mg/L at 12°C

Comments/Observations:
0hr: No ppt
48hr: No ppt

Reviewed By: CW Date Reviewed: 2022/07/26

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC 164 Reference 2122-2932

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/07/19	1550	LC/DM	3	NA
1	2022/07/20	0730	DM	2	EP
2	2022/07/21	0830	DM	2	NA

Sample Information

Initial pH: 8.1
Initial EC (µS/cm): 1706
Salinity (ppt): 0

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	7.5	7.5	7.5	7.9	7.9	7.9				
2	7.6	7.6	7.6	8.1	8.1	8.2				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	271	288	289	1758	1814	1825				
2	278	291	293	1689	1740	1744				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.7	7.7	7.9	7.9				
2		7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	21	21	20	20				
2	20	20	20	20	20	20				

Number Alive (l, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar wed C4 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 42
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0%
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 10.7 Temperature (°C) of sample prior to aeration: 20
DO % of sample prior to aeration: 134 Is aeration required (<40% or >100%)? **Yes or No**
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20min Filtered with 110um screen prior to testing **Yes or No**
Hardness (mg $CaCO_3$/L) of 100% : 1217 Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 504

Dilution Water
Pail label / preparation date 2:07/10
Hardness of dilution water (mg/L) 80

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Comments/Observations:
0hr: Neopf
48hr: Surficial ppt. Ppt on jar.

Reviewed By: CW Date Reviewed: 2022/07/26

APPENDIX C – Chain-of-custody form

Teck

Page 1 of 1

COC ID: 2022-07-18_BPO

TURNAROUND TIME: Regular (default)

RUSH: NO

PROJECT/CLIENT INFO

Facility Name	FRS AWTF		
Project Manager	Brett Mason		
Email	brett.mason@teck.com		
Address	29 km N of Elkford		
City	Elkford	Province	BC
Postal Code	V0B 2H0	Country	Canada
Phone Number	250 865 6267		

LABORATORY

Lab Name	Nautilus Environmental		
Lab Contact	Tamara Pomeroy		
Email	tamara@nautilusenvironmental.ca		
Address	10823 27th Street SE		
City	Calgary	Province	AB
Postal Code	T2Z 3V9	Country	Canada
Phone Number	403 253 7121		

OTHER INFO

Report Format / Distribution		Excel	PDF	EDD
Email 1:	DL-FROS-Lab@teck.com	X	X	X
Email 2:	TeckCoal@equisonline.com			X
Email 3:				
Email 4:				
Email 5:				
Email 6:				

PO number: VPO00842641

SAMPLE DETAILS

2022/07/19
08:45
Manitoulin
1 x 20 L carboy, 2x 1 L bottle
3R5/5T
Nos/Nos
Good Condition

ANALYSIS REQUESTED

Please indicate below Filtered, Perserved or both (F, P, F/P)

Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	ANALYSIS: NAUT_96Hr_RT_Single_Concentration_Toxicity Test	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 10C	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 20C	
FS_BPO_2022-07-18_N_0900	FS_BPO	WS		7/18/2022	9:00	G	3	X	X	X	13.5°C

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	Date	Time	ACCEPTED BY/AFFILIATION	Date	Time
		7/18/2022				

SERVICE REQUEST (rush - subject to availability)

Regular (default)	X
Priority (2-3 business days) - 50% surcharge	
Emergency (1 Business Day) - 100% surcharge	
For Emergency <1 Day, ASAP or Weekend - Contact ALS	

Sampler's Name	B. Campbell	Mobile #	
Sampler's Signature	B. Campbell	Date/Time	18-Jul-22

END OF REPORT

Acute Toxicity Test Results

Sample collected July 25, 2022

Final Report

September 21, 2022

Submitted to: **Teck Coal Ltd.**
Elkford, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates				
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation
FS_BPO_2022-07-25_N_0900 / 2122-2995	25-Jul-22 at 0900h	26-Jul-22 at 0845h	26-Jul-22 at 1515h	27-Jul-22 at 1550h	27-Jul-22 at 1550h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
FS_BPO_2022-07-25_N_0900	12.8°C	923	511

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample		
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C
FS_BPO_2022-07-25_N_0900	100	100	100

Sample ID	Percent Immobility in 100 (% v/v)	
	Daphnia magna 10˚C	*Daphnia magna* 20˚C
FS_BPO_2022-07-25_N_0900	0	0

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
FS_BPO_2022-07-25_N_0900	Rainbow trout	Precipitate observed on the test vessel	None
	Daphnia magna	Surficial precipitate observed	None

QA/QC

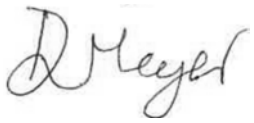
QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	4.8 (4.3-5.2) g/L KCl[1]	5.9 (5.6-6.2) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.5 (2.6-4.7) g/L KCl	6.3 (5.3-7.5) g/L NaCl
Reference toxicant CV	9.6%	5.8%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	See Below
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, July 22, 2022; [2] Test Date July 18, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation

The LC50 result of the rainbow trout reference toxicant test initiated on July 22, 2022, fell outside of two standard deviations of the historical mean; this is expected to happen 5% of the time. An investigation occurred and all testing and culturing procedures were followed appropriately.

The control/dilution water used in the *Daphnia magna* reference toxicant test was different than what was used in the tests for sample FS_BPO_2022-07-25_N_0900, resulting in a protocol deviation.



Report By:
Daisy Meyer, BSc
Laboratory Biologist



Reviewed By:
Leila Oosterbroek, P Biol
Environmental Scientist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	Moderately-hard reconstituted water supplemented with B12 (2 µg/L)
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	Moderately-hard reconstituted water supplemented with B12 (2 µg/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method: TRS | Client: TEC164 | Reference: 2122-2995 | Chamber: 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022/07/26	1515*	KCRM/AM/NA	1	JC
1	2022/07/27	0845	AM	-	CL
2	2022/07/28	0745	ML	-	KMM
3	2022/07/29	0830	ML	-	EP
4	2022/07/30	1045	ML/KU	1	MAF

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 8.1
Initial EC (µS/cm): 1602
Salinity (ppt): 0

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L : yes/no

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	8.6	8.6			
Temp (°C) of 100%	16				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	7.6	8.1						
Day 4	8.2	8.3						
EC (uS/cm)								
Day 0	354	1626						
Day 4	376	1488						
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	8.3	8.6						
Day 4	8.6	8.6						
Temperature (°C) (range: 14-16°C)								
Day 0	16	16						
Day 4	16	16						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.4	0.4
2	3.7	0.6
3	3.4	0.4
4	3.4	0.4
5	3.5	0.4
6	3.6	0.4
7	3.2	0.3
8	3.4	0.4
9	3.3	0.3
10	3.7	0.5

Loading Density (g/L): 0.2 (must be ≤0.5 g/L)
Mean Length (cm): 3.5
Length Range (cm): 3.2-3.7
Mean Weight (g): 0.4 (Must be ≥0.3g)
Weight Range: (g): 0.3-0.6

Test Organism Information

Batch: 20220706TR
Source: LSL
Tank #: 10
Days Held at 15± 2°C: 20 (must be ≥14 days)
Percent stock mortality: 0.11 (7 days prior to test, must be <2%)
Test Volume (L): 18

Comments :

96 hr: ppt on sides & bottom of tank

Reviewed By: TP Date Reviewed: SEP 09 2022

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC164 Reference 2122-2995

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/07/27	1550	LC/NA	3	CC
1	2022/07/28	0920	NA	-	WM
2	2022/07/29	0940	AI/BS	2	NA

Sample Information

Initial pH: 8.1
Initial EC (µS/cm): 1602
Salinity (ppt): 0

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	8.0	8.1	8.1	8.2	8.2	8.2				
2	7.9	7.9	7.9	8.3	8.3	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	366	369	370	1607	1640	1641				
2	362	375	375	1549	1673	1634				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.7	7.7	7.7	7.7	7.9	7.7				
2	7.7	7.7	7.7	7.0	7.0	6.9				

Temperature (°C) (range: **18-22 °C**)

0	21	21	21	21	21	21				
2	21	21	21	21	21	21				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar MON D1 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 21
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 9.0
Temperature (°C) of sample prior to aeration: 21°C
DO % of sample prior to aeration: 113%
Is aeration required (<40% or >100%)? (Yes) or No
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20 mins
Filtered with 110um screen prior to testing Yes or (No)
Hardness (mg $CaCO_3$/L) of 100% : 923
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 511

Dilution Water
Pail label / preparation date 3:07/18
Hardness of dilution water (mg/L) 80

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Comments/Observations:
0 hr: no ppt
48 hr: Superficial ppt

Reviewed By: TP Date Reviewed: SEP 09 2022

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC164 Reference 2122-2995

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/07/27	1550	LC/NA	3	CC
1	2022/07/28	0920	NA	-	KTM
2	2022/07/29	1050	BS/AM	2	NA

Sample Information

Initial pH:	8.1
Initial EC (µS/cm):	1602
Salinity (ppt):	0

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	8.1	8.1	8.0	8.2	8.7	8.2				
2	8.2	8.2	8.2	8.6	8.6	8.6				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	365	369	370	1624	1652	1651				
2	366	373	372	1589	1636	1648				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar MONEI Jar(s) mortality 7 days prior to test (must be ≤25%) 5%

QA (previous month)

Days to first brood (≤12 days) 7

Average number of young produced (≥15 young) 16

Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - 0

(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 10.2 Temperature (°C) of sample prior to aeration: 12°C

DO % of sample prior to aeration: 106% Is aeration required (<40% or >100%)? **Yes or No**

Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20 mins Filtered with 110um screen prior to testing **Yes or No**

Hardness (mg $CaCO_3$/L) of 100% : 923 Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —

Alkalinity of 100% sample (mg $CaCO_3$/L): 511

Dilution Water

Pail label / preparation date 3:07/18

Hardness of dilution water (mg/L) 80

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C
4.0 to 10.0 mg/L at 9°C
3.9 to 9.8 mg/L at 10°C
3.8 to 9.6 mg/L at 11°C
3.7 to 9.4 mg/L at 12°C

Comments/Observations:

0 hr: NO ppt

48 hr: surficial ppt

Reviewed By: TP Date Reviewed: SEP 09 2022

APPENDIX C – Chain-of-custody form

Teck

Page 1 of 1

COC ID: 2022-07-25_BPO **TURNAROUND TIME:** Regular (default) **RUSH:** NO

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name	FRS AWTF			Lab Name	Nautilus Environmental			Report Format / Distribution		Excel	PDF	EDD
Project Manager	Brett Mason			Lab Contact	Tamara Pomeroy			Email 1:	DL-FROS-Lab@teck.com	X	X	X
Email	brett.mason@teck.com			Email	tamara@nautilusenvironmental.ca			Email 2:	TeckCoal@equisonline.com			X
Address	29 km N of Elkford			Address	10823 27th Street SE			Email 3:				
								Email 4:				
City	Elkford	Province	BC	City	Calgary	Province	AB	Email 5:				
Postal Code	V0B 2H0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada	Email 6:				
Phone Number	250 865 6267			Phone Number	403 253 7121			PO number	VPO00842641			

SAMPLE DETAILS

20221071/26
0845
Manitoulin
1X 20 L carboy, 2x 1L bottles
SRS
NoS NoI
Good Condition

ANALYSIS REQUESTED

Please indicate below Filtered, Perserved or both (F, P, F/P)

Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	ANALYSIS: NAUT_96Hr_RT_Single_Concentration_Toxicity Test	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 10C	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 20C	
FS_BPO_2022-07-25_N_0900	FS_BPO	WS		2022/07/25	9:00	G	3	X	X	X	12.8°C

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	Date	Time	ACCEPTED BY/AFFILIATION	Date	Time
	Nicholas Krajnc	2022/07/25				

SERVICE REQUEST (rush - subject to availability)

Regular (default)	X
Priority (2-3 business days) - 50% surcharge	
Emergency (1 Business Day) - 100% surcharge	
For Emergency <1 Day, ASAP or Weekend - Contact ALS	

Sampler's Name	Patrick Eckerman	Mobile #	
Sampler's Signature		Date/Time	25-Jul-22

END OF REPORT

Acute Toxicity Test Results

Sample collected August 1, 2022

Final Report

September 20, 2022

Submitted to: **Teck Coal Ltd.**
Elkford, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates				
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation
FS_BPO_2022-08-01_N_0900 / 2122-3063	1-Aug-22 at 0900h	2-Aug-22 at 1335h	3-Aug-22 at 1435h	3-Aug-22 at 1535h	3-Aug-22 at 1540h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
FS_BPO_2022-08-01_N_0900	7.8°C	994	527

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample		
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C
FS_BPO_2022-08-01_N_0900	100	100	100

Sample ID	Percent Immobility in 100 (% v/v)	
	Daphnia magna 10˚C	*Daphnia magna* 20˚C
FS_BPO_2022-08-01_N_0900	0	0

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
FS_BPO_2022-08-01_N_0900	Rainbow trout	None	None
	Daphnia magna 10°C and 20°C	None	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	3.5 (3.3-3.7) g/L KCl[1]	5.9 (5.6-6.2) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.5 (2.6-4.7) g/L KCl	6.2 (5.2-7.4) g/L NaCl
Reference toxicant CV	9.6%	6.0%
Organism health history	Acceptable	Acceptable
Protocol deviations	See Below	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, August 4, 2022; [2] Test date, August 10, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation

The 100% test vessel in the rainbow trout test leaked on day 3 of testing and the volume in the test vessel was reduced to 14 L, consequently the control test vessel and 100% test sample volumes were not consistent on day 3. The control volume was subsequently adjusted to match the test volume.



Report By:
Lily Cole, B.Sc.
Laboratory Biologist



Reviewed By:
Emma Marus, BSc
Biologist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	96-hour LC50
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS ENVIRONMENTAL

Trout Bench Sheet

Method TRS Client TEC 164 Reference 2122-3063 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022/08/03	1435 *	AM/KCRM	1	KO
1	2022/08/04	0845	AM	-	MAP
2	2022/08/05	0730	ML	-	EP
3	2022/08/06	0730	ML	-	MAP
4	2022/08/07	0945	ML	1	MAP

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 7.9
Initial EC (µS/cm): 1810
Salinity (ppt): 0

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L : **yes/no**

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	10.7	8.6			
Temp (°C) of 100%	16				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	7.6	8.0						
Day 4	8.2	8.6						
EC (uS/cm)								
Day 0	382	1775						
Day 4	403	1658						
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	8.1	8.6						
Day 4	8.6	8.6						
Temperature (°C) (range: 14-16°C)								
Day 0	16	16						
Day 4	16	16						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.3	0.4
2	3.2	0.4
3	3.0	0.3
4	3.4	0.5
5	3.3	0.3
6	3.1	0.3
7	3.4	0.4
8	3.3	0.4
9	3.4	0.4
10	3.2	0.3

Loading Density (g/L): 0.3 (must be ≤0.5 g/L)
Mean Length (cm): 3.3
Length Range (cm): 3.0-3.4
Mean Weight (g): 0.4 (Must be ≥0.3g)
Weight Range: (g): 0.3-0.5

Test Organism Information

Batch 20220623TR
Source Trout Lodge
Tank # 7
Days Held at 15± 2°C 22 (must be ≥14 days)
Percent stock mortality 0.8 (7 days prior to test, must be <2%)
Test Volume (L) 14 16 ML

Comments :
96 hrs: No ppt

Reviewed By: MG Date Reviewed: 2022/08/11

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC 164 Reference 2122-3063

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/08/03	1540	CC/NA	2	EP
1	2022/08/04	0920	M	-	mmf
2	2022/08/05	1115	NA	2	mmf

Sample Information

Initial pH: 7.9
Initial EC (µS/cm): 1810
Salinity (ppt): 0

Lab Code	CTL A	CTL B	CTL C	100 A	100 B	100 C				

pH (units) (range: 6.0-8.5)

day										
0	8.0	8.0	8.0	8.3	8.3	8.3				
2	8.2	8.2	8.1	8.6	8.6	8.6				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	386	386	389	1781	1790	1798				
2	394	398	401	1741	1750	1769				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.9	7.9	7.9				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	20	20	20				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar WED C3 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 39
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0%
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 10.1
DO % of sample prior to aeration: 128%
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20min
Hardness (mg $CaCO_3$/L) of 100% : 994
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 527

Temperature (°C) of sample prior to aeration: 20
Is aeration required (<40% or >100%)? **Yes or No**
Filtered with 110um screen prior to testing **Yes or No**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Dilution Water
Pail label / preparation date 1:07/30
Hardness of dilution water (mg/L) 170

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Comments/Observations:
0h: No ppt.
48h: No ppt.

Reviewed By: ML Date Reviewed: 2022/08/11

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC 164 Reference 2122-3063

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/08/03	1535	CC/NA	2	EP
1	2022/08/04	0930	AT	-	MAF
2	2022/08/05	1110	NA	2	MAF

Sample Information

Initial pH: 7.9
Initial EC (µS/cm): 1810
Salinity (ppt): 0

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	8.0	8.0	8.0	8.3	8.3	8.3				
2	8.2	8.2	8.2	8.5	8.5	8.5				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	383	385	386	1767	1791	1798				
2	390	394	396	1746	1751	1760				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	9*	10	10				
2	10	10	10	9	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar WED C3 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)

Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 39
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - 0%
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: NA ~~10.~~ 12.0
Temperature (°C) of sample prior to aeration: 12
DO % of sample prior to aeration: 128%
Is aeration required (<40% or >100%)? (Yes) or No
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20 min
Filtered with 110um screen prior to testing Yes or (No)
Hardness (mg $CaCO_3$/L) of 100% : 994
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 527

Dilution Water

Pail label / preparation date 1:07130
Hardness of dilution water (mg/L) 170

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

* 100A: 1 stuck to test vessel. Do not include in mortality.

Comments/Observations:

0h: No ppt.
48h: No ppt.

Reviewed By: MG Date Reviewed: 2022/08/11

APPENDIX C – Chain-of-custody form

Teck

COC ID: 2022-08-01_BPO **TURNAROUND TIME:** Regular (default) **RUSH:** NO

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name	FRS AWTF			Lab Name	Nautilus Environmental			Report Format / Distribution		Excel	PDF	EDD
Project Manager	Brett Mason			Lab Contact	Tamara Pomeroy			Email 1:	DL-FROS-Lab@teck.com	X	X	X
Email	brett.mason@teck.com			Email	tamara@nautilusenvironmental.ca			Email 2:	TeckCoal@equisonline.com			X
Address	29 km N of Elkford			Address	10823 27th Street SE			Email 3:				
								Email 4:				
City	Elkford	Province	BC	City	Calgary	Province	AB	Email 5:				
Postal Code	V0B 2H0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada	Email 6:				
Phone Number	250 865 6267			Phone Number	403 253 7121			PO number	VPO00842641			

SAMPLE DETAILS / **ANALYSIS REQUESTED**

2022/08/02
13:8 JC 35
Manitoulin
JC
~~1x20L~~ 2x20L carboys, 2x1L bottles
NaS/NaB
Good Condition
7.8°C

Please indicate below Filtered, Perserved or both (F, P, F/P)

Sample ID 2122-3063	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont	ANALYSIS	NAUT_96Hr_RT_Single_Concentration_Toxicity Test	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 10C	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 20C
FS_BPO_2022-08-01_N_0900	FS_BPO	WS		8/1/2022	9:00	G	3		X	X	X

END OF REPORT

Acute Toxicity Test Results

Sample collected August 8, 2022

Final Report

September 24, 2022

Submitted to: **Teck Coal Ltd.**
Elkford, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates				
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation
FS_BPO_2022-08-08_N_0900 / 2122-3126	8-Aug-22 at 0900h	9-Aug-22 at 0845h	11-Aug-22 at 1455h	10-Aug-22 at 1420h	9-Aug-22 at 1645h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
FS_BPO_2022-08-08_N_0900	16.0°C	1095	554

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample		
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C
FS_BPO_2022-08-08_N_0900	100	100	100

Sample ID	Percent Immobility in 100 (% v/v)	
	Daphnia magna 10˚C	*Daphnia magna* 20˚C
FS_BPO_2022-08-08_N_0900	0	0

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
FS_BPO_2022-08-08_N_0900	Rainbow trout	Precipitate observed on the bottom and sides of test vessel	None
	Daphnia magna	None	None

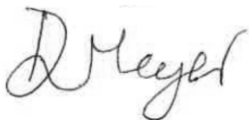
QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	3.5 (3.3-3.7) g/L KCl[1]	5.9 (5.6-6.2) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.5 (2.6-4.7) g/L KCl	6.2 (5.2-7.4) g/L NaCl
Reference toxicant CV	9.6%	6.0%
Organism health history	Acceptable	Acceptable
Protocol deviations	See Below	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, August 4, 2022; [2] Test date, August 10, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation

The 100% test vessel leaked between day 2 and day 3 of testing and the volume in the test vessel was reduced to 4 L, consequently the control test vessel and 100% test sample volumes were not consistent on day 3 and for the remainder of the test. The control volume was not adjusted to match the test volume.



Report By:
Daisy Meyer, BSc
Laboratory Biologist



Reviewed By:
Emma Marus, BSc
Biologist

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APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC 164 Reference 2122-3126 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022/08/11	1455 *	KCRM/CD	1	ZC
1	2022/08/12	0730	ML	-	mac
2	2022/08/13	0802	ML	-	mac
3	2022/08/14	0745	ML	-	NA
4	2022/08/15	1090	ML/KO	1	ZC

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 8.4
Initial EC (µS/cm): 1861
Salinity (ppt): 0

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L : yes/no

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	8.8	8.6			
Temp (°C) of 100%	14				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	7.7	8.3						
Day 4	8.2	8.5						
EC (uS/cm)								
Day 0	381	1774						
Day 4	408	1646						
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	8.6	8.9						
Day 4	8.6	8.6						
Temperature (°C) (range: 14-16°C)								
Day 0	15	14						
Day 4	16	16						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.5	0.5
2	3.8	0.7
3	3.5	0.4
4	3.5	0.5
5	3.3	0.3
6	3.7	0.6
7	3.0	0.3
8	3.1	0.3
9	3.0	0.3
10	3.3	0.4

Loading Density (g/L): 0.2 (must be ≤0.5 g/L)
Mean Length (cm): 3.4
Length Range (cm): 3.0-3.8
Mean Weight (g): 0.4 (Must be ≥0.3g)
Weight Range: (g): 0.3-0.7

Test Organism Information

Batch 20220623TR
Source Trout Lodge
Tank # 4
Days Held at 15± 2°C 30 (must be ≥14 days)
Percent stock mortality 0.09 (7 days prior to test, must be <2%)
Test Volume (L) 18

Comments :
96 hrs ppt on sides & bottom of tank

Reviewed By: CW Date Reviewed: 20221081 22

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC 164 Reference 2122-3126

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/08/09	1645	IC / AI	2	NA
1	2022/08/10	~~1915~~	~~AG~~	-	NA
2	2022/08/11	0915	AG	2	KTM

Sample Information

Initial pH: 8.4
Initial EC (µS/cm): 1861
Salinity (ppt): 0

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	8.0	8.0	8.0	8.4	8.4	8.4				
2	8.2	8.1	8.1	8.5	8.6	8.6				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	400	404	405	1965	1990	2060				
2	425	414	412	1673	1967	1972				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.7	7.7	7.7	7.7	7.7	7.7				
2	7.7	7.7	7.7	7.7	7.7	7.7				

Temperature (°C) (range: **18-22 °C**)

0	21	21	21	21	21	21				
2	21	21	21	21	21	21				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar WedC4 Jar(s) mortality 7 days prior to test (must be ≤25%) 10%

QA (previous month)

Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 45
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 9.2
Temperature (°C) of sample prior to aeration: 21°C
DO % of sample prior to aeration: 115%
Is aeration required (<40% or >100%)? **Yes or No**
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20 mins
Filtered with 110um screen prior to testing **Yes or No**
Hardness (mg $CaCO_3$/L) of 100% : 1095
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) -
Alkalinity of 100% sample (mg $CaCO_3$/L): 554

Dilution Water

Pail label / preparation date temp1
Hardness of dilution water (mg/L) 159

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Comments/Observations:

0 hr no ppt
48 hr no ppt

Reviewed By: CW Date Reviewed: 20221012 22

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC 164 Reference 2122-3126

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/08/10	1420	DM/AI	2	EP
1	2022/08/11	0850	DM	-	mnf
2	2022/08/12	1010	BS/AM	2	NA

Sample Information

Initial pH: 8.4
Initial EC (µS/cm): 1861
Salinity (ppt): 0

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	7.9	7.8	7.8	8.2	8.3	8.3				
2	8.3	8.2	8.2	8.5	8.5	8.5				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	413	427	428	1947	2080	2090				
2	513	440	433	1951	2070	2070				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10(1)	10	10	10	10				
2	10	10(1)	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar Wed C5 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)

Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 25
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 8.4
DO % of sample prior to aeration: 89
Duration of aeration (37.5 +/- 12.5 mL/min/L) : —
Hardness (mg $CaCO_3$/L) of 100% : 1095
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 554

Temperature (°C) of sample prior to aeration: 12
Is aeration required (<40% or >100%)? Yes or (No)
Filtered with 110um screen prior to testing Yes or (No)
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)

Dilution Water

Pail label / preparation date Pail 7
Hardness of dilution water (mg/L) 160

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

Comments/Observations:

0h: No ppt
48h: No ppt

Reviewed By: CW Date Reviewed: 20220812 22

APPENDIX C – Chain-of-custody form

Teck

COC ID: 2022-08-08_BPO

TURNAROUND TIME: Regular (default)

RUSH: NO

PROJECT/CLIENT INFO		LABORATORY		OTHER INFO				
Facility Name	FRS AWTF	Lab Name	Nautilus Environmental	Report Format / Distribution		Excel	PDF	EDD
Project Manager	Brett Mason	Lab Contact	Tamara Pomeroy	Email 1:	DL-FROS-Lab@teck.com	X	X	X
Email	brett.mason@teck.com	Email	tamara@nautilusenvironmental.ca	Email 2:	TeckCoal@equisonline.com			X
Address	29 km N of Elkford	Address	10823 27th Street SE	Email 3:				
				Email 4:				
City	Elkford	City	Calgary	Email 5:				
Province	BC	Province	AB	Email 6:				
Postal Code	V0B 2H0	Postal Code	T2Z 3V9					
Country	Canada	Country	Canada					
Phone Number	250 865 6267	Phone Number	403 253 7121	PO number	VPO00842641			

SAMPLE DETAILS

2022/08/09
08:45
Manitoulin
3X20 L carboys
SRS/AC
NoS, No I
Good Condition
16.0°C

ANALYSIS REQUESTED

Please indicate below Filtered, Perserved or both (F, P, F/P)

Sample ID 2122-3126	Sample Location	Field Matrix	Hazardous Material (Yes No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont	NAUT_96Hr_RT_Single_Concentration_Toxicity Test	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 10C	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 20C	
FS_BPO_2022-08-08_N_0900	FS_BPO	WS		8/8/2022	9:00	G	3	X	X	X	16.0°C

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	Date	Time	ACCEPTED BY/AFFILIATION	Date	Time
	Nicholas Krajnc	8/8/2022				

SERVICE REQUEST (rush - subject to availability)

Regular (default)	X	Sampler's Name	Joey Wills	Mobile #	
Priority (2-3 business days) - 50% surcharge					
Emergency (1 Business Day) - 100% surcharge		Sampler's Signature		Date/Time	8-Aug-22
For Emergency <1 Day, ASAP or Weekend - Contact ALS					

END OF REPORT

Acute Toxicity Test Results

Sample collected August 15, 2022

Final Report

September 28, 2022

Submitted to: **Teck Coal Ltd.**
Elkford, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates				
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation
FS_BPO_2022-08-15_N_0900/ 2122-3234	15-Aug-22 at 0900h	16-Aug-22 at 0900h	16-Aug-22 at 1500h	17-Aug-22 at 1500h	17-Aug-22 at 1505h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
FS_BPO_2022-08-15_N_0900	16.6°C	1864	488

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample		
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C
FS_BPO_2022-08-15_N_0900	100	100	100

Sample ID	Percent Immobility in 100 (% v/v)	
	Daphnia magna 10˚C	*Daphnia magna* 20˚C
FS_BPO_2022-08-15_N_0900	0	0

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
FS_BPO_2022-08-15_N_0900	Rainbow trout	Precipitate observed on the test vessel	None
	Daphnia magna	Surficial precipitate observed in the 20˚C test	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	3.5 (3.3-3.7) g/L KCl[1]	5.6 (5.4-5.8) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.5 (2.6-4.7) g/L KCl	6.1 (5.2-7.3) g/L NaCl
Reference toxicant CV	9.6%	5.6%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, August 4, 2022; [2] Test date, August 24, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation



Report By:
Alyssa Minifie, BSc
Laboratory Biologist



Reviewed By:
Emma Marus, BSc
Biologist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS ENVIRONMENTAL

Trout Bench Sheet

Method TRS Client TEC 164 Reference 2122-3234 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022/08/16	1500 *	KO/KCRM/CD	1	WM
1	2022/08/17	0930	KO	-	MAF
2	2022/08/18	0810	ML	-	MAF
3	2022/08/19	0800	CD/ML	-	CC
4	2022/08/20	1115	ML	1	MAF

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 8.1
Initial EC (µS/cm): 2870
Salinity (ppt): 0

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L : yes/no

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	8.6	8.6			
Temp (°C) of 100%	16				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: **5.5-8.5**)								
Day 0	7.6	7.9						
Day 4	8.0	8.0						
EC (uS/cm)								
Day 0	413	2990						
Day 4	447	2960						
DO (mg/L) (**70-100% saturation at test temp.**)								
Day 0	8.6	8.6						
Day 4	8.6	8.6						
Temperature (°C) (range: **14-16°C**)								
Day 0	16	16						
Day 4	16	16						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.7	0.6
2	2.7	0.3
3	3.2	0.4
4	2.9	0.3
5	3.1	0.4
6	3.1	0.4
7	3.3	0.4
8	3.4	0.5
9	3.1	0.3
10	3.5	0.5

Loading Density (g/L): 0.2 (must be ≤0.5 g/L)
Mean Length (cm): 3.2
Length Range (cm): 2.7-3.7
Mean Weight (g): 0.4 (Must be ≥0.3g)
Weight Range: (g): 0.3-0.6

Test Organism Information

Batch 20220623TR
Source Trout Lodge
Tank # 4
Days Held at 15± 2°C 35 (must be ≥14 days)
Percent stock mortality 0.12 (7 days prior to test, must be <2%)
Test Volume (L) 17/18 CD

Comments :
96 hrs: ppt on sides & bottom of tank

Reviewed By: SS Date Reviewed: 2022/08/26.

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC 164 Reference 2122-3234

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/08/17	1505	AI/NA	2	RC
1	2022/08/18	0815	BS	-	NA
2	2022/08/19	1040	AI	3	EP

Sample Information

Initial pH: 8.1
Initial EC (µS/cm): 2870
Salinity (ppt): 0

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	7.8	7.7	7.7	8.0	8.0	8.0				
2	8.1	8.1	8.0	8.4	8.3	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	420	418	420	3000	3080	3090				
2	405	405	406	2840	2900	2910				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.9	7.9	7.9				
2	7.7	7.7	7.7	7.7	7.7	7.7				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	20	20	20				
2	21	21	21	21	21	21				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar WED C4 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 35
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 7.9
DO % of sample prior to aeration: 100%
Duration of aeration (37.5 +/- 12.5 mL/min/L) : —
Hardness (mg $CaCO_3$/L) of 100% : 1864
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 488

Temperature (°C) of sample prior to aeration: 20
Is aeration required (<40% or >100%)? **Yes or (No)**
Filtered with 110um screen prior to testing **Yes or (No)**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or (No)**

Dilution Water
Pail label / preparation date Pail 2 TAP 2022/08/18
Hardness of dilution water (mg/L) NA ~~169~~ 129

DO Levels (40-100% saturation) - corrected for altitude -
8.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Comments/Observations:
0 hrs: No ppt.
48 hrs: Surficial ppt

Reviewed By: SS Date Reviewed: 2022/08/26

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC 164 Reference 2122-3234

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/08/17	1500	AL/NA	2	XC
1	2022/08/18	0810	BS	-	NE
2	2022/08/19	1130	AI	3	EP

Sample Information

Initial pH: 8.1
Initial EC (µS/cm): 2870
Salinity (ppt): 0

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	7.6	7.6	7.6	8.0	8.0	8.0				
2	8.2	8.2	8.2	8.4	8.4	8.4				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	411	409	416	3000	3110	3130				
2	433	424	412	2950	2990	3100				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar WED C4 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 34
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 9.4
Temperature (°C) of sample prior to aeration: 12
DO % of sample prior to aeration: 100%
Is aeration required (<40% or >100%)? **Yes or (No)**
Duration of aeration (37.5 +/- 12.5 mL/min/L) : —
Filtered with 110um screen prior to testing **Yes or (No)**
Hardness (mg $CaCO_3$/L) of 100% : 1864
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or (No)**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 488

Dilution Water

Pail label / preparation date Pail 2 TAP : 08/13
Hardness of dilution water (mg/L) 129

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

Comments/Observations:
0 hrs: No ppt.
48 hrs: No ppt

Reviewed By: SS Date Reviewed: 2022/08/26

APPENDIX C – Chain-of-custody form

Teck

COC ID: 2022-08-15_BPO | TURNAROUND TIME: Regular (default) | RUSH: NO

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name	FRS AWTF			Lab Name	Nautilus Environmental			Report Format / Distribution		Excel	PDF	EDD
Project Manager	Brett Mason			Lab Contact	Tamara Pomeroy			Email 1:	DL-FROS-Lab@teck.com	X	X	X
Email	brett.mason@teck.com			Email	tamara@nautilusenvironmental.ca			Email 2:	TeckCoal@equisonline.com			X
Address	29 km N of Elkford			Address	10823 27th Street SE			Email 3:				
								Email 4:				
City	Elkford	Province	BC	City	Calgary	Province	AB	Email 5:				
Postal Code	V0B 2H0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada	Email 6:				
Phone Number	250 865 6267			Phone Number	403 253 7121			PO number	VPO00842641			

SAMPLE DETAILS / **ANALYSIS REQUESTED**

2022/08/16
09:00
2x20 L carboys, 2 x 1 L bottles
Manitoulin
SRS / AC
No 5 No I
Good Condition

Please indicate below Filtered, Perserved or both (F, P, F/P)

Sample ID 212-3234	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	ANALYSIS: NAUT_96Hr_RT_Single_Concentration_Toxicity Test	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 10C	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 20C	
FS_BPO_2022-08-15_N_0900	FS_BPO	WS		8/15/2022	9:00	G	3	X	X	X	16.6°C

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	Date	Time	ACCEPTED BY/AFFILIATION	Date	Time
		8/15/2022				

SERVICE REQUEST (rush - subject to availability)					
Regular (default)	X	Sampler's Name	Abdul Salam	Mobile #	
Priority (2-3 business days) - 50% surcharge					
Emergency (1 Business Day) - 100% surcharge		Sampler's Signature	[signature]	Date/Time	15-Aug-22
For Emergency <1 Day, ASAP or Weekend - Contact ALS					

END OF REPORT

Acute Toxicity Test Results

Sample collected August 22, 2022

Final Report

October 5, 2022

Submitted to: **Teck Coal Ltd.**
Elkford, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates				
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation
FS_BPO_2022-08-22_N_0900 / 2122-3305	22-Aug-22 at 0900h	23-Aug-22 at 0900h	23-Aug-22 at 1430h	23-Aug-22 at 1555h	23-Aug-22 at 1555h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
FS_BPO_2022-08-22_N_0900	16.6°C	1634	470

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample		
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C
FS_BPO_2022-08-22_N_0900	100	100	100

Sample ID	Percent Immobility in 100 (% v/v)	
	Daphnia magna 10˚C	*Daphnia magna* 20˚C
FS_BPO_2022-08-22_N_0900	0	0

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
FS_BPO_2022-08-22_N_0900	Rainbow trout	Precipitate observed on sides and bottom of test vessel	None
	Daphnia magna	Surficial precipitate observed in 20˚C test	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	3.5 (3.3-3.7) g/L KCl[1]	5.6 (5.4-5.8) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.5 (2.6-4.7) g/L KCl	6.1 (5.2-7.3) g/L NaCl
Reference toxicant CV	9.6%	5.6%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date August 4, 2022; [2] Test date August 24, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation

Report By:
Kiara O'Shea, BSc
Laboratory Biologist

Reviewed By:
Emma Marus, BSc
Biologist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC 164 Reference 2122-3305 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022/08/23	1430 *	AM/CD	1	KD
1	2022/08/24	0945	AM	-	CC
2	2022/08/25	0745	ML	-	NA
3	2022/08/26	0800	ML	-	MAF
4	2022/08/27	0950	ML/CD	1	CC

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 8.1
Initial EC (µS/cm): 2800
Salinity (ppt): 5

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L : yes/no

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	8.6	8.6			
Temp (°C) of 100%	16				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: **5.5-8.5**)								
Day 0	7.7	7.8						
Day 4	8.1	7.9						
EC (uS/cm)								
Day 0	387	2610						
Day 4	433	2486						
DO (mg/L) (**70-100% saturation at test temp.**)								
Day 0	8.6	8.6						
Day 4	8.6	8.6						
Temperature (°C) (range: **14-16°C**)								
Day 0	16	16						
Day 4	16	16						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.8	0.7
2	3.2	0.4
3	3.2	0.3
4	3.8	0.7
5	3.4	0.5
6	2.6	0.2
7	2.8	0.3
8	2.6	0.2
9	3.4	0.4
10	3.2	0.4

Loading Density (g/L): 0.2 (must be ≤0.5 g/L)
Mean Length (cm): 3.2
Length Range (cm): 2.6-3.8
Mean Weight (g): 0.4 (Must be ≥0.3g)
Weight Range: (g): 0.2-0.7

Test Organism Information

Batch 20220623TR
Source Trout Lodge
Tank # 3
Days Held at 15± 2°C 42 (must be ≥14 days)
Percent stock mortality 0.19 (7 days prior to test, must be <2%)
Test Volume (L) 18

Comments :
96 hrs: ppt on sides & bottom of tank

Reviewed By: CW Date Reviewed: 20220909102

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC 164 Reference 2122-3305

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/08/23	1555	AI/AG	2	KJM
1	2022/08/24	0857	AG	-	EC
2	2022/08/25	0950	AI	3	NA

Sample Information

Initial pH:	8.1
Initial EC (µS/cm):	2800
Salinity (ppt):	5

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	7.8	7.8	7.8	8.0	8.0	8.0				
2	8.1	8.1	8.1	8.3	8.3					

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	489	488	489	2910	2950	2980				
2	507	476	495	2670	2790	2760				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.7	7.7	7.7	7.9	7.9	7.9				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	21	21	21	20	20	20				
2	20	20	20	20	20	20				

Number Alive (l, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar Wed D2 Jar(s) mortality 7 days prior to test (must be ≤25%) 5

QA (previous month)

Days to first brood (≤12 days) 8

Average number of young produced (≥15 young) 42

Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 7.9

Temperature (°C) of sample prior to aeration: 20

DO % of sample prior to aeration: 100

Is aeration required (<40% or >100%)? **Yes or (No)**

Duration of aeration (37.5 +/- 12.5 mL/min/L) : -

Filtered with 110um screen prior to testing : **Yes or (No)**

Hardness (mg $CaCO_3$/L) of 100% : 1634

Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or (No)**

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) -

Alkalinity of 100% sample (mg $CaCO_3$/L): 470

Dilution Water

Pail label / preparation date P1:08/20

Hardness of dilution water (mg/L) 159

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Comments/Observations:

0 hr No ppt

48 hr surficial ppt

Reviewed By: CW Date Reviewed: 20221091102

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC 164 Reference 2122-3305

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/08/23	1555	AM/AG	2	kam
1	2022/08/24	0810	BS	-	cc
2	2022/08/25	1010	AH	3	NA

Sample Information

Initial pH: 8.1
Initial EC (µS/cm): 2800
Salinity (ppt): 5

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	7.8	7.8	7.9	8.0	8.0	8.0				
2	8.2	8.2	8.2	8.5	8.5	8.5				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	489	491	492	2910	2970	2980				
2	490	480	491	2780	2810	2920				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar Wed D2 Jar(s) mortality 7 days prior to test (must be ≤25%) 5

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 42
Were test treatments randomized on test tray? (Yes) No

Control Validity Criteria
Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 9.4
Temperature (°C) of sample prior to aeration: 12
DO % of sample prior to aeration: 100
Is aeration required (<40% or >100%)? **Yes or (No)**
Duration of aeration (37.5 +/- 12.5 mL/min/L) : —
Filtered with 110um screen prior to testing **Yes or (No)**
Hardness (mg $CaCO_3$/L) of 100% : 1634
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or (No)**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 470

Dilution Water
Pail label / preparation date P1: 08120
Hardness of dilution water (mg/L) 159

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

Comments/Observations:
0 hr NO ppt
48 hr NO ppt

Reviewed By: CC Date Reviewed: 2022/09/02

APPENDIX C – Chain-of-custody form

Teck

Page 1 of 1

COC ID: 2022-08-22_BPO **TURNAROUND TIME:** Regular (default) **RUSH: NO**

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO			
Facility Name	FRS AWTF			Lab Name	Nautilus Environmental			Report Format / Distribution		Excel	PDF	EDD
Project Manager	Brett Mason			Lab Contact	Tamara Pomeroy			Email 1:	DL-FROS-Lab@teck.com	X	X	X
Email	brett.mason@teck.com			Email	tamara@nautilusenvironmental.ca			Email 2:	TeckCoal@equisonline.com			X
Address	29 km N of Elkford			Address	10823 27th Street SE			Email 3:				
								Email 4:				
City	Elkford	Province	BC	City	Calgary	Province	AB	Email 5:				
Postal Code	V0B 2H0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada	Email 6:				
Phone Number	250 865 6267			Phone Number	403 253 7121			PO number	VPO00842641			

SAMPLE DETAILS / **ANALYSIS REQUESTED**

2022/08/23
09:00
Manitoulin
3C/SRS/AC
2x20L carboys, 2x1L bottles
NoS/NoL
Good Condition
16.6°C

Please indicate below Filtered, Perserved or both (F, P, F/P)

Sample ID 2122-3805	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	ANALYSIS: NAUT_96Hr_RT_Single_Concentration_Toxicity Test	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 10C	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 20C
FS_BPO_2022-08-22_N_0900	FS_BPO	WS		2022/08/22	9:00	G	3	X	X	X

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	Date	Time	ACCEPTED BY/AFFILIATION	Date	Time
	Tanmay Lonandkar	2022/08/22				

SERVICE REQUEST (rush - subject to availability)					
Regular (default)	X	Sampler's Name	Haylee Williams	Mobile #	
Priority (2-3 business days) - 50% surcharge					
Emergency (1 Business Day) - 100% surcharge		Sampler's Signature		Date/Time	22-Aug-22
For Emergency <1 Day, ASAP or Weekend - Contact ALS					

END OF REPORT

Acute Toxicity Test Results

Sample collected August 29, 2022

Final Report

October 9, 2022

Submitted to: **Teck Coal Ltd.**
Elkford, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates				
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation
FS_BPO_2022-08-29_N_2000/ 2122-3399	29-Aug-22 at 2000h	31-Aug-22 at 0850h	31-Aug-22 at 1415h	01-Sep-22 at 1425h	01-Sep-22 at 1420h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
FS_BPO_2022-08-29_N_2000	14.4°C	1760	389

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample		
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C
FS_BPO_2022-08-29_N_2000	100	100	100

Sample ID	Percent Immobility in 100 (% v/v)	
	Daphnia magna 10˚C	*Daphnia magna* 20˚C
FS_BPO_2022-08-29_N_2000	0	0

Precipitate observations

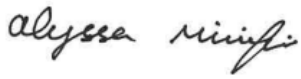
Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
FS_BPO_2022-08-29_N_2000	Rainbow trout	Precipitate observed on the test vessel	None
	Daphnia magna	Surficial precipitate observed	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	4.0 (3.5-4.4) g/L KCl[1]	5.6 (5.4-5.8) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.6 (2.7-4.8) g/L KCl	6.1 (5.2-7.3) g/L NaCl
Reference toxicant CV	9.4%	5.6%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, August 30, 2022; [2] Test date, August 24, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation



Report By:
Alyssa Minifie, BSc
Laboratory Biologist



Reviewed By:
Emma Marus, BSc
Biologist

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APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS ENVIRONMENTAL

Trout Bench Sheet

Method TRS Client TEC 164 Reference 2122-3399 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022/08/31	1415 *	KO/AM/CD	1	KO/RM
1	2022/09/01	0800	CD	-	KO
2	2022/09/02	0800	ML	-	MAE
3	2022/09/03	0830	ML	-	MAE
4	2022/09/04	1045	ML	1	KO

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 8.1
Initial EC (µS/cm): 2850
Salinity (ppt): 0

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L: **yes/no**

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	9.6	8.6			
Temp (°C) of 100%	16				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	7.5	8.3						
Day 4	7.9	8.0						
EC (uS/cm)								
Day 0	338	2480						
Day 4	396	2236						
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	8.0	8.6						
Day 4	8.6	8.6						
Temperature (°C) (range: 14-16°C)								
Day 0	16	16						
Day 4	16	16						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10(1)						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.2	0.4
2	3.8	0.8
3	3.7	0.6
4	3.4	0.5
5	3.5	0.4
6	3.6	0.5
7	3.0	0.2
8	3.2	0.3
9	2.9	0.2
10	3.4	0.5

Loading Density (g/L): 0.3 (must be ≤0.5 g/L)
Mean Length (cm): 3.4
Length Range (cm): 2.9-3.8
Mean Weight (g): 0.4 (Must be ≥0.3g)
Weight Range: (g): 0.2-0.8

Test Organism Information

Batch: 20220708TR
Source: Trout Lodge
Tank #: 2
Days Held at 15± 2°C: 36 (must be ≥14 days)
Percent stock mortality: 0.05 (7 days prior to test, must be <2%)
Test Volume (L): 16 17.5 KO

Comments :
96h: ppt on sides & bottom of tank

Reviewed By: CEW Date Reviewed: 20221 09107

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC 164 Reference 2122-3399

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/09/01	1420	CC/DM	2	JC
1	2022/09/02	0855	CC	-	MAP
2	2022/09/03	0955	BS	2	DM

Sample Information

Initial pH: 8.1
Initial EC (µS/cm): 2850
Salinity (ppt): 0

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	8.2	8.1	8.1	8.0	8.0	8.1				
2	8.3	8.3	8.3	8.1	8.1	8.1				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	394	395	391	2710	2650	2840				
2	374	393	392	2600	2750	2750				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.9	7.9	7.9				
2	7.7	7.7	7.7	7.7	7.7	7.7				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	20	20	20				
2	21	21	21	21	21	21				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar Wed C4 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 9
Average number of young produced (≥15 young) 33
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0%
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 9.5 Temperature (°C) of sample prior to aeration: 20
DO % of sample prior to aeration: 119 Is aeration required (<40% or >100%)? (Yes) or No
Duration of aeration (37.5 +/- 12.5 mL/min/L): 20min Filtered with 110um screen prior to testing Yes or (No)
Hardness (mg $CaCO_3$/L) of 100% : 1760 Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 389

Dilution Water
Pail label / preparation date P3:08/30
Hardness of dilution water (mg/L) 154

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Comments/Observations:
0hr: NOPPT
48hr: SURFACIAL PPT

Reviewed By: CW Date Reviewed: 20221009107

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC 164 Reference 2122-3399

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/09/01	1425	CC/DM	2	XC
1	2022/09/02	0850	CC	-	mqf
2	2022/09/03	1010	BS	2	DM

Sample Information

Initial pH: 8.1
Initial EC (µS/cm): 2850
Salinity (ppt): 0

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	7.9	7.9	7.9	7.9	8.0	8.1				
2	7.7	7.9	8.0	8.0	8.1	8.1				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	401	393	393	2690	2900	2940				
2	382	392	392	2730	2860	2820				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar WedC3 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 9
Average number of young produced (≥15 young) 33
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0%
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: DM ~~9.5~~ 9.4 Temperature (°C) of sample prior to aeration: DM 12
DO % of sample prior to aeration: ~~114~~ 100 Is aeration required (<40% or >100%)? Yes or (No)
Duration of aeration (37.5 +/- 12.5 mL/min/L) : - Filtered with 110um screen prior to testing Yes or (No)
Hardness (mg $CaCO_3$/L) of 100% : 1760 Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) -
Alkalinity of 100% sample (mg $CaCO_3$/L): 389

Dilution Water
Pail label / preparation date 23.08/30
Hardness of dilution water (mg/L) 154

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

Comments/Observations:
0hr: NOPPT
48hr: surficial ppt

Reviewed By: [signature] Date Reviewed: 2022/09/07

APPENDIX C – Chain-of-custody form

Teck

Page 1 of 1

COC ID: 2022-08-29_BPO **TURNAROUND TIME:** Regular (default) **RUSH:** NO

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name	FRS AWTF			Lab Name	Nautilus Environmental			Report Format / Distribution		Excel	PDF	EDD
Project Manager	Brett Mason			Lab Contact	Tamara Pomeroy			Email 1:	DL-FROS-Lab@teck.com	X	X	X
Email	brett.mason@teck.com			Email	tamara@nautilusenvironmental.ca			Email 2:	TeckCoal@equisonline.com			X
Address	29 km N of Elkford			Address	10823 27th Street SE			Email 3:				
								Email 4:				
City	Elkford	Province	BC	City	Calgary	Province	AB	Email 5:				
Postal Code	V0B 2H0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada	Email 6:				
Phone Number	250 865 6267			Phone Number	403 253 7121			PO number	VPO00842641			

SAMPLE DETAILS | **ANALYSIS REQUESTED**

2022/08/31
08:~~00~~50
Manitou Jn
DC/SRS/AC
2x20L carboys, 1x1L bottle
N6S/N6S
Good Condition
14.4°C

Please indicate below Filtered, Perserved or both (F, P, F/P)

Sample ID 2122-83999	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	ANALYSIS	NAUT_96Hr_RT_Single_Concentration_Toxicity Test	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 10C	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 20C
FS_BPO_2022-08-29_N_2000	FS_BPO	WS		8/29/2022	20:00	G	3		X	X	X

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	Date	Time	ACCEPTED BY/AFFILIATION	Date	Time
	Kyra Lindenbach	8/29/2022				

SERVICE REQUEST (rush - subject to availability)					
Regular (default)	X	Sampler's Name	Abdul Salam	Mobile #	
Priority (2-3 business days) - 50% surcharge					
Emergency (1 Business Day) - 100% surcharge		Sampler's Signature		Date/Time	29-Aug-22
For Emergency <1 Day, ASAP or Weekend - Contact ALS					

END OF REPORT

Acute Toxicity Test Results

Sample collected September 5, 2022

Final Report

October 12, 2022

Submitted to: **Teck Coal Ltd.**
Elkford, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates				
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation
FS_BPO_2022-09-05_N_0900 2223-0051	5-Sept-22 at 0900h	6-Sept-22 at 1530h	7-Sept-22 at 1440h	7-Sept-22 at 1430h	7-Sept-22 at 1430h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
FS_BPO_2022-09-05_N_0900	12.9°C	1126	362

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample		
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C
FS_BPO_2022-09-05_N_0900	100	100	100

Sample ID	Percent Immobility in 100 (% v/v)	
	Daphnia magna 10˚C	*Daphnia magna* 20˚C
FS_BPO_2022-09-05_N_0900	0	0

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
FS_BPO_2022-09-05_N_0900	Rainbow trout	Precipitate observed on sides and bottom of test vessel	None
	Daphnia magna	Surficial precipitate observed in the 20˚C test	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	4.0 (3.5-4.4) g/L KCl[1]	6.9 (6.6 - 7.2) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.6 (2.7-4.8) g/L KCl	6.1 (5.2 - 7.2) g/L NaCl
Reference toxicant CV	9.4%	5.5%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date August 30, 2022; [2] Test date September 21, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation



Report By:
Aishah Iqbal, BSc
Laboratory Biologist



Reviewed By:
Emma Marus, BSc
Biologist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS ENVIRONMENTAL

Trout Bench Sheet

Method TRS Client TEC 164 Reference 2223-0051 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022/09/07	1440 *	ML/KO/CD	71 1	AM
1	2022/09/08	0800	CD	-	ZC
2	2022/09/09	0800	CD	-	ZC
3	2022/09/10	0730	CD	-	ZC
4	2022/09/11	0935	ML/KC/BM	117	NA

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 8.2
Initial EC (µS/cm): 2460
Salinity (ppt): 3

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L (yes/no)

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	8.6	8.6			
Temp (°C) of 100%	16				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	8.1	8.1						
Day 4	~~8.3~~ 8.3	8.4						
EC (uS/cm)								
Day 0	408	2500						
Day 4	403	2296						
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	8.6	8.6						
Day 4	8.6	8.6						
Temperature (°C) (range: 14-16°C)								
Day 0	16	16						
Day 4	16	16						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.0	0.3
2	3.0	0.3
3	3.3	0.4
4	3.2	0.4
5	2.9	0.3
6	2.8	0.2
7	3.1	0.2
8	3.2	0.3
9	2.7	0.2
10	2.9	0.2

Loading Density (g/L): 0.2 (must be ≤0.5 g/L)
Mean Length (cm): 3.0
Length Range (cm): 2.7-3.2
Mean Weight (g): 0.3 (Must be ≥0.3g)
Weight Range: (g): 0.2-0.4

Test Organism Information

Batch 20220708TR
Source Trout Lodge
Tank # 1
Days Held at 15± 2°C 43 (must be ≥14 days)
Percent stock mortality 0.05 (7 days prior to test, must be <2%)
Test Volume (L) 18

Comments :
96 hrs ppt on sides & bottom of tank

Reviewed By: CW Date Reviewed: SEP 20 2022

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC164 Reference 2223-0051

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/09/07	1430	AI/BS	2	EP
1	2022/09/08	0830	DM	-	AC
2	2022/09/09	0910	BS	2	DM

Sample Information

Initial pH: 8.2
Initial EC (µS/cm): 2460
Salinity (ppt): 3

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	7.8	7.9	7.9	7.8	7.9	8.0				
2	8.5	8.4	8.4	8.2	8.3	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	394	388	398	2440	2480	2510				
2	401	391	401	2270	2370	2360				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.9	7.9	7.9				
2	7.7	7.7	7.7	7.5	7.5	7.5				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	20	20	20				
2	21	21	21	21	21	21				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar: used DS
Jar(s) mortality 7 days prior to test (must be ≤25%): 10%

QA (previous month)
Days to first brood (≤12 days): 9
Average number of young produced (≥15 young): 39
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%): 0%

Sample
DO (mg/L) of sample prior to aeration: 7.9
DO % of sample prior to aeration: 100
Duration of aeration (37.5 +/- 12.5 mL/min/L): —
Hardness (mg $CaCO_3$/L) of 100% : 1126
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L): —
Alkalinity of 100% sample (mg $CaCO_3$/L): 362

Temperature (°C) of sample prior to aeration: 20
Is aeration required (<40% or >100%)? Yes or (No)
Filtered with 110um screen prior to testing Yes or (No)
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)

Dilution Water
Pail label / preparation date: Pail 2: 09/05
Hardness of dilution water (mg/L): 165

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Comments/Observations:
0 hr: No ppt
48 hr: ~~No ppt~~ BS Surficial ppt.

Reviewed By: CW Date Reviewed: SEP 20 2022

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC164 Reference 2223-0051

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/09/07	1430	AI/BS	2	EP
1	2022/09/08	0900	DM	-	AC
2	2022/09/09	0830	BS	2	DM

Sample Information

Initial pH: 8.2
Initial EC (µS/cm): 2460
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	8.1	8.1	8.0	7.9	8.0	8.0				
2	8.3	8.2	8.2	8.1	8.2	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	402	394	401	2390	2510	2520				
2	398	396	406	2320	2480	2450				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.6	9.6	9.6	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar Wed D5 Jar(s) mortality 7 days prior to test (must be ≤25%) 10%

QA (previous month)
Days to first brood (≤12 days) 9
Average number of young produced (≥15 young) 39
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0%
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 9.4
Temperature (°C) of sample prior to aeration: 12
DO % of sample prior to aeration: 100
Is aeration required (<40% or >100%)? Yes or (No)
Duration of aeration (37.5 +/- 12.5 mL/min/L) : -
Filtered with 110um screen prior to testing Yes or (No)
Hardness (mg $CaCO_3$/L) of 100% : 1126
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) -
Alkalinity of 100% sample (mg $CaCO_3$/L): 362

Dilution Water
Pail label / preparation date Pail 2: 09/05
Hardness of dilution water (mg/L) 105

DO Levels (40-100% saturation) - corrected for altitude -
4.1 to 10.3 mg/L at 8°C
4.0 to 10.0 mg/L at 9°C
3.9 to 9.8 mg/L at 10°C
3.8 to 9.6 mg/L at 11°C
3.7 to 9.4 mg/L at 12°C

Comments/Observations:
0 hr: No ppt
48 hr: No ppt-

Reviewed By: CW Date Reviewed: SEP 20 2022

APPENDIX C – Chain-of-custody form

Teck

COC ID: 2022-09-05_BPO **TURNAROUND TIME:** Regular (default) **RUSH:** NO

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name	FRS AWTF			Lab Name	Nautilus Environmental			Report Format / Distribution		Excel	PDF	EDD
Project Manager	Brett Mason			Lab Contact	Tamara Pomeroy			Email 1:	DL-FROS-Lab@teck.com	X	X	X
Email	brett.mason@teck.com			Email	tamara@nautilusenvironmental.ca			Email 2:	TeckCoal@equisonline.com			X
Address	29 km N of Elkford			Address	10823 27th Street SE			Email 3:				
								Email 4:				
City	Elkford	Province	BC	City	Calgary	Province	AB	Email 5:				
Postal Code	V0B 2H0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada	Email 6:				
Phone Number	250 865 6267			Phone Number	403 253 7121			PO number	VPO00842641			

SAMPLE DETAILS | **ANALYSIS REQUESTED**

2022/09/06
16:30
Manitoulin
BC
2x20L cartons, 1x1L bottle
NoS/NoT
Good Condition
12.9°C

Please indicate below Filtered, Perserved or both (F, P, F/P)

Sample ID 2223-00051	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	ANALYSIS	NAUT_96Hr_RT_Single_Concentration_Toxicity Test	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 10C	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 20C
FS_BPO_2022-09-05_N_0900	FS_BPO	WS		9/5/2022	9:00	G	3		X	X	X

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	Date	Time	ACCEPTED BY/AFFILIATION	Date	Time
	Amith Gopurathingal	9/6/2022				

SERVICE REQUEST (rush - subject to availability)

Regular (default)	X
Priority (2-3 business days) - 50% surcharge	
Emergency (1 Business Day) - 100% surcharge	
For Emergency <1 Day, ASAP or Weekend - Contact ALS	

Sampler's Name	Bryson Drewniak	**Mobile #**	
Sampler's Signature		~~**Date/Time**~~	5-Sep-22

END OF REPORT

Acute Toxicity Test Results

Sample collected September 12, 2022

Final Report

October 13, 2022

Submitted to: **Teck Coal Ltd.**
Elkford, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates				
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation
FS_BPO_2022-09-12_N_0900 / 2223-0126	12-Sep-22 at 0900h	13-Sep-22 at 0900h	13-Sep-22 at 1515h	13-Sep-22 at 1525h	13-Sep-22 at 1520h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
FS_BPO_2022-09-12_N_0900	15.4°C	1289	454

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample		
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C
FS_BPO_2022-09-12_N_0900	100	100	100

Sample ID	Percent Immobility in 100 (% v/v)	
	Daphnia magna 10˚C	*Daphnia magna* 20˚C
FS_BPO_2022-09-12_N_0900	0	0

Precipitate observations

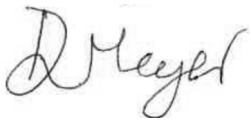
Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
FS_BPO_2022-09-12_N_0900	Rainbow trout	Precipitate observed on the test vessel	None
	Daphnia magna	Surficial precipitate observed	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	4.0 (3.5-4.4) g/L KCl[1]	6.5 (6.0-7.0) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.6 (2.7-4.8) g/L KCl	6.1 (5.2-7.2) g/L NaCl
Reference toxicant CV	9.4%	5.3%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, August 30, 2022; [2] Test Date September 7, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation



Report By:
Daisy Meyer, BSc
Biologist



Reviewed By:
Mimi Tran, Dipl. T.
Biologist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC 164 Reference 2223-0126 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022-09-13	1515 *	ML/CD/KO	117 ~~07-Jan~~	JC
1	2022-09-14	0905	[illegible]	-	MAF
2	2022-09-15	0750	CD	-	JC
3	2022-09-16	0830	CD	-	JC
4	2022-09-17	0930	CD/AM	177	NA

Note: *; time when the test was loaded with fish

Sample Information

Initial pH: 8.2
Initial EC (µS/cm): 2860
Salinity (ppt): 4

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L : yes/no

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	8.8	8.6			
Temp (°C) of 100%	15				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: **5.5-8.5**)								
Day 0	7.9	8.2						
Day 4	8.4	8.3						
EC (uS/cm)								
Day 0	406	2880						
Day 4	409	2750						
DO (mg/L) (**70-100% saturation at test temp.**)								
Day 0	8.6	8.6						
Day 4	8.6	8.6						
Temperature (°C) (range: **14-16°C**)								
Day 0	16	16						
Day 4	16	16						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	4.1	0.4
2	3.8	0.6
3	3.4	0.5
4	3.4	0.6
5	3.2	0.4
6	3.2	0.4
7	3.2	0.4
8	3.1	0.4
9	3.1	0.4
10	2.7	0.2

Loading Density (g/L): 0.3
(must be ≤0.5 g/L)
Mean Length (cm): 3.3
Length Range (cm): 2.7-4.1
Mean Weight (g): 0.5
(Must be ≥0.3g)
Weight Range: (g): 0.2-0.9

Test Organism Information

Batch 20220708TR
Source Trout Lodge
Tank # 1
Days Held at 15± 2°C 49
(must be ≥14 days)
Percent stock mortality 0.31
(7 days prior to test, must be <2%)
Test Volume (L) 18

Comments :
96 hrs PPT on tank

Reviewed By: [illegible] Date Reviewed: SEP 26 2022

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC164 Reference 2223-0126

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/09/13	1525	AG/KTM	2	DM
1	2022/09/14	0745	BS	-	MAF
2	2022/09/15	0855	BS	2	DM

Sample Information

Initial pH: 8.7
Initial EC (µS/cm): 2800
Salinity (ppt): 4

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	8.5	8.4	8.4	8.1	8.2	8.2				
2	8.2	8.2	8.1	7.9	8.1	8.2				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	422	411	409	2770	2880	2900				
2	418	411	409	2680	2836	2866				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.3	9.3	9.3	9.3	9.3	9.3				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (l, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar WED 02 Jar(s) mortality 7 days prior to test (must be ≤25%) 0

QA (previous month)
Days to first brood (≤12 days) 9
Average number of young produced (≥15 young) 41
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0%
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 8.6
Temperature (°C) of sample prior to aeration: 12
DO % of sample prior to aeration: 91
Is aeration required (<40% or >100%)? **Yes or (No)**
Duration of aeration (37.5 +/- 12.5 mL/min/L) : —
Filtered with 110um screen prior to testing **Yes or (No)**
Hardness (mg $CaCO_3$/L) of 100% : 1289
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or (No)**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 454

Dilution Water
Pail label / preparation date 2:09/09
Hardness of dilution water (mg/L) 175

DO Levels (40-100% saturation) - corrected for altitude -
4.1 to 10.3 mg/L at 8°C
4.0 to 10.0 mg/L at 9°C
3.9 to 9.8 mg/L at 10°C
3.8 to 9.6 mg/L at 11°C
3.7 to 9.4 mg/L at 12°C

Comments/Observations:
0 hr: negPL
48 hr: Surficial ppt

Reviewed By: CW Date Reviewed: SEP 26 2022

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC164 Reference 2223-0126

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/09/13	1520	AG/KTM	2	DM
1	2022/09/14	0800	BS	-	DM
2	2022/09/15	0900	BS	2	DM

Sample Information

Initial pH: 8.2
Initial EC (µS/cm): 2860
Salinity (ppt): 4

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	8.0	8.0	8.0	8.0	8.1	8.2				
2	8.4	8.3	8.2	8.0	8.0	8.0				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	406	407	405	2750	2880	2890				
2	404	410	415	2710	2780	2830				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.9	7.9	7.9				
2	7.6	7.6	7.6	7.0	7.0	7.0				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	20	20	20				
2	20	20	20	20	20	20				

Number Alive (l, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar Wed D2 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 9
Average number of young produced (≥15 young) 41
Were test treatments randomized on test tray? (Yes) No

Control Validity Criteria
Mean % mortality at 48 hours - 0%
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: [illegible] Temperature (°C) of sample prior to aeration: 19
DO % of sample prior to aeration: [illegible] Is aeration required (<40% or >100%)? Yes or (No)
Duration of aeration (37.5 +/- 12.5 mL/min/L) : — Filtered with 110um screen prior to testing Yes or (No)
Hardness (mg $CaCO_3$/L) of 100% : 1289 Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 454

Dilution Water
Pail label / preparation date 2:07/09
Hardness of dilution water (mg/L) 175

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Comments/Observations:
0 hr: trapped
48 hr: Surficial ppt

Reviewed By: CW Date Reviewed: SEP 26 2022

APPENDIX C – Chain-of-custody form

Teck

Page 1 of 1

COC ID: 2022-09-12_BPO | **TURNAROUND TIME:** Regular (default) | **RUSH:** NO

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name	FRS AWTF			Lab Name	Nautilus Environmental			Report Format / Distribution		Excel	PDF	EDD
Project Manager	Brett Mason			Lab Contact	Tamara Pomeroy			Email 1:	DL-FROS-Lab@teck.com	X	X	X
Email	brett.mason@teck.com			Email	tamara@nautilusenvironmental.ca			Email 2:	TeckCoal@equisonline.com			X
Address	29 km N of Elkford			Address	10823 27th Street SE			Email 3:				
								Email 4:				
City	Elkford	Province	BC	City	Calgary	Province	AB	Email 5:				
Postal Code	V0B 2H0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada	Email 6:				
Phone Number	250 865 6267			Phone Number	403 253 7121			PO number	VPO00842641			

SAMPLE DETAILS | **ANALYSIS REQUESTED**

2022/09/13
09:00
Manitou/In
3C/SRS
2x20L carboys, 2x1L bottles
N66/N96
Good Condition
15.4°C

Please indicate below Filtered, Perserved or both (F, P, F/P)

Sample ID 2226-0126	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	ANALYSIS: NAUT_96Hr_RT_Single_Concentration_Toxicity Test	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 10C	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 20C
FS_BPO_2022-09-12_N_0900	FS_BPO	WS		9/12/2022	9:00	G	3	X	X	X

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	Date	Time	ACCEPTED BY/AFFILIATION	Date	Time
	Kingsley Savariraj	9/12/2022				

SERVICE REQUEST (rush - subject to availability)

Regular (default)	X
Priority (2-3 business days) - 50% surcharge	
Emergency (1 Business Day) - 100% surcharge	
For Emergency <1 Day, ASAP or Weekend - Contact ALS	

Sampler's Name	Jessica Bethune	**Mobile #**	
Sampler's Signature		**Date/Time**	12-Sep-22

END OF REPORT

Acute Toxicity Test Results

Sample collected September 19, 2022

Final Report

October 16, 2022

Submitted to: **Teck Coal Ltd.**
Elkford, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates				
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation
FS_BPO_2022-09-19_N_0900 / 2223-0198	19-Sep-22 at 0900h	20-Sep-22 at 0900h	20-Sep-22 at 1500h	20-Sep-22 at 1440h	20-Sep-22 at 1435h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
FS_BPO_2022-09-19_N_0900	10.9°C	1301	514

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample		
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C
FS_BPO_2022-09-19_N_0900	100	100	100

Sample ID	Percent Immobility in 100 (% v/v)	
	Daphnia magna 10˚C	*Daphnia magna* 20˚C
FS_BPO_2022-09-19_N_0900	0	0

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
FS_BPO_2022-09-19_N_0900	Rainbow trout	Precipitate observed on the sides and bottom of test vessel	None
	Daphnia magna	Surficial precipitate observed	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	3.9 (2.9-4.3) g/L KCl[1]	6.9 (6.6-7.2) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.6 (2.7-4.8) g/L KCl	6.1 (5.2-7.2) g/L NaCl
Reference toxicant CV	9.4%	5.5%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, September 14, 2022; [2] Test date, September 21, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation

Report By:
Maryam Lo, BSc
Laboratory Biologist

Reviewed By:
Emma Marus, BSc
Biologist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC 164 Reference 2223-0198 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022-09-20	1500 *	KO/CD	1/7	MF
1	2022-09-21	0740	CD	-	MF
2	2022-09-22	0805	AI	-	MF
3	2022-09-23	0750	CD	-	MF
4	2022-09-24	1039	CD/FP	1/7	MF

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 8.3
Initial EC (µS/cm): 2700
Salinity (ppt): 4

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L ; yes/no

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	8.6	8.6			
Temp (°C) of 100%	16				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	7.5	8.2						
Day 4	8.3	8.3						
EC (uS/cm)								
Day 0	409	2780						
Day 4	414	2360						
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	8.6	8.6						
Day 4	8.2	8.6						
Temperature (°C) (range: 14-16°C)								
Day 0	16	16						
Day 4	16	16						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10 (2)						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.4	0.5
2	3.1	0.4
3	3.4	0.5
4	3.1	0.4
5	3.5	0.5
6	3.3	0.5
7	3.4	0.5
8	3.5	0.4
9	3.2	0.5
10	3.2	0.4

Loading Density (g/L): 0.3 (must be ≤0.5 g/L)
Mean Length (cm): 3.3
Length Range (cm): 3.1-3.5
Mean Weight (g): 0.5 (Must be ≥0.3g)
Weight Range: (g): 0.4-0.5

Test Organism Information

Batch 20220727TR
Source Sam Livingston
Tank # 6
Days Held at 15± 2°C 26 (must be ≥14 days)
Percent stock mortality 0.13 (7 days prior to test, must be <2%)
Test Volume (L) 18

Comments :
96h: PPT on sides and bottom

Reviewed By: MF Date Reviewed: 2022/09/30

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC 164 Reference 2223-0198

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/09/20	1455	AI/BS	3	DM
1	2022/09/21	0755	AG	-	MMM
2	2022/09/22	0905	MA	2	AI

Sample Information

Initial pH: 8.3
Initial EC (µS/cm): 2700
Salinity (ppt): 4

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	8.0	8.0	8.0	8.2	8.2	8.2				
2	8.1	8.2	8.2	7.9	8.0	8.0				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	438	406	407	2710	2730	2720				
2	431	434	443	2650	2650	2660				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	8.1	8.1	8.1				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	19	19	19				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar Wed D4 Jar(s) mortality 7 days prior to test (must be ≤25%) 12

QA (previous month)
Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 48
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0%
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 8.2
Temperature (°C) of sample prior to aeration: 18
DO % of sample prior to aeration: 100
Is aeration required (<40% or >100%)? Yes or (No)
Duration of aeration (37.5 +/- 12.5 mL/min/L) : -
Filtered with 110um screen prior to testing Yes or (No)
Hardness (mg $CaCO_3$/L) of 100% : 1801
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) -
Alkalinity of 100% sample (mg $CaCO_3$/L): 514

Dilution Water
Pail label / preparation date Pail 5 :09/16
Hardness of dilution water (mg/L) 160

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Comments/Observations:
0hr: NO ppt
48hr: surficial ppt / ppt on jar

Reviewed By: MG Date Reviewed: 2022/09/30

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC 164 Reference 2223-0198

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/09/20	1440	AI/BS	3	DM
1	2022/09/21	0750	AG	-	MAF
2	2022/09/22	0900	NA	2	AI

Sample Information

Initial pH:	8.3
Initial EC (µS/cm):	2700
Salinity (ppt):	4

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	8.0	8.0	8.0	8.1	8.1	8.1				
2	8.1	8.1	8.1	8.1	8.1	8.1				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	419	411	1102	2640	2730	2740				
2	433	419	420	2630	2710	2690				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar Wed C5 Jar(s) mortality 7 days prior to test (must be ≤25%) 0

QA (previous month)

Days to first brood (≤12 days) 9

Average number of young produced (≥15 young) 45

Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - (must be ≤10%) 0%

Sample

DO (mg/L) of sample prior to aeration: 9.4 Temperature (°C) of sample prior to aeration: 12

DO % of sample prior to aeration: 100 Is aeration required (<40% or >100%)? **Yes or (No)**

Duration of aeration (37.5 +/- 12.5 mL/min/L) : 0 Filtered with 110um screen prior to testing **Yes or (No)**

Hardness (mg $CaCO_3$/L) of 100% : 1301 Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or (No)**

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —

Alkalinity of 100% sample (mg $CaCO_3$/L): 514

Dilution Water

Pail label / preparation date Pail 5: 09/16

Hardness of dilution water (mg/L) 160

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

Comments/Observations:

0hr: No ppt

48hr: surficial ppt.

Reviewed By: MG Date Reviewed: 2022/09/30

APPENDIX C – Chain-of-custody form

Teck

Page 1 of 1

COC ID: 2022-09-19_BPO | TURNAROUND TIME: Regular (default) | RUSH: NO

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name	FRS AWTF			Lab Name	Nautilus Environmental			Report Format / Distribution		Excel	PDF	EDD
Project Manager	Brett Mason			Lab Contact	Tamara Pomeroy			Email 1:	DL-FROS-Lab@teck.com	X	X	X
Email	brett.mason@teck.com			Email	tamara@nautilusenvironmental.ca			Email 2:	TeckCoal@equisonline.com			X
Address	29 km N of Elkford			Address	10823 27th Street SE			Email 3:				
								Email 4:				
City	Elkford	Province	BC	City	Calgary	Province	AB	Email 5:				
Postal Code	V0B 2H0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada	Email 6:				
Phone Number	250 865 6267			Phone Number	403 253 7121			PO number	VPO00842641			

2022/09/20
09:00
Manitou Lin
3C/SRS
1x20L carboy, 3x1L bottles
NoS/NoE
Good Condition
10.9°C

SAMPLE DETAILS								ANALYSIS REQUESTED																
								Please indicate below Filtered, Perserved or both (F, P, F/P)																
Sample ID 2223-01985	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	NAUT_96Hr_RT_Single_Concentration_Toxicity Test	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 10C	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 20C														
FS_BPO_2022-09-19_N_0900	FS_BPO	WS		9/19/2022	9:00	G	3	X	X	X														

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	Date	Time	ACCEPTED BY/AFFILIATION	Date	Time
	Tanmay Lonandkar	9/19/2022				

SERVICE REQUEST (rush - subject to availability)					
Regular (default)	X	Sampler's Name	Haylee Williams	Mobile #	
Priority (2-3 business days) - 50% surcharge					
Emergency (1 Business Day) - 100% surcharge		Sampler's Signature	Haylee Williams	Date/Time	19-Sep-22
For Emergency <1 Day, ASAP or Weekend - Contact ALS					

END OF REPORT

Acute Toxicity Test Results

Sample collected September 26, 2022

Final Report

October 19, 2022

Submitted to: **Teck Coal Ltd.**
Elkford, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates				
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation
FS_BPO_2022-09-26_N_0900 / 2223-0311	26-Sep-22 at 0900h	27-Sep-22 at 0915h	28-Sep-22 at 1455h	29-Sep-22 at 1410h	29-Sep-22 at 1410h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
FS_BPO_2022-09-26_N_0900	12.9°C	1527	470

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample		
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C
FS_BPO_2022-09-26_N_0900	100	100	100

Sample ID	Percent Immobility in 100 (% v/v)	
	Daphnia magna 10˚C	*Daphnia magna* 20˚C
FS_BPO_2022-09-26_N_0900	0	3

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
FS_BPO_2022-09-26_N_0900	Rainbow trout	Precipitate observed on the sides and bottom of test vessel	None
	Daphnia magna	Surficial precipitate observed	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	3.9 (2.9-4.3) g/L KCl[1]	6.1 (5.8-6.4) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.6 (2.7-4.8) g/L KCl	6.1 (5.2-7.2) g/L NaCl
Reference toxicant CV	9.4%	5.5%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, September 14, 2022; [2] Test date, October 5, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation





Report By:
Maryam Lo, BSc
Biologist

Reviewed By:
Emma Marus, BSc
Biologist

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APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC 164 Reference 2223-0311 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022/09/28	1455 *	ML/KCRM	7	WM
1	2022/09/29	0930	AM	-	ZC
2	2022/09/30	0730	KCRM	-	MAE
3	2022/10/01	0830	NA	-	EP
4	2022/10/02	0940	MAE/NA	7	DM

Note: * ; time when the test was loaded with fish KCRM/CC

Sample Information

Initial pH: 7.9
Initial EC (µS/cm): 2340
Salinity (ppt): 2

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L : yes/no

Preaeration time	0 hours KCRM	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	8.6	8.6			
Temp (°C) of 100%	16				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	7.9	8.2						
Day 4	8.1	8.2						
EC (uS/cm)								
Day 0	413	2710						
Day 4	416	2650						
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	8.6	8.6						
Day 4	8.8	8.8						
Temperature (°C) (range: 14-16°C)								
Day 0	16	16						
Day 4	15	15						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.5	0.6
2	3.4	0.5
3	3.4	0.4
4	3.3	0.4
5	3.1	0.3
6	3.2	0.4
7	3.3	0.4
8	3.6	0.6
9	3.3	0.4
10	2.8	0.2

Loading Density (g/L): 0.2 (must be ≤0.5 g/L)
Mean Length (cm): 3.3
Length Range (cm): 2.8-3.6
Mean Weight (g): 0.4 (Must be ≥0.3g)
Weight Range: (g): 0.2-0.6

Test Organism Information

Batch 20220708TR
Source Trout Ledge
Tank # 2
Days Held at 15± 2°C 64 (must be ≥14 days)
Percent stock mortality 0.18 (7 days prior to test, must be <2%)
Test Volume (L) 18

Comments :
96 hrs ppt on bottom/sides of tank

Reviewed By: TP Date Reviewed: OCT 04 2022

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC 164 Reference 2223-0311

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/09/29	1410	AI/NA	2	YC
1	2022/09/30	0800	BS	-	MAF
2	2022/10/01	0956	BS	2	YC

Sample Information

Initial pH:	7.9
Initial EC (µS/cm):	2840
Salinity (ppt):	2

Lab Code	CTL A	CTL B	CTL C	100 A	100 B	100 C

pH (units) (range: 6.0-8.5)

day										
0	7.8	7.8	7.8	7.8	7.8	7.8				
2	7.8	7.9	7.9	7.8	7.8	7.8				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	452	420	420	2840	2910	2900				
2	398	423	423	2560	2890	2700				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.7	7.7	7.7	8.2	8.2	8.2				
2	7.7	7.7	7.7	7.1	7.1	7.1				

Temperature (°C) (range: **18-22 °C**)

0	21	21	21	18	18	18				
2	21	21	21	21	21	21				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10 (1:)				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar WED D1 Jar(s) mortality 7 days prior to test (must be ≤25%) 5

QA (previous month)

Days to first brood (≤12 days) 8

Average number of young produced (≥15 young) 37

Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - 0% (must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 8.2 Temperature (°C) of sample prior to aeration: 18

DO % of sample prior to aeration: 100 Is aeration required (<40% or >100%)? **Yes or (No)**

Duration of aeration (37.5 +/- 12.5 mL/min/L) : — Filtered with 110um screen prior to testing **Yes or (No)**

Hardness (mg $CaCO_3$/L) of 100% : 1527 Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or (No)**

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —

Alkalinity of 100% sample (mg $CaCO_3$/L): 470

Dilution Water

Pail label / preparation date P2:09/26

Hardness of dilution water (mg/L) 177

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Comments/Observations:

0hr No ppt.

48hr Survival ppt

Reviewed By: TP Date Reviewed: OCT 04 2022

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC 164 Reference 2223-0311

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/09/29	1410	AI/NA	2	ZC
1	2022/09/30	0740	BS	-	MAE
2	2022/10/01	0750	BS	2	ZC

Sample Information

Initial pH: 7.9
Initial EC (µS/cm): 2840
Salinity (ppt): 2

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	7.9	7.9	7.9	7.8	7.8	7.8				
2	8.1	8.0	8.0	7.9	8.0	8.0				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	426	422	420	2880	2910	2900				
2	421	425	423	2580	2770	2810				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar WED D4 Jar(s) mortality 7 days prior to test (must be ≤25%) 0

QA (previous month)

Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 37
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - 0%
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 9.4
Temperature (°C) of sample prior to aeration: 12
DO % of sample prior to aeration: 100
Is aeration required (<40% or >100%)? **Yes or (No)**
Duration of aeration (37.5 +/- 12.5 mL/min/L) : -
Filtered with 110um screen prior to testing **Yes or (No)**
Hardness (mg $CaCO_3$/L) of 100% : 1527
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or (No)**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 470

Dilution Water

Pail label / preparation date P2:09/26
Hardness of dilution water (mg/L) 177

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

Comments/Observations:

0hr No ppt.
48 hr Superficial ppt

Reviewed By: TP Date Reviewed: OCT 04 2022

APPENDIX C – Chain-of-custody form

Teck

Page 1 of 1

COC ID: 2022-09-26_BPO **TURNAROUND TIME:** Regular (default) **RUSH:** NO

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name	FRS AWTF			Lab Name	Nautilus Environmental			Report Format / Distribution		Excel	PDF	EDD
Project Manager	Brett Mason			Lab Contact	Tamara Pomeroy			Email 1:	DL-FROS-Lab@teck.com	X	X	X
Email	brett.mason@teck.com			Email	tamara@nautilusenvironmental.ca			Email 2:	TeckCoal@equisonline.com			X
Address	29 km N of Elkford			Address	10823 27th Street SE			Email 3:				
								Email 4:				
City	Elkford	Province	BC	City	Calgary	Province	AB	Email 5:				
Postal Code	V0B 2H0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada	Email 6:				
Phone Number	250 865 6267			Phone Number	403 253 7121			PO number	VPO00842641			

SAMPLE DETAILS | **ANALYSIS REQUESTED**

2022/09/27
09:15
Manitou In
JC/SRS
2x20L carboys, 3x1L bottles
NoS/NoG
Good Condition

Please indicate below Filtered, Perserved or both (F, P, F/P)

Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	ANALYSIS: NAUT_96Hr_RT_Single_Concentration_Toxicity Test	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 10C	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 20C	
FS_BPO_2022-09-26_N_0900	FS_BPO	WS		9/26/2022	9:00	G	3	X	X	X	12.9°C

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	Date	Time	ACCEPTED BY/AFFILIATION	Date	Time
	Tara Gentile	9/26/2022				

SERVICE REQUEST (rush - subject to availability)

Regular (default)	X
Priority (2-3 business days) - 50% surcharge	
Emergency (1 Business Day) - 100% surcharge	
For Emergency <1 Day, ASAP or Weekend - Contact ALS	

Sampler's Name	Stan Spittael	Mobile #	
Sampler's Signature		Date/Time	26-Sep-22

END OF REPORT

Acute Toxicity Test Results

Sample collected October 3, 2022

Final Report

November 1, 2022

Submitted to: **Teck Coal Ltd.**
Elkford, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates				
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation
FS_BPO_2022-10-03_N_0900 2223-0370	3-Oct-22 at 0900h	4-Oct-22 at 0930h	4-Oct-22 at 1415h	5-Oct-22 at 1505h	5-Oct-22 at 1510h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
FS_BPO_2022-10-03_N_0900	11.8°C	1784	420

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample		
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C
FS_BPO_2022-10-03_N_0900	100	100	100

Sample ID	Percent Immobility in 100 (% v/v)	
	Daphnia magna 10˚C	*Daphnia magna* 20˚C
FS_BPO_2022-10-03_N_0900	0	3

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
FS_BPO_2022-10-03_N_0900	Rainbow trout	Precipitate observed on test vessel	None
	Daphnia magna	Surficial precipitate observed for 20˚C and 10˚C tests. Precipitate observed on test vessel for 20˚C test	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	3.8 (3.3-4.4) g/L KCl[1]	6.1 (5.8-6.4) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.6 (2.7-4.8) g/L KCl	6.1 (5.2-7.2) g/L NaCl
Reference toxicant CV	9.4%	5.5%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, October 3, 2022; [2] Test Date, October 5, 2022

LC = Lethal Concentration, CL = Confidence Limits, SD = Standard Deviation, CV = Coefficient of Variation



Report By:
Aishah Iqbal, BSc
Laboratory Biologist



Reviewed By:
Mimi Tran, Dipl. T.
Biologist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC 164 Reference 2223-0370 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022/10/04	1415 *	AM/ML	7	CC
1	2022/10/05	8:13	ML	-	CC
2	2022/10/06	8:45	MS	-	FG
3	2022/10/07	0917	MS	-	FG
4	2022/10/08	1030	MS/AT/KO	7	NA

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 8.3
Initial EC (µS/cm): 3080
Salinity (ppt): 5

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L : yes/no

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	7.7	8.6			
Temp (°C) of 100%	16				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: **5.5-8.5**)								
Day 0	8.4	8.2						
Day 4	8.1	8.1						
EC (uS/cm)								
Day 0	405	3100						
Day 4	429	2976						
DO (mg/L) (**70-100% saturation at test temp.**)								
Day 0	8.6	8.6						
Day 4	8.6	8.6						
Temperature (°C) (range: **14-16°C**)								
Day 0	16	16						
Day 4	16	16						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	2.5	0.2
2	3.0	0.4
3	2.7	0.3
4 wo	~~3.2~~ 3.0	0.4
5	2.9	0.3
6	3.2	0.5
7	3.4	0.5
8	3.7	0.7
9	3.9	0.4
10	3.6	0.6

Loading Density (g/L): 0.2
(must be ≤0.5 g/L)
Mean Length (cm): 3.1
Length Range (cm): 2.5-3.7
Mean Weight (g): 0.4
(Must be ≥0.3g)
Weight Range: (g): 0.2-0.7

Test Organism Information

Batch 20220825TR
Source LSL
Tank # 11
Days Held at 15± 2°C: 40
(must be ≥14 days)
Percent stock mortality: 0.28
(7 days prior to test, must be <2%)
Test Volume (L): 18

Comments :
96 hrs: ppt on tank

Reviewed By: CW Date Reviewed: OCT 12 2022

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC 164 Reference 2223-0370

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/10/05	1505	AI/BS	2	CC
1	2022/10/06	0745	BS	-	EP
2	2022/10/07	1040	BS	2	KM

Sample Information

Initial pH:	8.3
Initial EC (µS/cm):	3080
Salinity (ppt):	5

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	7.8	7.7	7.7	8.1	8.1	8.1				
2	8.0	8.1	8.1	8.1	8.2	8.2				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	432	425	418	3080	3150	3140				
2	410	424	422	2920	3110	3110				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar Wed D4 Jar(s) mortality 7 days prior to test (must be ≤25%) 0

QA (previous month)

Days to first brood (≤12 days) 8

Average number of young produced (≥15 young) 39

Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - 0% (must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 9.0 Temperature (°C) of sample prior to aeration: 10

DO % of sample prior to aeration: 99 Is aeration required (<40% or >100%)? **Yes or (No)**

Duration of aeration (37.5 +/- 12.5 mL/min/L) : - Filtered with 110um screen prior to testing **Yes or (No)**

Hardness (mg $CaCO_3$/L) of 100% : 1784 Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or (No)**

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) -

Alkalinity of 100% sample (mg $CaCO_3$/L): 420

Dilution Water

Pail label / preparation date PM11:0103

Hardness of dilution water (mg/L) 155

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

Comments/Observations:

0 HR NO ppt

48 HR Surficial ppt

Reviewed By: CW Date Reviewed: OCT 12 2022

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC 164 Reference 2223-0370

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/10/05	1510	AI/BS	2	CC
1	2022/10/06	0750	BS	-	EP
2	2022/10/07	1115	BS	2	KTM

Sample Information

Initial pH:	8.3
Initial EC (µS/cm):	3080
Salinity (ppt):	5

Lab Code	CTL A	CTL B	CTL C	100 A	100 B	100 C				
day	pH (units) (range: 6.0-8.5)									
0	7.9	7.8	7.8	8.1	8.1	8.1				
2	8.0	8.0	7.9	7.9	7.9	7.9				
	The pH of the sample was not adjusted prior to test setting, unless noted in the comments below									
	EC (uS/cm)									
0	439	426	425	3130	3200	3200				
2	422	425	424	2860	3040	3070				
	DO (mg/L) (**40-100% saturation at test temp.**)									
0	7.9	7.9	7.9	8.2	8.2	8.2				
2	7.9	7.9	7.9	7.9	7.9	7.9				
	Temperature (°C) (range: **18-22 °C**)									
0	20	20	20	18	18	18				
2	20	20	20	20	20	20				
	Number Alive (I, immobile)									
0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10 (1)	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar Wed D2 Jar(s) mortality 7 days prior to test (must be ≤25%) 0

QA (previous month)

Days to first brood (≤12 days) 8

Average number of young produced (≥15 young) 39

Were test treatments randomized on test tray? Yes / No

Control Validity Criteria

Mean % mortality at 48 hours - 0% (must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 8.2 Temperature (°C) of sample prior to aeration: 18

DO % of sample prior to aeration: 100 Is aeration required (<40% or >100%)? **Yes or No**

Duration of aeration (37.5 +/- 12.5 mL/min/L) : - Filtered with 110um screen prior to testing **Yes or No**

Hardness (mg $CaCO_3$/L) of 100% : 1784 Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) -

Alkalinity of 100% sample (mg $CaCO_3$/L): 420

Dilution Water

Pail label / preparation date Pail 1: 10/03

Hardness of dilution water (mg/L) 155

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Comments/Observations:

0 HR NO ppt

48 HR Surficial ppt, ppt on jar

Reviewed By: CW Date Reviewed: OCT 12 2022

APPENDIX C – Chain-of-custody form

Teck

Page 1 of 1

COC ID: 2022-10-03_BPO

TURNAROUND TIME: Regular (default)

RUSH: NO

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name	FRS AWTF			Lab Name	Nautilus Environmental			Report Format / Distribution		Excel	PDF	EDD
Project Manager	Brett Mason			Lab Contact	Tamara Pomeroy			Email 1:	DL-FROS-Lab@teck.com	X	X	X
Email	brett.mason@teck.com			Email	tamara@nautilusenvironmental.ca			Email 2:	TeckCoal@equisonline.com			X
Address	29 km N of Elkford			Address	10823 27th Street SE			Email 3:				
								Email 4:				
City	Elkford	Province	BC	City	Calgary	Province	AB	Email 5:				
Postal Code	V0B 2H0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada	Email 6:				
Phone Number	250 865 6267			Phone Number	403 253 7121			PO number	VPO00861287			

SAMPLE DETAILS

2022/10/04
09:30
Manitoulin
3x/SRS
2x20L carboys, 3x1L bottles
Nos/Nat
Good Good Condition
11.8°C

ANALYSIS REQUESTED

Please indicate below Filtered, Perserved or both (F, P, F/P)

Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	ANALYSIS: NAUT_96Hr_RT_Single_Concentration_Toxicity Test	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 10C	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 20C
FS_BPO_2022-10-03_N_0900	FS_BPO	WS		10/3/2022	9:00	G	3	X	X	X

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	Date	Time	ACCEPTED BY/AFFILIATION	Date	Time
	Julia Johnson	10/3/2022				

SERVICE REQUEST (rush - subject to availability)

Regular (default)	X
Priority (2-3 business days) - 50% surcharge	
Emergency (1 Business Day) - 100% surcharge	
For Emergency <1 Day, ASAP or Weekend - Contact ALS	

Sampler's Name	Darren Simpson	Mobile #	
Sampler's Signature		Date/Time	3-Oct-22

END OF REPORT

Acute Toxicity Test Results

Sample collected October 10, 2022

Final Report

November 7, 2022

Submitted to: **Teck Coal Ltd.**
Elkford, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates				
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation
FS_BPO_2022-10-10_N_0900 / 2223-0465	10-Oct-22 at 0900h	11-Oct-22 at 1500h	12-Oct-22 at 1405h	12-Oct-22 at 1505h	12-Oct-22 at 1510h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
FS_BPO_2022-10-10_N_0900	12.1°C	1939	563

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample		
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C
FS_BPO_2022-10-10_N_0900	100	100	100

Sample ID	Percent Immobility in 100 (% v/v)	
	Daphnia magna 10˚C	*Daphnia magna* 20˚C
FS_BPO_2022-10-10_N_0900	0	0

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
FS_BPO_2022-10-10_N_0900	Rainbow trout	Precipitate observed on the sides and bottom of test vessel	None
	Daphnia magna	Surficial precipitate and precipitate on test vessel observed in the test conducted at 20°C	None

QA/QC

QA/QC summary	Rainbow trout	***Daphnia magna***
Reference toxicant LC50 (95% CL)	3.7 (3.3-4.2) g/L KCl[1]	6.7 (6.4-6.9) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.6 (2.7-4.8) g/L KCl	6.2 (5.3-7.2) g/L NaCl
Reference toxicant CV	9.4%	5.1%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, October 6, 2022; [2] Test Date, October 19, 2022

LC = Lethal Concentration, CL = Confidence Limits, SD = Standard Deviation, CV = Coefficient of Variation

Report By:
Maryam Lo, BSc
Biologist

Reviewed By:
Mimi Tran, Dipl. T.
Biologist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC 164 Reference 2223-0465 Chamber 3

Test Log

Day	Date	Time AM	Initial	Chem. Cart	Daily Data Review
0	2022/10/12 1405	1505 *	AM/KCRM	7	JC
1	2022/10/13	1040	MS	-	JC
2	2022/10/14	0910	KCRM	-	JC
3	2022/10/15	0910	AI	-	NA
4	2022/10/16	0945	CC/KCRM	7	MAF

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 8.0
Initial EC (µS/cm): 3100
Salinity (ppt): 4

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L: **yes/no**

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	9.4 AM	8.6			
Temp (°C) of 100%	16				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	7.9	8.1						
Day 4	8.0	8.1						
EC (uS/cm)								
Day 0	421	2950						
Day 4	422	2620						
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	8.6	8.6						
Day 4	8.6	8.6						
Temperature (°C) (range: 14-16°C)								
Day 0	16	16						
Day 4	16	16						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.2	0.3
2	3.1	0.3
3	3.2	0.3
4	3.3	0.3
5	3.0	0.3
6	3.1	0.3
7	2.9	0.2
8	3.5	0.3
9	3.2	0.3
10	3.6	0.5

Loading Density (g/L): 0.2 (must be ≤0.5 g/L)
Mean Length (cm): 3.2
Length Range (cm): 2.9-3.6
Mean Weight (g): 0.3 (Must be ≥0.3g)
Weight Range: (g): 0.2-0.5

Test Organism Information

Batch 20220818TR
Source Trout Lodge
Tank # 1
Days Held at 15± 2°C 36 (must be ≥14 days)
Percent stock mortality 0.24 (7 days prior to test, must be <2%)
Test Volume (L) 16 ~~18~~ AM

Comments :
96 hrs: ppt on bottom & sides of tank

Reviewed By: CW Date Reviewed: OCT 20 2022

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC 164 Reference 2223-0465

Test Log MS AG/BS

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/10/11 12	1505	~~CC/AG~~	2	mgf
1	2022/10/12 13	0830	AT	-	
2	2022/10/13 14	0840	OM	2	dm

Sample Information

Initial pH: 8.0
Initial EC (µS/cm): 3100
Salinity (ppt): 4

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	8.0	7.9	7.9	8.0	8.0	8.0				
2	8.2	8.1	8.1	8.4	8.4	8.4				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	440	439	430	3070	3110	3120				
2	424	431	432	2960	3060	3090				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar Wed 63 Jar(s) mortality 7 days prior to test (must be ≤25%) 0

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 32
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0 %
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 9.4
Temperature (°C) of sample prior to aeration: 12 to 9G
DO % of sample prior to aeration: 100 %
Is aeration required (<40% or >100%)? **Yes or (No)**
Duration of aeration (37.5 +/- 12.5 mL/min/L) : —
Filtered with 110um screen prior to testing **Yes or (No)**
Hardness (mg $CaCO_3$/L) of 100% : 1939
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 563

Dilution Water
Pail label / preparation date P3: 10/11
Hardness of dilution water (mg/L) 123

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

Comments/Observations:
0hr: No PPT
48hr: No ppt.

Reviewed By: CW Date Reviewed: OCT 20 2022

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC 164 Reference 2223-0465

Test Log MS AG/BS

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/10/~~11~~ 12	1510	~~CC/AG~~	2	MAF
1	2022/10/~~12~~ 13	0830	AN	-	
2	2022/10/~~13~~ 14	0915	DM	3	

Sample Information

Initial pH:	8.0
Initial EC (µS/cm):	3100
Salinity (ppt):	4

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	7.9	7.9	7.9	8.1	8.2	8.2				
2	8.3	8.1	8.0	8.2	8.2	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	407	424	422	3030	3030	3040				
2	397	411	411	2680	2740	2810				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.9	7.9	7.9				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	20	20	20				
2	20	20	20	20	20	20				

Number Alive (l, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar Wed 05 Jar(s) mortality 7 days prior to test (must be ≤25%) 5 %

QA (previous month)

Days to first brood (≤12 days) 8

Average number of young produced (≥15 young) 32

Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - 0 %
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 9.7 Temperature (°C) of sample prior to aeration: 21

DO % of sample prior to aeration: 126 % Is aeration required (<40% or >100%)? (Yes) or No

Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20min Filtered with 110um screen prior to testing Yes or (No)

Hardness (mg $CaCO_3$/L) of 100% : 1939 Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or No

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —

Alkalinity of 100% sample (mg $CaCO_3$/L): 563

Dilution Water

Pail label / preparation date P3/10/11

Hardness of dilution water (mg/L) 113

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Comments/Observations:

0hr: No PPT

48hr: slight surficial ppt. ppt on jar.

Reviewed By: CW Date Reviewed: OCT 20 2022

APPENDIX C – Chain-of-custody form

Teck

Page 1 of 1

COC ID: 2022-10-10_BPO **TURNAROUND TIME:** Regular (default) **RUSH: NO**

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name	FRS AWTF			Lab Name	Nautilus Environmental			Report Format / Distribution		Excel	PDF	EDD
Project Manager	Brett Mason			Lab Contact	Tamara Pomeroy			Email 1:	DL-FROS-Lab@teck.com	X	X	X
Email	brett.mason@teck.com			Email	tamara@nautilusenvironmental.ca			Email 2:	TeckCoal@equisonline.com			X
Address	29 km N of Elkford			Address	10823 27th Street SE			Email 3:				
								Email 4:				
City	Elkford	Province	BC	City	Calgary	Province	AB	Email 5:				
Postal Code	V0B 2H0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada	Email 6:				
Phone Number	250 865 6267			Phone Number	403 253 7121			PO number	VPO00861287			

SAMPLE DETAILS

2022/10/11
16:00
Manitou Lin
20
2x20L carboys ; 2x1L bottles
NaS/NaI
Good Condition

ANALYSIS REQUESTED

Please indicate below Filtered, Perserved or both (F, P, F/P)

Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	ANALYSIS	NAUT_96Hr_RT_Single_Concentration_Toxicity Test	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 10C	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 20C	
FS_BPO_2022-10-10_N_0900	FS_BPO	WS		10/10/2022	9:00	G	3		X	X	X	12.19

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	Date	Time	ACCEPTED BY/AFFILIATION	Date	Time
	Kingsley Savariraj	10/11/2022				

SERVICE REQUEST (rush - subject to availability)

Regular (default)	X
Priority (2-3 business days) - 50% surcharge	
Emergency (1 Business Day) - 100% surcharge	
For Emergency <1 Day, ASAP or Weekend - Contact ALS	

Sampler's Name	Jessica Bethune	Mobile #	
Sampler's Signature		Date/Time	10-Oct-22

END OF REPORT

Acute Toxicity Test Results

Sample collected October 17, 2022

Final Report

November 10, 2022

Submitted to: **Teck Coal Ltd.**
Elkford, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates				
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation
FS_BPO_2022-10-17_N_0900/ 2223-0526	17-Oct-22 at 0900h	18-Oct-22 at 0900h	18-Oct-22 at 1445h	19-Oct-22 at 1530h	19-Oct-22 at 1530h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
FS_BPO_2022-10-17_N_0900	12.2°C	1732	428

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample		
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C
FS_BPO_2022-10-17_N_0900	100	100	100

Sample ID	Percent Immobility in 100 (% v/v)	
	Daphnia magna 10˚C	*Daphnia magna* 20˚C
FS_BPO_2022-10-17_N_0900	0	0

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
FS_BPO_2022-10-17_N_0900	Rainbow trout	Precipitate observed in sides and bottom of test vessel	None
	Daphnia magna	Surficial precipitate observed in 20°C test vessel	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	3.7 (3.3-4.2) g/L KCl[1]	6.7 (6.4 - 6.9) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.6 (2.7-4.8) g/L KCl	6.2 (5.3 - 7.2) g/L NaCl
Reference toxicant CV	9.4%	5.1%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, October 6, 2022; [2] Test Date, October 19, 2022

LC = Lethal Concentration, CL = Confidence Limit, SD = Standard Deviation, CV = Coefficient of Variation

Report By:
Kristin McKenzie
Biologist

Reviewed By:
Mimi Tran, Dipl. T.
Biologist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC 164 Reference 2223-0526 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022/10/18	1445 *	ML/KO	7	VJM
1	2022/10/19	0950	MS	-	VJM
2	2022/10/20	0855	RC	-	NA
3	2022/10/21	0900	KO	-	RC
4	2022/10/22	1030	VJM KO/AI	7	NA

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 8.1
Initial EC (µS/cm): 2970
Salinity (ppt): 5

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L (yes/no)

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	8.8	8.8			
Temp (°C) of 100%	15				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	7.7	8.1						
Day 4	8.0	8.1						
EC (uS/cm)								
Day 0	414	3000						
Day 4	408	2850						
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	8.8	8.8						
Day 4	8.6	8.6						
Temperature (°C) (range: 14-16°C)								
Day 0	15	15						
Day 4	16	16						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.4	0.3
2	3.4	0.3
3	3.6	0.4
4	3.3	0.3
5	3.0	0.2
6	3.5	0.3
7	3.4	0.3
8	3.2	0.2
9	3.4	0.3
10	3.4	0.4

Loading Density (g/L): 0.2 (must be ≤0.5 g/L)
Mean Length (cm): 3.4
Length Range (cm): 3.0 - 3.6
Mean Weight (g): 0.3 (Must be ≥0.3g)
0.4 - 5%
Weight Range: (g): 0.2 - 0.6 EV

Test Organism Information

Batch 20220818TR
Source Trout Lodge
Tank # 1
Days Held at 15± 2°C 42 (must be ≥14 days)
Percent stock mortality 0.27 (7 days prior to test, must be <2%)
Test Volume (L) 18

Comments :
96 hrs
ppt on sides/bottom of tank

Reviewed By: EV Date Reviewed: 2022/10/25

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC164 Reference 2223-0526

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/10/19	1530	DM/AI	2	AC
1	2022/10/20	0810	BS	-	NA
2	2022/10/21	0950	AC	2	um

Sample Information

Initial pH: 8.1
Initial EC (µS/cm): 2970
Salinity (ppt): 5

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	7.6	7.6	7.6	7.9	7.9	7.9				
2	8.0	7.9	7.9	8.2	8.1	8.0				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	415	428	430	3030 AI ~~442~~	~~1001~~ AI	3100 ~~1006~~ AI				
2	442	442	441	3020	3120 3040	2990				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.9	7.9	7.9				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	20	20	20				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar Ned E1 Jar(s) mortality 7 days prior to test (must be ≤25%) 5

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 26
Were test treatments randomized on test tray? (Yes) No

Control Validity Criteria
Mean % mortality at 48 hours - 0%
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 9.5
Temperature (°C) of sample prior to aeration: 21
DO % of sample prior to aeration: AI HG 117
Is aeration required (<40% or >100%)? **Yes or No**
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20
Filtered with 110um screen prior to testing **Yes or No**
Hardness (mg $CaCO_3$/L) of 100% : 1732
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) –
Alkalinity of 100% sample (mg $CaCO_3$/L): 428

Dilution Water
Pail label / preparation date Pail 5: 10/17
Hardness of dilution water (mg/L) 143

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Comments/Observations:
0 hr: NO ppt
48 hr: surficial ppt

Reviewed By: EV Date Reviewed: 2022/10/25

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC164 Reference 2223-0526

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/10/19	1530	DM/Al	2	XC
1	2022/10/20	0740	BS	-	NA
2	2022/10/21	0950	XC	2	WM

Sample Information

Initial pH:	8.1
Initial EC (µS/cm):	2970
Salinity (ppt):	5

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	7.7	7.6	7.6	7.9	7.9	7.9				
2	7.8	7.8	7.9	8.2	8.3	8.2				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	426	430	432	Al 3060 ~~992~~	~~1001~~	3140				
2	422	440	440	3020	3129 3130	3100				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar Wed D4 Jar(s) mortality 7 days prior to test (must be ≤25%) 0

QA (previous month)

Days to first brood (≤12 days) 9

Average number of young produced (≥15 young) 31

Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - 0

(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 11.0 Temperature (°C) of sample prior to aeration: 12

DO % of sample prior to aeration: 117 Is aeration required (<40% or >100%)? **Yes or No**

Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20 Filtered with 110um screen prior to testing **Yes or No**

Hardness (mg $CaCO_3$/L) of 100% : 1732 Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —

Alkalinity of 100% sample (mg $CaCO_3$/L): 428

Dilution Water

Pail label / preparation date Pail 10/17

Hardness of dilution water (mg/L) 143

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

Comments/Observations:

0 hr: No ppt

48 hr: No ppt

Reviewed By: EV Date Reviewed: 2022/10/25

APPENDIX C – Chain-of-custody form

Teck

Page 1 of 1

COC ID: 2022-10-17_BPO **TURNAROUND TIME:** Regular (default) **RUSH:** NO

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name	FRS AWTF			Lab Name	Nautilus Environmental			Report Format / Distribution		Excel	PDF	EDD
Project Manager	Brett Mason			Lab Contact	Tamara Pomeroy			Email 1:	DL-FROS-Lab@teck.com	X	X	X
Email	brett.mason@teck.com			Email	tamara@nautilusenvironmental.ca			Email 2:	TeckCoal@equisonline.com			X
Address	29 km N of Elkford			Address	10823 27th Street SE			Email 3:				
								Email 4:				
City	Elkford	Province	BC	City	Calgary	Province	AB	Email 5:				
Postal Code	V0B 2H0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada	Email 6:				
Phone Number	250 865 6267			Phone Number	403 253 7121			PO number	VPO00861287			

SAMPLE DETAILS | **ANALYSIS REQUESTED**

2022/10/18
09:00
Manitoulin
DC/FRS
~~1x20L carboy~~
2x20L carboys, 3x1L bottles
NGS/NGS
Good Condition

Please indicate below Filtered, Perserved or both (F, P, F/P)

Sample ID 2223-0526	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	ANALYSIS	NAUT_96Hr_RT_Single_Concentration_Toxicity Test	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 10C	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 20C	12.2°C
FS_BPO_2022-10-17_N_0900	FS_BPO	WS		10/17/2022	9:00	G	3		X	X	X	

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	Date	Time	ACCEPTED BY/AFFILIATION	Date	Time
	Tanmay Lonandkar	10/17/2022				

SERVICE REQUEST (rush - subject to availability)

Regular (default)	X
Priority (2-3 business days) - 50% surcharge	
Emergency (1 Business Day) - 100% surcharge	
For Emergency <1 Day, ASAP or Weekend - Contact ALS	

Sampler's Name	Patrick Eckerman	Mobile #	
Sampler's Signature		Date/Time	17-Oct-22

END OF REPORT

Acute Toxicity Test Results

Sample collected October 24, 2022

Final Report

November 23, 2022

Submitted to: **Teck Coal Ltd.**
Elkford, AB

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates				
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation
FS_BPO_2022-10-24_N_0900/ 2223-0616	24-Oct-22 at 0900h	25-Oct-22 at 0925h	25-Oct-22 at 1420h	01-Nov-22 at 1400h	01-Nov-22 at 1400h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
FS_BPO_2022-10-24_N_0900	3.1°C	1453	476

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample		
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C
FS_BPO_2022-10-24_N_0900	90	100	100

Sample ID	Percent Immobility in 100 (% v/v)	
	Daphnia magna 10˚C	*Daphnia magna* 20˚C
FS_BPO_2022-10-24_N_0900	0	7

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
FS_BPO_2022-10-24_N_0900	Rainbow trout	Precipitate observed on the test vessel	None
	Daphnia magna	Surficial precipitate observed in the 10°C and 20°C tests and on test vessels in 20°C	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	3.8 (3.3-4.4) g/L KCl[1]	6.6 (6.4-6.8) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.6 (2.7-4.8) g/L KCl	6.2 (5.3-7.2) g/L NaCl
Reference toxicant CV	9.4%	5.1%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	See Below
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, October 3, 2022; [2] Test Date November 2, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation

The *Daphnia magna* 48-h single concentration screening tests conducted at 20°C and 10°C were initiated beyond hold time.

Report By:
Maryam Lo, BSc
Laboratory Biologist

Reviewed By:
Jacklyn Poole, BSc
Laboratory and Quality Manager

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC 164 Reference 2223-~~0609-01~~ 0616 GO Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022-10-25	1420 *	KO/ML/BS	7	EP
1	2022-10-26	0939	MS	-	MSC
2	2022-10-27	0850	MS	-	SC
3	2022-10-28	0850	MS	-	VTM
4	2022-10-29	0950	MA/AI/MS	7	KO

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 8.1
Initial EC (µS/cm): ~~1459~~ 2870 KO
Salinity (ppt): 5

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L (yes/no)

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	8.8	8.8			
Temp (°C) of 100%	15				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: **5.5-8.5**)								
Day 0	7.9	8.2						
Day 4	8.0	8.2						
EC (uS/cm)								
Day 0	402	2820						
Day 4	394	2710						
DO (mg/L) (**70-100% saturation at test temp.**)								
Day 0	8.8	8.8						
Day 4	8.8	8.8						
Temperature (°C) (range: **14-16°C**)								
Day 0	15	15						
Day 4	15	15						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	9						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	~~3.6~~	0.4
2	~~3.7~~	0.5
3	3.4	0.4
4	~~3.7~~	0.6
5	3.6	0.4
6	3.5	0.5
7	3.2	0.5
8	3.9	0.6
9	3.6	0.4
10	3.6	0.3

Loading Density (g/L): 0.2 CW ~~0.3~~ (must be ≤0.5 g/L)
Mean Length (cm): 3.6
Length Range (cm): 3.2 - 3.9
Mean Weight (g): 0.4 CW ~~0.5~~ (Must be ≥0.3g)
Weight Range: (g): 0.3 - 0.6

Test Organism Information

Batch 20220825TR
Source LSL
Tank # 3
Days Held at 15± 2°C (must be ≥14 days) 19
Percent stock mortality (7 days prior to test, must be <2%) 0.09
Test Volume (L) 18

Comments :
96h: ppt. on tank

Reviewed By: CW Date Reviewed: NOV 2 1 2022

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC 164 Reference 2223-0616

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/11/01	1401	AG/DM	2	WM
1	2022/11/02	0845	BS	-	EP
2	2022/11/03	0750	NA	2	DM

Sample Information

Initial pH: 8.1
Initial EC (µS/cm): 2670
Salinity (ppt): 5

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	7.5	7.6	7.6	7.9	8.0	8.0				
2	7.9	7.9	7.9	8.3	8.3	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	484	496	499	2890	2940	2980				
2	493	500	503	2930	2860	2880				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.6	9.6	9.6	9.6	9.6	9.6				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	~~11~~ NA	11	11	11	11	11				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar med EZ — Jar(s) mortality 7 days prior to test (must be ≤25%) 17%

QA (previous month)
Days to first brood (≤12 days) 9
Average number of young produced (≥15 young) 25
Were test treatments randomized on test tray? (Yes) No

Control Validity Criteria
Mean % mortality at 48 hours - 0%
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: AM 9.4 — Temperature (°C) of sample prior to aeration: am 12 20
DO % of sample prior to aeration: ~~104~~ 100 — Is aeration required (<40% or >100%)? **Yes or No**
Duration of aeration (37.5 +/- 12.5 mL/min/L) : — — Filtered with 110um screen prior to testing **Yes or No**
Hardness (mg $CaCO_3$/L) of 100% : 145 — Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 476

Dilution Water
Pail label / preparation date P1:16/29
Hardness of dilution water (mg/L) 170

DO Levels (40-100% saturation) - corrected for altitude -
4.1 to 10.3 mg/L at 8°C
4.0 to 10.0 mg/L at 9°C
3.9 to 9.8 mg/L at 10°C
3.8 to 9.6 mg/L at 11°C
3.7 to 9.4 mg/L at 12°C

Comments/Observations:
0 hr No ppt
48 hr surficial ppt.

Reviewed By: [signature] Date Reviewed: NOV 2 1 2022

NAUTILUS ENVIRONMENTAL

Reset out of hold CW CW

Daphnia Bench Sheet

Method DAS 20 Client TEC 164 Reference 2223-0616

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/11/01	1400	AG/DM	2	KM
1	2022/11/02	0900	BS	-	EP
2	2022/11/03	0755	NA	2	DM

Sample Information

Initial pH: 8.1
Initial EC (µS/cm): 2870
Salinity (ppt): 5

Lab Code	CTL A	CTL B	CTL C	100 A	100 B	100 C				
day										
pH (units) (range: 6.0-8.5)										
0	7.9	7.8	7.7	8.0	8.0	8.0				
2	7.9	7.9	7.9	8.1	8.1	8.2				
EC (uS/cm)										
0	478	495	493	2790	2940	2970				
2	498	509	507	2830	2900	2860				
DO (mg/L) (**40-100% saturation at test temp.**)										
0	7.9	7.9	7.9	7.9	7.9	7.9				
2	7.9	7.9	7.9	7.9	7.9	7.9				
Temperature (°C) (range: **18-22 °C**)										
0	20	20	20	20	20	20				
2	20	20	20	20	20	20				
Number Alive (I, immobile)										
0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10 (1)	10	10 (1)				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar wed E3 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 9
Average number of young produced (≥15 young) 25
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0%
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 9.5
DO % of sample prior to aeration: 104
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20m,n
Hardness (mg $CaCO_3$/L) of 100% : 153
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 470

Temperature (°C) of sample prior to aeration: 20
Is aeration required (<40% or >100%)? (Yes) or No
Filtered with 110um screen prior to testing Yes or (No)
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)

Dilution Water
Pail label / preparation date 1:10/29
Hardness of dilution water (mg/L) 170

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Comments/Observations:
0 hr NOPPT
48 hr surficial ppt / ppt. on jar

Reviewed By: CW Date Reviewed: NOV 2 1 2022

APPENDIX C – Chain-of-custody form

Teck

COC ID: 2022-10-24_BPO **TURNAROUND TIME:** Regular (default) **RUSH:** NO

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name	FRS AWTF			Lab Name	Nautilus Environmental			Report Format / Distribution		Excel	PDF	EDD
Project Manager	Brett Mason			Lab Contact	Tamara Pomeroy			Email 1:	DL-FROS-Lab@teck.com	X	X	X
Email	brett.mason@teck.com			Email	tamara@nautilusenvironmental.ca			Email 2:	TeckCoal@equisonline.com			X
Address	29 km N of Elkford			Address	10823 27th Street SE			Email 3:				
								Email 4:				
City	Elkford	Province	BC	City	Calgary	Province	AB	Email 5:				
Postal Code	V0B 2H0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada	Email 6:				
Phone Number	250 865 6267			Phone Number	403 253 7121			PO number	VPO00861287			

SAMPLE DETAILS / **ANALYSIS REQUESTED**

~~222~~ 2022/10/25
09:25
Manitoulin
OC/SRS
2x20L carboys, 3x1L bottles
NaS/NaI
Good Condition

Please indicate below Filtered, Perserved or both (F, P, F/P)

Sample ID 2223-0616	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	ANALYSIS	NAUT_96Hr_RT_Single_Concentration_Toxicity Test	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 10C	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 20C	
FS_BPO_2022-10-24_N_0900	FS_BPO	WS		10/24/2022	9:00	G	3		X	X	X	3.1°C

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	Date	Time	ACCEPTED BY/AFFILIATION	Date	Time
	Kristoff Iliou	10/25/2022				

SERVICE REQUEST (rush - subject to availability)

Regular (default)	X
Priority (2-3 business days) - 50% surcharge	
Emergency (1 Business Day) - 100% surcharge	
For Emergency <1 Day, ASAP or Weekend - Contact ALS	

Sampler's Name	Cole Vogel	**Mobile #**	
Sampler's Signature		**Date/Time**	24-Oct-22

END OF REPORT

Acute Toxicity Test Results

Sample collected October 31, 2022

Final Report

November 23, 2022

Submitted to: **Teck Coal Ltd.**
Elkford, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates				
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation
FS_BPO_2022-10-31_N_0900 / 2223-0682	31-Oct-22 at 0900h	1-Nov-22 at 0910h	1-Nov-22 at 1455h	2-Nov-22 at 1420h	2-Nov-22 at 1420h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
FS_BPO_2022-10-31_N_0900	8.9°C	1654	418

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample		
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C
FS_BPO_2022-10-31_N_0900	100	100	100

Sample ID	Percent Immobility in 100 (% v/v)	
	Daphnia magna 10˚C	*Daphnia magna* 20˚C
FS_BPO_2022-10-31_N_0900	0	3

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
FS_BPO_2022-10-31_N_0900	Rainbow trout	Precipitate observed on the side and bottom of test vessel	None
	Daphnia magna	Precipitate observed on the surface and on test vessel in the test conducted at 20°C	None

QA/QC

QA/QC summary	Rainbow trout	***Daphnia magna***
Reference toxicant LC50 (95% CL)	3.7 (3.3-4.2) g/L KCl[1]	6.6 (6.4-6.8) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.6 (2.7-4.8) g/L KCl	6.2 (5.3-7.2) g/L NaCl
Reference toxicant CV	9.4%	5.1%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, October 6, 2022; [2] Test Date November 2, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation

Report By:
Maryam Lo, BSc
Laboratory Biologist

Reviewed By:
Mimi Tran, Dipl. T.
Biologist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC 164 Reference 2223-0682 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022/11/01	1455 *	ML/BS	7	MM
1	2022/11/02	0800	BS	-	EP
2	2022/11/03	0840	ML	-	MAF
3	2022/11/04	0900	MAF	-	KO
4	2022/11/05	1050	MS/AI	7	NA

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 8.1
Initial EC (µS/cm): 2900
Salinity (ppt): 4

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L (yes/no)

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	8.8	8.8			
Temp (°C) of 100%	15				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	7.6	8.2						
Day 4	8.2	8.2						
EC (uS/cm)								
Day 0	400	2530						
Day 4	402	2840						
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	8.9	8.8						
Day 4	8.6	8.6						
Temperature (°C) (range: 14-16°C)								
Day 0	14	15						
Day 4	16	16						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.2	0.4
2	3.2	0.4
3	3.3	0.3
4	3.2	0.4
5	3.5	0.2
6	3.7	0.4
7	3.6	0.3
8	3.6	0.3
9	4.0	0.4
10	3.8	0.4

Loading Density (g/L): 0.2
(must be ≤0.5 g/L)
Mean Length (cm): 3.5
Length Range (cm): 3.2-4.0
Mean Weight (g): 0.4
(Must be ≥0.3g)
Weight Range: (g): 0.2-0.4

Test Organism Information

Batch 20220818TR
Source Trout Lodge
Tank # 2
Days Held at 15± 2°C 56
(must be ≥14 days)
Percent stock mortality 0.21
(7 days prior to test, must be <2%)
Test Volume (L) 18

Comments : 96 hrs ppt in 100% tank (side / bottom)

Reviewed By: MAF Date Reviewed: 22/11/12

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC164 Reference 2223-0682

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/11/02	1420	AG/AI	2	MM
1	2022/11/03	0911	BS	-	MAF
2	2022/11/04	0910	DM	2	AI

Sample Information

Initial pH: 8.1
Initial EC (µS/cm): 2900
Salinity (ppt): ~~1.6~~ 1.4

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	7.8	7.8	7.8	8.1	8.1	8.1				
2	7.9	8.1	8.1	8.1	8.1	8.2				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	416	411	416	2960	3060	2990				
2	395	411	419	2780	2950	2900				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.9	7.9	7.9				
2	7.3	7.3	7.3	7.3	7.3	7.3				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	20	20	20				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10(I)	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar Wed D2 Jar(s) mortality 7 days prior to test (must be ≤25%) 0

QA (previous month)
Days to first brood (≤12 days) 9
Average number of young produced (≥15 young) 36
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0%
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 9.7 Temperature (°C) of sample prior to aeration: 21
DO % of sample prior to aeration: 111 Is aeration required (<40% or >100%)? **Yes or No**
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20 Filtered with 110um screen prior to testing **Yes or No**
Hardness (mg $CaCO_3$/L) of 100% : 165 Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 418

Dilution Water
Pail label / preparation date P3:10131
Hardness of dilution water (mg/L) 163

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C 3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C 3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C

Comments/Observations:
0 hr:
48 hr: NO ppt surficial ppt. ppt on jars

Reviewed By: MAF Date Reviewed: 22/11/12

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC164 Reference 2223-0682

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/11/02	1420	AG/AI	2	MAF
1	2022/11/03	0855	BS	-	MAF
2	2022/11/04	0905	DM	2	AI

Sample Information

Initial pH: 8.1
Initial EC (µS/cm): 2930
Salinity (ppt): 1

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	7.7	7.7	7.7	8.1	8.1	8.1				
2	7.9	8.2	8.2	8.4	8.5	8.5				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	416	414	417	2930	3030	3060				
2	407	417	424	2800	2970	3050				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar Wed D1 Jar(s) mortality 7 days prior to test (must be ≤25%) 0

QA (previous month)
Days to first brood (≤12 days) 9
Average number of young produced (≥15 young) 36
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0 %
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 9.4
DO % of sample prior to aeration: 100
Duration of aeration (37.5 +/- 12.5 mL/min/L) : —
Hardness (mg $CaCO_3$/L) of 100% : 1654
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) NA —
Alkalinity of 100% sample (mg $CaCO_3$/L): 418

Temperature (°C) of sample prior to aeration: 12
Is aeration required (<40% or >100%)? Yes or (No)
Filtered with 110um screen prior to testing Yes or (No)
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)

Dilution Water
Pail label / preparation date 23:1031
Hardness of dilution water (mg/L) 163

DO Levels (40-100% saturation) - corrected for altitude -
4.1 to 10.3 mg/L at 8°C
4.0 to 10.0 mg/L at 9°C
3.9 to 9.8 mg/L at 10°C
3.8 to 9.6 mg/L at 11°C
3.7 to 9.4 mg/L at 12°C

Comments/Observations:
0 hr: No ppt
48 hr: No ppt.

Reviewed By: MAF Date Reviewed: 22/11/12

APPENDIX C – Chain-of-custody form

Teck

COC ID: 2022-10-31_BPO **TURNAROUND TIME:** Regular (default) **RUSH: NO**

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO			
Facility Name	FRS AWTF			Lab Name	Nautilus Environmental			Report Format / Distribution		Excel	PDF	EDD
Project Manager	Brett Mason			Lab Contact	Tamara Pomeroy			Email 1:	DL-FROS-Lab@teck.com	X	X	X
Email	brett.mason@teck.com			Email	tamara@nautilusenvironmental.ca			Email 2:	TeckCoal@equisonline.com			X
Address	29 km N of Elkford			Address	10823 27th Street SE			Email 3:				
								Email 4:				
City	Elkford	Province	BC	City	Calgary	Province	AB	Email 5:				
Postal Code	V0B 2H0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada	Email 6:				
Phone Number	250 865 6267			Phone Number	403 253 7121			PO number	VPO00861287			

SAMPLE DETAILS

2022/11/01
09:10
Manitou Lin
SC/SRS
2x20L cartoons, 2x1L bottles
NoS/NGS
Good Cond.

ANALYSIS REQUESTED

Please indicate below Filtered, Perserved or both (F, P, F/P)

Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	ANALYSIS: NAUT_96Hr_RT_Single_Concentration_Toxicity Test	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 10C	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 20C
FS_BPO_2022-10-31_N_0900	FS_BPO	WS		10/31/2022	9:00	G	3	X	X	X

2223-0662
6.9°C

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	Date	Time	ACCEPTED BY/AFFILIATION	Date	Time
	Amith Gopurathingal	10/31/2022				

SERVICE REQUEST (rush - subject to availability)					
Regular (default)	X	Sampler's Name	Lucas Hawryluk	Mobile #	
Priority (2-3 business days) - 50% surcharge					
Emergency (1 Business Day) - 100% surcharge		Sampler's Signature		Date/Time	31-Oct-22
For Emergency <1 Day, ASAP or Weekend - Contact ALS					

END OF REPORT

Acute Toxicity Test Results

Sample collected November 7, 2022

Final Report

November 29, 2022

Submitted to: **Teck Coal Ltd.**
Elkford, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates				
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation
FS_BPO_2022-11-07_N_0800 / 2223-0752	7-Nov-22 at 0800h	8-Nov-22 at 0930h	9-Nov-22 at 1400h	9-Nov-22 at 1405h	8-Nov-22 at 1540h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
FS_BPO_2022-11-07_N_0800	8.3°C	1744	539

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample		
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C
FS_BPO_2022-11-07_N_0800	100	100	100

Sample ID	Percent Immobility in 100 (% v/v)	
	Daphnia magna 10˚C	*Daphnia magna* 20˚C
FS_BPO_2022-11-07_N_0800	0	0

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
FS_BPO_2022-11-07_N_0800	Rainbow trout	Precipitate observed on the test vessel	None
	Daphnia magna	Surficial precipitate observed in 20-degree test	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	4.5 (4.1-5.0) g/L KCl[1]	6.6 (6.4-6.8) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.7 (2.8-4.9) g/L KCl	6.2 (5.3-7.2) g/L NaCl
Reference toxicant CV	9.1%	5.1%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, November 8, 2022; [2] Test Date November 2, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation



Report By:
Emma Pedersen, BSc
Biologist



Reviewed By:
Leila Oosterbroek, P Biol
Environmental Scientist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14 with February 2016 amendments
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14 with February 2016 amendments
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC 164 Reference 2223-0752 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022-11-09	1400 *	ML/BS	7	EP
1	2022-11-10	0830	BS	-	MAF
2	2022-11-11	0915	ML	-	MAF
3	2022-11-12	0925	BS	-	MAF
4	2022-11-13	0940	ML/AM	7	EP

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 8.1
Initial EC (µS/cm): 3030
Salinity (ppt): 5

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L: yes/no

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	8.6	8.6			
Temp (°C) of 100%	16				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: **5.5-8.5**)								
Day 0	8.1	8.2						
Day 4	8.1	8.1						
EC (uS/cm)								
Day 0	394	2080						
Day 4	4046	2850						
DO (mg/L) (**70-100% saturation at test temp.**)								
Day 0	8.6	8.6						
Day 4	8.6	8.6						
Temperature (°C) (range: **14-16°C**)								
Day 0	16	16						
Day 4	16	16						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	4.1	0.5
2	4.0	0.5
3	3.9	0.4
4	4.0	0.5
5	4.0	0.5
6	4.0	0.4
7	3.4	0.3
8	3.6	0.4
9	3.4	0.2
10	3.1	0.2

Loading Density (g/L): 0.2 (must be ≤0.5 g/L)
Mean Length (cm): 3.8
Length Range (cm): 3.1-4.1
Mean Weight (g): 0.4 (Must be ≥0.3g)
Weight Range: (g): 0.2-0.5

Test Organism Information

Batch 20220928TR
Source LSL
Tank # 4
Days Held at 15± 2°C 42 (must be ≥14 days)
Percent stock mortality 0 (7 days prior to test, must be <2%)
Test Volume (L) 18

Comments :
96 hrs ppt on sides & bottom

Reviewed By: SS Date Reviewed: 2022/11/18

Daphnia Bench Sheet

Method: DAS Client: TEC 164 Reference: 2223-0752

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/11/07 08	1540	AI/AM	2	DM
1	2022/11/08 09	0810	DM	-	EP
2	2022/11/09 10	0950	DM	2	NA

Sample Information

Initial pH:	8.1
Initial EC (µS/cm):	3030
Salinity (ppt):	5

Lab Code	CTL A	CTL B	CTL C	100 A	100 B	100 C

pH (units) (range: 6.0-8.5)

day										
0	7.9	7.8	7.8	8.1	8.2	8.2				
2	8.1	8.1	8.1	8.1	8.1	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	368	373	374	2870	3020	3070				
2	385	379	379	2770	2900	2980				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.9	7.9	7.9				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	20	20	20				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar: Med DM Jar(s) mortality 7 days prior to test (must be ≤25%): 0

QA (previous month)

Days to first brood (≤12 days): 9

Average number of young produced (≥15 young): 39

Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - (must be ≤10%): 0%

Sample

DO (mg/L) of sample prior to aeration: 9.3 Temperature (°C) of sample prior to aeration: 20

DO % of sample prior to aeration: 114% Is aeration required (<40% or >100%)? Yes or No

Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20 mins Filtered with 110um screen prior to testing Yes or No

Hardness (mg $CaCO_3$/L) of 100% : 1744 Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or No

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L): —

Alkalinity of 100% sample (mg $CaCO_3$/L): 539

Dilution Water

Pail label / preparation date: DM: 11/05

Hardness of dilution water (mg/L): 157

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C 3.1 to 7.7 mg/L at 21°C

3.2 to 8.1 mg/L at 19°C 3.0 to 7.6 mg/L at 22°C

3.2 to 7.9 mg/L at 20°C

Comments/Observations:

0hr: no ppt

48hr: Sur fecal ppt

Reviewed By: SS Date Reviewed: 2022/11/18

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC 164 Reference 2223-0752

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/11/09	1405	AG/DM	2	AI
1	2022/11/10	1020	DM	-	MAF
2	2022/11/11	1010	DM	2	MAF

Sample Information

Initial pH:	8.1
Initial EC (µS/cm):	3030
Salinity (ppt):	3

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	7.7	7.7	7.7	8.0	8.1	8.1				
2	7.8	8.0	8.0	8.2	8.4	8.4				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	350	362	369	2880	3000	3040				
2	362	374	378	2840	2990	3000				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar wedE2 Jar(s) mortality 7 days prior to test (must be ≤25%) 15%

QA (previous month)

Days to first brood (≤12 days) 9

Average number of young produced (≥15 young) 39

Were test treatments randomized on test tray? Yes / No

Control Validity Criteria

Mean % mortality at 48 hours - (must be ≤10%) 0%

Sample

DO (mg/L) of sample prior to aeration: 9.4

Temperature (°C) of sample prior to aeration: 12

DO % of sample prior to aeration: 100

Is aeration required (<40% or >100%)? **Yes or No**

Duration of aeration (37.5 +/- 12.5 mL/min/L) : —

Filtered with 110um screen prior to testing **Yes or No**

Hardness (mg $CaCO_3$/L) of 100% : 1744

Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —

Alkalinity of 100% sample (mg $CaCO_3$/L): 539

Dilution Water

Pail label / preparation date 1: 11/04

Hardness of dilution water (mg/L) 149

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

Comments/Observations:

0 hr: No ppt

48 hr: No ppt,

Reviewed By: SS Date Reviewed: 20221111 18

APPENDIX C – Chain-of-custody form

Teck

Page 1 of 1

COC ID: 2022-11-07_BPO | **TURNAROUND TIME:** Regular (default) | **RUSH:** NO

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO			
Facility Name	FRS AWTF			Lab Name	Nautilus Environmental			Report Format / Distribution		Excel	PDF	EDD
Project Manager	Brett Mason			Lab Contact	Tamara Pomeroy			Email 1:	DL-FROS-Lab@teck.com	X	X	X
Email	brett.mason@teck.com			Email	tamara@nautilusenvironmental.ca			Email 2:	TeckCoal@equisonline.com			X
Address	29 km N of Elkford			Address	10823 27th Street SE			Email 3:				
								Email 4:				
City	Elkford	Province	BC	City	Calgary	Province	AB	Email 5:				
Postal Code	V0B 2H0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada	Email 6:				
Phone Number	250 865 6267			Phone Number	403 253 7121			PO number	VPO00861287			

SAMPLE DETAILS

2022/11/08
09:30
Manitoulin
DC
2x20L carboys, 2x1L bottles
NaS/NaI
Good Condition

ANALYSIS REQUESTED

Please indicate below Filtered, Perserved or both (F, P, F/P)

Sample ID 2223-0752	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	ANALYSIS	NAUT_96Hr_RT_Single_Concentration_Toxicity Test	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 10C	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 20C	
FS_BPO_2022-11-07_N_0800	FS_BPO	WS		11/7/2022	8:00	G	3		X	X	X	8.3°C

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	Date	Time	ACCEPTED BY/AFFILIATION	Date	Time
	Tara Gentile	11/7/2022				

SERVICE REQUEST (rush - subject to availability)					
Regular (default)	X	Sampler's Name	Brittany Campbell	Mobile #	
Priority (2-3 business days) - 50% surcharge					
Emergency (1 Business Day) - 100% surcharge		Sampler's Signature		Date/Time	7-Nov-22
For Emergency <1 Day, ASAP or Weekend - Contact ALS					

END OF REPORT

Acute Toxicity Test Results

Sample collected November 14, 2022

Final Report

December 1, 2022

Submitted to: **Teck Coal Ltd.**
Elkford, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates				
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation
FS_BPO_2022-11-14_N_0800/ 2223-0816	14-Nov-22 at 0800h	15-Nov-22 at 0925h	15-Nov-22 at 1435h	15-Nov-22 at 1455h	15-Nov-22 at 1500h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
FS_BPO_2022-11-14_N_0800	7.3°C	1747	529

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample		
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C
FS_BPO_2022-11-14_N_0800	100	100	100

Sample ID	Percent Immobility in 100 (% v/v)	
	Daphnia magna 10˚C	*Daphnia magna* 20˚C
FS_BPO_2022-11-14_N_0800	0	7

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
FS_BPO_2022-11-14_N_0800	Rainbow trout	Precipitate observed on test vessel	None
	Daphnia magna	Precipitate observed on the surface and on test vessel when conducted at 20°C	None

QA/QC

QA/QC summary	Rainbow trout	***Daphnia magna***
Reference toxicant LC50 (95% CL)	4.5 (4.1-5.0) g/L KCl[1]	6.6 (6.4-6.8) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.7 (2.8-4.9) g/L KCl	6.2 (5.3-7.2) g/L NaCl
Reference toxicant CV	9.1%	5.1%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, November 8, 2022; [2] Test Date November 2, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation

Report By:
Maryam Lo, BSc
Laboratory Biologist

Reviewed By:
Emma Pedersen, BSc
Laboratory Biologist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14 with February 2016 amendments
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14 with February 2016 amendments
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS ENVIRONMENTAL

Trout Bench Sheet

Method TRS Client TEC 164 Reference 2223-0816 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022/11/15	1435 *	ML/BS	7	LC
1	2022/11/16	1000	KCmm	-	MAF
2	2022/11/17	0810	BS	-	MAF
3	2022/11/18	0735	KCM	-	MAF
4	2022/11/19	1100	MJ	7	NA

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 7.9
Initial EC (µS/cm): 2960
Salinity (ppt): 5

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L : yes/no

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	9.6	8.6			
Temp (°C) of 100%	16				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	7.7	8.1						
Day 4	3.3	8.2						
EC (uS/cm)								
Day 0	406	3080						
Day 4	470	2750						
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	8.6	8.6						
Day 4	8.6	8.6						
Temperature (°C) (range: 14-16°C)								
Day 0	16	16						
Day 4	16	16						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.4	0.5
2	3.7	0.3
3	4.6	0.6
4	3.7	0.3
5	4.2	0.5
6	4.0	0.5
7	4.2	0.5
8	3.7	0.3
9	4.4	0.6
10	3.6	0.3

Loading Density (g/L): 0.2
(must be ≤0.5 g/L)
Mean Length (cm): 4.0
Length Range (cm): 3.6-4.6
Mean Weight (g): 0.4
(Must be ≥0.3g)
Weight Range: (g): 0.3-0.6

Test Organism Information

Batch 20220928TR
Source LSL
Tank # 4
Days Held at 15± 2°C (must be ≥14 days) 48
Percent stock mortality (7 days prior to test, must be <2%) 0.15
Test Volume (L) 18

Comments : 96 hrs ppt on 100% (side / bottom)

Reviewed By: MAF Date Reviewed: 22/11/22

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC 164 Reference 2223-0816

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/11/15	1500	DM/LC	2	kim
1	2022/11/16	0940	AG	-	mmf
2	2022/11/17	0905	NA	2	DM

Sample Information

Initial pH: 7.9
Initial EC (µS/cm): 1900
Salinity (ppt): 5

Lab Code	CTL A	CTL B	CTL C	100 A	100 B	100 C

pH (units) (range: 6.0-8.5)

day										
0	7.8	7.9	7.9	8.1	8.2	8.2				
2	8.0	8.0	8.0	8.1	8.1	8.1				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	389	406	408	2890	3010	3030				
2	406	411	412	2820	2810	2940				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.4	7.4	7.4	8.2	8.2	8.2				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	18	18	18				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10(1i)	10(1i)				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar wed E2 Jar(s) mortality 7 days prior to test (must be ≤25%) 6.1.

QA (previous month)
Days to first brood (≤12 days) 9
Average number of young produced (≥15 young) 40
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0%
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: DM 10.6 Temperature (°C) of sample prior to aeration: 18
DO % of sample prior to aeration: DM 129 Is aeration required (<40% or >100%)? (Yes or No)
Duration of aeration (37.5 +/- 12.5 mL/min/L): 20min Filtered with 110um screen prior to testing Yes or (No)
Hardness (mg $CaCO_3$/L) of 100%: 1747 Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 529

Dilution Water
Pail label / preparation date 3:11/12
Hardness of dilution water (mg/L) 156

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Comments/Observations:
0 hr No ppt
48 hr surficial ppt / ppt on jar

Reviewed By: mmf Date Reviewed: 22/11/22

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC 164 Reference 2223-0816

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/11/15	1455	DM/LC	2	WM
1	2022/11/16	0735	AG	-	MAF
2	2022/11/17	0900	NA	2	DM

Sample Information

Initial pH: 7.9
Initial EC (µS/cm): 1060
Salinity (ppt): 5

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	8.0	7.9	7.9	8.0	8.0	8.0				
2	8.1	8.0	8.0	8.4	8.4	8.4				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	411	410	409	2980	3030	3060				
2	419	418	417	2940	3010	2020				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.6	9.6	9.6	9.6	9.6	9.6				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	11	11	11	11	11	11				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar med D2 Jar(s) mortality 7 days prior to test (must be ≤25%) 5%

QA (previous month)
Days to first brood (≤12 days) 9
Average number of young produced (≥15 young) 30
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0%
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 11.1
DO % of sample prior to aeration: 118
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20min
Hardness (mg $CaCO_3$/L) of 100% : 1747
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 529

Temperature (°C) of sample prior to aeration: 12
Is aeration required (<40% or >100%)? **Yes or No**
Filtered with 110um screen prior to testing **Yes or No**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Dilution Water
Pail label / preparation date 3:11/12
Hardness of dilution water (mg/L) 156

DO Levels (40-100% saturation) - corrected for altitude -
4.1 to 10.3 mg/L at 8°C
4.0 to 10.0 mg/L at 9°C
3.9 to 9.8 mg/L at 10°C
3.8 to 9.6 mg/L at 11°C
3.7 to 9.4 mg/L at 12°C

Comments/Observations:
0hr NO ppt
48hr No ppt.

Reviewed By: MAF Date Reviewed: 22/11/22

APPENDIX C – Chain-of-custody form

Teck

COC ID: 2022-11-14_BPO **TURNAROUND TIME:** Regular (default) **RUSH:** NO

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name	FRS AWTF			Lab Name	Nautilus Environmental			Report Format / Distribution		Excel	PDF	EDD
Project Manager	Brett Mason			Lab Contact	Tamara Pomeroy			Email 1:	DL-FROS-Lab@teck.com	X	X	X
Email	brett.mason@teck.com			Email	tamara@nautilusenvironmental.ca			Email 2:	TeckCoal@equisonline.com			X
Address	29 km N of Elkford			Address	10823 27th Street SE			Email 3:				
								Email 4:				
City	Elkford	Province	BC	City	Calgary	Province	AB	Email 5:				
Postal Code	V0B 2H0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada	Email 6:				
Phone Number	250 865 6267			Phone Number	403 253 7121			PO number	VPO00861287			

SAMPLE DETAILS

2022/11/15
09:25
Manitou Jn
QC/SRS
2x20L carboys, 2x1L bottles
No6/No6
Good Condition

ANALYSIS REQUESTED

Please indicate below Filtered, Perserved or both (F, P, F/P)

Sample ID 2223-0816	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	ANALYSIS	NAUT_96Hr_RT_Single_Concentration_Toxicity Test	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @10C	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @20C	7.3°C										
FS_BPO_2022-11-14_N_0800	FS_BPO	WS		11/14/2022	8:00	G	3		X	X	X											

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	Date	Time	ACCEPTED BY/AFFILIATION	Date	Time
	Patrick Eckerman	11/14/2022				

SERVICE REQUEST (rush - subject to availability)

Regular (default)	X
Priority (2-3 business days) - 50% surcharge	
Emergency (1 Business Day) - 100% surcharge	
For Emergency <1 Day, ASAP or Weekend - Contact ALS	

Sampler's Name	Patrick Eckerman	**Mobile #**	
Sampler's Signature		**Date/Time**	14-Nov-22

END OF REPORT

Acute Toxicity Test Results

Sample collected November 21, 2022

Final Report

December 9, 2022

Submitted to: **Teck Coal Ltd.**
Elkford, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates				
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation
FS_BPO_2022-11-21_N_0800/ 2223-0886	21-Nov-22 at 0800h	23-Nov-22 at 0900h	23-Nov-22 at 1430h	23-Nov-22 at 1420h	23-Nov-22 at 1410h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
FS_BPO_2022-11-21_N_0800	6.5°C	520	1616

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample		
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C
FS_BPO_2022-11-21_N_0800	100	100	100

Sample ID	Percent Immobility in 100 (% v/v)	
	Daphnia magna 10˚C	*Daphnia magna* 20˚C
FS_BPO_2022-11-21_N_0800	0	7

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
FS_BPO_2022-11-21_N_0800	Rainbow trout	Precipitate observed on test vessel	None
	Daphnia magna	Surficial precipitate when conducted at 20°C	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	4.5 (4.1-5.0) g/L KCl[1]	6.8 (6.5-7.1) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.7 (2.8-4.9) g/L KCl	6.2 (5.3-7.2) g/L NaCl
Reference toxicant CV	9.1%	5.1%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, November 8, 2022; [2] Test Date November 21, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation

Report By:
Maryam Lo, BSc
Laboratory Biologist

Reviewed By:
Emma Pedersen, BSc
Laboratory Biologist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14 with February 2016 amendments
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14 with February 2016 amendments
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC164 Reference 2223-0886 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022-11-23	1430 *	KCRM/BS	7	CC
1	2022-11-24	0900	MS	-	CC
2	2022-11-25	0850	MS	-	NA
3	2022-11-26	0900	MS	-	NA
4	2022-11-27	1030	MLIKO	7	WM

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 7.7
Initial EC (µS/cm): 2940
Salinity (ppt): 5

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L (yes/no)

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	11.0	8.9			
Temp (°C) of 100%	14				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: **5.5-8.5**)								
Day 0	7.9	8.1						
Day 4	8.2	8.3						
EC (uS/cm)								
Day 0	379	2950						
Day 4	433	2520						
DO (mg/L) (**70-100% saturation at test temp.**)								
Day 0	8.8	8.9						
Day 4	8.6	8.6						
Temperature (°C) (range: **14-16°C**)								
Day 0	15	14						
Day 4	16	16						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	4.6	0.8
2	3.6	0.3
3	3.4	0.3
4	3.7	0.4
5	3.6	0.3
6	3.5	0.3
7	3.1	0.3
8	3.5	0.3
9	3.4	0.4
10	3.1	0.2

Loading Density (g/L): 0.2 (must be ≤0.5 g/L)
Mean Length (cm): 3.5
Length Range (cm): 3.1-4.6
Mean Weight (g): 0.4 (Must be ≥0.3g)
Weight Range: (g): 0.2-0.8

Test Organism Information

Batch 20220928TR
Source LSL
Tank # 3
Days Held at 15± 2°C: 56 (must be ≥14 days)
Percent stock mortality: 0.2 (7 days prior to test, must be <2%)
Test Volume (L): 18

Comments :
96 Hrs: ppt on sides & bottom of tank

Reviewed By: CW Date Reviewed: NOV 29 2022

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS Client TEC 164 Reference 2223-0886

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/11/23	1410	AG/KO	2	CC
1	2022/11/24	0840	KO/AI	-	KC
2	2022/11/25	1015	BS	2	WM

Sample Information

Initial pH: 7.7
Initial EC (µS/cm): 2940
Salinity (ppt): 5

Lab Code	CTL A	CTL B	CTL C	100 A	100 B	100 C				

pH (units) (range: 6.0-8.5)

day										
0	7.9	7.9	7.9	8.0	8.0	8.0				
2	8.0	8.0	8.0	8.0	8.0	8.0				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	411	434	437	2920	3110	3080				
2	416	435	442	2850	2970	2910				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.9	7.9	7.9				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	20	20	20				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10(2))				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar Wed E5 Jar(s) mortality 7 days prior to test (must be ≤25%) 10%

QA (previous month)
Days to first brood (≤12 days) 7
Average number of young produced (≥15 young) 37
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0%
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 11.3 mg/L
DO % of sample prior to aeration: 135%
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20 min
Hardness (mg $CaCO_3$/L) of 100% : 520
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 160

Temperature (°C) of sample prior to aeration: 20
Is aeration required (<40% or >100%)? (Yes) or No
Filtered with 110um screen prior to testing Yes or (No)
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)

Dilution Water
Pail label / preparation date pl: 11/29
Hardness of dilution water (mg/L) 160

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Comments/Observations:
0 hr no ppt
48 hr Surficial ppt

Reviewed By: CW Date Reviewed: NOV 2 9 2022

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC 164 Reference 2223-0886

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/11/23	1420	AG/KO	2	CC
1	2022/11/24	0930	AI/MO	-	KC
2	2022/11/25	1010	BS	2	WM

Sample Information

Initial pH:	7.7
Initial EC (µS/cm):	2940
Salinity (ppt):	5

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	8.0	8.0	8.0	8.1	8.1	8.1				
2	8.1	8.0	8.0	8.3	8.3	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	440	438	437	3030	3130	3110				
2	456	442	441	2936	3056	3040				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (l, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar Bed D4 Jar(s) mortality 7 days prior to test (must be ≤25%) 11%

QA (previous month)

Days to first brood (≤12 days) 8

Average number of young produced (≥15 young) 42

Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - 0% (must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 11.4 mg/L Temperature (°C) of sample prior to aeration: 12

DO % of sample prior to aeration: 122 % Is aeration required (<40% or >100%)? (Yes) or No

Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20 min Filtered with 110um screen prior to testing Yes or (No)

Hardness (mg $CaCO_3$/L) of 100% : 520 Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —

Alkalinity of 100% sample (mg $CaCO_3$/L): 1616

Dilution Water

Pail label / preparation date P1 : 11/21

Hardness of dilution water (mg/L) 140

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

Comments/Observations:

0 hr no ppt

48 hr No ppt

Reviewed By: CW Date Reviewed: NOV 29 2022

APPENDIX C – Chain-of-custody form

Teck

COC ID: 2022-11-21_BPO **TURNAROUND TIME:** Regular (default) **RUSH:** NO

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name	FRS AWTF			Lab Name	Nautilus Environmental			Report Format / Distribution		Excel	PDF	EDD
Project Manager	Brett Mason			Lab Contact	Tamara Pomeroy			Email 1:	DL-FROS-Lab@teck.com	X	X	X
Email	brett.mason@teck.com			Email	tamara@nautilusenvironmental.ca			Email 2:	TeckCoal@equisonline.com			X
Address	29 km N of Elkford			Address	10823 27th Street SE			Email 3:				
								Email 4:				
City	Elkford	Province	BC	City	Calgary	Province	AB	Email 5:				
Postal Code	V0B 2H0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada	Email 6:				
Phone Number	250 865 6267			Phone Number	403 253 7121			PO number	VPO00861287			

SAMPLE DETAILS / **ANALYSIS REQUESTED**

2022/11/23
09:00
Manitoulin
OC/BS
2x20L carboys, 2x1L bottles
NoS/NoJ
Good Condition
6.5°C

Please indicate below Filtered, Perserved or both (F, P, F/P)

Sample ID 2223-0686	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	ANALYSIS	NAUT_96Hr_RT_Single_Concentration_Toxicity Test	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 10C	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 20C
FS_BPO_2022-11-21_N_0800	FS_BPO	WS		11/21/2022	8:00	G	3		X	X	X

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	Date	Time	ACCEPTED BY/AFFILIATION	Date	Time
	Kristoff Iliou	11/21/2022				

SERVICE REQUEST (rush - subject to availability)

Regular (default)	X
Priority (2-3 business days) - 50% surcharge	
Emergency (1 Business Day) - 100% surcharge	
For Emergency <1 Day, ASAP or Weekend - Contact ALS	

Sampler's Name	Stan Spittael	**Mobile #**	
Sampler's Signature		**Date/Time**	21-Nov-22

END OF REPORT

Acute Toxicity Test Results

Sample collected November 28, 2022

Final Report

December 16, 2022

Submitted to: **Teck Coal Ltd.**
Elkford, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates				
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation
FS_BPO_2022-11-28_N_0800/ 2223-0941	28-Nov-22 at 0800h	29-Nov-22 at 1030h	30-Nov-22 at 1450h	30-Nov-22 at 1430h	30-Nov-22 at 1430h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
FS_BPO_2022-11-28_N_0800	-1.9°C	1700	565

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample		
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C
FS_BPO_2022-11-28_N_0800	100	100	97

Sample ID	Percent Immobility in 100 (% v/v)	
	Daphnia magna 10˚C	*Daphnia magna* 20˚C
FS_BPO_2022-11-28_N_0800	0	3

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
FS_BPO_2022-11-28_N_0800	Rainbow trout	Precipitate observed on the test vessel	None
	Daphnia magna	Surficial precipitate observed in 10 and 20°C tests	Precipitate observed on carapace in 20°C test

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	3.6 (3.3-4.0) g/L KCl[1]	6.5 (6.2-6.7) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.8 (3.0-4.8) g/L KCl	6.2 (5.3-7.2) g/L NaCl
Reference toxicant CV	7.8%	5.1%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, November 25, 2022; [2] Test Date November 30, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation

Report By:
Maryam Lo, BSc
Laboratory Biologist

Reviewed By:
Leila Oosterbroek, P Biol
Environmental Scientist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14 with February 2016 amendments
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14 with February 2016 amendments
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC164 Reference 2223-0941 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022-11-30	1450 *	BS/ML	7	AM
1	2022-12-01	0905	MS	-	MAF
2	2022-12-02	1000	MS	-	MAF
3	2022-12-03	0930	YC	-	FF
4	2022-12-04	1010	Karm/ML	7	MO

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 8.0
Initial EC (µS/cm): 2910
Salinity (ppt): 5

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L (yes/no)

	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
Preaeration time					
DO(mg/L) of 100%	9.8	8.6			
Temp (°C) of 100%	16				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	7.9	8.1						
Day 4	8.2	8.1						
EC (uS/cm)								
Day 0	438	2790						
Day 4	425	2370						
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	8.8	8.6						
Day 4	8.5	8.8						
Temperature (°C) (range: 14-16°C)								
Day 0	15	16						
Day 4	15	15						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.4	0.3
2	3.5	0.3
3	3.6	0.4
4	3.1	0.3
5	3.9	0.4
6	4.2	0.5
7	3.9	0.4
8	3.7	0.4
9	3.7	0.4
10	3.4	0.3

Loading Density (g/L): 0.2 (must be ≤0.5 g/L)
Mean Length (cm): 3.6
Length Range (cm): 3.1-4.2
Mean Weight (g): 0.4 (Must be ≥0.3g)
Weight Range: (g): 0.3-0.5

Test Organism Information

Batch 20221028TR
Source Smoky Trout Farm
Tank # 11
Days Held at 15± 2°C 33 (must be ≥14 days)
Percent stock mortality 0.43 (7 days prior to test, must be <2%)
Test Volume (L) 18

Comments :
96 hr: PPT Sides & bottom

Reviewed By: MAF Date Reviewed: 22/12/08

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS Client TEC 164 Reference 2223-0941

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/11/30	1430	KO/AG	2	YC
1	2022/12/01	0800	KO	-	MAF
2	2022/12/02	1015	BS	2	EP

Sample Information

Initial pH:	8.0
Initial EC (µS/cm):	2910
Salinity (ppt):	5

Lab Code	CTL A	CTL B	CTL C	100 A	100 B	100 C				

pH (units) (range: 6.0-8.5)

day										
0	8.0	8.0	8.0	8.2	8.2	8.2				
2	8.2	8.1	8.1	8.1	8.1	8.1				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	436	447	447	2800	2910	2930				
2	436	449	448	2660	2780	2800				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.9	7.9	7.9				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	20	20	20				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	9	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar Wed C1 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)

Days to first brood (≤12 days) 8

Average number of young produced (≥15 young) 27

Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - 0 % (must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 9.1 Temperature (°C) of sample prior to aeration: 20

DO % of sample prior to aeration: 116 % Is aeration required (<40% or >100%)? **Yes or No**

Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20 min Filtered with 110um screen prior to testing **Yes or (No)**

Hardness (mg $CaCO_3$/L) of 100% : 1700 Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or (No)**

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) -

Alkalinity of 100% sample (mg $CaCO_3$/L): 565

Dilution Water

Pail label / preparation date PS: 11/29

Hardness of dilution water (mg/L) 165

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Comments/Observations:

0 HR ND ppt

48 HRS Surficial ppt, ppt on carapace.

Reviewed By: MAF Date Reviewed: 22/12/08

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC 164 Reference 2223-0941

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/11/30	1450	KO/AG	2	AC
1	2022/12/01	0730	AG	-	MAF
2	2022/12/02	0945	BS	2	EP

Sample Information

Initial pH:	8.0
Initial EC (µS/cm):	2910
Salinity (ppt):	5

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	8.1	8.0	8.0	8.1	8.1	8.1				
2	8.1	8.1	8.1	8.3	8.4	8.4				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	457	448	446	2840	2920	2970				
2	429	441	447	2750	2860	2880				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (l, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar Wed C3 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)

Days to first brood (≤12 days) 8

Average number of young produced (≥15 young) 27

Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - 0%
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 10.1 Temperature (°C) of sample prior to aeration: 12

DO % of sample prior to aeration: 110 % Is aeration required (<40% or >100%)? **Yes or No**

Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20min Filtered with 110um screen prior to testing **Yes or (No)**

Hardness (mg $CaCO_3$/L) of 100% : 1700 Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or (No)**

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —

Alkalinity of 100% sample (mg $CaCO_3$/L): 565

Dilution Water

Pail label / preparation date P3: 11/28

Hardness of dilution water (mg/L) 165

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

Comments/Observations:

0 HR no ppt

48 HRS Surficial ppt

Reviewed By: MAF Date Reviewed: 22/12/08

APPENDIX C – Chain-of-custody form

Teck

Page 1 of 1

COC ID: 2022-11-28_BPO **TURNAROUND TIME:** Regular (default) **RUSH: NO**

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name	FRS AWTF			Lab Name	Nautilus Environmental			Report Format / Distribution		Excel	PDF	EDD
Project Manager	Brett Mason			Lab Contact	Tamara Pomeroy			Email 1:	DL-FROS-Lab@teck.com	X	X	X
Email	brett.mason@teck.com			Email	tamara@nautilusenvironmental.ca			Email 2:	TeckCoal@equisonline.com			X
Address	29 km N of Elkford			Address	10823 27th Street SE			Email 3:				
								Email 4:				
City	Elkford	Province	BC	City	Calgary	Province	AB	Email 5:				
Postal Code	V0B 2H0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada	Email 6:				
Phone Number	250 865 6267			Phone Number	403 253 7121			PO number	VPO00861287			

SAMPLE DETAILS / **ANALYSIS REQUESTED**

2022/11/29
10:30
Manitou Lin
DC/SAS/AG
2x20L carboys
3x1L bottles
NoS/NaI
Good Condition

Please indicate below Filtered, Perserved or both (F, P, F/P)

Sample ID 2223-09441	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	ANALYSIS: NAUT_96Hr_RT_Single_Concentration_Toxicity Test	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 10C	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 20C	
FS_BPO_2022-11-28_N_0800	FS_BPO	WS		11/28/2022	8:00	G	3	X	X	X	~1 APC

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	Date	Time	ACCEPTED BY/AFFILIATION	Date	Time
	Sophie Bourassa	11/28/2022				

SERVICE REQUEST (rush - subject to availability)					
Regular (default)	X	Sampler's Name	Ricardo Wolff	Mobile #	
Priority (2-3 business days) - 50% surcharge					
Emergency (1 Business Day) - 100% surcharge		Sampler's Signature		Date/Time	28-Nov-22
For Emergency <1 Day, ASAP or Weekend - Contact ALS					

END OF REPORT

Acute Toxicity Test Results

Sample collected December 12, 2022

Final Report

January 6, 2023

Submitted to: **Teck Coal Ltd.**
Elkford, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates				
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation
FS_BPO_2022-12-12_N_0800/ 2223-1066	12-Dec-22 at 0800h	13-Dec-22 at 0950h	14-Dec-22 at 1445h	14-Dec-22 at 1415h	14-Dec-22 at 1425h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
FS_BPO_2022-12-12_N_0800	3.4°C	1897	452

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample		
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C
FS_BPO_2022-12-12_N_0800	100	100	100

Sample ID	Percent Immobility in 100 (% v/v)	
	Daphnia magna 10˚C	*Daphnia magna* 20˚C
FS_BPO_2022-12-12_N_0800	0	0

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
FS_BPO_2022-12-12_N_0800	Rainbow trout	Precipitate observed on test vessel	None
	Daphnia magna	None	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	4.6 (4.2-5.1) g/L KCl[1]	6.5 (6.2-6.7) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.8 (3.0-4.9) g/L KCl	6.2 (5.3-7.2) g/L NaCl
Reference toxicant CV	8.2%	5.1%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, December 13, 2022; [2] Test Date November 30, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation

Report By:
Maryam Lo, BSc
Laboratory Biologist

Reviewed By:
Emma Pedersen, BSc
Laboratory Biologist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14 with February 2016 amendments
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14 with February 2016 amendments
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC164 Reference 2223-1066 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Revjew
0	2022-12-14	1445 *	BS/ML	7	XC
1	2022-12-15	0910	MS	-	EP
2	2022-12-16	0913	KORM	-	AM
3	2022-12-17	1140	MS	-	XC
4	2022-12-18	1000	ML/KD	7	NA

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 8.0
Initial EC (µS/cm): 3100
Salinity (ppt): 5

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L: **yes/no**

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	9.7	8.6			
Temp (°C) of 100%	16				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	7.7	8.0						
Day 4	7.5	8.0						
EC (uS/cm)								
Day 0	451	3036						
Day 4	386	2750						
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	8.8	8.6						
Day 4	8.6	8.8						
Temperature (°C) (range: 14-16°C)								
Day 0	15	16						
Day 4	16	15						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	4.0	0.5
2	3.3	0.3
3	3.4	0.3
4	3.8	0.5
5	4.0	0.6
6	4.5	0.9
7	4.0	0.6
8	3.6	0.4
9	3.9	0.5
10	3.7	0.4

Loading Density (g/L): 0.3 (must be ≤0.5 g/L)
Mean Length (cm): 3.8
Length Range (cm): 3.3-4.5
Mean Weight (g): 0.5 (Must be ≥0.3g)
Weight Range: (g): 0.3-0.9

Test Organism Information

Batch 20221012TR
Source Sam Livingston
Tank # 5
Days Held at 15± 2°C 22 (must be ≥14 days)
Percent stock mortality 0.58 (7 days prior to test, must be <2%)
Test Volume (L) 18

Comments :
96 hr: ppt on sides & bottom

Reviewed By: [signature]
Date Reviewed: DEC 19 2022

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS Client TEC 164 Reference 2223-1066

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/12/14	1425	AI/AG	2	DM
1	2022/12/15	0815	KO	-	EP
2	2022/12/16	0805	LC	2	DM

Sample Information

Initial pH: 8.0
Initial EC (µS/cm): 3100
Salinity (ppt): 5

Lab Code	CTL A	CTL B	CTL C	100 A	100 B	100C				
day				pH (units) (range: 6.0-8.5)						
0	7.9	7.9	7.9	7.9	7.9	7.9				
2	8.0	8.0	8.0	8.3	8.3	8.3				
				The pH of the sample was not adjusted prior to test setting, unless noted in the comments below						
				EC (uS/cm)						
0	445	433	437	3060	3100	3100				
2	439	435	432	3020	3030	3050				
				DO (mg/L) (**40-100% saturation at test temp.**)						
0	7.9	7.9	7.9	9.9	9.9	9.9				
2	7.9	7.9	7.9	7.9	7.9	7.9				
				Temperature (°C) (range: **18-22 °C**)						
0	20	20	20	20	20	20				
2	20	20	20	20	20	20				
				Number Alive (I, immobile)						
0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar Wed D4 Jar(s) mortality 7 days prior to test (must be ≤25%) 0

QA (previous month)
Days to first brood (≤12 days) 9
Average number of young produced (≥15 young) 38
Were test treatments randomized on test tray? Yes / No

Control Validity Criteria
Mean % mortality at 48 hours - 0%
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 13.5 Temperature (°C) of sample prior to aeration: 21
DO % of sample prior to aeration: 169 Is aeration required (<40% or >100%)? Yes or No
Duration of aeration (37.5 +/- 12.5 mL/min/L) : ~~20~~ 30 min Filtered with 110um screen prior to testing Yes or No
Hardness (mg $CaCO_3$/L) of 100% : 1897 Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or No
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 452

Dilution Water
Pail label / preparation date P3:12/12
Hardness of dilution water (mg/L) 162

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Comments/Observations:
0 HR NO ppt
48 HRS no ppt

Reviewed By: [signature] Date Reviewed: DEC 19 2022

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC 164 Reference 2223-1066

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/12/14	1415	AI/AG	2	DM
1	2022/12/15	0815	KO	-	EP
2	2022/12/16	0805	XC	2	DM

Sample Information

Initial pH:	8.0
Initial EC (µS/cm):	3100
Salinity (ppt):	5

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				
day	pH (units) (range: 6.0-8.5)									
0	7.9	7.9	7.9	7.9	7.9	7.9				
2	7.8	7.8	7.8	8.2	8.3	8.3				
	The pH of the sample was not adjusted prior to test setting, unless noted in the comments below									
	EC (uS/cm)									
0	424	428	428	3040	3090	3100				
2	436	430	427	3010	3060	3040				
	DO (mg/L) (**40-100% saturation at test temp.**)									
0	9.4	9.4	9.4	11.3	11.3	11.3				
2	9.4	9.4	9.4	9.4	9.4	9.4				
	Temperature (°C) (range: **8-12 °C**)									
0	12	12	12	12	12	12				
2	12	12	12	12	12	12				
	Number Alive (I, immobile)									
0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar Wed D3 Jar(s) mortality 7 days prior to test (must be ≤25%) 0

QA (previous month)

Days to first brood (≤12 days) 9

Average number of young produced (≥15 young) 38

Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - 0% (must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 15.9 Temperature (°C) of sample prior to aeration: 12

DO % of sample prior to aeration: 169 Is aeration required (<40% or >100%)? **Yes or No**

Duration of aeration (37.5 +/- 12.5 mL/min/L) : ~~30~~ 20 min Filtered with 110um screen prior to testing **Yes or No**

Hardness (mg $CaCO_3$/L) of 100% : 1897 30 min Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) -

Alkalinity of 100% sample (mg $CaCO_3$/L): 452

Dilution Water

Pail label / preparation date P3: 12/12

Hardness of dilution water (mg/L) 162

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

Comments/Observations:

0 HR NO ppt

48 HRS no ppt

Reviewed By: SP Date Reviewed: DEC 19 2022

APPENDIX C – Chain-of-custody form

Teck

Page 1 of 1

COC ID: 2022-12-12_BPO **TURNAROUND TIME:** Regular (default) **RUSH:** NO

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name	FRS AWTF			Lab Name	Nautilus Environmental			Report Format / Distribution		Excel	PDF	EDD
Project Manager	Brett Mason			Lab Contact	Tamara Pomeroy			Email 1:	DL-FROS-Lab@teck.com	X	X	X
Email	brett.mason@teck.com			Email	tamara@nautilusenvironmental.ca			Email 2:	TeckCoal@equisonline.com			X
Address	29 km N of Elkford			Address	10823 27th Street SE			Email 3:				
								Email 4:				
City	Elkford	Province	BC	City	Calgary	Province	AB	Email 5:				
Postal Code	V0B 2H0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada	Email 6:				
Phone Number	250 865 6267			Phone Number	403 253 7121			PO number	VPO00861287			

SAMPLE DETAILS / **ANALYSIS REQUESTED**

2022/12/13
09:50
Monitoring
3C/6RS/ML
2x20L carboys
3x1L bottles
NoS/NoT
Good Condition

Please indicate below Filtered, Perserved or both (F, P, F/P)

Sample ID 2223-1066	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	ANALYSIS: NAUT_96Hr_RT_Single_Concentration_Toxicity Test	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 10C	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 20C												
FS_BPO_2022-12-12_N_0800	FS_BPO	WS		12/12/2022	8:00	G	3	X	X	X	3.4°C											

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	Date	Time	ACCEPTED BY/AFFILIATION	Date	Time
	Tanmay Lonandkar	12/12/2022				

SERVICE REQUEST (rush - subject to availability)					
Regular (default)	X	Sampler's Name	Haylee Williams	Mobile #	
Priority (2-3 business days) - 50% surcharge					
Emergency (1 Business Day) - 100% surcharge		Sampler's Signature	Haylee Williams	Date/Time	12-Dec-22
For Emergency <1 Day, ASAP or Weekend - Contact ALS					

END OF REPORT

Acute Toxicity Test Results

Sample collected December 5, 2022

Final Report

December 30, 2022

Submitted to: **Teck Coal Ltd.**
Elkford, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates				
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation
FS_BPO_2022-12-05_N_0800/ 2223-1008	5-Dec-22 at 0800h	6-Dec-22 at 1030h	7-Dec-22 at 1410h	7-Dec-22 at 1340h	7-Dec-22 at 1340h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
FS_BPO_2022-12-05_N_0800	3.4°C	1816	472

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample		
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C
FS_BPO_2022-12-05_N_0800	100	100	100

Sample ID	Percent Immobility in 100 (% v/v)	
	Daphnia magna 10˚C	*Daphnia magna* 20˚C
FS_BPO_2022-12-05_N_0800	0	0

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
FS_BPO_2022-12-05_N_0800	Rainbow trout	None	None
	Daphnia magna	None	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	3.6 (3.3-4.0) g/L KCl[1]	6.5 (6.2-6.7) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.8 (3.0-4.8) g/L KCl	6.2 (5.3-7.2) g/L NaCl
Reference toxicant CV	7.8%	5.1%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, November 25, 2022; [2] Test Date November 30, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation

Report By:
Aishah Iqbal, BSc
Laboratory Biologist

Reviewed By:
Emma Pedersen, BSc
Laboratory Biologist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14 with February 2016 amendments
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14 with February 2016 amendments
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC164 Reference 2223-1008 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022-12-07	1410 *	BS/KCRM	7	YC
1	2022-12-08	0900	MS	-	EP
2	2022-12-09	0905	BS	-	MDF
3	2022-12-10	0850	MS	-	YC
4	2022-12-11	1115	Kam/AL	7	ML

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 8.0
Initial EC (µS/cm): 3190
Salinity (ppt): 5

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L ? yes/no

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	11.4	8.9			
Temp (°C) of 100%	16				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: **5.5-8.5**)								
Day 0	7.5	8.1						
Day 4	7.8	8.4						
EC (uS/cm)								
Day 0	374	3000						
Day 4	360	2810						
DO (mg/L) (**70-100% saturation at test temp.**)								
Day 0	8.8	8.9						
Day 4	8.6	8.8						
Temperature (°C) (range: **14-16°C**)								
Day 0	15	16						
Day 4	15	15						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10						
Day 3	10	10						
Day 4	10	10(1)						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	4.3	0.5
2	3.9	0.4
3	3.5	0.3
4	3.5	0.3
5	3.4	0.2
6	3.5	0.3
7	3.5	0.4
8	3.3	0.3
9	3.9	0.5
10	3.8	0.4

Loading Density (g/L): 0.2 (must be ≤0.5 g/L)
Mean Length (cm): 3.7
Length Range (cm): 3.3-4.3
Mean Weight (g): 0.4 (Must be ≥0.3g)
Weight Range: (g): 0.2-0.5

Test Organism Information

Batch 20221028TR
Source Smoky Trout Farm
Tank # 12
Days Held at 15± 2°C 40 (must be ≥14 days)
Percent stock mortality 0.3 (7 days prior to test, must be <2%)
Test Volume (L) 18

Comments :
96 hr: no ppt

Reviewed By: MG Date Reviewed: 2022/12/13

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC 164 Reference 2223-1008

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/12/07	1340	CC/AG	2	WM
1	2022/12/08	0750	AG	-	EP
2	2022/12/09	1120	BS	2	DM

Sample Information

Initial pH:	8.0
Initial EC (µS/cm):	3190
Salinity (ppt):	5

Lab Code	CTL A	CTL B	CTL C	100 A	100 B	100 C				

pH (units) (range: 6.0-8.5)

day										
0	7.7	7.7	7.7	8.0	8.0	8.0				
2	7.7	7.8	7.8	8.2	8.3	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm) (435 cc, 3321 cc)

0	~~262~~	432	434	~~3170~~	3340	3370				
2	417	434	437	3140	3320	3340				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	7.9	7.9	7.9				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	20	20	20				
2	20	20	20	20	20	20				

Number Alive (l, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar: Wed C3 — Jar(s) mortality 7 days prior to test (must be ≤25%): 0 %

QA (previous month)

Days to first brood (≤12 days): 9

Average number of young produced (≥15 young): 27

Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - (must be ≤10%): 0%

Sample

DO (mg/L) of sample prior to aeration: 11.4 — Temperature (°C) of sample prior to aeration: 21

DO % of sample prior to aeration: 145 % — Is aeration required (<40% or >100%)? (Yes) or No

Duration of aeration (37.5 +/- 12.5 mL/min/L): 20min — Filtered with 110um screen prior to testing Yes or (No)

Hardness (mg $CaCO_3$/L) of 100% : 1816 — Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L): =

Alkalinity of 100% sample (mg $CaCO_3$/L): 472

Dilution Water

Pail label / preparation date: 5:12/05

Hardness of dilution water (mg/L): 154

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C	3.1 to 7.7 mg/L at 21°C
3.2 to 8.1 mg/L at 19°C	3.0 to 7.6 mg/L at 22°C
3.2 to 7.9 mg/L at 20°C	

Comments/Observations:

0 HR No ppt

48 HRS No ppt

Reviewed By: MG Date Reviewed: 2022/12/13

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS-~~MOD~~ CC 10 Client TEC 164 Reference 2223-1008

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/12/07	1340	CC/AG	2	WM
1	2022/12/08	0750	AG	-	EP
2	2022/12/09	1115	BS	2	DM

Sample Information

Initial pH: 8.0
Initial EC (µS/cm): 3190
Salinity (ppt): 5

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	7.7	7.7	7.7	8.0	8.0	8.0				
2	7.7	7.8	7.8	8.2	8.3	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	436	436	436	3390	3400	3400				
2	424	439	442	3200	3390	3430				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar Wed C3 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 9
Average number of young produced (≥15 young) 27
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%) 0%

Sample
DO (mg/L) of sample prior to aeration: 11.4 Temperature (°C) of sample prior to aeration: 21
DO % of sample prior to aeration: 145% Is aeration required (<40% or >100%)? **Yes or No**
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20 min Filtered with 110um screen prior to testing **Yes or (No)**
Hardness (mg $CaCO_3$/L) of 100% : 1816 Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or (No)**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 472

Dilution Water
Pail label / preparation date 5:12/05
Hardness of dilution water (mg/L) 154

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

Comments/Observations:
0 HR No ppt
48 HRS No ppt

Reviewed By: ML Date Reviewed: 2022/12/13

APPENDIX C – Chain-of-custody form

Teck

Page 1 of 1

COC ID: 2022-12-05_BPO (002) **TURNAROUND TIME:** Regular (default) **RUSH:** NO

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name	FRS AWTF			Lab Name	Nautilus Environmental			Report Format / Distribution		Excel	PDF	EDD
Project Manager	Brett Mason			Lab Contact	Tamara Pomeroy			Email 1:	DL-FROS-Lab@teck.com	X	X	X
Email	brett.mason@teck.com			Email	tamara@nautilusenvironmental.ca			Email 2:	TeckCoal@equisonline.com			X
Address	29 km N of Elkford			Address	10823 27th Street SE			Email 3:				
								Email 4:				
City	Elkford	Province	BC	City	Calgary	Province	AB	Email 5:				
Postal Code	V0B 2H0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada	Email 6:				
Phone Number	250 865 6267			Phone Number	403 253 7121			PO number	VPO00861287			

SAMPLE DETAILS | **ANALYSIS REQUESTED**

Please indicate below Filtered, Perserved or both (F, P, F/P)

Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	ANALYSIS	NAUT_96Hr_RT_Single_Concentration_Toxicity Test	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 10C	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 20C
FS_BPO_2022-12-05_N_0800	FS_BPO	WS		2022-12-05	8:00	G	3		X	X	X
2223-1008											
2022/12/05											
10:30											
Manitoulin											
SRS / AG											
2 x 20 L Carboys, 2 x 1 L bottles											
No5 No I											
Good Condition											
3.4°C											

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	Date	Time	ACCEPTED BY/AFFILIATION	Date	Time
	Sophie Bourassa	2022-12-05				

SERVICE REQUEST (rush - subject to availability)					
Regular (default)	X	Sampler's Name	Abdul Salam	Mobile #	
Priority (2-3 business days) - 50% surcharge					
Emergency (1 Business Day) - 100% surcharge		Sampler's Signature		Date/Time	05-Dec-22
For Emergency <1 Day, ASAP or Weekend - Contact ALS					

END OF REPORT

Acute Toxicity Test Results

Sample collected December 19, 2022

Final Report

January 17, 2023

Submitted to: **Teck Coal Ltd.**
Elkford, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates				
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation
FS_BPO_2022-12-19_N_0800/ 2223-1159	19-Dec-22 at 0800h	20-Dec-22 at 1200h	21-Dec-22 at 1440h	21-Dec-22 at 1530h	21-Dec-22 at 1530h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
FS_BPO_2022-12-19_N_0800	4.4°C	1520	498

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample		
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C
FS_BPO_2022-12-19_N_0800	100	100	100

Sample ID	Percent Immobility in 100 (% v/v)	
	Daphnia magna 10˚C	*Daphnia magna* 20˚C
FS_BPO_2022-12-19_N_0800	0	0

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
FS_BPO_2022-12-19_N_0800	Rainbow trout	None	None
	Daphnia magna	None	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	4.0 (3.4-4.5) g/L KCl[1]	6.8 (6.4-7.1) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.8 (3.0-4.9) g/L KCl	6.2 (5.3-7.3) g/L NaCl
Reference toxicant CV	8.1%	5.3%
Organism health history	Acceptable	Acceptable
Protocol deviations	See Below	See Below
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, December 21, 2022; [2] Test Date December 19, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation

The samples were frozen upon receipt. Samples were brought to temperature and the tests were conducted as per the client's request.

Report By:
Christine Chanhao, BSc
Biologist

Reviewed By:
Jacklyn Poole, BSc
Laboratory and Quality Manager

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14 with February 2016 amendments
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14 with February 2016 amendments
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC164 Reference 2223-1159 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022-12-21	1440 *	BS/ML	7	VM
1	2022-12-22	0900	NZ	-	JC
2	2022-12-23	0845	MS	-	AM
3	2022-12-24	0850	NZ	-	EP
4	2022-12-25	0940	ML/KS/AJ	7	NA

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 7.9
Initial EC (µS/cm): 2970
Salinity (ppt): 5

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L **yes/no**

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	10.4	8.9			
Temp (°C) of 100%	14				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: **5.5-8.5**)								
Day 0	7.8	8.0						
Day 4	8.0	8.4						
EC (uS/cm)								
Day 0	405	2960						
Day 4	408	2840						
DO (mg/L) (**70-100% saturation at test temp.**)								
Day 0	8.9	8.9						
Day 4	8.6	8.8						
Temperature (°C) (range: **14-16°C**)								
Day 0	14	14						
Day 4	16	15						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10(3)						
Day 2	10	10(2)						
Day 3	10(1)	10(2)						
Day 4	10(1)	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	4.2	0.5
2	4.1	0.6
3	4.1	0.5
4	4.0	0.6
5	3.5	0.4
6	3.8	0.4
7	3.5	0.4
8	3.6	0.4
9	3.6	0.4
10	3.1	0.2

Loading Density (g/L): 0.2 (must be ≤0.5 g/L)
Mean Length (cm): 3.8
Length Range (cm): 3.1-4.2
Mean Weight (g): 0.4 (Must be ≥0.3g)
Weight Range: (g): 0.2-0.6

Test Organism Information

Batch 20220921TR
Source Trout Lodge
Tank # 3
Days Held at 15± 2°C: 69 (must be ≥14 days)
Percent stock mortality: 0 (7 days prior to test, must be <2%)
Test Volume (L): 18

Comments : 96 hr: loss of buoyancy, dark coloration → day 2
dark coloration → Day 3
day 4 → CTL → dark coloration
NO ppt

Reviewed By: MF Date Reviewed: 22/12/28

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS Client TEC 164 Reference 2223-1159

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/12/21	1550	DM/AM	2	DTM
1	2022/12/22	1015	AM	-	ZC
2	2022/12/23	0900	DM	2	ZC

Sample Information

Initial pH: 7.9
Initial EC (µS/cm): 2970
Salinity (ppt): 5

Lab Code	CTL A	CTLB	CTL C	100 A	100 B	100 C				

pH (units) (range: 6.0-8.5)

day										
0	7.6	7.6	7.6	8.0	8.0	8.0				
2	7.7	7.7	7.7	8.3	8.3	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	381	389	392	2750	2900	2920				
2	396	402	403	2750	2930	2930				

DO (mg/L) (**40-100% saturation at test temp.**)

0	8.1	8.1	8.1	7.9	7.9	7.9				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	19	19	19	20	20	20				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move

Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar Wed DM Jar(s) mortality 7 days prior to test (must be ≤25%) 0/.

QA (previous month)

Days to first brood (≤12 days) 8

Average number of young produced (≥15 young) 27

Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - 0/. (must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 11.0 Temperature (°C) of sample prior to aeration: 21

DO % of sample prior to aeration: 143% Is aeration required (<40% or >100%)? **Yes or No**

Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20 mins Filtered with 110um screen prior to testing **Yes or No**

Hardness (mg $CaCO_3$/L) of 100% : 1520 Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —

Alkalinity of 100% sample (mg $CaCO_3$/L): 498

Dilution Water

Pail label / preparation date D1:12/19

Hardness of dilution water (mg/L) 163

DO Levels (40-100% saturation) - corrected for altitude -

3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Comments/Observations:

0 HR no ppt

48 HRS no ppt

Reviewed By: MAF Date Reviewed: JAN 18/1 2023 MAF

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC 164 Reference 2223-1159

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/12/21	1530	DM/AM	2	KM
1	2022/12/22	1600	AG	-	JL
2	2022/12/23	0920	DM	2	JC

Sample Information

Initial pH: 7.9
Initial EC (µS/cm): 2970
Salinity (ppt): 5

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	7.6	7.7	7.6	8.0	8.0	8.0				
2	7.9	7.9	7.9	8.3	8.3	8.3				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	384	388	394	2940	1900	2940				
2	399	398	397	2760	2890	2910				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (l, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar Wed DM Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 27
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0%
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 13.4 Temperature (°C) of sample prior to aeration: 12
DO % of sample prior to aeration: 143% Is aeration required (<40% or >100%)? (Yes) or No
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20 mins Filtered with 110um screen prior to testing (Yes) or No
Hardness (mg $CaCO_3$/L) of 100% : 1520 Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 496

Dilution Water
Pail label / preparation date Pl:12/19
Hardness of dilution water (mg/L) 163

DO Levels (40-100% saturation) - corrected for altitude -
4.1 to 10.3 mg/L at 8°C
4.0 to 10.0 mg/L at 9°C
3.9 to 9.8 mg/L at 10°C
3.8 to 9.6 mg/L at 11°C
3.7 to 9.4 mg/L at 12°C

Comments/Observations:
0 HR no ppt
48 HRS No ppt.

Reviewed By: mmf Date Reviewed: JAN 17 2023

APPENDIX C – Chain-of-custody form

Teck

Page 1 of 1

COC ID: 2022-12-19_BPO **TURNAROUND TIME:** Regular (default) **RUSH: NO**

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name	FRS AWTF			Lab Name	Nautilus Environmental			Report Format / Distribution		Excel	PDF	EDD
Project Manager	Brett Mason			Lab Contact	Tamara Pomeroy			Email 1:	DL-FROS-Lab@teck.com	X	X	X
Email	brett.mason@teck.com			Email	tamara@nautilusenvironmental.ca			Email 2:	TeckCoal@equisonline.com			X
Address	29 km N of Elkford			Address	10823 27th Street SE			Email 3:				
								Email 4:				
City	Elkford	Province	BC	City	Calgary	Province	AB	Email 5:				
Postal Code	V0B 2H0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada	Email 6:				
Phone Number	250 865 6267			Phone Number	403 253 7121			PO number	VPO00861287			

SAMPLE DETAILS

2022/12/20
12:00
Manitou Jn
SC
2x20L carboys, 3x1L bottles
N6S/N6B
1/2 20L carboys, 2/3 1L bottles >50% frozen

Sample ID 2223-1159	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	ANALYSIS	NAUT_96Hr_RT_Single_Concentration_Toxicity Test	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 10C	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 20C	Please indicate below Filtered, Perserved or both (F, P, F/P)
FS_BPO_2022-12-19_N_0800	FS_BPO	WS		12/19/2022	8:00	G	3		X	X	X	4.4°C

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	Date	Time	ACCEPTED BY/AFFILIATION	Date	Time
	Tara Gentile	12/19/2022				

SERVICE REQUEST (rush - subject to availability)					
Regular (default)	X	Sampler's Name	Connor Gratton	Mobile #	
Priority (2-3 business days) - 50% surcharge					
Emergency (1 Business Day) - 100% surcharge		Sampler's Signature		Date/Time	19-Dec-22
For Emergency <1 Day, ASAP or Weekend - Contact ALS					

END OF REPORT

Acute Toxicity Test Results

Sample collected December 21, 2022

Final Report

January 11, 2023

Submitted to: **Teck Coal Ltd.**
Elkford, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates				
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation
FS_BPO_2022-12-21_N_0800/ 2223-1168	21-Dec-22 at 0800h	23-Dec-22 at 1200h	23-Dec-22 at 1505h	23-Dec-22 at 1455h	23-Dec-22 at 1450h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
FS_BPO_2022-12-21_N_0800	9.7°C	1937	532

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample		
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C
FS_BPO_2022-12-21_N_0800	100	100	100

Sample ID	Percent Immobility in 100 (% v/v)	
	Daphnia magna 10˚C	*Daphnia magna* 20˚C
FS_BPO_2022-12-21_N_0800	0	0

Precipitate observations

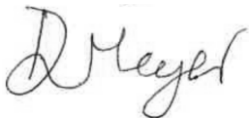
Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
FS_BPO_2022-12-21_N_0800	Rainbow trout	Precipitate observed on test vessel	None
	Daphnia magna	None	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	4.0 (3.4-4.5) g/L KCl[1]	6.8 (6.3-7.2) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.8 (3.0-4.9) g/L KCl	6.2 (5.3-7.3) g/L NaCl
Reference toxicant CV	8.1%	5.3%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, December 21, 2022; [2] Test Date December 19, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation



Report By:
Daisy Meyer, BSc
Laboratory Biologist



Reviewed By:
Emma Pedersen, BSc
Laboratory Biologist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14 with February 2016 amendments
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14 with February 2016 amendments
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC164 Reference 2223-1168 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022-12-23	1405 *	BS/KCRM	7	
1	2022-12-24	0840	NR	-	
2	2022-12-25	0715	ML	-	KD
3	2022-12-26	0930	ML	-	NA
4	2022-12-27	0930	MS	7	ML

Note: *; time when the test was loaded with fish

Sample Information

Initial pH: 7.8
Initial EC (µS/cm): 2960
Salinity (ppt): 5

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L : (yes)/no

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	14.4	11.3	8.6		
Temp (°C) of 100%	16				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

	Conc.	CTL	100						
pH (units) (range: **5.5-8.5**)									
	Day 0	7.9	7.9						
	Day 4	8.1	8.1						
EC (uS/cm)									
	Day 0	466	3080						
	Day 4	510	2910						
DO (mg/L) (**70-100% saturation at test temp.**)									
	Day 0	8.8	8.6						
	Day 4	8.6	8.6						
Temperature (°C) (range: **14-16°C**)									
	Day 0	15	16						
	Day 4	16	16						
Number Alive (In brackets number stressed)									
	Day 0	10	10						
	Day 1	10	10(3)						
	Day 2	10	10						
	Day 3	10	10(2)						
	Day 4	10	10(1)						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	4.0	0.4
2	4.2	0.5
3	3.5	0.3
4	4.0	0.4
5	3.8	0.4
6	4.1	0.5
7	4.2	0.5
8	4.2	0.5
9	4.3	0.6
10	3.2	0.3

Loading Density (g/L): 0.2 (must be ≤0.5 g/L)
Mean Length (cm): 4.0
Length Range (cm): 3.2-4.3
Mean Weight (g): 0.4 (Must be ≥0.3g)
Weight Range: (g): 0.3-0.6

Test Organism Information

Batch 20220921TR
Source Trout Lodge
Tank # 3
Days Held at 15± 2°C 71 (must be ≥14 days)
Percent stock mortality 0 (7 days prior to test, must be <2%)
Test Volume (L) 18

Comments: 96 hr: day 3 → 100% → lrg dark coloration ppt on side / bottom

Reviewed By: CW Date Reviewed: DEC 28 2022

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC164 Reference 2223-1168

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/12/23	1450	LC/AM	2	EP
1	2022/12/24	0746	BS	-	NA
2	2022/12/25	0845	AG	2	NA

Sample Information

Initial pH: 7.8
Initial EC (µS/cm): 2960
Salinity (ppt): 5

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C

pH (units) (range: 6.0-8.5)

day										
0	7.8	7.8	7.8	7.9	7.9	8.0				
2	8.2	8.1	8.0	8.5	8.5	8.5				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	390	385	384	2900	2960	2950				
2	394	389	387	2770	2860	2890				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	9.4	9.4	9.4				
2	7.9	7.9	7.9	7.9	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	18.9	18.9	18.9				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar Wed02 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 28
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 14.1
DO % of sample prior to aeration: 190.1
Duration of aeration (37.5 +/- 12.5 mL/min/L): 20 MINS
Hardness (mg $CaCO_3$/L) of 100% : 1937
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 532

Temperature (°C) of sample prior to aeration: 18°C
Is aeration required (<40% or >100%)? **Yes or No**
Filtered with 110um screen prior to testing **Yes or No**
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**

Dilution Water
Pail label / preparation date P3: 12121
Hardness of dilution water (mg/L) 182

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Comments/Observations:
0 hr: no ppt
48 hr: no ppt

Reviewed By: CW Date Reviewed: DEC 28 2022

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC164 Reference 2223-1168

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/12/23	1455	LC/AM	2	EP
1	2022/12/24	0730	BS	-	NA
2	2022/12/25	0840	AG	2	NA

Sample Information

Initial pH: 7.8
Initial EC (µS/cm): 2960
Salinity (ppt): 5

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	7.9	7.8	7.8	8.1	8.1	8.1				
2	7.9	7.9	7.9	8.4	8.4	8.4				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	415	388	386	2920	2950	2960				
2	402	389	391	2740	2930	2940				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	10.2	10.2	10.2				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	12	12	12	11	11	11				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control

Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture

Young jar Wed D2 Jar(s) mortality 7 days prior to test (must be ≤25%) 0/.

QA (previous month)

Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 28
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria

Mean % mortality at 48 hours - 0
(must be ≤10%)

Sample

DO (mg/L) of sample prior to aeration: 13.2
Temperature (°C) of sample prior to aeration: 11°C
DO % of sample prior to aeration: 135.1
Is aeration required (<40% or >100%)? **(Yes) or No**
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20 mins
Filtered with 110um screen prior to testing **Yes or (No)**
Hardness (mg $CaCO_3$/L) of 100% : 1937
Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or (No)**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) _____
Alkalinity of 100% sample (mg $CaCO_3$/L): 532

Dilution Water

Pail label / preparation date P3:12121
Hardness of dilution water (mg/L) 182

DO Levels (40-100% saturation) - corrected for altitude -

4.1 to 10.3 mg/L at 8°C	3.8 to 9.6 mg/L at 11°C
4.0 to 10.0 mg/L at 9°C	3.7 to 9.4 mg/L at 12°C
3.9 to 9.8 mg/L at 10°C	

Comments/Observations:

0 hr: NO ppt
48 hr: na ppt

Reviewed By: CW Date Reviewed: DEC 28 2022

APPENDIX C – Chain-of-custody form

Teck

COC ID: 2022-12-21_BPO **TURNAROUND TIME:** Regular (default) **RUSH:** NO

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name	FRS AWTF			Lab Name	Nautilus Environmental			Report Format / Distribution		Excel	PDF	EDD
Project Manager	Brett Mason			Lab Contact	Tamara Pomeroy			Email 1:	DL-FROS-Lab@teck.com	X	X	X
Email	brett.mason@teck.com			Email	tamara@nautilusenvironmental.ca			Email 2:	TeckCoal@equisonline.com			X
Address	29 km N of Elkford			Address	10823 27th Street SE			Email 3:				
								Email 4:				
City	Elkford	Province	BC	City	Calgary	Province	AB	Email 5:				
Postal Code	V0B 2H0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada	Email 6:				
Phone Number	250 865 6267			Phone Number	403 253 7121			PO number	VPO00861287			

SAMPLE DETAILS / **ANALYSIS REQUESTED**

2223-1168
2022/12/23
12:00
Manitoulin
SRG
1x20L carboy, 2 x 1 L bottles
Nos No I
Good Condition
9.7°C

Please indicate below Filtered, Perserved or both (F, P, F/P)

Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	ANALYSIS: NAUT_96Hr_RT_Single_Concentration_Toxicity Test	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 10C	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 20C
FS_BPO_2022-12-21_N_0800	FS_BPO	WS		12/21/2022	8:00	G	3	X	X	X

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	Date	Time	ACCEPTED BY/AFFILIATION	Date	Time
		12/21/2022				

SERVICE REQUEST (rush - subject to availability)

Regular (default)	X
Priority (2-3 business days) - 50% surcharge	
Emergency (1 Business Day) - 100% surcharge	
For Emergency <1 Day, ASAP or Weekend - Contact ALS	

Sampler's Name		**Mobile #**	
Sampler's Signature		**Date/Time**	21-Dec-22

END OF REPORT

Acute Toxicity Test Results

Sample collected December 26, 2022

Final Report

January 16, 2023

Submitted to: **Teck Coal Ltd.**
Elkford, BC

10823 27 Street SE, Calgary, AB T2Z 3V9

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates				
	Collected	Received	Rainbow trout test initiation	*Daphnia magna* 10˚C test initiation	*Daphnia magna* 20˚C test initiation
FS_BPO_2022-12-26_N_0800/ 2223-1204	26-Dec-22 at 0800h	28-Dec-22 at 1510h	29-Dec-22 at 1425h	29-Dec-22 at 1435h	29-Dec-22 at 1410h

Sample chemistry

Sample ID	Receipt temperature	Hardness (mg/L CaCO3)	Alkalinity (mg/L CaCO3)
FS_BPO_2022-12-26_N_0800	3.7°C	2102	605

TEST TYPES

- Rainbow trout 96-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test
- *Daphnia magna* 48-h single concentration screening test (conducted at 10°C)

RESULTS

Toxicity test results

Sample ID	Percent survival in 100% (v/v) sample		
	Rainbow trout	*Daphnia magna* 10˚C	*Daphnia magna* 20˚C
FS_BPO_2022-12-26_N_0800	100	100	100

Sample ID	Percent Immobility in 100 (% v/v)	
	Daphnia magna 10˚C	*Daphnia magna* 20˚C
FS_BPO_2022-12-26_N_0800	0	0

Precipitate observations

Sample ID	Species	Precipitate in test vessel at test termination	Precipitate on test organism at test termination
FS_BPO_2022-12-26_N_0800	Rainbow trout	Precipitate observed on the test vessel	None
	Daphnia magna	Surficial precipitate observed and precipitate observed on the test vessel when conducted at 20-degrees	None

QA/QC

QA/QC summary	Rainbow trout	*Daphnia magna*
Reference toxicant LC50 (95% CL)	4.0 (3.4-4.5) g/L KCl[1]	6.8 (6.3-7.2) g/L NaCl[2]
Reference toxicant historical mean (2 SD Range)	3.8 (3.0-4.9) g/L KCl	6.2 (5.3-7.3) g/L NaCl
Reference toxicant CV	8.1%	5.3%
Organism health history	Acceptable	Acceptable
Protocol deviations	None	None
Water quality range deviations	None	None
Control performance	Acceptable	Acceptable
Test performance	Valid	Valid

[1] Test date, December 21, 2022; [2] Test Date December 19, 2022

LC = Lethal Concentration; CL = Confidence Limit, SD = Standard Deviation; CV = Coefficient of Variation

Report By:
Maryam Lo, BSc
Laboratory Biologist

Reviewed By:
Emma Pedersen, BSc
Laboratory Biologist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) survival test.

Test species	*Oncorhynchus mykiss*
Organism source	Fish Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 – 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 2. Summary of test conditions: 48-h *Daphnia magna* survival test.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	20 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14 with February 2016 amendments
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

Table 3. Summary of test conditions: 48-h *Daphnia magna* survival test at 10˚C.

Test species	*Daphnia magna*
Organism source	In-house culture
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	375 mL glass vessels
Test volume	150 mL
Test concentrations	100% (undiluted) sample plus laboratory control
Test replicates	3 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water amended with 4 mg/L KCl and with B12 (2 µg/L) and Na_2SeO_4 (2 µg Se/L)
Test solution renewal	None
Test temperature	10 ± 2°C
Feeding	None
Light intensity	400 to 800 lux
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test measurements	pH, conductivity, dissolved oxygen and temperature measured at test initiation and completion; salinity and hardness measured at test initiation in undiluted sample; evaluated daily for survival
Test protocol	Environment Canada (2000), EPS 1/RM/14 with February 2016 amendments
Statistical software	None
Test endpoints	Mean Percent survival
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Sodium chloride (NaCl)

APPENDIX B – Toxicity test data

NAUTILUS

Trout Bench Sheet

Method TRS Client TEC164 Reference 2223-1204 Chamber 3

Test Log

Day	Date	Time	Initial	Chem. Cart	Daily Data Review
0	2022-12-29	1425 *	BS/KCRM	7	MAF
1	2022-12-30	0925	KCRM	-	EP
2	2022-12-31	0910	NS	-	CC
3	2023-01-01	0800	MAF	-	CC
4	2023-01-02	1005	KCRM/CC	7	MAF

Note: * ; time when the test was loaded with fish

Sample Information

Initial pH: 8.0
Initial EC (µS/cm): 3050
Salinity (ppt): 5

Sample Pre-Aeration

Aeration rate adjusted to 6.5 +/- 1 mL/min/L : **yes/no**

Preaeration time	0 hours	0.5 hours	1 hour	1.5 hours	2 hours
DO(mg/L) of 100%	10.8	9.4	8.6		
Temp (°C) of 100%	16				

DO in mg/L (70% - 100% saturation)**
6.2 mg/L - 8.9 mg/L at 14°C
6.1 mg/L - 8.8 mg/L at 15°C
6.0 mg/L - 8.6 mg/L at 16°C
**corrected for altitude

Test Chemistry and Biology

Conc.	CTL	100						
pH (units) (range: 5.5-8.5)								
Day 0	8.2	8.0						
Day 4	8.2	8.2						
EC (uS/cm)								
Day 0	475	3240						
Day 4	454	2900						
DO (mg/L) (70-100% saturation at test temp.)								
Day 0	8.8	8.6						
Day 4	8.6	8.6						
Temperature (°C) (range: 14-16°C)								
Day 0	15	16						
Day 4	16	16						
Number Alive (In brackets number stressed)								
Day 0	10	10						
Day 1	10	10						
Day 2	10	10(2)						
Day 3	10	10						
Day 4	10	10						

Validity Criteria: must be ≤ 10% mortality and/or stressed behavior in the control
Unless otherwise noted, behavior is considered to be normal

Control Organism Data

Control Fish	Length (cm)	Weight (g)
1	3.8	0.5
2	4.0	0.5
3	4.2	0.6
4	3.9	0.5
5	4.2	0.7
6	3.8	0.5
7	4.0	0.5
8	4.0	0.5
9	4.3	0.7
10	4.0	0.5

Loading Density (g/L): 0.3 (must be ≤0.5 g/L)
Mean Length (cm): 4.0
Length Range (cm): 3.8-4.3
Mean Weight (g): 0.6 (Must be ≥0.3g)
Weight Range: (g): 0.5-0.7

Test Organism Information

Batch 20220921TR
Source Trout Lodge
Tank # KCRM 3
Days Held at 15± 2°C: 77 (must be ≥14 days)
Percent stock mortality: 0 (7 days prior to test, must be <2%)
Test Volume (L): 18

Comments :
96 hr: dark coloration (day 2) PPT sides & bottom

Reviewed By: MAF Date Reviewed: 23/01/01

NAUTILUS ENVIRONMENTAL

Daphnia Bench Sheet

Method DAS 20 Client TEC 164 Reference 2223-1204

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/12/29	1410	CC/DM	2	JC
1	2022/12/30	1025	DM	-	EP
2	2022/12/31	1010	AM	2	EP

Sample Information

Initial pH: 8.0
Initial EC (µS/cm): 3050
Salinity (ppt): 5

Lab Code	CTL A	CTL B	CTL C	100 A	100 B	100 C				

pH (units) (range: 6.0-8.5)

day										
0	8.1	8.0	8.0	8.0	8.1	8.1				
2	8.2	8.1	8.1	8.0	8.1	8.2				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	415	411	406	2850	3010	3040				
2	425	413	421	2750	2930	2970				

DO (mg/L) (**40-100% saturation at test temp.**)

0	7.9	7.9	7.9	8.1	8.1	8.1				
2	7.9	7.9	7.9	8.79 AM	7.9	7.9				

Temperature (°C) (range: **18-22 °C**)

0	20	20	20	19	19	19				
2	20	20	20	20	20	20				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar: wed C3 — Jar(s) mortality 7 days prior to test (must be ≤25%): 0/

QA (previous month)
Days to first brood (≤12 days): 8
Average number of young produced (≥15 young): 32
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - (must be ≤10%): 0/.

Sample
DO (mg/L) of sample prior to aeration: 12.1 — Temperature (°C) of sample prior to aeration: 19
DO % of sample prior to aeration: 149 — Is aeration required (<40% or >100%)? **Yes or No**
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 30 mins — Filtered with 110um screen prior to testing **Yes or No**
Hardness (mg $CaCO_3$/L) of 100% : 2102 — Is hardness adjustment required (<25 mg $CaCO_3$/L)? **Yes or No**
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L): —
Alkalinity of 100% sample (mg $CaCO_3$/L): 605

Dilution Water
Pail label / preparation date: 2:12/23
Hardness of dilution water (mg/L): 185

DO Levels (40-100% saturation) - corrected for altitude -
3.3 to 8.2 mg/L at 18°C
3.2 to 8.1 mg/L at 19°C
3.2 to 7.9 mg/L at 20°C
3.1 to 7.7 mg/L at 21°C
3.0 to 7.6 mg/L at 22°C

Comments/Observations:
0 Hr: No ppt
48 Hr: surficial ppt, ppt on ic

Reviewed By: MAF Date Reviewed: 23/01/01

NAUTILUS ENVIRONMENTAL

Daphnia 10°C Bench Sheet

Method DAS 10 Client TEC 164 Reference 2223-1204

Test Log

Day	Date	Time	Technician	Chem. Cart	Daily Data Review
0	2022/12/29	1435	CC/DM	2	MC
1	2022/12/30	1030	AM	-	EP
2	2022/12/31	~~0730~~ 0815	AM	2	

Sample Information

Initial pH: 8.0
Initial EC (µS/cm): 3050
Salinity (ppt): 5

Lab Code	CTLA	CTLB	CTLC	100A	100B	100C				

pH (units) (range: 6.0-8.5)

day										
0	8.0	8.1	8.1	8.1	8.2	8.2				
2	8.2	8.2	8.1	8.3	8.4	8.4				

The pH of the sample was not adjusted prior to test setting, unless noted in the comments below

EC (uS/cm)

0	392	406	408	2890	2980	3060				
2	403	413	413	2800	2970	3010				

DO (mg/L) (**40-100% saturation at test temp.**)

0	9.4	9.4	9.4	9.4	9.4	9.4				
2	9.4	9.4	9.4	9.4	9.4	9.4				

Temperature (°C) (range: **8-12 °C**)

0	DM 12.0	12	12	12	12	12				
2	12	12	12	12	12	12				

Number Alive (I, immobile)

0	10	10	10	10	10	10				
1	10	10	10	10	10	10				
2	10	10	10	10	10	10				

Validity Criteria: must be ≤ 10% mortality and/or abnormal behavior in the control
Notes: Immobile; daphnid can't swim after 60 sec. even if antenna still move
Unless otherwise noted, behaviour is considered to be normal

Culture
Young jar Wed C5 Jar(s) mortality 7 days prior to test (must be ≤25%) 0%

QA (previous month)
Days to first brood (≤12 days) 8
Average number of young produced (≥15 young) 32
Were test treatments randomized on test tray? (Yes) / No

Control Validity Criteria
Mean % mortality at 48 hours - 0%
(must be ≤10%)

Sample
DO (mg/L) of sample prior to aeration: 12.7
DO % of sample prior to aeration: 135
Duration of aeration (37.5 +/- 12.5 mL/min/L) : 20min
Hardness (mg $CaCO_3$/L) of 100% : 2102
Hardness of sample after adjustment (must be between 25 - 30 mg $CaCO_3$/L) —
Alkalinity of 100% sample (mg $CaCO_3$/L): 605

Temperature (°C) of sample prior to aeration: 12
Is aeration required (<40% or >100%)? (Yes) or No
Filtered with 110um screen prior to testing Yes or (No)
Is hardness adjustment required (<25 mg $CaCO_3$/L)? Yes or (No)

Dilution Water
Pail label / preparation date 2;12/23
Hardness of dilution water (mg/L) 184

DO Levels (40-100% saturation) - corrected for altitude -
4.1 to 10.3 mg/L at 8°C
4.0 to 10.0 mg/L at 9°C
3.9 to 9.8 mg/L at 10°C
3.8 to 9.6 mg/L at 11°C
3.7 to 9.4 mg/L at 12°C

Comments/Observations:
0Hr: No ppt
48Hr: no ppt

Reviewed By: MAF Date Reviewed: 23/01/01

APPENDIX C – Chain-of-custody form

Teck

Page 1 of 1

COC ID: 2022-12-26_BPO **TURNAROUND TIME:** Regular (default) **RUSH: NO**

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name	FRS AWTF			Lab Name	Nautilus Environmental			Report Format / Distribution		Excel	PDF	EDD
Project Manager	Brett Mason			Lab Contact	Tamara Pomeroy			Email 1:	DL-FROS-Lab@teck.com	X	X	X
Email	brett.mason@teck.com			Email	tamara@nautilusenvironmental.ca			Email 2:	TeckCoal@equisenline.com			X
Address	29 km N of Elkford			Address	10823 27th Street SE			Email 3:				
								Email 4:				
City	Elkford	Province	BC	City	Calgary	Province	AB	Email 5:				
Postal Code	V0B 2H0	Country	Canada	Postal Code	T2Z 3V9	Country	Canada	Email 6:				
Phone Number	250 865 6267			Phone Number	403 253 7121			PO number	VPO00861287			

SAMPLE DETAILS

20221212/23
1510
Monitoulin
BS/NZ
2x20L carboys
2x1L bottles
No S/No E
Good condition
2223 - 1204

ANALYSIS REQUESTED

Please indicate below Filtered, Perserved or both (F, P, F/P)

Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	ANALYSIS: NAUT_96Hr_RT_Single_Concentration_Toxicity Test	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 10C	NAUT_48Hr_DM_Single_Concentration_Toxicity Test @ 20C	
FS_BPO_2022-12-26_N_0800	FS_BPO	WS		12/26/2022	8:00	G	3	X	X	X	3.7

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	Date	Time	ACCEPTED BY/AFFILIATION	Date	Time
	Amith Gopurathingal	12/27/2022				

SERVICE REQUEST (rush - subject to availability)

Regular (default)	X
Priority (2-3 business days) - 50% surcharge	
Emergency (1 Business Day) - 100% surcharge	
For Emergency <1 Day, ASAP or Weekend - Contact ALS	

Sampler's Name	Bryson Drewniak	Mobile #	
Sampler's Signature		Date/Time	26-Dec-22

END OF REPORT

Appendix E – QA/QC Program

This appendix contains a summary of the Teck quality assurance/quality control (QA/QC) program, and the QA/QC results summary for:

- WLC AWTF
- EVO SRF P2
- FROS AWTF

QA/QC Summary

Teck has established a quality assurance/quality control (QA/QC) program to promote the collection of high quality environmental data. Teck has developed protocols and procedures to collect representative samples and to minimize the potential for deterioration and contamination of samples before laboratory analysis.

Representativeness is the degree to which the data represent a characteristic of an environmental condition. In the field, representativeness is achieved by collecting samples at the permitted water sampling sites and adhering to sample collection procedures. In the laboratory, representativeness is achieved by the proper handling and storage of samples, the use of standard performance-based methods, and the initiation of analyses within hold times.

Comparability is the qualitative similarity of one dataset to another (i.e., the extent to which different data sets can be combined for use). Comparability is achieved by consistently using standardized field and laboratory methods and procedures.

Despite the considerable level of effort and management system tools employed to achieve high-quality data, there were instances in 2021 where data quality issues occurred.

Teck's Data Quality Objective

Teck conducts and manages a wide range of environmental monitoring programs. Teck depends on the data generated by these programs to inform management decisions and actions. Data can be categorized as either:

Category 1 – Data of Known Quality

Data is of known quality and are considered acceptable for use in decision-making. There is sufficient information on the dataset to be confident that the data, along with associated qualifiers, accurately represents the chemical concentrations present at the location at the time of sampling.

Category 2 – Data of Partially Known Quality

Data has a limited body of supporting QA/QC information. Although not sufficient to be considered Category 1, the data is considered suitable for qualitative use. These datasets may be considered for further evaluation based on project-specific Data Quality Objectives and intended end uses.

Category 3 – Data of Unknown Quality

Data includes sample concentration information, but lacks an adequate level of supporting QA/QC information. These datasets are not considered suitable for detailed project uses. However, considering the reputability of the source, these datasets may be used on a limited or provisional basis for qualitative comparisons with Category 1 and Category 2 datasets.

Teck's data quality objective is to produce Category 1 and 2 data at all times. To meet this objective, Teck has developed and implemented sampling and data management procedures that align with provincial standards. Teck applies these standards when samples are collected and analyzed, and when data is managed and stored.

Quantifying Data Quality

To determine the quality or category of each data point, Teck collects duplicate samples in the field and calculates relative percent difference (RPD). RPD is the arithmetic difference between two samples

divided by the mean of those samples, then multiplied by one hundred to express the result as a percentage:

RPD = (difference/mean) x 100%

or

$$RPD = \left(\frac{(a - b)}{(a + b) / 2} \right) \times 100\%$$

Teck's environmental database, EQuIS, is configured to run RPD reports on demand. RPD results are assigned a pass/fail grade that correlates to the data quality categories described above. Teck uses the same RPD criteria outlined in the British Columbia Field Sampling Manual (2013):

- An RPD of <20% = Pass, Category 1
  - No action required; data point is considered validated.

- An RPD of >20%, with results < 5 times the detection limit = Pass, Category 1
  - No action required; result is not considered quantitatively meaningful.

- An RPD of >20% and <50%, with results >5 times the detection limit = Pass, Category 2
  - Data point is validated, but does have reasonable variance.
  - This analyte is monitored in future RPD evaluations to determine if the variance is a trend.
  - If a variance of 20% to 50% persists, the lab is notified and requested to investigate.

- An RPD of >50%, with results >5 times the detection limit = Fail, Category 3
  - Data point is not validated and is not suitable for quantitative use.
  - If a variance >50% persists, the lab is notified and requested to investigate.
  - Lab can be requested to re-analyze the sample.

To determine if contamination has occurred during bottle storage, sample collection, sample handling, or sample analysis, Teck collects blank samples. Teck collects a set of trip blanks and field blanks with each sample event. Blank sample results are reviewed and if a measurable level of an analyte is detected, the blank sample is re-analyzed to confirm. Detectable results are investigated to determine the source of the contamination.

Laboratory QA/QC

Teck's water samples are analyzed by ALS Laboratory Group, Nautilus Environmental Company, and Brooks Applied Labs. Quality control samples and procedures (as specified in analytical method protocols) are completed by the laboratory and include:

- initial calibration
- initial calibration verification
- continuing calibration
- calibration or instrument blanks
- method blanks
- laboratory control samples
- internal standards (including certified reference material)
- serial dilutions
- matrix spikes
- laboratory duplicates

The laboratory determines a method detection limit (MDL) for each analyte. MDLs are statistically derived. They reflect the concentration at which an analyte can be detected in a clean matrix with 99% confidence that a false positive result has not been reported. The laboratory establishes method reporting limits (MRLs) at levels above the MDLs for each parameter. These values are based on the laboratory's experience analyzing environmental samples and reflect the typical sensitivity obtained by the analytical system; they represent the level of analyte above which concentrations are accurately quantified.

The laboratory quantifies parameters at concentrations above the MRL. Parameters detected at concentrations between the MDL and MRL are flagged with a "J" qualifier to indicate that the value is an estimate (i.e., the analyte concentration is greater than or equal to the MDL and less than the MRL). Parameters that are not detected are reported as the MDL and are flagged with a "U" qualifier. MDLs can be adjusted by the laboratory to reflect sample dilution and/or matrix interference.

Table E-1. Results outside RPD acceptance criteria at WLC AWTF – 2022

Date	EMS ID	Location Code	Parameters	Reason
10-Jan-2022	E291569	WL_BFWB_OUT_SP21	Chromium, Dissolved	Pass-1
10-Jan-2022	E291569	WL_BFWB_OUT_SP21	Iron, Dissolved	Pass-1
10-Jan-2022	E291569	WL_BFWB_OUT_SP21	Nitrate Nitrogen (NO3), as N	Pass-1
10-Jan-2022	E291569	WL_BFWB_OUT_SP21	Nitrite Nitrogen (NO2), as N	Pass-2
10-Jan-2022	E291569	WL_BFWB_OUT_SP21	Phosphorus, Total	Pass-1
7-Feb-2022	E291569	WL_BFWB_OUT_SP21	Cadmium, Dissolved	Pass-1
7-Feb-2022	E291569	WL_BFWB_OUT_SP21	Phosphorus, Total	Pass-1
7-Mar-2022	E291569	WL_BFWB_OUT_SP21	Aluminum, Total	Pass-1
7-Mar-2022	E291569	WL_BFWB_OUT_SP21	Chromium, Total	Fail
7-Mar-2022	E291569	WL_BFWB_OUT_SP21	Lead, Dissolved	Pass-1
7-Mar-2022	E291569	WL_BFWB_OUT_SP21	Phosphorus, Total	Pass-1
4-Apr-2022	E291569	WL_BFWB_OUT_SP21	Aluminum, Dissolved	Pass-1
4-Apr-2022	E291569	WL_BFWB_OUT_SP21	Aluminum, Total	Pass-1
4-Apr-2022	E291569	WL_BFWB_OUT_SP21	Cadmium, Dissolved	Pass-1
4-Apr-2022	E291569	WL_BFWB_OUT_SP21	Chloride, Dissolved	Fail
4-Apr-2022	E291569	WL_BFWB_OUT_SP21	Fluoride	Pass-1
4-Apr-2022	E291569	WL_BFWB_OUT_SP21	Nitrate Nitrogen (NO3), as N	Fail
4-Apr-2022	E291569	WL_BFWB_OUT_SP21	Nitrite Nitrogen (NO2), as N	Fail
4-Apr-2022	E291569	WL_BFWB_OUT_SP21	Nitrogen, Ammonia (as N), Total	Pass-1
4-Apr-2022	E291569	WL_BFWB_OUT_SP21	Phosphorus, Total	Pass-1
4-Apr-2022	E291569	WL_BFWB_OUT_SP21	Sulphate (as SO4), Dissolved	Fail
4-Apr-2022	E291569	WL_BFWB_OUT_SP21	Zinc, Total	Pass-1
2-May2022	E291569	WL_BFWB_OUT_SP21	Aluminum, Total	Pass-1

Date	EMS ID	Location Code	Parameters	Reason
2-May-2022	E291569	WL_BFWB_OUT_SP21	Bromate	Pass-2
2-May-2022	E291569	WL_BFWB_OUT_SP21	Cadmium, Dissolved	Pass-1
2-May-2022	E291569	WL_BFWB_OUT_SP21	Cadmium, Total	Pass-1
2-May-2022	E291569	WL_BFWB_OUT_SP21	Phosphorus, Total	Fail
13-Jun-2022	E291569	WL_BFWB_OUT_SP21	Aluminum, Total	Pass-1
13-Jun-2022	E291569	WL_BFWB_OUT_SP21	Bromate	Pass-2
13-Jun-2022	E291569	WL_BFWB_OUT_SP21	Cadmium, Total	Pass-1
13-Jun-2022	E291569	WL_BFWB_OUT_SP21	Nickel, Total	Pass-2
13-Jun-2022	E291569	WL_BFWB_OUT_SP21	Phosphorus, Total	Pass-1
13-Jun-2022	E291569	WL_BFWB_OUT_SP21	Total Suspended Solids, Lab	Pass-1
13-Jun-2022	E291569	WL_BFWB_OUT_SP21	Turbidity, Lab	Fail
11-Jul-2022	E291569	WL_BFWB_OUT_SP21	Cadmium, Dissolved	Pass-1
11-Jul-2022	E291569	WL_BFWB_OUT_SP21	Mercury, Dissolved	Pass-1
11-Jul-2022	E291569	WL_BFWB_OUT_SP21	Phosphorus, Total	Fail
11-Jul-2022	E291569	WL_BFWB_OUT_SP21	Phosphorus, Total	Pass-2
11-Jul-2022	E291569	WL_BFWB_OUT_SP21	Sulphide (as S), Total	Pass-1
11-Jul-2022	E291569	WL_BFWB_OUT_SP21	Total Suspended Solids, Lab	Pass-1
18-Jul-2022	E291569	WL_BFWB_OUT_SP21	Biochemical Oxygen Demand, Five Day	Pass-1
8-Aug-2022	E291569	WL_BFWB_OUT_SP21	Chromium, Dissolved	Pass-1
8-Aug-2022	E291569	WL_BFWB_OUT_SP21	Chromium, Total	Pass-1
8-Aug-2022	E291569	WL_BFWB_OUT_SP21	Iron, Dissolved	Pass-1
8-Aug-2022	E291569	WL_BFWB_OUT_SP21	Nitrogen, Ammonia (as N), Total	Pass-1
8-Aug-2022	E291569	WL_BFWB_OUT_SP21	Phosphorus, Total	Pass-1
8-Aug-2022	E291569	WL_BFWB_OUT_SP21	Sulphide (as S), Total	Pass-1
8-Aug-2022	E291569	WL_BFWB_OUT_SP21	Total Kjeldahl Nitrogen	Pass-1
8-Aug-2022	E291569	WL_BFWB_OUT_SP21	Total Suspended Solids, Lab	Pass-1
8-Aug-2022	E291569	WL_BFWB_OUT_SP21	Turbidity, Lab	Pass-2
5-Sept-2022	E291569	WL_BFWB_OUT_SP21	Fluoride	Pass-1
5-Sept-2022	E291569	WL_BFWB_OUT_SP21	Iron, Dissolved	Pass-1
5-Sept-2022	E291569	WL_BFWB_OUT_SP21	Molybdenum, Total	Pass-2
5-Sept-2022	E291569	WL_BFWB_OUT_SP21	Phosphorus, Total	Fail
5-Sept-2022	E291569	WL_BFWB_OUT_SP21	Total Suspended Solids, Lab	Pass-1
3-Oct-2022	E291569	WL_BFWB_OUT_SP21	Boron, Total	Pass-1

Date	EMS ID	Location Code	Parameters	Reason
3-Oct-2022	E291569	WL_BFWB_OUT_SP21	Cadmium, Total	Pass-1
3-Oct-2022	E291569	WL_BFWB_OUT_SP21	Iron, Dissolved	Pass-1
3-Oct-2022	E291569	WL_BFWB_OUT_SP21	Nitrogen, Ammonia (as N), Total	Pass-1
3-Oct-2022	E291569	WL_BFWB_OUT_SP21	Phosphorus, Total	Fail
3-Oct-2022	E291569	WL_BFWB_OUT_SP21	Sulphide (as S), Total	Pass-1
3-Oct-2022	E291569	WL_BFWB_OUT_SP21	Total Kjeldahl Nitrogen	Pass-1
3-Oct-2022	E291569	WL_BFWB_OUT_SP21	Total Suspended Solids, Lab	Pass-1
14-Nov-2022	E291569	WL_BFWB_OUT_SP21	Cadmium, Dissolved	Pass-1
14-Nov-2022	E291569	WL_BFWB_OUT_SP21	Cadmium, Total	Pass-1
14-Nov-2022	E291569	WL_BFWB_OUT_SP21	Iron, Dissolved	Pass-1
14-Nov-2022	E291569	WL_BFWB_OUT_SP21	Nitrate Nitrogen (NO3), as N	Pass-1
14-Nov-2022	E291569	WL_BFWB_OUT_SP21	Phosphorus, Total	Pass-1
14-Nov-2022	E291569	WL_BFWB_OUT_SP21	Total Kjeldahl Nitrogen	Pass-1
14-Nov-2022	E291569	WL_BFWB_OUT_SP21	Total Suspended Solids, Lab	Pass-1
15-Nov-2022	E291569	WL_BFWB_OUT_SP21	Selenium, Total	Fail
12-Dec-2022	E291569	WL_BFWB_OUT_SP21	Antimony, Dissolved	Pass-1
12-Dec-2022	E291569	WL_BFWB_OUT_SP21	Cadmium, Total	Pass-1
12-Dec-2022	E291569	WL_BFWB_OUT_SP21	Chromium, Dissolved	Pass-1
12-Dec-2022	E291569	WL_BFWB_OUT_SP21	Iron, Total	Fail
12-Dec-2022	E291569	WL_BFWB_OUT_SP21	Phosphorus, Total	Pass-1
12-Dec-2022	E291569	WL_BFWB_OUT_SP21	Sulphide (as S), Total	Pass-1
12-Dec-2022	E291569	WL_BFWB_OUT_SP21	Thorium, Dissolved	Pass-1
12-Dec-2022	E291569	WL_BFWB_OUT_SP21	Thorium, Total	Pass-1
12-Dec-2022	E291569	WL_BFWB_OUT_SP21	Total Suspended Solids, Lab	Pass-1

Table E-2. Hold Time Exceedances at WLC AWTF – 2022

Date	EMS ID	Location Code	Parameters	Reason
7-Mar-2022	E291569	WL_BFWB_OUT_SP21	Nitrate Nitrogen (NO3), as N	EHT
7-Mar-2022	E291569	WL_BFWB_OUT_SP21	Turbidity, Lab	EHT
7-Mar-2022	E293370	WL_LC1_SP02	Nitrate Nitrogen (NO3), as N	EHT
7-Mar-2022	E293370	WL_LCI_SP02	Turbidity, Lab	EHT
7-Mar-2022	E293371	WL_WLCI_SP01	Nitrate Nitrogen (NO3), as N	EHT

7-Mar-2022	E293371	WL_WLCI_SP01	Turbidity, Lab	EHT
24-Apr-2022	E291569	WL_BFWB_OUT_SP21	Biochemical Oxygen Demand, Five Day	EHTL
4-Sep-2022	E291569	WL_BFWB_OUT_SP21	Biochemical Oxygen Demand, Five Day	EHT

EHTR = Exceeded ALS recommended hold time prior to sample receipt.
EHTL = Exceeded ALS recommended hold time prior to analysis. Sample received less than 24 hours prior to expiry.
EHT = Exceeded ALS recommended hold time prior to sample analysis.

Table E-3. Blank Detects at WLC AWTF – 2022

Date	EMS ID	Location Code	Parameters	Reason
10-Jan-2022	E291569	WL_BFWB_OUT_SP21	Aluminum, Dissolved	Blank Detect
10-Jan-2022	E291569	WL_BFWB_OUT_SP21	Aluminum, Total	Blank Detect
10-Jan-2022	E291569	WL_BFWB_OUT_SP21	Copper, Dissolved	Blank Detect
10-Jan-2022	E291569	WL_BFWB_OUT_SP21	Copper, Total	Blank Detect
10-Jan-2022	E291569	WL_BFWB_OUT_SP21	Mercury, Dissolved	Blank Detect
7-Feb-2022	E291569	WL_BFWB_OUT_SP21	Selenate, Dissolved	Blank Detect
7-Feb-2022	E291569	WL_BFWB_OUT_SP21	Selenium, Total	Blank Detect
4-Apr-2022	E291569	WL_BFWB_OUT_SP21	Mercury, Total	Blank Detect
12-Apr-2022	E291569	WL_BFWB_OUT_SP21	Unknown Selenium Species	Blank Detect
2-May-2022	E291569	WL_BFWB_OUT_SP21	Aluminum, Dissolved	Blank Detect
2-May-2022	E291569	WL_BFWB_OUT_SP21	Barium, Dissolved	Blank Detect
2-May-2022	E291569	WL_BFWB_OUT_SP21	Barium, Total	Blank Detect
10-May-2022	E291569	WL_BFWB_OUT_SP21	Selenite, Dissolved	Blank Detect
7-Jun-2022	E291569	WL_BFWB_OUT_SP21	Selenite, Dissolved	Blank Detect
13-Jun-2022	E291569	WL_BFWB_OUT_SP21	Turbidity, Lab	Blank Detect
11-Jul-2022	E291569	WL_BFWB_OUT_SP21	Molybdenum, Dissolved	Blank Detect
11-Jul-2022	E291569	WL_BFWB_OUT_SP21	Manganese, Total	Blank Detect
11-Jul-2022	E291569	WL_BFWB_OUT_SP21	Manganese, Dissolved	Blank Detect
11-Jul-2022	E291569	WL_BFWB_OUT_SP21	Aluminum, Total	Blank Detect
8-Aug-2022	E291569	WL_BFWB_OUT_SP21	Aluminum, Dissolved	Blank Detect
8-Aug-2022	E291569	WL_BFWB_OUT_SP21	Molybdenum, Total	Blank Detect
30-Aug-2022	E291569	WL_BFWB_OUT_SP21	Selenium, Total	Blank Detect
2-Sep-2022	E291569	WL_BFWB_OUT_SP21	Selenium, Total	Blank Detect
5-Sep-2022	E291569	WL_BFWB_OUT_SP21	Selenium, Total	Blank Detect
5-Sep-2022	E291569	WL_BFWB_OUT_SP21	Selenium, Dissolved	Blank Detect

Date	EMS ID	Location Code	Parameters	Reason
5-Sep-2022	E291569	WL_BFWB_OUT_SP21	Molybdenum, Total	Blank Detect
13-Sep-2022	E291569	WL_BFWB_OUT_SP21	Selenium, Total	Blank Detect
20-Sep-2022	E291569	WL_BFWB_OUT_SP21	Selenium, Total	Blank Detect
3-Oct-2022	E291569	WL_BFWB_OUT_SP21	Selenium, Total	Blank Detect
15-Nov-2022	E291569	WL_BFWB_OUT_SP21	Total Organic Carbon	Blank Detect

Table E-4. Results outside RPD acceptance criteria at the EVO SRF P2 2022

Date	EMS ID	Location Code	Parameters	Reason
1/1/2022	E321811	F2_ECIN	Nitrogen, Ammonia (as N)	Fail
1/3/2022	E206231	EV_GT1	Cation - Anion Balance	Fail
1/3/2022	E206231	EV_GT1	Cobalt, Dissolved	Pass-1
1/3/2022	E206231	EV_GT1	Mercury, Dissolved	Pass-1
1/3/2022	E206231	EV_GT1	Mercury, Total	Fail
1/3/2022	E206231	EV_GT1	Nitrite Nitrogen (NO2), as N	Pass-1
1/3/2022	E206231	EV_GT1	Nitrogen, Ammonia (as N)	Pass-1
1/3/2022	E206231	EV_GT1	Total Kjeldahl Nitrogen	Fail
1/3/2022	E206231	EV_GT1	Total Suspended Solids, Lab	Pass-1
1/4/2022	E321811	F2_ECIN	Acidity to pH 8.3 (as CaCO3)	Pass-1
1/4/2022	E321811	F2_ECIN	Alkalinity, Bicarbonate (as CaCO3), lab measured.	Pass-2
1/4/2022	E321811	F2_ECIN	Alkalinity, Total (as CaCO3), lab measured.	Pass-2
1/4/2022	E321811	F2_ECIN	Antimony, Total	Pass-1
1/4/2022	E321811	F2_ECIN	Arsenic, Total	Pass-1
1/4/2022	E321811	F2_ECIN	Barium, Total	Fail
1/4/2022	E321811	F2_ECIN	Bicarbonate	Pass-2
1/4/2022	E321811	F2_ECIN	Bismuth, Dissolved	Pass-1
1/4/2022	E321811	F2_ECIN	Boron, Dissolved	Pass-1
1/4/2022	E321811	F2_ECIN	Boron, Total	Fail
1/4/2022	E321811	F2_ECIN	Bromide	Fail
1/4/2022	E321811	F2_ECIN	Cadmium, Total	Fail
1/4/2022	E321811	F2_ECIN	Carbon, Dissolved Organic	Pass-1
1/4/2022	E321811	F2_ECIN	Chloride, Dissolved	Fail
1/4/2022	E321811	F2_ECIN	Chromium, Total	Pass-1

Date	EMS ID	Location Code	Parameters	Reason
1/4/2022	E321811	F2_ECIN	Cobalt, Dissolved	Fail
1/4/2022	E321811	F2_ECIN	Cobalt, Total	Fail
1/4/2022	E321811	F2_ECIN	Fluoride	Pass-1
1/4/2022	E321811	F2_ECIN	Iron, Total	Fail
1/4/2022	E321811	F2_ECIN	Lead, Dissolved	Pass-1
1/4/2022	E321811	F2_ECIN	Lithium, Total	Fail
1/4/2022	E321811	F2_ECIN	Manganese, Total	Fail
1/4/2022	E321811	F2_ECIN	Mercury, Total	Fail
1/4/2022	E321811	F2_ECIN	Molybdenum, Total	Fail
1/4/2022	E321811	F2_ECIN	Nickel, Total	Fail
1/4/2022	E321811	F2_ECIN	Nitrate Nitrogen (NO3), as N	Fail
1/4/2022	E321811	F2_ECIN	Nitrite Nitrogen (NO2), as N	Pass-1
1/4/2022	E321811	F2_ECIN	Nitrogen, Ammonia (as N), Total	Fail
1/4/2022	E321811	F2_ECIN	Ortho-phosphate, Dissolved	Fail
1/4/2022	E321811	F2_ECIN	Phosphorus, Total	Fail
1/4/2022	E321811	F2_ECIN	Potassium, Dissolved	Pass-2
1/4/2022	E321811	F2_ECIN	Potassium, Total	Fail
1/4/2022	E321811	F2_ECIN	Selenium, Total	Fail
1/4/2022	E321811	F2_ECIN	Silicon, Total	Pass-2
1/4/2022	E321811	F2_ECIN	Sodium, Dissolved	Fail
1/4/2022	E321811	F2_ECIN	Sodium, Total	Fail
1/4/2022	E321811	F2_ECIN	Strontium, Total	Pass-2
1/4/2022	E321811	F2_ECIN	Sulphur, Total	Pass-2
1/4/2022	E321811	F2_ECIN	Thallium, Total	Fail
1/4/2022	E321811	F2_ECIN	Tin, Dissolved	Pass-1
1/4/2022	E321811	F2_ECIN	Turbidity, lab	Fail
1/4/2022	E321811	F2_ECIN	Uranium, Total	Fail
1/4/2022	E321811	F2_ECIN	Zinc, Total	Fail
1/16/2022	E321811	F2_ECIN	Carbon, Dissolved Organic	Pass-1
1/16/2022	E321811	F2_ECIN	Nitrogen, Ammonia (as N)	Fail
1/16/2022	E321811	F2_ECIN	Total Suspended Solids, lab	Pass-1
1/19/2022	E321791	F2_NWPI	Total Suspended Solids, lab	Pass-1
1/22/2022	E321791	F2_NWPI	Nitrogen, Ammonia (as N)	Pass-2
1/22/2022	E321791	F2_NWPI	Phosphorus, Total	Pass-1

Date	EMS ID	Location Code	Parameters	Reason
1/22/2022	E321791	F2_NWPI	Total Suspended Solids, lab	Pass-1
2/1/2022	E206231	EV_GT1	Aluminum, Dissolved	Pass-1
2/1/2022	E206231	EV_GT1	Cation - Anion Balance	Fail
2/1/2022	E206231	EV_GT1	Chloride, Dissolved	Pass-1
2/1/2022	E206231	EV_GT1	Cobalt, Dissolved	Pass-1
2/1/2022	E206231	EV_GT1	Manganese, Total	Fail
2/1/2022	E206231	EV_GT1	Mercury, Total	Fail
2/1/2022	E206231	EV_GT1	Nitrogen, Ammonia (as N), Total	Pass-1
2/1/2022	E206231	EV_GT1	Total Kjeldahl Nitrogen	Pass-2
2/1/2022	E206231	EV_GT1	Total Suspended Solids, lab	Pass-1
2/1/2022	E206231	EV_GT1	Zinc, Dissolved	Fail
2/4/2022	E321811	F2_ECIN	Carbon, Dissolved Organic	Pass-1
2/4/2022	E321811	F2_ECIN	Nitrite Nitrogen (NO2), as N	Pass-1
2/4/2022	E321811	F2_ECIN	Nitrogen, Ammonia (as N), Total	Pass-1
2/4/2022	E321811	F2_ECIN	Total Suspended Solids, lab	Pass-1
2/6/2022	E321811	F2_ECIN	Oxidation-Reduction Potential, lab	Pass-2
2/6/2022	E321811	F2_ECIN	Total Suspended Solids, lab	Pass-1
2/15/2022	E206231	EV_GT1	Aluminum, Dissolved	Pass-1
2/15/2022	E206231	EV_GT1	Arsenic, Dissolved	Pass-1
2/15/2022	E206231	EV_GT1	Cadmium, Total	Pass-2
2/15/2022	E206231	EV_GT1	Cation - Anion Balance	Fail
2/15/2022	E206231	EV_GT1	Cobalt, Dissolved	Pass-1
2/15/2022	E206231	EV_GT1	Copper, Dissolved	Pass-1
2/15/2022	E206231	EV_GT1	Iron, Dissolved	Pass-1
2/15/2022	E206231	EV_GT1	Mercury, Total	Fail
2/15/2022	E206231	EV_GT1	Total Kjeldahl Nitrogen	Pass-2
2/15/2022	E206231	EV_GT1	Turbidity, lab	Pass-2
2/15/2022	E206231	EV_GT1	Zinc, Dissolved	Fail
2/16/2022	E321811	F2_ECIN	Carbon, Dissolved Organic	Pass-1
2/16/2022	E321811	F2_ECIN	Chloride, Dissolved	Pass-2
2/16/2022	E321811	F2_ECIN	Total Suspended Solids, lab	Pass-1
2/18/2022	E321791	F2_NWPI	Acidity to pH 8.3 (as CaCO3)	Pass-1
2/18/2022	E321791	F2_NWPI	Oxidation-Reduction Potential, lab	Pass-2
2/18/2022	E321791	F2_NWPI	Sulphide (as S), Total	Pass-1

Date	EMS ID	Location Code	Parameters	Reason
2/19/2022	E321811	F2_ECIN	Total Suspended Solids, lab	Pass-1
2/25/2022	E321811	F2_ECIN	Acidity to pH 8.3 (as CaCo3)	Pass-1
2/25/2022	E321811	F2_ECIN	Carbon, Dissolved Organic	Pass-1
2/25/2022	E321811	F2_ECIN	Total Suspended Solids, lab	Pass-1
2/26/2022	E321791	F2_NWPI	Carbon, Dissolved Organic	Fail
2/26/2022	E321791	F2_NWPI	Nitrogen, Ammonia (as N)	Pass-2
2/26/2022	E321791	F2_NWPI	Ortho-phosphate, Dissolved	Pass-1
2/26/2022	E321791	F2_NWPI	Phosphorus, Total	Pass-1
2/26/2022	E321791	F2_NWPI	Total Suspended Solids, lab	Pass-1
2/27/2022	E321811	F2_ECIN	Total Suspended Solids, lab	Pass-1
3/1/2022	E206231	EV_GT1	Alkalinity, Carbonate (as CaCO3), lab measured.	Pass-1
3/1/2022	E206231	EV_GT1	Aluminum, Dissolved	Pass-1
3/1/2022	E206231	EV_GT1	Aluminum, Total	Pass-1
3/1/2022	E206231	EV_GT1	Chromium, Total	Pass-1
3/1/2022	E206231	EV_GT1	Cobalt, Dissolved	Pass-1
3/1/2022	E206231	EV_GT1	Iron, Total	Fail
3/1/2022	E206231	EV_GT1	Mercury, Total	Fail
3/1/2022	E206231	EV_GT1	Total Kjeldahl Nitrogen	Pass-2
3/1/2022	E206231	EV_GT1	Zinc, Dissolved	Fail
3/1/2022	E206231	EV_GT1	Zinc, Total	Pass-1
3/6/2022	E321811	F2_ECIN	Total Suspended Solids, lab	Pass-1
3/9/2022	E321791	F2_NWPI	Total Suspended Solids, lab	Pass-1
3/9/2022	E321791	F2_NWPI	Turbidity, lab	Pass-2
3/15/2022	E206231	EV_GT1	Acidity to pH 8.3 (as CaCO3)	Pass-1
3/15/2022	E206231	EV_GT1	Aluminum, Dissolved	Pass-1
3/15/2022	E206231	EV_GT1	Aluminum, Total	Pass-2
3/15/2022	E206231	EV_GT1	Chromium, Total	Pass-1
3/15/2022	E206231	EV_GT1	Cobalt, Dissolved	Pass-1
3/15/2022	E206231	EV_GT1	Copper, Dissolved	Pass-1
3/15/2022	E206231	EV_GT1	Iron, Total	Pass-2
3/15/2022	E206231	EV_GT1	Lead, Total	Pass-1
3/15/2022	E206231	EV_GT1	Manganese, Total	Pass-2
3/15/2022	E206231	EV_GT1	Mercury, Total	Fail

Date	EMS ID	Location Code	Parameters	Reason
3/15/2022	E206231	EV_GT1	Ortho-phosphate, Dissolved	Pass-1
3/15/2022	E206231	EV_GT1	Titanium, Total	Fail
3/15/2022	E206231	EV_GT1	Vanadium, total	Pass-1
3/18/2022	E321811	F2_ECIN	Acidity to pH 8.3 (as CaCO3)	Pass-1
3/18/2022	E321811	F2_ECIN	Nitrite Nitrogen (NO2), as N	Pass-1
3/18/2022	E321811	F2_ECIN	Total Suspended Solids, lab	Pass-1
3/19/2022	E321791	F2_NWPI	Acidity to pH 8.3 (as CaCO3)	Pass-1
3/22/2022	E206231	EV_GT1	Alkalinity, Carbonate (as CaCO3), lab measured.	Pass-2
3/22/2022	E206231	EV_GT1	Aluminum, Dissolved	Pass-1
3/22/2022	E206231	EV_GT1	Aluminum, Total	Fail
3/22/2022	E206231	EV_GT1	Antimony, Total	Pass-2
3/22/2022	E206231	EV_GT1	Arsenic, Total	Pass-1
3/22/2022	E206231	EV_GT1	Barium, Total	Pass-2
3/22/2022	E206231	EV_GT1	Boron, Total	Pass-1
3/22/2022	E206231	EV_GT1	Cadmium, Total	Fail
3/22/2022	E206231	EV_GT1	Carbonate (as CO3)	Pass-2
3/22/2022	E206231	EV_GT1	Cation - Anion Balance	Fail
3/22/2022	E206231	EV_GT1	Chromium, Total	Pass-1
3/22/2022	E206231	EV_GT1	Cobalt, Dissolved	Pass-1
3/22/2022	E206231	EV_GT1	Iron, Total	Fail
3/22/2022	E206231	EV_GT1	Lead, Total	Pass-1
3/22/2022	E206231	EV_GT1	Lithium, Total	Pass-2
3/22/2022	E206231	EV_GT1	Manganese, Total	Pass-2
3/22/2022	E206231	EV_GT1	Mercury, Total	Fail
3/22/2022	E206231	EV_GT1	Molybdenum, Total	Pass-2
3/22/2022	E206231	EV_GT1	Nickel, Total	Fail
3/22/2022	E206231	EV_GT1	Potassium, Total	Pass-2
3/22/2022	E206231	EV_GT1	Sodium, Total	Fail
3/22/2022	E206231	EV_GT1	Strontium, Total	Fail
3/22/2022	E206231	EV_GT1	Thallium, Total	Pass-1
3/22/2022	E206231	EV_GT1	Titanium, Total	Fail
3/22/2022	E206231	EV_GT1	Total Kjeldahl Nitrogen	Pass-2
3/22/2022	E206231	EV_GT1	Total Suspended Solids, lab	Fail

Date	EMS ID	Location Code	Parameters	Reason
3/22/2022	E206231	EV_GT1	Uranium, Total	Pass-2
3/22/2022	E206231	EV_GT1	Zinc, Dissolved	Fail
3/22/2022	E206231	EV_GT1	Zinc, Total	Pass-1
3/29/2022	E206231	EV_GT1	Alkalinity, Carbonate (as CaCO3), lab measured.	Pass-1
3/29/2022	E206231	EV_GT1	Aluminum, Dissolved	Fail
3/29/2022	E206231	EV_GT1	Aluminum, Total	Pass-2
3/29/2022	E206231	EV_GT1	Biochemical Oxygen Demand, five day	Pass-1
3/29/2022	E206231	EV_GT1	Carbonate (as CO3)	Pass-1
3/29/2022	E206231	EV_GT1	Cation - Anion Balance	Pass-2
3/29/2022	E206231	EV_GT1	Chromium, Dissolved	Pass-1
3/29/2022	E206231	EV_GT1	Chromium, Total	Pass-2
3/29/2022	E206231	EV_GT1	Cobalt, Dissolved	Pass-1
3/29/2022	E206231	EV_GT1	COD - Chemical Oxygen Demand	Pass-1
3/29/2022	E206231	EV_GT1	Iron, Total	Pass-2
3/29/2022	E206231	EV_GT1	Mercury, Total	Fail
3/29/2022	E206231	EV_GT1	Nitrite Nitrogen (NO2), as N	Pass-1
3/29/2022	E206231	EV_GT1	Silver, Total	Pass-1
3/29/2022	E206231	EV_GT1	Titanium, Total	Pass-2
3/29/2022	E206231	EV_GT1	Total Organic Carbon, Total	Fail
3/29/2022	E206231	EV_GT1	Vanadium, Total	Fail
3/29/2022	E206231	EV_GT1	Zinc, Dissolved	Fail
4/1/2022	E321791	F2_NWPI	Fluoride	Pass-1
4/1/2022	E321791	F2_NWPI	Nitrite Nitrogen (NO2), as N	Pass-2
4/1/2022	E321791	F2_NWPI	Oxidation-Reduction Potential, lab	Pass-2
4/1/2022	E321791	F2_NWPI	Phosphorus, Total	Pass-1
4/1/2022	E321791	F2_NWPI	Total Suspended Solids, lab	Pass-1
4/2/2022	E321811	F2_ECIN	Total Suspended Solids, lab	Pass-1
4/5/2022	E206231	EV_GT1	Aluminum, Total	Pass-2
4/5/2022	E206231	EV_GT1	Cation - Anion Balance	Fail
4/5/2022	E206231	EV_GT1	Chromium, Dissolved	Pass-1
4/5/2022	E206231	EV_GT1	Iron, Dissolved	Pass-1
4/5/2022	E206231	EV_GT1	Mercury, Total	Fail
4/5/2022	E206231	EV_GT1	Titanium, Total	Pass-1

Date	EMS ID	Location Code	Parameters	Reason
4/5/2022	E206231	EV_GT1	Total Kjeldahl Nitrogen	Fail
4/5/2022	E206231	EV_GT1	Total Suspended Solids, lab	Fail
4/8/2022	E321811	F2_ECIN	Ortho-phosphate, Dissolved	Pass-2
4/9/2022	E321791	F2_NWPI	Carbon, Dissolved Organic	Pass-1
4/9/2022	E321791	F2_NWPI	Ortho-phosphate, Dissolved	Pass-1
4/9/2022	E321791	F2_NWPI	Total Suspended Solids, lab	Pass-1
4/10/2022	E321791	F2_NWPI	Phosphorus, Total	Pass-1
4/12/2022	E206231	EV_GT1	Alkalinity, Carbonate (as CaCO3), lab measured.	Fail
4/12/2022	E206231	EV_GT1	Aluminum, Dissolved	Pass-1
4/12/2022	E206231	EV_GT1	Aluminum, Total	Pass-1
4/12/2022	E206231	EV_GT1	Carbonate (as CO3)	Fail
4/12/2022	E206231	EV_GT1	Cation - Anion Balance	Fail
4/12/2022	E206231	EV_GT1	Iron, Dissolved	Pass-1
4/12/2022	E206231	EV_GT1	Iron, Total	Pass-2
4/12/2022	E206231	EV_GT1	Mercury, Total	Fail
4/12/2022	E206231	EV_GT1	Phosphorus, Total	Pass-1
4/12/2022	E206231	EV_GT1	Total Suspended Solids, lab	Pass-1
4/19/2022	E206231	EV_GT1	Aluminum, Total	Pass-1
4/19/2022	E206231	EV_GT1	Beryllium, Dissolved	Pass-1
4/19/2022	E206231	EV_GT1	Bismuth, Dissolved	Pass-1
4/19/2022	E206231	EV_GT1	Cation - Anion Balance, Dissolved	Pass-2
4/19/2022	E206231	EV_GT1	Chromium, Dissolved	Pass-1
4/19/2022	E206231	EV_GT1	Cobalt, Dissolved	Pass-1
4/19/2022	E206231	EV_GT1	Copper, Dissolved	Pass-1
4/19/2022	E206231	EV_GT1	Lead, Dissolved	Pass-1
4/19/2022	E206231	EV_GT1	Mercury, Total	Fail
4/19/2022	E206231	EV_GT1	Silver, Dissolved	Pass-1
4/19/2022	E206231	EV_GT1	Tin, Dissolved	Pass-1
4/19/2022	E206231	EV_GT1	Titanium, Dissolved	Pass-1
4/19/2022	E206231	EV_GT1	Total Kjeldahl Nitrogen	Fail
4/19/2022	E206231	EV_GT1	Total Suspended Solids, lab	Pass-1
4/19/2022	E206231	EV_GT1	Vanadium, Dissolved	Pass-1
4/22/2022	E321791	F2_NWPI	Total Suspended Solids, lab	Pass-1

Date	EMS ID	Location Code	Parameters	Reason
4/24/2022	E321791	F2_NWPI	Fluoride	Pass-1
4/24/2022	E321791	F2_NWPI	Hydrogen Sulfide	Pass-1
4/24/2022	E321791	F2_NWPI	Ortho-phosphate, Dissolved	Pass-1
4/24/2022	E321791	F2_NWPI	Phosphorus, Total	Pass-1
4/24/2022	E321791	F2_NWPI	Sulphide (as S), Total	Pass-1
4/26/2022	E206231	EV_GT1	Cation - Anion Balance	Fail
4/26/2022	E206231	EV_GT1	Chromium, Dissolved	Fail
4/26/2022	E206231	EV_GT1	Mercury, Total	Fail
4/26/2022	E206231	EV_GT1	Nitrite Nitrogen (NO2), as N	Fail
4/26/2022	E206231	EV_GT1	Phosphorus, Total	Pass-1
4/26/2022	E206231	EV_GT1	Total Kjeldahl Nitrogen	Pass-1
4/26/2022	E206231	EV_GT1	Total Suspended Solids, lab	Pass-1
4/30/2022	E321791	F2_NWPI	Phosphorus, Total	Pass-1
4/30/2022	E321791	F2_NWPI	Total Suspended Solids, lab	Pass-1
5/3/2022	E206231	EV_GT1	Aluminum, Total	Pass-1
5/3/2022	E206231	EV_GT1	Mercury, Dissolved	Pass-1
5/3/2022	E206231	EV_GT1	Mercury, Total	Fail
5/3/2022	E206231	EV_GT1	Total Suspended Solids, lab	Fail
5/8/2022	E321791	F2_NWPI	Phosphorus, Total	Pass-1
5/10/2022	E206231	EV_GT1	Aluminum, Dissolved	Pass-1
5/10/2022	E206231	EV_GT1	Cation - Anion Balance	Pass-2
5/10/2022	E206231	EV_GT1	Copper, Dissolved	Pass-1
5/10/2022	E206231	EV_GT1	Iron, Dissolved	Pass-1
5/10/2022	E206231	EV_GT1	Mercury, Total	Fail
5/10/2022	E206231	EV_GT1	Nitrite Nitrogen (NO2), as N	Pass-1
5/10/2022	E206231	EV_GT1	Oxidation-Reduction Potential, lab	Pass-2
5/10/2022	E206231	EV_GT1	Zinc, Dissolved	Fail
5/16/2022	E300091	EV_MC2	Antimony, Dissolved	Pass-1
5/16/2022	E300091	EV_MC2	Arsenic, Dissolved	Pass-1
5/16/2022	E300091	EV_MC2	Cation - Anion Balance	Fail
5/16/2022	E300091	EV_MC2	Chromium, Total	Pass-1
5/16/2022	E300091	EV_MC2	COD - Chemical Oxygen Demand	Pass-1
5/16/2022	E300091	EV_MC2	Iron, Dissolved	Pass-1
5/16/2022	E300091	EV_MC2	Mercury, Dissolved	Fail

Date	EMS ID	Location Code	Parameters	Reason
5/16/2022	E300091	EV_MC2	Mercury, Total	Fail
5/16/2022	E300091	EV_MC2	Nitrogen, Ammonia (as N), Total	Pass-1
5/16/2022	E300091	EV_MC2	Titanium, Total	Fail
5/16/2022	E300091	EV_MC2	Total Kjeldahl Nitrogen	Pass-1
5/16/2022	E300091	EV_MC2	Zinc, Dissolved	Fail
5/16/2022	E300091	EV_MC2	Zinc, Total	Pass-1
5/20/2022	E321791	F2_NWPI	Carbon, Dissolved Organic	Pass-1
5/20/2022	E321791	F2_NWPI	Total Suspended Solids, lab	Pass-1
5/24/2022	E206231	EV_GT1	Alkalinity, Carbonate (as CaCO3), lab measured.	Pass-1
5/24/2022	E206231	EV_GT1	Aluminum, Dissolved	Pass-1
5/24/2022	E206231	EV_GT1	Aluminum, Total	Pass-1
5/24/2022	E206231	EV_GT1	Carbonate (as CO3)	Pass-1
5/24/2022	E206231	EV_GT1	Cation - Anion Balance	Pass-2
5/24/2022	E206231	EV_GT1	Copper, Dissolved	Pass-1
5/24/2022	E206231	EV_GT1	Lead, Dissolved	Pass-1
5/24/2022	E206231	EV_GT1	Mercury, Total	Fail
5/24/2022	E206231	EV_GT1	Total Kjeldahl Nitrogen	Fail
5/24/2022	E206231	EV_GT1	Zinc, Total	Pass-1
5/31/2022	E206231	EV_GT1	Aluminum, Total	Pass-1
5/31/2022	E206231	EV_GT1	Beryllium, Total	Pass-1
5/31/2022	E206231	EV_GT1	Bismuth, Total	Pass-1
5/31/2022	E206231	EV_GT1	Cation - Anion Balance	Fail
5/31/2022	E206231	EV_GT1	Chromium, Dissolved	Pass-1
5/31/2022	E206231	EV_GT1	Chromium, Total	Pass-1
5/31/2022	E206231	EV_GT1	Copper, Total	Pass-1
5/31/2022	E206231	EV_GT1	Iron, Dissolved	Pass-1
5/31/2022	E206231	EV_GT1	Lead, Total	Pass-1
5/31/2022	E206231	EV_GT1	Mercury, Total	Fail
5/31/2022	E206231	EV_GT1	Silver, Dissolved	Pass-1
5/31/2022	E206231	EV_GT1	Silver, Total	Pass-1
5/31/2022	E206231	EV_GT1	Tin, Total	Pass-1
5/31/2022	E206231	EV_GT1	Titanium, Total	Pass-1
5/31/2022	E206231	EV_GT1	Total Kjeldahl Nitrogen	Pass-2

Date	EMS ID	Location Code	Parameters	Reason
5/31/2022	E206231	EV_GT1	Total Suspended Solids, lab	Pass-1
5/31/2022	E206231	EV_GT1	Vanadium, Total	Pass-1
6/3/2022	E321791	F2_NWPI	Total Suspended Solids, lab	Pass-1
6/7/2022	E206231	EV_GT1	Aluminum, Dissolved	Pass-1
6/7/2022	E206231	EV_GT1	Cation - Anion Balance	Fail
6/7/2022	E206231	EV_GT1	COD - Chemical Oxygen Demand	Pass-1
6/7/2022	E206231	EV_GT1	Iron, Dissolved	Pass-1
6/7/2022	E206231	EV_GT1	Mercury, Dissolved	Fail
6/7/2022	E206231	EV_GT1	Mercury, Total	Fail
6/10/2022	E321791	F2_NWPI	Alkalinity, Carbonate (as CaCO3), lab measured.	Pass-1
6/10/2022	E321791	F2_NWPI	Carbon, Dissolved Organic	Pass-1
6/10/2022	E321791	F2_NWPI	Carbonate (as CO3)	Pass-1
6/11/2022	E321791	F2_NWPI	Carbon, Dissolved Organic	Pass-1
6/11/2022	E321791	F2_NWPI	Phosphorus, Total	Pass-1
6/11/2022	E321791	F2_NWPI	Total Suspended Solids, lab	Pass-1
6/13/2022	E321812	F2_BPO	Carbon, Dissolved Organic	Pass-1
6/13/2022	E321812	F2_BPO	Chloride, Dissolved	Pass-2
6/13/2022	E321812	F2_BPO	Iron, Dissolved	Pass-1
6/13/2022	E321812	F2_BPO	Mercury, Total	Fail
6/13/2022	E321812	F2_BPO	Molybdenum, Dissolved	Pass-2
6/13/2022	E321812	F2_BPO	Molybdenum, Total	Pass-2
6/13/2022	E321812	F2_BPO	Phosphorus, Total	Pass-1
6/13/2022	E321812	F2_BPO	Sulphide (as S), Total	Pass-1
6/13/2022	E321812	F2_BPO	Total Suspended Solids, lab	Pass-1
6/14/2022	E321812	F2_BPO	Alkalinity, Carbonate (as CaCO3), lab measured.	Fail
6/14/2022	E321812	F2_BPO	Aluminum, Dissolved	Pass-1
6/14/2022	E321812	F2_BPO	Beryllium, Dissolved	Pass-1
6/14/2022	E321812	F2_BPO	Bismuth, Dissolved	Pass-1
6/14/2022	E321812	F2_BPO	Bromide	Pass-1
6/14/2022	E321812	F2_BPO	Carbonate (as CO3)	Fail
6/14/2022	E321812	F2_BPO	Chromium, Dissolved	Pass-1
6/14/2022	E321812	F2_BPO	Copper, Dissolved	Pass-1
6/14/2022	E321812	F2_BPO	Fluoride	Pass-1

Date	EMS ID	Location Code	Parameters	Reason
6/14/2022	E321812	F2_BPO	Lead, Dissolved	Pass-1
6/14/2022	E321812	F2_BPO	Mercury, Total	Fail
6/14/2022	E321812	F2_BPO	Nitrate Nitrogen (NO3), as N	Pass-2
6/14/2022	E321812	F2_BPO	Nitrite Nitrogen (NO2), as N	Pass-1
6/14/2022	E321812	F2_BPO	Ortho-phosphate, Dissolved	Pass-1
6/14/2022	E321812	F2_BPO	Silver, Dissolved	Pass-1
6/14/2022	E321812	F2_BPO	Sulphide (as S), Total	Pass-1
6/14/2022	E321812	F2_BPO	Tin, Dissolved	Pass-1
6/14/2022	E321812	F2_BPO	Titanium, Dissolved	Pass-1
6/14/2022	E321812	F2_BPO	Total Suspended Solids, lab	Pass-1
6/14/2022	E321812	F2_BPO	Vanadium, Dissolved	Pass-1
6/15/2022	E321791	F2_NWPI	Carbon, Dissolved Organic	Pass-1
6/15/2022	E321791	F2_NWPI	Total Suspended Solids, lab	Pass-1
6/16/2022	E321812	F2_BPO	Aluminum, Dissolved	Pass-1
6/16/2022	E321812	F2_BPO	Carbon, Dissolved Organic	Pass-1
6/16/2022	E321812	F2_BPO	Mercury, Dissolved	Fail
6/16/2022	E321812	F2_BPO	Mercury, Total	Fail
6/16/2022	E321812	F2_BPO	Nitrate Nitrogen (NO3), as N	Pass-2
6/16/2022	E321812	F2_BPO	Phosphorus, Total	Pass-1
6/16/2022	E321812	F2_BPO	Total Suspended Solids, lab	Pass-1
6/17/2022	E321791	F2_NWPI	Fluoride	Pass-1
6/17/2022	E321791	F2_NWPI	Total Suspended Solids, lab	Pass-1
6/19/2022	E321812	F2_BPO	Alkalinity, Carbonate (as CaCO3), lab measured.	Fail
6/19/2022	E321812	F2_BPO	Carbonate (as CO3)	Fail
6/19/2022	E321812	F2_BPO	Nitrate Nitrogen (NO3), as N	Fail
6/19/2022	E321812	F2_BPO	Total Suspended Solids, lab	Pass-1
6/20/2022	E321791	F2_NWPI	Aluminum, Dissolved	Fail
6/20/2022	E321791	F2_NWPI	Aluminum, Total	Pass-2
6/20/2022	E321791	F2_NWPI	Copper, Dissolved	Pass-1
6/20/2022	E321791	F2_NWPI	Copper, Total	Pass-1
6/20/2022	E321791	F2_NWPI	Iron, Dissolved	Pass-1
6/20/2022	E321791	F2_NWPI	Lead, Total	Pass-1
6/20/2022	E321791	F2_NWPI	Phosphorus, Total	Pass-1

Date	EMS ID	Location Code	Parameters	Reason
6/20/2022	E321791	F2_NWPI	Titanium, Total	Pass-1
6/20/2022	E321791	F2_NWPI	Total Kjeldahl Nitrogen	Fail
6/20/2022	E321791	F2_NWPI	Total Organic Carbon, Total	Pass-1
6/20/2022	E321791	F2_NWPI	Total Suspended Solids, lab	Pass-1
6/21/2022	E321791	F2_NWPI	Alkalinity, Carbonate (as CaCO3), lab measured.	Fail
6/21/2022	E321791	F2_NWPI	Aluminum, Dissolved	Pass-1
6/21/2022	E321791	F2_NWPI	Beryllium, Dissolved	Pass-1
6/21/2022	E321791	F2_NWPI	Bismuth, Dissolved	Pass-1
6/21/2022	E321791	F2_NWPI	Carbonate (as CO3)	Pass-1
6/21/2022	E321791	F2_NWPI	Chromium, Dissolved	Pass-1
6/21/2022	E321791	F2_NWPI	Copper, Dissolved	Pass-1
6/21/2022	E321791	F2_NWPI	Iron, Dissolved	Pass-1
6/21/2022	E321791	F2_NWPI	Lead, Dissolved	Pass-1
6/21/2022	E321791	F2_NWPI	Mercury, Dissolved	Pass-1
6/21/2022	E321791	F2_NWPI	Mercury, Total	Pass-1
6/21/2022	E321791	F2_NWPI	Phosphorus, Total	Pass-1
6/21/2022	E321791	F2_NWPI	Selenium, Dissolved	Pass-2
6/21/2022	E321791	F2_NWPI	Silver, Dissolved	Pass-1
6/21/2022	E321791	F2_NWPI	Tin, Dissolved	Pass-1
6/21/2022	E321791	F2_NWPI	Titanium, Dissolved	Pass-1
6/21/2022	E321791	F2_NWPI	Total Suspended Solids, lab	Pass-1
6/21/2022	E321791	F2_NWPI	Vanadium, Dissolved	Pass-1
6/21/2022	E321791	F2_NWPI	Zinc, Dissolved	Pass-2
6/21/2022	E206231	EV_GT1	Cation - Anion Balance	Pass-2
6/21/2022	E206231	EV_GT1	Mercury, Total	Fail
6/21/2022	E206231	EV_GT1	Ortho-phosphate, Dissolved	Pass-1
6/21/2022	E206231	EV_GT1	Total Suspended Solids, lab	Pass-1
6/22/2022	E321791	F2_NWPI	Fluoride	Pass-1
6/22/2022	E321791	F2_NWPI	Total Suspended Solids, lab	Pass-1
6/24/2022	E321791	F2_NWPI	Carbon, Dissolved Organic	Pass-1
6/24/2022	E321791	F2_NWPI	Total Suspended Solids, lab	Pass-1
6/24/2022	E321791	F2_NWPI	Turbidity, lab	Pass-2
6/25/2022	E321791	F2_NWPI	Carbon, Dissolved Organic	Pass-1

Date	EMS ID	Location Code	Parameters	Reason
6/25/2022	E321791	F2_NWPI	Nitrate Nitrogen (NO3), as N	Fail
6/25/2022	E321791	F2_NWPI	Nitrite Nitrogen (NO2), as N	Pass-2
6/25/2022	E321791	F2_NWPI	Ortho-phosphate, Dissolved	Pass-1
6/25/2022	E321791	F2_NWPI	Phosphorus, Total	Pass-1
6/25/2022	E321791	F2_NWPI	Total Suspended Solids, lab	Pass-1
6/26/2022	E321791	F2_NWPI	Phosphorus, Total	Pass-1
6/27/2022	E321812	F2_BPO	Aluminum, Dissolved	Pass-1
6/27/2022	E321812	F2_BPO	Aluminum, Total	Pass-1
6/27/2022	E321812	F2_BPO	Beryllium, Dissolved	Pass-1
6/27/2022	E321812	F2_BPO	Bismuth, Dissolved	Pass-1
6/27/2022	E321812	F2_BPO	Carbon, Dissolved Organic	Pass-1
6/27/2022	E321812	F2_BPO	Chromium, Dissolved	Pass-1
6/27/2022	E321812	F2_BPO	Copper, Dissolved	Pass-1
6/27/2022	E321812	F2_BPO	Lead, Dissolved	Pass-1
6/27/2022	E321812	F2_BPO	Nitrate Nitrogen (NO3), as N	Pass-2
6/27/2022	E321812	F2_BPO	Phosphorus, Total	Pass-1
6/27/2022	E321812	F2_BPO	Silver, Dissolved	Pass-1
6/27/2022	E321812	F2_BPO	Tin, Dissolved	Pass-1
6/27/2022	E321812	F2_BPO	Titanium, Dissolved	Pass-1
6/27/2022	E321812	F2_BPO	Total Organic Carbon, Total	Pass-1
6/27/2022	E321812	F2_BPO	Total Suspended Solids, lab	Pass-1
6/27/2022	E321812	F2_BPO	Vanadium, Dissolved	Pass-1
6/28/2022	E321812	F2_BPO	COD - Chemical Oxygen Demand	Pass-1
6/28/2022	E321812	F2_BPO	Iron, Dissolved	Pass-1
6/28/2022	E321812	F2_BPO	Mercury, Total	Pass-1
6/28/2022	E321812	F2_BPO	Nitrate Nitrogen (NO3), as N	Pass-2
6/28/2022	E321812	F2_BPO	Phosphorus, Total	Pass-1
6/28/2022	E321812	F2_BPO	Sulphide (as S), Total	Pass-1
6/28/2022	E321812	F2_BPO	Total Suspended Solids, lab	Pass-1
6/28/2022	E206231	EV_GT1	Aluminum, Dissolved	Pass-1
6/28/2022	E206231	EV_GT1	Cation - Anion Balance	Fail
6/28/2022	E206231	EV_GT1	Copper, Dissolved	Pass-1
6/28/2022	E206231	EV_GT1	Zinc, Total	Fail
7/1/2022	E321791	F2_NWPI	Total Suspended Solids, lab	Pass-1

Date	EMS ID	Location Code	Parameters	Reason
7/1/2022	E321791	F2_NWPI	Turbidity, lab	Pass-2
7/3/2022	E321812	F2_BPO	Nitrate Nitrogen (NO3), as N	Pass-2
7/3/2022	E321812	F2_BPO	Total Dissolved Solids (residue, filterable)	Pass-2
7/3/2022	E321812	F2_BPO	Total Suspended Solids, lab	Pass-1
7/4/2022	E321812	F2_BPO	Aluminum, Dissolved	Pass-1
7/4/2022	E321812	F2_BPO	Aluminum, Total	Pass-1
7/4/2022	E321812	F2_BPO	Beryllium, Dissolved	Pass-1
7/4/2022	E321812	F2_BPO	Bismuth, Dissolved	Pass-1
7/4/2022	E321812	F2_BPO	Chromium, Dissolved	Pass-1
7/4/2022	E321812	F2_BPO	Copper, Dissolved	Pass-1
7/4/2022	E321812	F2_BPO	Lead, Dissolved	Pass-1
7/4/2022	E321812	F2_BPO	Molybdenum, Dissolved	Pass-2
7/4/2022	E321812	F2_BPO	Molybdenum, Total	Pass-2
7/4/2022	E321812	F2_BPO	Ortho-phosphate, Dissolved	Pass-1
7/4/2022	E321812	F2_BPO	Oxidation-Reduction Potential, lab	Pass-2
7/4/2022	E321812	F2_BPO	Selenium, Dissolved	Pass-2
7/4/2022	E321812	F2_BPO	Silver, Dissolved	Pass-1
7/4/2022	E321812	F2_BPO	Tin, Dissolved	Pass-1
7/4/2022	E321812	F2_BPO	Titanium, Dissolved	Pass-1
7/4/2022	E321812	F2_BPO	Total Suspended Solids, lab	Pass-1
7/4/2022	E321812	F2_BPO	Vanadium, Dissolved	Pass-1
7/5/2022	E321812	F2_BPO	Aluminum, Dissolved	Pass-1
7/5/2022	E321812	F2_BPO	Cadmium, Dissolved	Fail
7/5/2022	E321812	F2_BPO	Iron, Dissolved	Fail
7/5/2022	E321812	F2_BPO	Lead, Dissolved	Pass-1
7/5/2022	E321812	F2_BPO	Nitrite Nitrogen (NO2), as N	Pass-1
7/5/2022	E321812	F2_BPO	Phosphorus, Total	Pass-1
7/5/2022	E321812	F2_BPO	Total Organic Carbon, Total	Fail
7/5/2022	E321812	F2_BPO	Total Suspended Solids, lab	Pass-1
7/5/2022	E206231	EV_GT1	Aluminum, Dissolved	Fail
7/5/2022	E206231	EV_GT1	Cation - Anion Balance	Fail
7/5/2022	E206231	EV_GT1	Copper, Dissolved	Pass-1
7/5/2022	E206231	EV_GT1	Copper, Total	Pass-1

Date	EMS ID	Location Code	Parameters	Reason
7/5/2022	E206231	EV_GT1	Lead, Dissolved	Pass-1
7/5/2022	E206231	EV_GT1	Lead, Total	Pass-1
7/5/2022	E206231	EV_GT1	Nitrite Nitrogen (NO2), as N	Pass-1
7/5/2022	E206231	EV_GT1	Ortho-phosphate, Dissolved	Pass-1
7/5/2022	E206231	EV_GT1	Total Organic Carbon, Total	Pass-1
7/5/2022	E206231	EV_GT1	Total Suspended Solids, lab	Pass-2
7/5/2022	E206231	EV_GT1	Zinc, Dissolved	Fail
7/5/2022	E206231	EV_GT1	Zinc, Total	Fail
7/8/2022	E321791	F2_NWPI	Nitrite Nitrogen (NO2), as N	Pass-2
7/8/2022	E321791	F2_NWPI	Phosphorus, Total	Pass-1
7/10/2022	E321791	F2_NWPI	Phosphorus, Total	Pass-1
7/10/2022	E321791	F2_NWPI	Total Suspended Solids, lab	Pass-1
7/11/2022	E321812	F2_BPO	Aluminum, Dissolved	Pass-1
7/11/2022	E321812	F2_BPO	Beryllium, Dissolved	Pass-1
7/11/2022	E321812	F2_BPO	Bismuth, Dissolved	Pass-1
7/11/2022	E321812	F2_BPO	Chromium, Dissolved	Pass-1
7/11/2022	E321812	F2_BPO	Copper, Dissolved	Pass-1
7/11/2022	E321812	F2_BPO	Fluoride	Pass-1
7/11/2022	E321812	F2_BPO	Iron, Dissolved	Pass-1
7/11/2022	E321812	F2_BPO	Lead, Dissolved	Pass-1
7/11/2022	E321812	F2_BPO	Molybdenum, Dissolved	Pass-2
7/11/2022	E321812	F2_BPO	Molybdenum, Total	Pass-2
7/11/2022	E321812	F2_BPO	Silver, Dissolved	Pass-1
7/11/2022	E321812	F2_BPO	Tin, Dissolved	Pass-1
7/11/2022	E321812	F2_BPO	Titanium, Dissolved	Pass-1
7/11/2022	E321812	F2_BPO	Total Kjeldahl Nitrogen	Pass-2
7/11/2022	E321812	F2_BPO	Total Organic Carbon, Total	Pass-1
7/11/2022	E321812	F2_BPO	Vanadium, Dissolved	Pass-1
7/12/2022	E321791	F2_NWPI	Carbon, Dissolved Organic	Pass-1
7/12/2022	E206231	EV_GT1	Aluminum, Dissolved	Pass-1
7/12/2022	E206231	EV_GT1	Aluminum, Total	Pass-1
7/12/2022	E206231	EV_GT1	Bromide	Pass-1
7/12/2022	E206231	EV_GT1	Carbon, Dissolved Organic	Pass-1
7/12/2022	E206231	EV_GT1	Cation - Anion Balance	Fail

Date	EMS ID	Location Code	Parameters	Reason
7/12/2022	E206231	EV_GT1	Total Kjeldahl Nitrogen	Pass-1
7/12/2022	E206231	EV_GT1	Total Organic Carbon	Pass-1
7/13/2022	E321791	F2_NWPI	Carbon, Dissolved Organic	Pass-1
7/13/2022	E321791	F2_NWPI	Carbon, Dissolved Organic	Pass-1
7/13/2022	E321791	F2_NWPI	Nitrite Nitrogen (NO2), as N	Pass-2
7/13/2022	E321791	F2_NWPI	Ortho-phosphate, Dissolved	Pass-1
7/13/2022	E321791	F2_NWPI	Phosphorus, Total	Pass-1
7/13/2022	E321791	F2_NWPI	Total Suspended Solids, lab	Fail
7/14/2022	E321812	F2_BPO	Aluminum, Dissolved	Pass-1
7/14/2022	E321812	F2_BPO	Carbon, Dissolved Organic	Pass-1
7/14/2022	E321812	F2_BPO	Turbidity, lab	Pass-2
7/14/2022	E321812	F2_BPO	Zinc, Dissolved	Pass-2
7/15/2022	E321791	F2_NWPI	Nitrite Nitrogen (NO2), as N	Pass-2
7/16/2022	E321791	F2_NWPI	Total Suspended Solids, lab	Pass-1
7/18/2022	E321812	F2_BPO	Aluminum, Dissolved	Pass-1
7/18/2022	E321812	F2_BPO	Carbon, Dissolved Organic	Pass-1
7/18/2022	E321812	F2_BPO	Molybdenum, Dissolved	Fail
7/18/2022	E321812	F2_BPO	Molybdenum, Total	Pass-2
7/18/2022	E321812	F2_BPO	Phosphorus, Total	Pass-1
7/18/2022	E321812	F2_BPO	Zinc, Dissolved	Pass-2
7/18/2022	E321812	F2_BPO	Zinc, Total	Pass-2
7/19/2022	E321812	F2_BPO	Nitrate Nitrogen (NO3), as N	Fail
7/19/2022	E206231	EV_GT1	Total Kjeldahl Nitrogen	Fail
7/19/2022	E206231	EV_GT1	Turbidity, lab	Pass-2
7/21/2022	E321791	F2_NWPI	Fluoride	Pass-1
7/21/2022	E321791	F2_NWPI	Mercury, Dissolved	Pass-1
7/21/2022	E321791	F2_NWPI	Mercury, Total	Pass-1
7/21/2022	E321791	F2_NWPI	Total Suspended Solids, lab	Pass-1
7/23/2022	E321791	F2_NWPI	Total Suspended Solids, lab	Fail
7/25/2022	E321812	F2_BPO	Bromide	Pass-1
7/25/2022	E321812	F2_BPO	Mercury, Total	Pass-1
7/25/2022	E321812	F2_BPO	Sulphur, Total	Pass-2
7/25/2022	E321812	F2_BPO	Total Organic Carbon, Total	Pass-1
7/25/2022	E321812	F2_BPO	Total Suspended Solids, lab	Pass-1

Date	EMS ID	Location Code	Parameters	Reason
7/26/2022	E321812	F2_BPO	Aluminum, Dissolved	Pass-1
7/26/2022	E321812	F2_BPO	COD - Chemical Oxygen Demand	Pass-1
7/26/2022	E321812	F2_BPO	Mercury, Dissolved	Pass-1
7/26/2022	E321812	F2_BPO	Nitrate Nitrogen (NO3), as N	Fail
7/26/2022	E321812	F2_BPO	Selenium, Total	Pass-2
7/26/2022	E321812	F2_BPO	Zinc, Dissolved	Pass-2
7/28/2022	E321812	F2_BPO	Boron, Dissolved	Pass-1
7/28/2022	E321812	F2_BPO	Nitrate Nitrogen (NO3), as N	Pass-2
7/28/2022	E321812	F2_BPO	Phosphorus, Total	Pass-1
7/29/2022	E321791	F2_NWPI	Total Suspended Solids, lab	Pass-1
7/30/2022	E321791	F2_NWPI	Phosphorus, Total	Pass-1
7/30/2022	E321791	F2_NWPI	Total Suspended Solids, lab	Pass-1
7/31/2022	E321791	F2_NWPI	Total Suspended Solids, lab	Pass-1
8/1/2022	E321812	F2_BPO	Aluminum, Dissolved	Pass-1
8/1/2022	E321812	F2_BPO	Cadmium, Dissolved	Pass-2
8/1/2022	E321812	F2_BPO	Cobalt, Dissolved	Pass-2
8/1/2022	E321812	F2_BPO	Magnesium, Dissolved	Fail
8/1/2022	E321812	F2_BPO	Manganese, Dissolved	Pass-2
8/1/2022	E321812	F2_BPO	Nickel, Dissolved	Pass-2
8/1/2022	E321812	F2_BPO	Nitrate Nitrogen (NO3), as N	Pass-2
8/1/2022	E321812	F2_BPO	Nitrite Nitrogen (NO2), as N	Fail
8/1/2022	E321812	F2_BPO	Potassium, Dissolved	Pass-2
8/1/2022	E321812	F2_BPO	Sodium, Dissolved	Pass-2
8/1/2022	E321812	F2_BPO	Sulphur, Dissolved	Pass-2
8/1/2022	E321812	F2_BPO	Zinc, Dissolved	Pass-2
8/1/2022	E321812	F2_BPO	Zinc, Total	Fail
8/2/2022	E321812	F2_BPO	Aluminum, Dissolved	Pass-1
8/2/2022	E321812	F2_BPO	Fluoride	Pass-1
8/2/2022	E321812	F2_BPO	Ortho-phosphate, Dissolved	Pass-1
8/2/2022	E321812	F2_BPO	Oxidation-Reduction Potential, lab	Pass-2
8/2/2022	E321812	F2_BPO	Sulphur, Dissolved	Pass-2
8/2/2022	E321812	F2_BPO	Total Suspended Solids, lab	Pass-1
8/2/2022	E321812	F2_BPO	Turbidity, lab	Pass-2
8/2/2022	E206231	EV_GT1	Aluminum, Total	Pass-1

Date	EMS ID	Location Code	Parameters	Reason
8/2/2022	E206231	EV_GT1	Cadmium, Total	Pass-1
8/2/2022	E206231	EV_GT1	Lead, Total	Pass-2
8/2/2022	E206231	EV_GT1	Total Suspended Solids, lab	Pass-1
8/2/2022	E206231	EV_GT1	Zinc, Total	Pass-1
8/3/2022	E321791	F2_NWPI	Phosphorus, Total	Pass-1
8/3/2022	E321791	F2_NWPI	Total Suspended Solids, lab	Pass-1
8/6/2022	E321791	F2_NWPI	Carbon, Dissolved Organic	Pass-1
8/6/2022	E321791	F2_NWPI	Oxidation-Reduction Potential, lab	Pass-2
8/6/2022	E321791	F2_NWPI	Total Suspended Solids, lab	Pass-1
8/8/2022	E321812	F2_BPO	Boron, Dissolved	Pass-1
8/8/2022	E321812	F2_BPO	Carbon, Dissolved Organic	Pass-1
8/8/2022	E321812	F2_BPO	COD - Chemical Oxygen Demand	Pass-1
8/8/2022	E321812	F2_BPO	Iron, Dissolved	Pass-1
8/8/2022	E321812	F2_BPO	Molybdenum, Total	Pass-2
8/8/2022	E321812	F2_BPO	Nitrate Nitrogen (NO3), as N	Fail
8/8/2022	E321812	F2_BPO	Phosphorus, Total	Pass-1
8/8/2022	E321812	F2_BPO	Selenium, Dissolved	Pass-2
8/8/2022	E321812	F2_BPO	Thallium, Dissolved	Pass-2
8/8/2022	E321812	F2_BPO	Titanium, Total	Pass-1
8/8/2022	E321812	F2_BPO	Total Organic Carbon	Pass-1
8/8/2022	E321812	F2_BPO	Total Suspended Solids, lab	Pass-1
8/8/2022	E321812	F2_BPO	Zinc, Dissolved	Pass-2
8/9/2022	E321812	F2_BPO	Alkalinity, Carbonate (as CaCO3), lab measured.	Pass-2
8/9/2022	E321812	F2_BPO	Carbonate (as CO3)	Pass-2
8/9/2022	E321812	F2_BPO	Iron, Dissolved	Pass-1
8/9/2022	E321812	F2_BPO	Nitrate Nitrogen (NO3), as N	Pass-2
8/9/2022	E321812	F2_BPO	Ortho-phosphate, Dissolved	Pass-1
8/9/2022	E321812	F2_BPO	Total Suspended Solids, lab	Pass-1
8/9/2022	E321812	F2_BPO	Turbidity, lab	Pass-2
8/10/2022	E321791	F2_NWPI	Oxidation-Reduction Potential, lab	Pass-2
8/10/2022	E321791	F2_NWPI	Total Suspended Solids, lab	Pass-1
8/11/2022	E321812	F2_BPO	Aluminum, Total	Pass-1
8/11/2022	E321812	F2_BPO	Ortho-phosphate, Dissolved	Pass-1

Date	EMS ID	Location Code	Parameters	Reason
8/11/2022	E321812	F2_BPO	Phosphorus, Total	Pass-1
8/11/2022	E321812	F2_BPO	Total Suspended Solids, lab	Pass-1
8/11/2022	E321812	F2_BPO	Turbidity, lab	Pass-2
8/13/2022	E321791	F2_NWPI	Phosphorus, Total	Pass-1
8/13/2022	E321791	F2_NWPI	Total Suspended Solids, lab	Pass-1
8/13/2022	E321791	F2_NWPI	Turbidity, lab	Pass-2
8/14/2022	E321791	F2_NWPI	Phosphorus, Total	Pass-1
8/15/2022	E321812	F2_BPO	Aluminum, Dissolved	Pass-1
8/15/2022	E321812	F2_BPO	Aluminum, Total	Pass-1
8/15/2022	E321812	F2_BPO	Iron, Dissolved	Pass-1
8/15/2022	E321812	F2_BPO	Molybdenum, Total	Pass-2
8/15/2022	E321812	F2_BPO	Titanium, Total	Pass-1
8/15/2022	E321812	F2_BPO	Zinc, Dissolved	Pass-2
8/16/2022	E206231	EV_GT1	Alkalinity, Carbonate (as CaCO3), lab measured.	Fail
8/16/2022	E206231	EV_GT1	Aluminum, Total	Pass-1
8/16/2022	E206231	EV_GT1	Arsenic, Dissolved	Pass-1
8/16/2022	E206231	EV_GT1	Carbonate (as CO3)	Fail
8/16/2022	E206231	EV_GT1	Cation - Anion Balance	Fail
8/16/2022	E206231	EV_GT1	Iron, Dissolved	Pass-1
8/16/2022	E206231	EV_GT1	Mercury, Dissolved	Pass-1
8/16/2022	E206231	EV_GT1	Phosphorus, Total	Pass-1
8/16/2022	E206231	EV_GT1	Total Suspended Solids, lab	Fail
8/16/2022	E206231	EV_GT1	Zinc, Total	Pass-1
8/16/2022	E321812	F2_BPO	Aluminum, Dissolved	Pass-1
8/16/2022	E321812	F2_BPO	Phosphorus, Total	Pass-1
8/16/2022	E321812	F2_BPO	Zinc, Dissolved	Fail
8/18/2022	E321791	F2_NWPI	Phosphorus, Total	Pass-1
8/18/2022	E321791	F2_NWPI	Zinc, Dissolved	Pass-2
8/19/2022	E321812	F2_BPO	Oxidation-Reduction Potential, lab	Pass-2
8/19/2022	E321812	F2_BPO	Phosphorus, Total	Pass-1
8/19/2022	E321812	F2_BPO	Total Suspended Solids, lab	Pass-1
8/20/2022	E321791	F2_NWPI	Phosphorus, Total	Pass-1
8/21/2022	E321791	F2_NWPI	Phosphorus, Total	Pass-1

Date	EMS ID	Location Code	Parameters	Reason
8/22/2022	E321812	F2_BPO	Aluminum, Dissolved	Pass-1
8/22/2022	E321812	F2_BPO	Nitrate Nitrogen (NO3), as N	Fail
8/22/2022	E321812	F2_BPO	Total Suspended Solids, lab	Pass-1
8/22/2022	E321812	F2_BPO	Zinc, Dissolved	Pass-2
8/23/2022	E321791	F2_NWPI	Mercury, Dissolved	Fail
8/23/2022	E321791	F2_NWPI	Oxidation-Reduction Potential, lab	Pass-2
8/23/2022	E321791	F2_NWPI	Total Suspended Solids, lab	Pass-1
8/23/2022	E321791	F2_NWPI	Turbidity, lab	Pass-2
8/24/2022	E321791	F2_NWPI	Total Suspended Solids, lab	Pass-1
8/25/2022	E321812	F2_BPO	Mercury, Dissolved	Fail
8/25/2022	E321812	F2_BPO	Mercury, Total	Fail
8/25/2022	E321812	F2_BPO	Nitrate Nitrogen (NO3), as N	Fail
8/25/2022	E321812	F2_BPO	Phosphorus, Total	Pass-1
8/25/2022	E321812	F2_BPO	Zinc, Dissolved	Pass-2
8/26/2022	E321791	F2_NWPI	Fluoride	Pass-1
8/26/2022	E321791	F2_NWPI	Total Suspended Solids, lab	Pass-1
8/29/2022	E321812	F2_BPO	Aluminum, Dissolved	Pass-1
8/29/2022	E321812	F2_BPO	Aluminum, Total	Pass-1
8/29/2022	E321812	F2_BPO	Lead, Total	Pass-1
8/29/2022	E321812	F2_BPO	Total Suspended Solids, lab	Pass-1
8/30/2022	E321812	F2_BPO	Aluminum, Dissolved	Pass-1
8/30/2022	E321812	F2_BPO	Antimony, Dissolved	Pass-1
8/30/2022	E321812	F2_BPO	Mercury, Dissolved	Pass-1
8/30/2022	E321812	F2_BPO	Mercury, Total	Pass-1
8/30/2022	E321812	F2_BPO	Total Suspended Solids, lab	Pass-1
8/30/2022	E206231	EV_GT1	Aluminum, Dissolved	Pass-1
8/30/2022	E206231	EV_GT1	Aluminum, Total	Pass-1
8/30/2022	E206231	EV_GT1	Carbon, Dissolved Organic	Pass-1
8/30/2022	E206231	EV_GT1	Cation - Anion Balance	Fail
8/30/2022	E206231	EV_GT1	Phosphorus, Total	Pass-1
8/30/2022	E206231	EV_GT1	Total Suspended Solids, lab	Pass-1
8/30/2022	E206231	EV_GT1	Turbidity, lab	Pass-2
9/1/2022	E321791	F2_NWPI	Aluminum, Dissolved	Pass-1
9/1/2022	E321791	F2_NWPI	Phosphorus, Total	Pass-1

Date	EMS ID	Location Code	Parameters	Reason
9/1/2022	E321791	F2_NWPI	Total Suspended Solids, lab	Pass-1
9/1/2022	E321791	F2_NWPI	Turbidity, lab	Pass-2
9/2/2022	E321791	F2_NWPI	Phosphorus, Total	Fail
9/3/2022	E321791	F2_NWPI	Total Suspended Solids, lab	Pass-1
9/4/2022	E321791	F2_NWPI	Sulphide (as S), Total	Pass-1
9/4/2022	E321791	F2_NWPI	Total Suspended Solids, lab	Pass-1
9/5/2022	E321791	F2_NWPI	Titanium, Total	Pass-1
9/5/2022	E321791	F2_NWPI	Total Kjeldahl Nitrogen	Pass-1
9/5/2022	E321791	F2_NWPI	Total Suspended Solids, lab	Pass-1
9/5/2022	E321791	F2_NWPI	Turbidity, lab	Pass-2
9/6/2022	E321812	F2_BPO	Carbon, Dissolved Organic	Pass-1
9/6/2022	E321812	F2_BPO	Nitrate Nitrogen (NO3), as N	Fail
9/6/2022	E321812	F2_BPO	Total Suspended Solids, lab	Pass-1
9/7/2022	E321812	F2_BPO	Acidity to pH 8.3 (as CaCO3)	Pass-1
9/7/2022	E321812	F2_BPO	Carbon, Dissolved Organic	Pass-1
9/8/2022	E321812	F2_BPO	Antimony, Dissolved	Pass-1
9/8/2022	E321812	F2_BPO	Nitrate Nitrogen (NO3), as N	Fail
9/8/2022	E321812	F2_BPO	Total Suspended Solids, lab	Pass-1
9/9/2022	E321791	F2_NWPI	Turbidity, lab	Pass-2
9/10/2022	E321791	F2_NWPI	Phosphorus, Total	Pass-1
9/10/2022	E321791	F2_NWPI	Total Suspended Solids, lab	Pass-1
9/11/2022	E321791	F2_NWPI	Total Suspended Solids, lab	Pass-1
9/12/2022	E321812	F2_BPO	Aluminum, Total	Pass-1
9/12/2022	E321812	F2_BPO	Phosphorus, Total	Pass-1
9/12/2022	E321812	F2_BPO	Total Organic Carbon	Pass-1
9/12/2022	E321812	F2_BPO	Total Suspended Solids, lab	Pass-1
9/12/2022	E321812	F2_BPO	Turbidity, lab	Pass-2
9/12/2022	E321812	F2_BPO	Zinc, Total	Fail
9/13/2022	E206231	EV_GT1	Cadmium, Dissolved	Pass-2
9/13/2022	E206231	EV_GT1	Cation - Anion Balance	Pass-2
9/13/2022	E206231	EV_GT1	Total Suspended Solids, lab	Fail
9/13/2022	E206231	EV_GT1	Turbidity, lab	Pass-2
9/13/2022	E321791	F2_NWPI	Aluminum, Dissolved	Pass-1
9/13/2022	E321791	F2_NWPI	Barium, Dissolved	Pass-2

Date	EMS ID	Location Code	Parameters	Reason
9/13/2022	E321791	F2_NWPI	Bromide	Pass-1
9/13/2022	E321791	F2_NWPI	Cadmium, Dissolved	Pass-2
9/13/2022	E321791	F2_NWPI	Cobalt, Dissolved	Pass-2
9/13/2022	E321791	F2_NWPI	Manganese, Dissolved	Pass-2
9/13/2022	E321791	F2_NWPI	Nickel, Dissolved	Pass-2
9/13/2022	E321791	F2_NWPI	Ortho-phosphate, Dissolved	Pass-1
9/13/2022	E321791	F2_NWPI	Phosphorus, Total	Pass-1
9/13/2022	E321791	F2_NWPI	Sodium, Dissolved	Pass-2
9/13/2022	E321791	F2_NWPI	Total Suspended Solids, lab	Pass-1
9/13/2022	E321791	F2_NWPI	Zinc, Dissolved	Pass-2
9/16/2022	E321791	F2_NWPI	Total Suspended Solids, lab	Pass-1
9/17/2022	E321812	F2_BPO	Bromide	Pass-1
9/17/2022	E321812	F2_BPO	Carbon, Dissolved Organic	Pass-1
9/18/2022	E321791	F2_NWPI	Fluoride	Pass-1
9/18/2022	E321791	F2_NWPI	Total Suspended Solids, lab	Pass-1
9/19/2022	E321812	F2_BPO	Arsenic, Dissolved	Pass-1
9/19/2022	E321812	F2_BPO	Carbon, Dissolved Organic	Pass-1
9/19/2022	E321812	F2_BPO	Molybdenum, Total	Pass-2
9/19/2022	E321812	F2_BPO	Nitrate Nitrogen (NO3), as N	Fail
9/19/2022	E321812	F2_BPO	Ortho-phosphate, Dissolved	Pass-1
9/19/2022	E321812	F2_BPO	Phosphorus, Total	Pass-1
9/19/2022	E321812	F2_BPO	Tin, Dissolved	Pass-1
9/19/2022	E321812	F2_BPO	Total Suspended Solids, lab	Pass-1
9/19/2022	E321812	F2_BPO	Turbidity, lab	Pass-2
9/20/2022	E321791	F2_NWPI	Aluminum, Dissolved	Pass-1
9/20/2022	E321791	F2_NWPI	Carbon, Dissolved Organic	Pass-1
9/20/2022	E321791	F2_NWPI	Ortho-phosphate, Dissolved	Pass-1
9/20/2022	E321791	F2_NWPI	Total Suspended Solids, lab	Pass-1
9/21/2022	E321811	F2_ECIN	Total Suspended Solids, lab	Pass-1
9/22/2022	E321812	F2_BPO	Carbon, Dissolved Organic	Pass-1
9/22/2022	E321812	F2_BPO	Iron, Dissolved	Pass-1
9/22/2022	E321812	F2_BPO	Mercury, Dissolved	Fail
9/22/2022	E321812	F2_BPO	Mercury, Total	Fail
9/22/2022	E321812	F2_BPO	Oxidation-Reduction Potential, lab	Pass-2

Date	EMS ID	Location Code	Parameters	Reason
9/22/2022	E321812	F2_BPO	Total Suspended Solids, lab	Pass-1
9/24/2022	E321791	F2_NWPI	Total Suspended Solids, lab	Pass-1
9/25/2022	E321791	F2_NWPI	Phosphorus, Total	Pass-1
9/26/2022	E321812	F2_BPO	Antimony, Dissolved	Pass-1
9/26/2022	E321812	F2_BPO	Beryllium, Dissolved	Pass-1
9/26/2022	E321812	F2_BPO	Bismuth, Dissolved	Pass-1
9/26/2022	E321812	F2_BPO	Bromide	Pass-1
9/26/2022	E321812	F2_BPO	Carbon, Dissolved Organic	Pass-1
9/26/2022	E321812	F2_BPO	Chromium, Dissolved	Pass-1
9/26/2022	E321812	F2_BPO	Copper, Dissolved	Pass-1
9/26/2022	E321812	F2_BPO	Iron, Dissolved	Pass-1
9/26/2022	E321812	F2_BPO	Lead, Dissolved	Pass-1
9/26/2022	E321812	F2_BPO	Lithium, Dissolved	Pass-2
9/26/2022	E321812	F2_BPO	Molybdenum, Dissolved	Fail
9/26/2022	E321812	F2_BPO	Molybdenum, Total	Pass-2
9/26/2022	E321812	F2_BPO	Nitrate Nitrogen (NO3), as N	Fail
9/26/2022	E321812	F2_BPO	Silicon, Dissolved	Pass-2
9/26/2022	E321812	F2_BPO	Silver, Dissolved	Pass-1
9/26/2022	E321812	F2_BPO	Tin, Dissolved	Pass-1
9/26/2022	E321812	F2_BPO	Titanium, Dissolved	Pass-1
9/26/2022	E321812	F2_BPO	Total Dissolved Solids (residue, filterable)	Pass-2
9/26/2022	E321812	F2_BPO	Total Suspended Solids, lab	Fail
9/26/2022	E321812	F2_BPO	Turbidity, lab	Pass-2
9/26/2022	E321812	F2_BPO	Vanadium, Dissolved	Pass-1
9/27/2022	E206231	EV_GT1	Alkalinity, Carbonate (as CaCO3), lab measured.	Pass-1
9/27/2022	E206231	EV_GT1	Aluminum, Dissolved	Pass-1
9/27/2022	E206231	EV_GT1	Carbonate (as CO3)	Pass-1
9/27/2022	E206231	EV_GT1	Cation - Anion Balance	Pass-2
9/27/2022	E206231	EV_GT1	Total Suspended Solids, lab	Pass-1
9/27/2022	E321791	F2_NWPI	Arsenic, Dissolved	Pass-1
9/27/2022	E321791	F2_NWPI	Mercury, Dissolved	Fail
9/27/2022	E321791	F2_NWPI	Mercury, Total	Pass-1
9/27/2022	E321791	F2_NWPI	Nitrogen, Ammonia (as N), Total	Pass-2

Date	EMS ID	Location Code	Parameters	Reason
9/27/2022	E321791	F2_NWPI	Phosphorus, Total	Pass-1
9/27/2022	E321791	F2_NWPI	Total Suspended Solids, lab	Pass-1
9/27/2022	E321791	F2_NWPI	Turbidity, lab	Fail
9/28/2022	E321811	F2_ECIN	Carbon, Dissolved Organic	Pass-1
9/28/2022	E321811	F2_ECIN	Oxidation-Reduction Potential, lab	Pass-2
9/28/2022	E321811	F2_ECIN	Phosphorus, Total	Pass-1
9/28/2022	E321811	F2_ECIN	Total Suspended Solids, lab	Pass-1
10/1/2022	E321791	F2_NWPI	Total Suspended Solids, lab	Pass-1
10/1/2022	E321791	F2_NWPI	Turbidity, lab	Pass-2
10/2/2022	E321791	F2_NWPI	Total Suspended Solids, lab	Pass-1
10/2/2022	E321791	F2_NWPI	Turbidity, lab	Pass-2
10/3/2022	E321812	F2_BPO	Acidity to pH 8.3 (as CaCO3)	Pass-1
10/3/2022	E321812	F2_BPO	Aluminum, Dissolved	Pass-1
10/3/2022	E321812	F2_BPO	Aluminum, Total	Pass-1
10/3/2022	E321812	F2_BPO	Antimony, Dissolved	Pass-1
10/3/2022	E321812	F2_BPO	Boron, Dissolved	Pass-1
10/3/2022	E321812	F2_BPO	Cadmium, Dissolved	Pass-2
10/3/2022	E321812	F2_BPO	Carbon, Dissolved Organic	Pass-1
10/3/2022	E321812	F2_BPO	Nitrate Nitrogen (NO3), as N	Pass-2
10/3/2022	E321812	F2_BPO	Phosphorus, Total	Pass-1
10/3/2022	E321812	F2_BPO	Total Suspended Solids, lab	Pass-1
10/4/2022	E321791	F2_NWPI	Acidity to pH 8.3 (as CaCO3)	Pass-1
10/4/2022	E206231	EV_GT1	Aluminum, Dissolved	Pass-1
10/4/2022	E206231	EV_GT1	Aluminum, Total	Fail
10/4/2022	E206231	EV_GT1	Arsenic, Dissolved	Pass-1
10/4/2022	E206231	EV_GT1	Cation - Anion Balance	Pass-2
10/4/2022	E206231	EV_GT1	Total Suspended Solids, lab	Fail
10/4/2022	E206231	EV_GT1	Turbidity, lab	Pass-2
10/5/2022	E321791	F2_NWPI	Alkalinity, Bicarbonate (as CaCO3), lab measured.	Pass-2
10/5/2022	E321791	F2_NWPI	Alkalinity, Total (as CaCO3), lab measured.	Pass-2
10/5/2022	E321791	F2_NWPI	Antimony, Dissolved	Fail
10/5/2022	E321791	F2_NWPI	Arsenic, Dissolved	Pass-1
10/5/2022	E321791	F2_NWPI	Barium, Dissolved	Fail

Date	EMS ID	Location Code	Parameters	Reason
10/5/2022	E321791	F2_NWPI	Bicarbonate	Pass-2
10/5/2022	E321791	F2_NWPI	Bromide	Pass-1
10/5/2022	E321791	F2_NWPI	Cadmium, Dissolved	Fail
10/5/2022	E321791	F2_NWPI	Carbon, Dissolved Organic	Pass-1
10/5/2022	E321791	F2_NWPI	Cobalt, Dissolved	Fail
10/5/2022	E321791	F2_NWPI	Fluoride	Pass-1
10/5/2022	E321791	F2_NWPI	Lithium, Dissolved	Pass-2
10/5/2022	E321791	F2_NWPI	Manganese, Dissolved	Fail
10/5/2022	E321791	F2_NWPI	Molybdenum, Dissolved	Pass-2
10/5/2022	E321791	F2_NWPI	Nickel, Dissolved	Fail
10/5/2022	E321791	F2_NWPI	Nitrate Nitrogen (NO3), as N	Fail
10/5/2022	E321791	F2_NWPI	Nitrite Nitrogen (NO2), as N	Fail
10/5/2022	E321791	F2_NWPI	Phosphorus, Total	Pass-1
10/5/2022	E321791	F2_NWPI	Potassium, Dissolved	Pass-2
10/5/2022	E321791	F2_NWPI	Selenium, Dissolved	Fail
10/5/2022	E321791	F2_NWPI	Silicon, Dissolved	Pass-2
10/5/2022	E321791	F2_NWPI	Strontium, Dissolved	Fail
10/5/2022	E321791	F2_NWPI	Thallium, Dissolved	Fail
10/5/2022	E321791	F2_NWPI	Total Organic Carbon	Pass-1
10/5/2022	E321791	F2_NWPI	Turbidity, lab	Fail
10/5/2022	E321791	F2_NWPI	Zinc, Dissolved	Fail
10/6/2022	E321791	F2_NWPI	Total Suspended Solids, lab	Pass-1
10/7/2022	E321811	F2_ECIN	Acidity to pH 8.3 (as CaCO3)	Pass-1
10/7/2022	E321811	F2_ECIN	Aluminum, Dissolved	Pass-1
10/7/2022	E321811	F2_ECIN	Nickel, Dissolved	Pass-1
10/7/2022	E321811	F2_ECIN	Total Kjeldahl Nitrogen	Pass-1
10/7/2022	E321811	F2_ECIN	Total Suspended Solids, lab	Pass-1
10/7/2022	E321811	F2_ECIN	Turbidity, lab	Fail
10/7/2022	E321811	F2_ECIN	Zinc, Dissolved	Pass-1
10/8/2022	E321811	F2_ECIN	Ortho-phosphate, Dissolved	Pass-2
10/9/2022	E321791	F2_NWPI	Carbon, Dissolved Organic	Pass-1
10/9/2022	E321791	F2_NWPI	Total Suspended Solids, lab	Pass-1
10/10/2022	E321791	F2_NWPI	Aluminum, Total	Pass-1
10/10/2022	E321791	F2_NWPI	Phosphorus, Total	Pass-1

Date	EMS ID	Location Code	Parameters	Reason
10/10/2022	E321791	F2_NWPI	Total Kjeldahl Nitrogen	Pass-1
10/10/2022	E321791	F2_NWPI	Total Suspended Solids, lab	Pass-1
10/10/2022	E321791	F2_NWPI	Turbidity, lab	Pass-2
10/10/2022	E321791	F2_NWPI	Zinc, Total	Pass-2
10/11/2022	E321811	F2_ECIN	Phosphorus, Total	Pass-2
10/11/2022	E321811	F2_ECIN	Total Suspended Solids, lab	Pass-1
10/11/2022	E321811	F2_ECIN	Turbidity, lab	Pass-1
10/12/2022	E321811	F2_ECIN	Copper, Dissolved	Pass-1
10/12/2022	E321811	F2_ECIN	Manganese, Dissolved	Pass-1
10/12/2022	E321811	F2_ECIN	Nitrite Nitrogen (NO2), as N	Fail
10/12/2022	E321811	F2_ECIN	Ortho-phosphate, Dissolved	Pass-2
10/12/2022	E321811	F2_ECIN	Total Suspended Solids, lab	Pass-1
10/12/2022	E321811	F2_ECIN	Turbidity, lab	Pass-1
10/12/2022	E321811	F2_ECIN	Zinc, Dissolved	Pass-1
10/13/2022	E321791	F2_NWPI	Phosphorus, Total	Pass-1
10/13/2022	E321791	F2_NWPI	Total Suspended Solids, lab	Pass-1
10/14/2022	E321791	F2_NWPI	Copper, Dissolved	Pass-1
10/14/2022	E321791	F2_NWPI	Lithium, Dissolved	Pass-2
10/14/2022	E321791	F2_NWPI	Molybdenum, Dissolved	Pass-2
10/14/2022	E321791	F2_NWPI	Phosphorus, Total	Fail
10/14/2022	E321791	F2_NWPI	Total Suspended Solids, lab	Pass-1
10/15/2022	E321811	F2_ECIN	Carbon, Dissolved Organic	Pass-1
10/15/2022	E321811	F2_ECIN	Total Suspended Solids, lab	Pass-1
10/16/2022	E321811	F2_ECIN	Carbon, Dissolved Organic	Pass-1
10/16/2022	E321811	F2_ECIN	Nitrite Nitrogen (NO2), as N	Pass-1
10/16/2022	E321811	F2_ECIN	Ortho-phosphate, Dissolved	Pass-2
10/16/2022	E321811	F2_ECIN	Total Suspended Solids, lab	Pass-1
10/16/2022	E321811	F2_ECIN	Turbidity, lab	Fail
10/17/2022	E321811	F2_ECIN	Acidity to pH 8.3 (as CaCO3)	Pass-1
10/17/2022	E321811	F2_ECIN	Aluminum, Dissolved	Pass-1
10/17/2022	E321811	F2_ECIN	Arsenic, Total	Pass-1
10/17/2022	E321811	F2_ECIN	Cadmium, Dissolved	Pass-2
10/17/2022	E321811	F2_ECIN	Iron, Total	Pass-1
10/17/2022	E321811	F2_ECIN	Manganese, Total	Pass-1

Date	EMS ID	Location Code	Parameters	Reason
10/17/2022	E321811	F2_ECIN	Molybdenum, Total	Pass-2
10/17/2022	E321811	F2_ECIN	Total Kjeldahl Nitrogen	Fail
10/17/2022	E321811	F2_ECIN	Total Suspended Solids, lab	Pass-1
10/17/2022	E321811	F2_ECIN	Zinc, Dissolved	Pass-1
10/18/2022	E206231	EV_GT1	Aluminum, Dissolved	Pass-1
10/18/2022	E206231	EV_GT1	Arsenic, Dissolved	Pass-1
10/18/2022	E206231	EV_GT1	Barium, Total	Pass-2
10/18/2022	E206231	EV_GT1	Bromide	Pass-1
10/18/2022	E206231	EV_GT1	Cation - Anion Balance	Fail
10/18/2022	E206231	EV_GT1	Chloride, Dissolved	Fail
10/18/2022	E206231	EV_GT1	Fluoride	Pass-1
10/18/2022	E206231	EV_GT1	Nitrite Nitrogen (NO2), as N	Fail
10/18/2022	E206231	EV_GT1	Thallium, Dissolved	Pass-1
10/18/2022	E206231	EV_GT1	Total Kjeldahl Nitrogen	Pass-1
10/18/2022	E206231	EV_GT1	Zinc, Dissolved	Pass-1
10/18/2022	E321812	F2_BPO	Nitrate Nitrogen (NO3), as N	Fail
10/18/2022	E321812	F2_BPO	Phosphorus, Total	Pass-1
10/18/2022	E321812	F2_BPO	Total Suspended Solids, lab	Pass-1
10/19/2022	E321811	F2_ECIN	Aluminum, Dissolved	Pass-1
10/19/2022	E321811	F2_ECIN	Arsenic, Dissolved	Pass-1
10/19/2022	E321811	F2_ECIN	Total Kjeldahl Nitrogen	Pass-1
10/19/2022	E321811	F2_ECIN	Zinc, Dissolved	Fail
10/20/2022	E321811	F2_ECIN	Total Suspended Solids, lab	Pass-1
10/21/2022	E321811	F2_ECIN	Carbon, Dissolved Organic	Pass-1
10/21/2022	E321811	F2_ECIN	Total Kjeldahl Nitrogen	Pass-1
10/21/2022	E321811	F2_ECIN	Total Organic Carbon	Pass-1
10/22/2022	E321812	F2_BPO	Total Suspended Solids, lab	Pass-1
10/23/2022	E321811	F2_ECIN	Oxidation-Reduction Potential, lab	Pass-2
10/23/2022	E321811	F2_ECIN	Turbidity, lab	Pass-1
10/24/2022	E321812	F2_BPO	Aluminum, Dissolved	Pass-1
10/24/2022	E321812	F2_BPO	Cadmium, Total	Fail
10/24/2022	E321812	F2_BPO	Cobalt, Total	Fail
10/24/2022	E321812	F2_BPO	Nitrate Nitrogen (NO3), as N	Fail
10/24/2022	E321812	F2_BPO	Phosphorus, Total	Pass-1

Date	EMS ID	Location Code	Parameters	Reason
10/24/2022	E321812	F2_BPO	Total Kjeldahl Nitrogen	Fail
10/24/2022	E321812	F2_BPO	Total Suspended Solids, lab	Pass-1
10/24/2022	E321812	F2_BPO	Turbidity, lab	Pass-2
10/25/2022	E321811	F2_ECIN	Carbon, Dissolved Organic	Pass-1
10/25/2022	E321811	F2_ECIN	Total Suspended Solids, lab	Pass-1
10/26/2022	E321811	F2_ECIN	Aluminum, Dissolved	Pass-1
10/26/2022	E321811	F2_ECIN	Total Suspended Solids, lab	Pass-1
10/26/2022	E321811	F2_ECIN	Turbidity, lab	Pass-1
10/27/2022	E321811	F2_ECIN	Total Suspended Solids, lab	Pass-1
10/28/2022	E321812	F2_BPO	Aluminum, Dissolved	Pass-1
10/28/2022	E321812	F2_BPO	Carbonate (as CO3)	Pass-1
10/28/2022	E321812	F2_BPO	Hydroxide	Pass-1
10/28/2022	E321812	F2_BPO	Total Suspended Solids, lab	Pass-1
10/29/2022	E321811	F2_ECIN	Nitrogen, Ammonia (as N), Total	Pass-1
10/29/2022	E321811	F2_ECIN	Phosphorus, Total	Fail
10/30/2022	E321811	F2_ECIN	Nitrogen, Ammonia (as N), Total	Pass-1
10/31/2022	E321811	F2_ECIN	Aluminum, Total	Pass-1
10/31/2022	E321811	F2_ECIN	Chromium, Total	Pass-1
10/31/2022	E321811	F2_ECIN	Manganese, Dissolved	Pass-1
10/31/2022	E321811	F2_ECIN	Total Kjeldahl Nitrogen	Pass-1
10/31/2022	E321811	F2_ECIN	Zinc, Dissolved	Pass-1
10/31/2022	E321811	F2_ECIN	Zinc, Total	Pass-1
11/1/2022	E321791	F2_NWPI	Total Suspended Solids, lab	Pass-1
11/1/2022	E206231	EV_GT1	Cadmium, Total	Pass-2
11/1/2022	E206231	EV_GT1	Sodium, Total	Pass-2
11/1/2022	E206231	EV_GT1	Tin, Total	Pass-1
11/1/2022	E206231	EV_GT1	Titanium, Total	Pass-1
11/1/2022	E206231	EV_GT1	Total Kjeldahl Nitrogen	Fail
11/1/2022	E206231	EV_GT1	Total Suspended Solids, lab	Pass-2
11/1/2022	E206231	EV_GT1	Turbidity, lab	Pass-2
11/1/2022	E206231	EV_GT1	Zinc, Total	Fail
11/2/2022	E321811	F2_ECIN	Alkalinity, Bicarbonate (as CaCO3), lab measured.	Pass-2
11/2/2022	E321811	F2_ECIN	Alkalinity, Total (as CaCO3), lab measured.	Pass-2

Date	EMS ID	Location Code	Parameters	Reason
11/2/2022	E321811	F2_ECIN	Aluminum, Dissolved	Pass-1
11/2/2022	E321811	F2_ECIN	Bicarbonate	Pass-2
11/2/2022	E321811	F2_ECIN	Nitrogen, Ammonia (as N), Total	Pass-1
11/2/2022	E321811	F2_ECIN	Phosphorus, Total	Pass-2
11/2/2022	E321811	F2_ECIN	Total Kjeldahl Nitrogen	Pass-1
11/2/2022	E321811	F2_ECIN	Turbidity, lab	Pass-1
11/3/2022	E321791	F2_NWPI	Total Suspended Solids, lab	Pass-1
11/4/2022	E321791	F2_NWPI	Turbidity, lab	Fail
11/5/2022	E321811	F2_ECIN	Turbidity, lab	Pass-1
11/6/2022	E321812	F2_BPO	Nitrate Nitrogen (NO3), as N	Fail
11/6/2022	E321812	F2_BPO	Total Suspended Solids, lab	Pass-1
11/7/2022	E321791	F2_NWPI	Aluminum, Dissolved	Pass-1
11/7/2022	E321791	F2_NWPI	Aluminum, Total	Pass-1
11/7/2022	E321791	F2_NWPI	Arsenic, Dissolved	Pass-1
11/7/2022	E321791	F2_NWPI	Arsenic, Total	Pass-1
11/7/2022	E321791	F2_NWPI	Total Kjeldahl Nitrogen	Pass-1
11/7/2022	E321791	F2_NWPI	Total Organic Carbon, Total	Pass-1
11/7/2022	E321791	F2_NWPI	Total Suspended Solids, lab	Pass-1
11/7/2022	E321791	F2_NWPI	Turbidity, lab	Pass-1
11/8/2022	E321812	F2_BPO	Phosphorus, Total	Pass-1
11/9/2022	E321791	F2_NWPI	Aluminum, Dissolved	Pass-1
11/9/2022	E321791	F2_NWPI	Total Kjeldahl Nitrogen	Fail
11/9/2022	E321791	F2_NWPI	Total Suspended Solids, lab	Pass-1
11/10/2022	E321811	F2_ECIN	Total Suspended Solids, lab	Pass-1
11/11/2022	E321811	F2_ECIN	Chromium, Dissolved	Pass-1
11/11/2022	E321811	F2_ECIN	Manganese, Dissolved	Pass-1
11/11/2022	E321811	F2_ECIN	Total Kjeldahl Nitrogen	Pass-1
11/11/2022	E321811	F2_ECIN	Zinc, Dissolved	Fail
11/13/2022	E321812	F2_BPO	Alkalinity, Carbonate (as CaCO3), lab measured.	Fail
11/13/2022	E321812	F2_BPO	Carbon, Dissolved Organic	Pass-1
11/13/2022	E321812	F2_BPO	Carbonate (as CO3)	Fail
11/13/2022	E321812	F2_BPO	Nitrate Nitrogen (NO3), as N	Fail
11/13/2022	E321812	F2_BPO	Phosphorus, Total	Pass-1

Date	EMS ID	Location Code	Parameters	Reason
11/14/2022	E321812	F2_BPO	Alkalinity, Carbonate (as CaCO3), lab measured.	Fail
11/14/2022	E321812	F2_BPO	Aluminum, Dissolved	Pass-1
11/14/2022	E321812	F2_BPO	Aluminum, Total	Fail
11/14/2022	E321812	F2_BPO	Arsenic, Dissolved	Pass-2
11/14/2022	E321812	F2_BPO	Carbon, Dissolved Organic	Pass-1
11/14/2022	E321812	F2_BPO	Carbonate (as CO3)	Fail
11/14/2022	E321812	F2_BPO	Chromium, Total	Pass-1
11/14/2022	E321812	F2_BPO	Iron, Dissolved	Pass-1
11/14/2022	E321812	F2_BPO	Nitrate Nitrogen (NO3), as N	Pass-2
11/14/2022	E321812	F2_BPO	Total Kjeldahl Nitrogen	Fail
11/14/2022	E321812	F2_BPO	Total Suspended Solids, lab	Pass-1
11/15/2022	E321791	F2_NWPI	Alkalinity, Carbonate (as CaCO3), lab measured.	Pass-1
11/15/2022	E321791	F2_NWPI	Carbonate (as CO3)	Pass-1
11/15/2022	E321791	F2_NWPI	Total Suspended Solids, lab	Pass-1
11/16/2022	E321791	F2_NWPI	Copper, Dissolved	Pass-1
11/16/2022	E321791	F2_NWPI	Total Kjeldahl Nitrogen	Pass-1
11/16/2022	E321791	F2_NWPI	Total Suspended Solids, lab	Pass-1
11/17/2022	E321811	F2_ECIN	Ortho-phosphate, Dissolved	Pass-2
11/17/2022	E321811	F2_ECIN	Total Suspended Solids, lab	Pass-1
11/17/2022	E321811	F2_ECIN	Turbidity, lab	Pass-1
11/18/2022	E321811	F2_ECIN	Chromium, Dissolved	Pass-1
11/18/2022	E321811	F2_ECIN	Total Kjeldahl Nitrogen	Fail
11/18/2022	E321811	F2_ECIN	Zinc, Dissolved	Pass-1
11/19/2022	E321791	F2_NWPI	Alkalinity, Carbonate (as CaCO3), lab measured.	Fail
11/19/2022	E321791	F2_NWPI	Carbonate (as CO3)	Fail
11/19/2022	E321791	F2_NWPI	Total Suspended Solids, lab	Pass-1
11/20/2022	E321812	F2_BPO	Acidity to pH 8.3 (as CaCO3)	Pass-1
11/20/2022	E321812	F2_BPO	Carbon, Dissolved Organic	Pass-1
11/20/2022	E321812	F2_BPO	Nitrate Nitrogen (NO3), as N	Pass-2
11/20/2022	E321812	F2_BPO	Total Suspended Solids, lab	Pass-1
11/21/2022	E321791	F2_NWPI	Arsenic, Dissolved	Pass-1
11/21/2022	E321791	F2_NWPI	Phosphorus, Total	Pass-1

Date	EMS ID	Location Code	Parameters	Reason
11/21/2022	E321791	F2_NWPI	Total Suspended Solids, lab	Pass-1
11/22/2022	E321811	F2_ECIN	Total Suspended Solids, lab	Pass-1
11/22/2022	E321811	F2_ECIN	Turbidity, lab	Pass-1
11/23/2022	E321791	F2_NWPI	Aluminum, Dissolved	Pass-1
11/23/2022	E321791	F2_NWPI	Carbon, Dissolved Organic	Pass-1
11/23/2022	E321791	F2_NWPI	Total Kjeldahl Nitrogen	Pass-1
11/23/2022	E321791	F2_NWPI	Total Suspended Solids, lab	Pass-1
11/23/2022	E321791	F2_NWPI	Turbidity, lab	Pass-2
11/24/2022	E321812	F2_BPO	Nitrate Nitrogen (NO3), as N	Fail
11/25/2022	E321811	F2_ECIN	Nitrite Nitrogen (NO2), as N	Pass-1
11/25/2022	E321811	F2_ECIN	Total Kjeldahl Nitrogen	Pass-1
11/25/2022	E321811	F2_ECIN	Total Suspended Solids, lab	Pass-1
11/25/2022	E321811	F2_ECIN	Turbidity, lab	Pass-1
11/25/2022	E321811	F2_ECIN	Zinc, Dissolved	Fail
11/28/2022	E321812	F2_BPO	Aluminum, Dissolved	Fail
11/28/2022	E321812	F2_BPO	Aluminum, Total	Pass-1
11/28/2022	E321812	F2_BPO	Barium, Dissolved	Pass-2
11/28/2022	E321812	F2_BPO	Carbon, Dissolved Organic	Pass-1
11/28/2022	E321812	F2_BPO	Nitrite Nitrogen (NO2), as N	Pass-1
11/28/2022	E321812	F2_BPO	Total Organic Carbon	Pass-1
11/28/2022	E321812	F2_BPO	Turbidity, lab	Pass-2
11/29/2022	E206231	EV_GT1	Cobalt, Dissolved	Pass-1
11/29/2022	E206231	EV_GT1	Total Organic Carbon	Pass-1
11/29/2022	E206231	EV_GT1	Total Suspended Solids, lab	Pass-1
11/29/2022	E321811	F2_ECIN	Carbon, Dissolved Organic	Pass-1
11/30/2022	E321791	F2_NWPI	Alkalinity, Carbonate (as CaCO3), lab measured.	Pass-1
11/30/2022	E321791	F2_NWPI	Aluminum, Dissolved	Pass-1
11/30/2022	E321791	F2_NWPI	Arsenic, Dissolved	Pass-1
11/30/2022	E321791	F2_NWPI	Carbonate (as CO3)	Pass-1
11/30/2022	E321791	F2_NWPI	Turbidity, lab	Fail
12/1/2022	E321812	F2_BPO	Carbon, Dissolved Organic	Pass-1
12/1/2022	E321812	F2_BPO	Nitrate Nitrogen (NO3), as N	Fail
12/1/2022	E321812	F2_BPO	Total Suspended Solids, lab	Pass-1

Date	EMS ID	Location Code	Parameters	Reason
12/2/2022	E321811	F2_ECIN	Nickel, Dissolved	Pass-1
12/2/2022	E321811	F2_ECIN	Total Kjeldahl Nitrogen	Pass-1
12/2/2022	E321811	F2_ECIN	Turbidity, lab	Pass-1
12/2/2022	E321811	F2_ECIN	Zinc, Dissolved	Pass-1
12/3/2022	E321811	F2_ECIN	Total Suspended Solids, lab	Pass-1
12/4/2022	E321791	F2_NWPI	Total Suspended Solids, lab	Pass-1
12/5/2022	E321812	F2_BPO	Aluminum, Dissolved	Pass-1
12/5/2022	E321812	F2_BPO	Aluminum, Total	Pass-1
12/5/2022	E321812	F2_BPO	Iron, Dissolved	Pass-1
12/5/2022	E321812	F2_BPO	Nitrate Nitrogen (NO3), as N	Pass-2
12/5/2022	E321812	F2_BPO	Phosphorus, Total	Pass-1
12/5/2022	E321812	F2_BPO	Total Kjeldahl Nitrogen	Fail
12/5/2022	E321812	F2_BPO	Total Suspended Solids, lab	Pass-1
12/5/2022	E321812	F2_BPO	Zinc, Total	Fail
12/6/2022	E321791	F2_NWPI	Acidity to pH 8.3 (as CaCO3)	Pass-1
12/6/2022	E321791	F2_NWPI	Chloride, Dissolved	Pass-2
12/6/2022	E321791	F2_NWPI	Nitrite Nitrogen (NO2), as N	Pass-1
12/7/2022	E321811	F2_ECIN	Aluminum, Dissolved	Fail
12/7/2022	E321811	F2_ECIN	Cadmium, Dissolved	Pass-2
12/7/2022	E321811	F2_ECIN	Chromium, Dissolved	Pass-1
12/7/2022	E321811	F2_ECIN	Manganese, Dissolved	Fail
12/7/2022	E321811	F2_ECIN	Nitrite Nitrogen (NO2), as N	Pass-1
12/7/2022	E321811	F2_ECIN	Total Kjeldahl Nitrogen	Pass-1
12/7/2022	E321811	F2_ECIN	Turbidity, lab	Fail
12/8/2022	E321791	F2_NWPI	Acidity to pH 8.3 (as CaCO3)	Pass-1
12/8/2022	E321791	F2_NWPI	Carbon, Dissolved Organic	Pass-1
12/8/2022	E321791	F2_NWPI	Total Suspended Solids, lab	Pass-1
12/9/2022	E321811	F2_ECIN	Aluminum, Dissolved	Pass-1
12/9/2022	E321811	F2_ECIN	Arsenic, Dissolved	Pass-1
12/9/2022	E321811	F2_ECIN	Calcium, Dissolved	Pass-2
12/9/2022	E321811	F2_ECIN	Lithium, Dissolved	Pass-2
12/9/2022	E321811	F2_ECIN	Manganese, Dissolved	Pass-1
12/9/2022	E321811	F2_ECIN	Potassium, Dissolved	Pass-2
12/9/2022	E321811	F2_ECIN	Selenium, Dissolved	Pass-2

Date	EMS ID	Location Code	Parameters	Reason
12/9/2022	E321811	F2_ECIN	Silicon, Dissolved	Pass-2
12/9/2022	E321811	F2_ECIN	Sodium, Dissolved	Pass-2
12/9/2022	E321811	F2_ECIN	Total Kjeldahl Nitrogen	Pass-1
12/9/2022	E321811	F2_ECIN	Turbidity, lab	Pass-1
12/9/2022	E321811	F2_ECIN	Zinc, Dissolved	Pass-1
12/10/2022	E321791	F2_NWPI	Carbon, Dissolved Organic	Pass-1
12/11/2022	E321791	F2_NWPI	Total Suspended Solids, lab	Pass-1
12/12/2022	E321812	F2_BPO	Arsenic, Total	Pass-1
12/12/2022	E321812	F2_BPO	Arsenic, Total	Pass-1
12/12/2022	E321812	F2_BPO	Nitrate Nitrogen (NO3), as N	Fail
12/12/2022	E321812	F2_BPO	Ortho-phosphate, Dissolved	Pass-1
12/12/2022	E321812	F2_BPO	Phosphorus, Total	Pass-1
12/12/2022	E321812	F2_BPO	Tin, Total	Pass-1
12/12/2022	E321812	F2_BPO	Total Kjeldahl Nitrogen	Fail
12/12/2022	E321812	F2_BPO	Total Suspended Solids, lab	Pass-1
12/13/2022	E206231	EV_GT1	Aluminum, Dissolved	Fail
12/13/2022	E206231	EV_GT1	Aluminum, Total	Pass-1
12/13/2022	E206231	EV_GT1	Barium, Dissolved	Pass-2
12/13/2022	E206231	EV_GT1	Cadmium, Total	Pass-2
12/13/2022	E206231	EV_GT1	Cation - Anion Balance	Fail
12/13/2022	E206231	EV_GT1	Iron, Dissolved	Pass-1
12/13/2022	E206231	EV_GT1	Tin, Dissolved	Pass-1
12/13/2022	E206231	EV_GT1	Total Kjeldahl Nitrogen	Fail
12/13/2022	E206231	EV_GT1	Turbidity, lab	Pass-2
12/13/2022	E206231	EV_GT1	Zinc, Dissolved	Fail
12/14/2022	E321811	F2_ECIN	Manganese, Dissolved	Fail
12/14/2022	E321811	F2_ECIN	Total Suspended Solids, lab	Pass-1
12/16/2022	E321811	F2_ECIN	Acidity to pH 8.3 (as CaCO3)	Fail
12/16/2022	E321811	F2_ECIN	Cadmium, Dissolved	Pass-2
12/16/2022	E321811	F2_ECIN	COD - Chemical Oxygen Demand	Pass-1
12/16/2022	E321811	F2_ECIN	Ortho-phosphate, Dissolved	Pass-2
12/16/2022	E321811	F2_ECIN	Total Kjeldahl Nitrogen	Pass-1
12/16/2022	E321811	F2_ECIN	Zinc, Dissolved	Fail
12/17/2022	E321812	F2_BPO	COD - Chemical Oxygen Demand	Pass-1

Date	EMS ID	Location Code	Parameters	Reason
12/17/2022	E321812	F2_BPO	Nitrate Nitrogen (NO3), as N	Fail
12/17/2022	E321812	F2_BPO	Phosphorus, Total	Pass-1
12/17/2022	E321812	F2_BPO	Total Suspended Solids, lab	Pass-1
12/18/2022	E321791	F2_NWPI	Total Suspended Solids, lab	Pass-1
12/19/2022	E321812	F2_BPO	COD - Chemical Oxygen Demand	Pass-1
12/19/2022	E321812	F2_BPO	Lead, Total	Fail
12/19/2022	E321812	F2_BPO	Nitrate Nitrogen (NO3), as N	Fail
12/19/2022	E321812	F2_BPO	Selenium, Dissolved	Pass-2
12/19/2022	E321812	F2_BPO	Total Kjeldahl Nitrogen	Fail
12/20/2022	E321811	F2_ECIN	Turbidity, lab	Pass-1
12/21/2022	E321811	F2_ECIN	Chromium, Dissolved	Pass-1
12/21/2022	E321811	F2_ECIN	Manganese, Dissolved	Pass-1
12/21/2022	E321811	F2_ECIN	Total Suspended Solids, lab	Pass-1
12/21/2022	E321811	F2_ECIN	Turbidity, lab	Pass-1
12/21/2022	E321811	F2_ECIN	Zinc, Dissolved	Pass-1
12/22/2022	E321791	F2_NWPI	Ortho-phosphate, Dissolved	Pass-1
12/23/2022	E321811	F2_ECIN	Manganese, Dissolved	Pass-1
12/23/2022	E321811	F2_ECIN	Total Suspended Solids, lab	Pass-1
12/23/2022	E321811	F2_ECIN	Turbidity, lab	Pass-1
12/23/2022	E321811	F2_ECIN	Zinc, Dissolved	Pass-1
12/24/2022	E321791	F2_NWPI	Carbon, Dissolved Organic	Pass-1
12/25/2022	E321812	F2_BPO	Nitrate Nitrogen (NO3), as N	Fail
12/25/2022	E321812	F2_BPO	Nitrite Nitrogen (NO2), as N	Pass-1
12/25/2022	E321812	F2_BPO	Phosphorus, Total	Pass-1
12/25/2022	E321812	F2_BPO	Turbidity, lab	Pass-2
12/26/2022	E321791	F2_NWPI	Arsenic, Dissolved	Pass-1
12/26/2022	E321791	F2_NWPI	Phosphorus, Total	Pass-1
12/26/2022	E321791	F2_NWPI	Total Suspended Solids, lab	Pass-1
12/27/2022	E321812	F2_BPO	Carbon, Dissolved Organic	Pass-1
12/27/2022	E321812	F2_BPO	Iron, Dissolved	Pass-1
12/27/2022	E321812	F2_BPO	Nitrate Nitrogen (NO3), as N	Fail
12/27/2022	E321812	F2_BPO	Phosphorus, Total	Pass-1
12/27/2022	E321812	F2_BPO	Selenium, Total	Pass-2
12/27/2022	E321812	F2_BPO	Total Kjeldahl Nitrogen	Fail

Date	EMS ID	Location Code	Parameters	Reason
12/27/2022	E321812	F2_BPO	Total Organic Carbon	Pass-1
12/27/2022	E321812	F2_BPO	Total Suspended Solids, lab	Pass-1
12/28/2022	E206231	EV_GT1	Aluminum, Total	Fail
12/28/2022	E206231	EV_GT1	Beryllium, Dissolved	Pass-1
12/28/2022	E206231	EV_GT1	Beryllium, Total	Pass-1
12/28/2022	E206231	EV_GT1	Bismuth, Dissolved	Pass-1
12/28/2022	E206231	EV_GT1	Bismuth, Total	Pass-1
12/28/2022	E206231	EV_GT1	Carbon, Dissolved Organic	Pass-1
12/28/2022	E206231	EV_GT1	Cation - Anion Balance	Fail
12/28/2022	E206231	EV_GT1	Chromium, Dissolved	Pass-1
12/28/2022	E206231	EV_GT1	Chromium, Total	Pass-1
12/28/2022	E206231	EV_GT1	Cobalt, Dissolved	Pass-1
12/28/2022	E206231	EV_GT1	Copper, Dissolved	Pass-1
12/28/2022	E206231	EV_GT1	Copper, Total	Pass-1
12/28/2022	E206231	EV_GT1	Iron, Dissolved	Pass-1
12/28/2022	E206231	EV_GT1	Lead, Dissolved	Pass-1
12/28/2022	E206231	EV_GT1	Lead, Total	Pass-1
12/28/2022	E206231	EV_GT1	Silver, Dissolved	Pass-1
12/28/2022	E206231	EV_GT1	Silver, Total	Pass-1
12/28/2022	E206231	EV_GT1	Tin, Dissolved	Pass-1
12/28/2022	E206231	EV_GT1	Tin, Total	Pass-1
12/28/2022	E206231	EV_GT1	Titanium, Dissolved	Pass-1
12/28/2022	E206231	EV_GT1	Titanium, Total	Pass-1
12/28/2022	E206231	EV_GT1	Total Kjeldahl Nitrogen	Fail
12/28/2022	E206231	EV_GT1	Total Organic Carbon	Pass-1
12/28/2022	E206231	EV_GT1	Vanadium, Dissolved	Pass-1
12/28/2022	E206231	EV_GT1	Vanadium, Total	Pass-1
12/28/2022	E206231	EV_GT1	Zinc, Dissolved	Fail
12/28/2022	E206231	EV_GT1	Zinc, Total	Pass-1
12/28/2022	E321791	F2_NWPI	Acidity to pH 8.3 (as CaCO3)	Pass-1
12/28/2022	E321791	F2_NWPI	Total Suspended Solids, lab	Pass-1
12/29/2022	E321811	F2_ECIN	Nitrite Nitrogen (NO2), as N	Pass-1
12/29/2022	E321811	F2_ECIN	Total Suspended Solids, lab	Pass-1
12/29/2022	E321811	F2_ECIN	Turbidity, lab	Pass-1

Date	EMS ID	Location Code	Parameters	Reason
12/30/2022	E321791	F2_NWPI	Aluminum, Dissolved	Pass-1
12/30/2022	E321791	F2_NWPI	Phosphorus, Total	Pass-1
12/30/2022	E321791	F2_NWPI	Total Kjeldahl Nitrogen	Pass-1
12/30/2022	E321791	F2_NWPI	Total Suspended Solids, lab	Pass-1
12/31/2022	E321811	F2_ECIN	Turbidity, lab	Pass-1

Table E-5. EVO SRF 2022 Hold Time Exceedances

Date	EMS ID	Location Code	Parameters	Reason
2/15/2022	E321812	F2_BPO	Sulphide (as S), Total	EHT
2/15/2022	E321811	F2_ECIN	Sulphide (as S), Total	EHT
2/15/2022	E321791	F2_NWPI	Sulphide (as S), Total	EHT
2/15/2022	E102685	EV_BC1	Sulphide (as S), Total	EHT
2/15/2022	E206231	EV_GT1	Sulphide (as S), Total	EHT
3/5/2022	E321811	F2_ECIN	Nitrate Nitrogen (NO3), as N	EHT
3/5/2022	E321811	F2_ECIN	Turbidity, Lab	EHTR
3/5/2022	E321791	F2_NWPI	Nitrate Nitrogen (NO3), as N	EHT
3/5/2022	E321791	F2_NWPI	Nitrite Nitrogen (NO2), as N	EHT
3/5/2022	E321791	F2_NWPI	Turbidity, Lab	EHTR
4/14/2022	E321812	F2_BPO	Nitrate Nitrogen (NO3), as N	EHT
4/14/2022	E321812	F2_BPO	Nitrite Nitrogen (NO2), as N	EHT
4/14/2022	E321791	F2_NWPI	Nitrate Nitrogen (NO3), as N	EHT
4/14/2022	E321791	F2_NWPI	Nitrite Nitrogen (NO2), as N	EHT
12/6/2022	E321791	F2_NWPI	Total Suspended Solids, Lab	EHT
12/20/2022	E321812	F2_BPO	Sulphide (as S), Dissolved	EHT
12/20/2022	E321812	F2_BPO	Sulphide (as S), Total	EHT
12/20/2022	E321811	F2_ECIN	Sulphide (as S), Total	EHT
12/23/2022	E321812	F2_BPO	Sulphide (as S), Dissolved	EHT
12/25/2022	E321811	F2_ECIN	Turbidity, Lab	EHTL
12/25/2022	E321791	F2_NWPI	Nitrite Nitrogen (NO2), As N	EHT
12/25/2022	E321791	F2_NWPI	Sulphide (as S), Total	EHT

EHTR = Exceeded ALS recommended hold time prior to sample receipt.
EHT = Exceeded ALS recommended hold time prior to sample analysis.

Table E-6 1: EVO SRF 2022 Blank Detects

Date	EMS ID	Location	Parameters	Reason
1/18/2022	E206231	EV_GT1	Zinc, Dissolved	Blank Detect
2/1/2022	E206231	EV_GT1	Chromium, Total	Blank Detect
2/15/2022	E206231	EV_GT1	Barium, Dissolved	Blank Detect
2/15/2022	E206231	EV_GT1	Copper, Dissolved	Blank Detect
2/15/2022	E206231	EV_GT1	Copper, Total	Blank Detect
2/15/2022	E206231	EV_GT1	Lead, Dissolved	Blank Detect
2/15/2022	E206231	EV_GT1	Lead, Total	Blank Detect
2/15/2022	E206231	EV_GT1	Silver, Dissolved	Blank Detect
2/15/2022	E206231	EV_GT1	Silver, Total	Blank Detect
2/15/2022	E206231	EV_GT1	Zinc, Dissolved	Blank Detect
3/22/2022	E206231	EV_GT1	Zinc, Dissolved	Blank Detect
4/5/2022	E206231	EV_GT1	Aluminum, Dissolved	Blank Detect
4/5/2022	E206231	EV_GT1	Aluminum, Total	Blank Detect
4/5/2022	E206231	EV_GT1	Barium, Total	Blank Detect
4/10/2022	E321791	F2_NWPI	Nitrogen, Ammonia (as N)	Blank Detect
4/26/2022	E206231	EV_GT1	Lead, Total	Blank Detect
4/26/2022	E206231	EV_GT1	Zinc, Dissolved	Blank Detect
5/3/2022	E206231	EV_GT1	Aluminum, Dissolved	Blank Detect
5/3/2022	E206231	EV_GT1	Barium, Dissolved	Blank Detect
5/3/2022	E206231	EV_GT1	Tin, Dissolved	Blank Detect
5/3/2022	E206231	EV_GT1	Zinc, Dissolved	Blank Detect
5/3/2022	E206231	EV_GT1	Chloride, Dissolved	Blank Detect
5/12/2022	E300091	EV_MC2	Nitrate Nitrogen (NO3), as N	Blank Detect
5/13/2022	E300091	EV_MC2	Nitrate Nitrogen (NO3), as N	Blank Detect
5/24/2022	E206231	EV_GT1	Silver, Dissolved	Blank Detect
5/24/2022	E206231	EV_GT1	Silver, Total	Blank Detect
5/24/2022	E206231	EV_GT1	Nitrate Nitrogen (NO3), as N	Blank Detect
5/31/2022	E206231	EV_GT1	Mercury, Dissolved	Blank Detect
6/7/2022	E206231	EV_GT1	Copper, Dissolved	Blank Detect
6/7/2022	E206231	EV_GT1	Copper, Total	Blank Detect
6/7/2022	E206231	EV_GT1	Zinc, Dissolved	Blank Detect
6/7/2022	E206231	EV_GT1	Zinc, Total	Blank Detect

Date	EMS ID	Location	Parameters	Reason
6/13/2022	E321812	F2_BPO	Barium, Dissolved	Blank Detect
6/13/2022	E321812	F2_BPO	Copper, Dissolved	Blank Detect
6/13/2022	E321812	F2_BPO	Mercury, Dissolved	Blank Detect
6/14/2022	E321812	EV_GT1	Magnesium, Total	Blank Detect
6/14/2022	E321812	F2_BPO	Zinc, Dissolved	Blank Detect
6/15/2022	E321791	F2_NWPI	Hardness, Total or Dissolved CaCO3	Blank Detect
6/15/2022	E321791	F2_NWPI	Nitrate Nitrogen (NO3), as N	Blank Detect
6/15/2022	E321791	F2_NWPI	Nitrite Nitrogen (NO2), as N	Blank Detect
7/12/2022	E206231	EV_GT1	Mercury, Dissolved	Blank Detect
7/12/2022	E206231	EV_GT1	Zinc, Total	Blank Detect
8/16/2022	E206231	EV_GT1	Calcium, Total	Blank Detect
8/16/2022	E206231	EV_GT1	Magnesium, Total	Blank Detect
8/16/2022	E206231	EV_GT1	Manganese, Total	Blank Detect
8/16/2022	E206231	EV_GT1	Molybdenum, Dissolved	Blank Detect
8/16/2022	E206231	EV_GT1	Turbidity, Lab	Blank Detect
8/16/2022	E206231	EV_GT1	Uranium, Dissolved	Blank Detect
8/16/2022	E206231	EV_GT1	Uranium, Total	Blank Detect
8/16/2022	E206231	EV_GT1	Zinc, Dissolved	Blank Detect
8/30/2022	E206231	EV_GT1	Nitrate Nitrogen (NO3), As N	Blank Detect
8/30/2022	E206231	EV_GT1	Nitrogen, Ammonia (As N)	Blank Detect
8/30/2022	E206231	EV_GT1	Zinc, Dissolved	Blank Detect
9/13/2022	E206231	EV_GT1	Calcium, Total	Blank Detect
10/3/2022	E321812	F2_BPO	Selenium, Dissolved	Blank Detect
10/3/2022	E321812	F2_BPO	Selenium, Total	Blank Detect
10/3/2022	E321812	F2_BPO	Sodium, Total	Blank Detect
10/3/2022	E321812	F2_BPO	Strontium, Dissolved	Blank Detect
10/3/2022	E321812	F2_BPO	Strontium, Total	Blank Detect
10/3/2022	E321812	F2_BPO	Zinc, Dissolved	Blank Detect
10/3/2022	E321812	F2_BPO	Zinc, Total	Blank Detect
10/4/2022	E321791	F2_NWPI	Alkalinity, Total (As CaCO3)	Blank Detect
10/4/2022	E321791	F2_NWPI	Chloride, Dissolved	Blank Detect
10/4/2022	E206231	EV_GT1	Aluminum, Dissolved	Blank Detect
10/4/2022	E206231	EV_GT1	Aluminum, Total	Blank Detect

Date	EMS ID	Location	Parameters	Reason
10/4/2022	E206231	EV_GT1	Arsenic, Dissolved	Blank Detect
10/4/2022	E206231	EV_GT1	Arsenic, Total	Blank Detect
10/4/2022	E206231	EV_GT1	Barium, Dissolved	Blank Detect
10/4/2022	E206231	EV_GT1	Barium, Total	Blank Detect
10/4/2022	E206231	EV_GT1	Bismuth, Total	Blank Detect
10/4/2022	E206231	EV_GT1	Calcium, Total	Blank Detect
10/4/2022	E206231	EV_GT1	Chloride, Dissolved	Blank Detect
10/4/2022	E206231	EV_GT1	Chromium, Dissolved	Blank Detect
10/4/2022	E206231	EV_GT1	Chromium, Total	Blank Detect
10/28/2022	E321812	F2_BPO	Sulphate (As SO4), Dissolved	Blank Detect
10/28/2022	E321812	F2_BPO	Zinc, Dissolved	Blank Detect
10/29/2022	E321811	F2_ECIN	Conductivity, Lab	Blank Detect
10/29/2022	E321811	F2_ECIN	Nitrate Nitrogen (NO3), As N	Blank Detect
10/29/2022	E321811	F2_ECIN	Sulphate (As SO4), Dissolved	Blank Detect
10/30/2022	E321811	F2_ECIN	Conductivity, Lab	Blank Detect
10/30/2022	E321811	F2_ECIN	Nitrate Nitrogen (NO3), As N	Blank Detect
10/30/2022	E321811	F2_ECIN	Nitrogen, Ammonia (As N)	Blank Detect
10/30/2022	E321811	F2_ECIN	Sulphate (As SO4), Dissolved	Blank Detect
10/31/2022	E321811	F2_ECIN	Barium, Dissolved	Blank Detect
10/31/2022	E321811	F2_ECIN	Nitrate Nitrogen (NO3), As N	Blank Detect
10/31/2022	E321811	F2_ECIN	Zinc, Dissolved	Blank Detect
11/30/2022	E321791	F2_NWPI	Nitrate Nitrogen (NO3), As N	Blank Detect
12/5/2022	E321812	F2_BPO	Aluminum, Dissolved	Blank Detect

Table E-7. Results outside RPD acceptance criteria at the FRO-S AWTF 2022

Date	EMS ID	Location Code	Parameters	Reason
1/3/2022	E321351	FS_BPO	Cation - Anion Balance, (Dissolved)	Fail
1/6/2022	E321351	FS_BPO	Total Dissolved Solids (Residue,	Pass-2
1/6/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Fail
1/6/2022	E321351	FS_BPO	Turbidity, lab	Fail
1/10/2022	E321351	FS_BPO	Mercury, Total	Fail
1/10/2022	E321351	FS_BPO	Nitrate Nitrogen (NO3), as N	Pass-2

Date	EMS ID	Location Code	Parameters	Reason
1/10/2022	E321351	FS_BPO	Nitrite Nitrogen (NO2), as N	Pass-1
1/10/2022	E321351	FS_BPO	Nitrogen, Ammonia (as N)	Pass-1
1/10/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Fail
1/13/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Pass-1
1/14/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Pass-1
1/15/2022	E321351	FS_BPO	Selenium, Total	Fail
1/15/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Pass-1
1/15/2022	E321351	FS_BPO	Turbidity, lab	Pass-1
1/16/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Pass-1
1/17/2022	E321351	FS_BPO	Cation - Anion Balance, (Dissolved)	Fail
1/17/2022	E321351	FS_BPO	Nitrate Nitrogen (NO3), as N	Fail
1/17/2022	E321351	FS_BPO	Phosphorus, Total	Pass-2
1/17/2022	E321351	FS_BPO	Turbidity, lab	Fail
1/18/2022	E321351	FS_BPO	Aluminum, Dissolved	Pass-1
1/18/2022	E321351	FS_BPO	Antimony, Dissolved	Fail
1/18/2022	E321351	FS_BPO	Antimony, Total	Pass-1
1/18/2022	E321351	FS_BPO	Arsenic, Dissolved	Pass-1
1/18/2022	E321351	FS_BPO	Beryllium, Dissolved	Pass-1
1/18/2022	E321351	FS_BPO	Bismuth, Dissolved	Pass-1
1/18/2022	E321351	FS_BPO	Boron, Dissolved	Pass-1
1/18/2022	E321351	FS_BPO	Cadmium, Total	Pass-1
1/18/2022	E321351	FS_BPO	Chromium, Dissolved	Pass-1
1/18/2022	E321351	FS_BPO	Cobalt, Dissolved	Pass-1
1/18/2022	E321351	FS_BPO	Copper, Dissolved	Pass-1
1/18/2022	E321351	FS_BPO	Iron, Dissolved	Pass-1
1/18/2022	E321351	FS_BPO	Lead, Dissolved	Pass-1
1/18/2022	E321351	FS_BPO	Phosphorus, Dissolved	Pass-1
1/18/2022	E321351	FS_BPO	Silver, Dissolved	Pass-1
1/18/2022	E321351	FS_BPO	Tellurium, Dissolved	Pass-1
1/18/2022	E321351	FS_BPO	Thorium, Dissolved	Pass-1
1/18/2022	E321351	FS_BPO	Tin, Dissolved	Pass-1
1/18/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Pass-1
1/18/2022	E321351	FS_BPO	Tungsten, Dissolved	Pass-1

Date	EMS ID	Location Code	Parameters	Reason
1/18/2022	E321351	FS_BPO	Vanadium, Dissolved	Pass-1
1/18/2022	E321351	FS_BPO	Zinc, Dissolved	Pass-1
1/18/2022	E321351	FS_BPO	Zirconium, Dissolved	Pass-1
1/19/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Pass-1
1/19/2022	E321351	FS_BPO	Turbidity, lab	Pass-1
1/20/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Pass-1
1/22/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Fail
1/22/2022	E321351	FS_BPO	Turbidity, lab	Pass-1
1/23/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Fail
1/23/2022	E321351	FS_BPO	Turbidity, lab	Pass-1
1/24/2022	E321351	FS_BPO	Cation - Anion Balance, (Dissolved)	Fail
1/24/2022	E321351	FS_BPO	Mercury, Total	Fail
1/24/2022	E321351	FS_BPO	Nitrate Nitrogen (NO3), as N	Fail
1/24/2022	E321351	FS_BPO	Nitrogen, Ammonia (as N)	Pass-1
1/24/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Fail
1/25/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Pass-1
1/30/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Pass-1
1/30/2022	E321351	FS_BPO	Turbidity, lab	Pass-1
1/31/2022	E321351	FS_BPO	Acidity To pH 8.3 (As CaCO3)	Pass-1
1/31/2022	E321351	FS_BPO	Cation - Anion Balance, (Dissolved)	Pass-2
1/31/2022	E321351	FS_BPO	Nitrate Nitrogen (NO3), as N	Fail
2/1/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Pass-1
2/1/2022	E321351	FS_BPO	Turbidity, lab	Pass-1
2/2/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Pass-1
2/3/2022	E321351	FS_BPO	Turbidity, lab	Pass-1
2/7/2022	E321351	FS_BPO	Biochemical Oxygen Demand, Five Day	Pass-1
2/7/2022	E321351	FS_BPO	Nitrate Nitrogen (NO3), as N	Fail
2/7/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Fail
2/9/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Pass-1
2/10/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Pass-1
2/11/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Pass-1
2/13/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Pass-1
2/14/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Pass-1

Date	EMS ID	Location Code	Parameters	Reason
2/16/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Pass-1
2/17/2022	E321351	FS_BPO	Turbidity, lab	Pass-1
2/18/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Pass-1
2/21/2022	E321351	FS_BPO	Dissolved Organic Carbon	Fail
2/21/2022	E321351	FS_BPO	Cation - Anion Balance, (Dissolved)	Pass-2
2/21/2022	E321351	FS_BPO	Nitrate Nitrogen (NO3), as N	Fail
2/21/2022	E321351	FS_BPO	Nitrogen, Ammonia (as N)	Pass-1
2/21/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Pass-1
2/21/2022	E321351	FS_BPO	Turbidity, lab	Fail
2/22/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Pass-1
2/23/2022	E321351	FS_BPO	Turbidity, lab	Pass-1
2/24/2022	E321351	FS_BPO	Turbidity, lab	Pass-1
2/25/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Pass-1
2/25/2022	E321351	FS_BPO	Turbidity, lab	Pass-1
2/28/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Pass-1
2/28/2022	E321351	FS_BPO	Turbidity, lab	Pass-1
3/1/2022	E321351	FS_BPO	Cadmium, Dissolved	Pass-1
3/1/2022	E321351	FS_BPO	Cadmium, Total	Pass-1
3/1/2022	E321351	FS_BPO	Chromium, Dissolved	Pass-1
3/1/2022	E321351	FS_BPO	Titanium, Total	Pass-1
3/2/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Pass-1
3/3/2022	E321351	FS_BPO	Turbidity, lab	Pass-1
3/4/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Pass-1
3/6/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Pass-1
3/7/2022	E321351	FS_BPO	Nitrate Nitrogen (NO3), as N	Fail
3/7/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Pass-1
3/8/2022	E321351	FS_BPO	Cadmium, Total	Pass-1
3/9/2022	E321351	FS_BPO	Turbidity, lab	Pass-1
3/10/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Pass-1
3/11/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Pass-1
3/13/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Pass-1
3/14/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Pass-1
3/14/2022	E321351	FS_BPO	Turbidity, lab	Fail

Date	EMS ID	Location Code	Parameters	Reason
3/15/2022	E321351	FS_BPO	Lead, Total	Pass-1
3/15/2022	E321351	FS_BPO	Titanium, Total	Pass-1
3/15/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Pass-1
3/17/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Pass-1
3/18/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Pass-1
3/18/2022	E321351	FS_BPO	Turbidity, lab	Fail
3/20/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Pass-1
3/21/2022	E321351	FS_BPO	Cation - Anion Balance, (Dissolved)	Fail
3/21/2022	E321351	FS_BPO	Nitrate Nitrogen (NO3), as N	Fail
3/21/2022	E321351	FS_BPO	Nitrite Nitrogen (NO2), as N	Pass-1
3/22/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Pass-1
3/24/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Pass-1
3/24/2022	E321351	FS_BPO	Turbidity, lab	Pass-2
3/27/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Fail
3/28/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Pass-1
3/29/2022	E321351	FS_BPO	Cadmium, Dissolved	Pass-1
3/29/2022	E321351	FS_BPO	Cadmium, Total	Pass-1
3/29/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Fail
3/30/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Pass-1
3/31/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Fail
4/1/2022	E321351	FS_BPO	Total Dissolved Solids (Residue,	Pass-2
4/1/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Pass-1
4/4/2022	E321351	FS_BPO	Nitrate Nitrogen (NO3), as N	Fail
4/4/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Pass-1
4/4/2022	E321351	FS_BPO	Turbidity, lab	Fail
4/5/2022	E321351	FS_BPO	Cadmium, Total	Pass-1
4/5/2022	E321351	FS_BPO	Titanium, Dissolved	Pass-1
4/5/2022	E321351	FS_BPO	Titanium, Total	Pass-1
4/5/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Pass-1
4/5/2022	E321351	FS_BPO	Turbidity, lab	Pass-2
4/6/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Pass-1
4/7/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Pass-1
4/8/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Fail

Date	EMS ID	Location Code	Parameters	Reason
4/10/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Pass-1
4/11/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Pass-1
4/12/2022	E321351	FS_BPO	Cadmium, Dissolved	Pass-1
4/12/2022	E321351	FS_BPO	Cadmium, Total	Pass-1
4/17/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Pass-1
4/18/2022	E321351	FS_BPO	Dissolved Organic Carbon	Fail
4/18/2022	E321351	FS_BPO	Cation - Anion Balance, (Dissolved)	Fail
4/18/2022	E321351	FS_BPO	Mercury, Total	Pass-1
4/18/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Pass-1
4/18/2022	E321351	FS_BPO	Turbidity, lab	Pass-2
4/22/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Fail
4/26/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Pass-1
4/26/2022	E321351	FS_BPO	Turbidity, lab	Pass-2
4/27/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Fail
4/28/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Pass-2
4/29/2022	E321351	FS_BPO	Biochemical Oxygen Demand, Five Day	Pass-1
4/29/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Fail
5/2/2022	E321351	FS_BPO	Nitrate Nitrogen (NO3), as N	Pass-2
5/4/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Pass-1
5/4/2022	E321351	FS_BPO	Turbidity, lab	Fail
5/5/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Pass-1
5/5/2022	E321351	FS_BPO	Turbidity, lab	Pass-2
5/6/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Pass-1
5/9/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Pass-1
5/9/2022	E321351	FS_BPO	Turbidity, lab	Pass-2
5/10/2022	E321351	FS_BPO	Antimony, Dissolved	Pass-1
5/10/2022	E321351	FS_BPO	Cadmium, Total	Pass-1
5/10/2022	E321351	FS_BPO	Titanium, Total	Pass-1
5/10/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Fail
5/11/2022	E321351	FS_BPO	Turbidity, lab	Pass-2
5/12/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Pass-1
5/12/2022	E321351	FS_BPO	Turbidity, lab	Pass-2
5/13/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Fail

Date	EMS ID	Location Code	Parameters	Reason
5/15/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Pass-1
5/16/2022	E321351	FS_BPO	Cation - Anion Balance, (Dissolved)	Fail
5/16/2022	E321351	FS_BPO	Nitrate Nitrogen (NO3), as N	Fail
5/16/2022	E321351	FS_BPO	Nitrogen, Ammonia (as N)	Pass-1
5/16/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Fail
5/17/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Pass-1
5/18/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Pass-1
5/23/2022	E321351	FS_BPO	Turbidity, lab	Fail
5/24/2022	E321351	FS_BPO	Cadmium, Dissolved	Pass-1
5/24/2022	E321351	FS_BPO	Cadmium, Total	Pass-1
5/24/2022	E321351	FS_BPO	Chromium, Dissolved	Pass-1
5/24/2022	E321351	FS_BPO	Phosphorus, Dissolved	Pass-1
5/24/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Pass-1
5/25/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Pass-1
5/26/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Pass-1
5/26/2022	E321351	FS_BPO	Turbidity, lab	Fail
5/27/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Pass-1
5/27/2022	E321351	FS_BPO	Turbidity, lab	Pass-2
5/30/2022	E321351	FS_BPO	Alkalinity, Carbonate (As CaCO3), Lab Measured	Pass-1
5/30/2022	E321351	FS_BPO	Carbonate (As CO3)	Pass-1
5/30/2022	E321351	FS_BPO	Cation - Anion Balance, (Dissolved)	Fail
5/30/2022	E321351	FS_BPO	Mercury, Total	Pass-1
5/30/2022	E321351	FS_BPO	Nitrate Nitrogen (NO3), as N	Fail
5/30/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Pass-1
5/30/2022	E321351	FS_BPO	Turbidity, lab	Pass-2
6/3/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Pass-1
6/5/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Pass-1
6/6/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Pass-1
6/6/2022	E321351	FS_BPO	Turbidity, lab	Fail
6/7/2022	E321351	FS_BPO	Aluminum, Dissolved	Pass-1
6/7/2022	E321351	FS_BPO	Arsenic, Dissolved	Pass-1
6/7/2022	E321351	FS_BPO	Beryllium, Dissolved	Pass-1

Date	EMS ID	Location Code	Parameters	Reason
6/7/2022	E321351	FS_BPO	Bismuth, Dissolved	Pass-1
6/7/2022	E321351	FS_BPO	Cadmium, Dissolved	Pass-1
6/7/2022	E321351	FS_BPO	Cadmium, Total	Pass-1
6/7/2022	E321351	FS_BPO	Chromium, Dissolved	Pass-1
6/7/2022	E321351	FS_BPO	Copper, Dissolved	Pass-1
6/7/2022	E321351	FS_BPO	Iron, Dissolved	Pass-1
6/7/2022	E321351	FS_BPO	Lead, Dissolved	Pass-1
6/7/2022	E321351	FS_BPO	Silver, Dissolved	Pass-1
6/7/2022	E321351	FS_BPO	Sulphur, Dissolved	Pass-2
6/7/2022	E321351	FS_BPO	Tellurium, Dissolved	Pass-1
6/7/2022	E321351	FS_BPO	Thallium, Dissolved	Pass-1
6/7/2022	E321351	FS_BPO	Thorium, Dissolved	Pass-1
6/7/2022	E321351	FS_BPO	Tin, Dissolved	Pass-1
6/7/2022	E321351	FS_BPO	Titanium, Dissolved	Pass-1
6/7/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Pass-1
6/7/2022	E321351	FS_BPO	Tungsten, Dissolved	Pass-1
6/7/2022	E321351	FS_BPO	Turbidity, lab	Fail
6/7/2022	E321351	FS_BPO	Vanadium, Dissolved	Pass-1
6/7/2022	E321351	FS_BPO	Zinc, Dissolved	Pass-1
6/7/2022	E321351	FS_BPO	Zirconium, Dissolved	Pass-1
6/10/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Pass-1
6/12/2022	E321351	FS_BPO	Total Dissolved Solids (Residue,	Fail
6/12/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Pass-1
6/12/2022	E321351	FS_BPO	Turbidity, lab	Pass-2
6/13/2022	E321351	FS_BPO	Cation - Anion Balance, (Dissolved)	Fail
6/13/2022	E321351	FS_BPO	Nitrate Nitrogen (NO3), as N	Fail
6/13/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Pass-1
6/13/2022	E321351	FS_BPO	Turbidity, lab	Pass-2
6/14/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Fail
6/14/2022	E321351	FS_BPO	Turbidity, lab	Fail
6/15/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Fail
6/16/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Pass-1
6/17/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Pass-1

Date	EMS ID	Location Code	Parameters	Reason
6/19/2022	E321351	FS_BPO	Turbidity, lab	Pass-2
6/20/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Pass-1
6/20/2022	E321351	FS_BPO	Turbidity, lab	Pass-2
6/21/2022	E321351	FS_BPO	Cadmium, Dissolved	Pass-1
6/21/2022	E321351	FS_BPO	Cadmium, Total	Pass-1
6/21/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Fail
6/22/2022	E321351	FS_BPO	Turbidity, lab	Pass-2
6/26/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Pass-1
6/27/2022	E321351	FS_BPO	Cation - Anion Balance, (Dissolved)	Fail
6/27/2022	E321351	FS_BPO	Nitrate Nitrogen (NO3), as N	Fail
6/27/2022	E321351	FS_BPO	Nitrite Nitrogen (NO2), as N	Pass-1
6/27/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Pass-1
6/28/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Pass-1
7/1/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Pass-1
7/4/2022	E321351	FS_BPO	Alkalinity, Carbonate (As CaCO3), Lab Measured	Pass-2
7/4/2022	E321351	FS_BPO	Carbonate (As CO3)	Pass-2
7/5/2022	E321351	FS_BPO	Beryllium, Total	Fail
7/5/2022	E321351	FS_BPO	Cadmium, Dissolved	Pass-1
7/5/2022	E321351	FS_BPO	Cadmium, Total	Fail
7/5/2022	E321351	FS_BPO	Cobalt, Total	Fail
7/5/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Pass-1
7/6/2022	E321351	FS_BPO	Turbidity, lab	Pass-2
7/7/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Pass-1
7/8/2022	E321351	FS_BPO	Turbidity, lab	Fail
7/10/2022	E321351	FS_BPO	Turbidity, lab	Pass-2
7/11/2022	E321351	FS_BPO	Cation - Anion Balance, (Dissolved)	Pass-2
7/11/2022	E321351	FS_BPO	Nitrate Nitrogen (NO3), as N	Fail
7/11/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Pass-1
7/12/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Pass-1
7/12/2022	E321351	FS_BPO	Turbidity, lab	Pass-2
7/17/2022	E321351	FS_BPO	Turbidity, lab	Pass-2
7/18/2022	E321351	FS_BPO	Nitrate Nitrogen (NO3), as N	Fail

Date	EMS ID	Location Code	Parameters	Reason
7/18/2022	E321351	FS_BPO	Turbidity, lab	Fail
7/19/2022	E321351	FS_BPO	Antimony, Dissolved	Pass-1
7/19/2022	E321351	FS_BPO	Cadmium, Dissolved	Pass-1
7/19/2022	E321351	FS_BPO	Chromium, Total	Pass-1
7/20/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Pass-1
7/22/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Pass-1
7/25/2022	E321351	FS_BPO	Mercury, Total	Pass-1
7/25/2022	E321351	FS_BPO	Nitrate Nitrogen (NO3), as N	Fail
7/25/2022	E321351	FS_BPO	Nitrogen, Ammonia (as N)	Pass-1
7/25/2022	E321351	FS_BPO	Total Kjeldahl Nitrogen	Fail
7/26/2022	E321351	FS_BPO	Selenium, Dissolved	Fail
7/26/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Pass-1
7/29/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Pass-1
7/31/2022	E321351	FS_BPO	Turbidity, lab	Pass-2
8/1/2022	E321351	FS_BPO	Nitrate Nitrogen (NO3), as N	Fail
8/1/2022	E321351	FS_BPO	Turbidity, lab	Pass-2
8/2/2022	E321351	FS_BPO	Arsenic, Total	Pass-1
8/2/2022	E321351	FS_BPO	Beryllium, Total	Fail
8/2/2022	E321351	FS_BPO	Cadmium, Total	Fail
8/2/2022	E321351	FS_BPO	Cobalt, Total	Fail
8/2/2022	E321351	FS_BPO	Selenium, Dissolved	Fail
8/2/2022	E321351	FS_BPO	Vanadium, Total	Pass-1
8/3/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Pass-1
8/3/2022	E321351	FS_BPO	Turbidity, lab	Pass-2
8/4/2022	E321351	FS_BPO	Total Dissolved Solids (Residue,	Fail
8/4/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Pass-1
8/4/2022	E321351	FS_BPO	Turbidity, lab	Fail
8/5/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Pass-1
8/8/2022	E321351	FS_BPO	Alkalinity, Carbonate (As CaCO3), Lab Measured	Pass-2
8/8/2022	E321351	FS_BPO	Carbonate (As CO3)	Pass-2
8/8/2022	E321351	FS_BPO	Cation - Anion Balance, (Dissolved)	Fail
8/8/2022	E321351	FS_BPO	Chloride, Dissolved	Pass-2

Date	EMS ID	Location Code	Parameters	Reason
8/8/2022	E321351	FS_BPO	Ion Balance, Dissolved	Fail
8/8/2022	E321351	FS_BPO	Nitrate Nitrogen (NO3), as N	Fail
8/8/2022	E321351	FS_BPO	Sulphate (As SO4), Dissolved	Pass-2
8/8/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Fail
8/9/2022	E321351	FS_BPO	Aluminum, Dissolved	Pass-1
8/9/2022	E321351	FS_BPO	Aluminum, Total	Pass-1
8/9/2022	E321351	FS_BPO	Beryllium, Total	Fail
8/9/2022	E321351	FS_BPO	Cadmium, Dissolved	Fail
8/9/2022	E321351	FS_BPO	Cadmium, Total	Fail
8/9/2022	E321351	FS_BPO	Chromium, Dissolved	Pass-1
8/9/2022	E321351	FS_BPO	Cobalt, Total	Fail
8/9/2022	E321351	FS_BPO	Iron, Dissolved	Pass-1
8/9/2022	E321351	FS_BPO	Sulphur, Dissolved	Pass-2
8/11/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Fail
8/12/2022	E321351	FS_BPO	Turbidity, lab	Pass-2
8/14/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Pass-1
8/14/2022	E321351	FS_BPO	Turbidity, lab	Fail
8/15/2022	E321351	FS_BPO	Nitrate Nitrogen (NO3), as N	Pass-1
8/15/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Fail
8/16/2022	E321351	FS_BPO	Aluminum, Total	Pass-1
8/16/2022	E321351	FS_BPO	Beryllium, Total	Fail
8/16/2022	E321351	FS_BPO	Cadmium, Dissolved	Pass-1
8/16/2022	E321351	FS_BPO	Cadmium, Total	Fail
8/16/2022	E321351	FS_BPO	Chromium, Total	Pass-1
8/16/2022	E321351	FS_BPO	Cobalt, Total	Fail
8/16/2022	E321351	FS_BPO	Copper, Dissolved	Pass-1
8/16/2022	E321351	FS_BPO	Silver, Dissolved	Pass-1
8/16/2022	E321351	FS_BPO	Turbidity, lab	Pass-2
8/18/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Pass-1
8/18/2022	E321351	FS_BPO	Turbidity, lab	Pass-2
8/19/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Fail
8/22/2022	E321351	FS_BPO	Alkalinity, Carbonate (As CaCO3), Lab Measured	Pass-2

Date	EMS ID	Location Code	Parameters	Reason
8/22/2022	E321351	FS_BPO	Carbonate (As CO3)	Pass-2
8/22/2022	E321351	FS_BPO	Mercury, Total	Pass-1
8/22/2022	E321351	FS_BPO	Nitrate Nitrogen (NO3), as N	Fail
8/22/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Pass-1
8/23/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Pass-1
8/24/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Fail
8/24/2022	E321351	FS_BPO	Turbidity, lab	Fail
8/25/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Pass-1
8/28/2022	E321351	FS_BPO	Selenium, Total	Pass-2
8/29/2022	E321351	FS_BPO	Nitrate Nitrogen (NO3), as N	Fail
8/29/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Fail
8/29/2022	E321351	FS_BPO	Turbidity, lab	Pass-2
8/30/2022	E321351	FS_BPO	Aluminum, Dissolved	Pass-1
8/30/2022	E321351	FS_BPO	Arsenic, Dissolved	Pass-1
8/30/2022	E321351	FS_BPO	Beryllium, Dissolved	Pass-1
8/30/2022	E321351	FS_BPO	Bismuth, Dissolved	Pass-1
8/30/2022	E321351	FS_BPO	Cadmium, Dissolved	Pass-1
8/30/2022	E321351	FS_BPO	Cadmium, Total	Pass-1
8/30/2022	E321351	FS_BPO	Calcium, Dissolved	Pass-2
8/30/2022	E321351	FS_BPO	Chromium, Dissolved	Pass-1
8/30/2022	E321351	FS_BPO	Copper, Dissolved	Pass-1
8/30/2022	E321351	FS_BPO	Iron, Dissolved	Pass-1
8/30/2022	E321351	FS_BPO	Lead, Dissolved	Pass-1
8/30/2022	E321351	FS_BPO	Phosphorus, Dissolved	Pass-1
8/30/2022	E321351	FS_BPO	Silver, Dissolved	Pass-1
8/30/2022	E321351	FS_BPO	Sulphur, Total	Pass-2
8/30/2022	E321351	FS_BPO	Tellurium, Dissolved	Pass-1
8/30/2022	E321351	FS_BPO	Thallium, Dissolved	Pass-1
8/30/2022	E321351	FS_BPO	Thorium, Dissolved	Pass-1
8/30/2022	E321351	FS_BPO	Tin, Dissolved	Pass-1
8/30/2022	E321351	FS_BPO	Titanium, Dissolved	Pass-1
8/30/2022	E321351	FS_BPO	Tungsten, Dissolved	Pass-1
8/30/2022	E321351	FS_BPO	Turbidity, lab	Pass-2

Date	EMS ID	Location Code	Parameters	Reason
8/30/2022	E321351	FS_BPO	Vanadium, Dissolved	Pass-1
8/30/2022	E321351	FS_BPO	Zinc, Dissolved	Pass-1
8/30/2022	E321351	FS_BPO	Zirconium, Dissolved	Pass-1
8/31/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Fail
8/31/2022	E321351	FS_BPO	Turbidity, lab	Pass-2
9/1/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Pass-2
9/4/2022	E321351	FS_BPO	Turbidity, lab	Fail
9/5/2022	E321351	FS_BPO	Acidity To pH 8.3 (As CaCO3)	Pass-1
9/5/2022	E321351	FS_BPO	Alkalinity, Carbonate (As CaCO3), Lab Measured	Fail
9/5/2022	E321351	FS_BPO	Carbonate (As CO3)	Fail
9/5/2022	E321351	FS_BPO	Cation - Anion Balance, (Dissolved)	Pass-2
9/5/2022	E321351	FS_BPO	Nitrate Nitrogen (NO3), as N	Fail
9/5/2022	E321351	FS_BPO	Turbidity, lab	Pass-2
9/6/2022	E321351	FS_BPO	Arsenic, Dissolved	Pass-1
9/6/2022	E321351	FS_BPO	Arsenic, Total	Pass-1
9/6/2022	E321351	FS_BPO	Beryllium, Dissolved	Pass-1
9/6/2022	E321351	FS_BPO	Beryllium, Total	Pass-1
9/6/2022	E321351	FS_BPO	Bismuth, Dissolved	Pass-1
9/6/2022	E321351	FS_BPO	Bismuth, Total	Pass-1
9/6/2022	E321351	FS_BPO	Cadmium, Dissolved	Pass-1
9/6/2022	E321351	FS_BPO	Chromium, Total	Pass-1
9/6/2022	E321351	FS_BPO	Cobalt, Dissolved	Pass-1
9/6/2022	E321351	FS_BPO	Cobalt, Total	Pass-1
9/6/2022	E321351	FS_BPO	Copper, Dissolved	Pass-1
9/6/2022	E321351	FS_BPO	Copper, Total	Pass-1
9/6/2022	E321351	FS_BPO	Iron, Dissolved	Pass-1
9/6/2022	E321351	FS_BPO	Lead, Dissolved	Pass-1
9/6/2022	E321351	FS_BPO	Lead, Total	Pass-1
9/6/2022	E321351	FS_BPO	Phosphorus, Dissolved	Pass-1
9/6/2022	E321351	FS_BPO	Silver, Dissolved	Pass-1
9/6/2022	E321351	FS_BPO	Silver, Total	Pass-1
9/6/2022	E321351	FS_BPO	Sulphur, Dissolved	Pass-2

Date	EMS ID	Location Code	Parameters	Reason
9/6/2022	E321351	FS_BPO	Tellurium, Dissolved	Pass-1
9/6/2022	E321351	FS_BPO	Thallium, Dissolved	Pass-1
9/6/2022	E321351	FS_BPO	Thallium, Total	Pass-1
9/6/2022	E321351	FS_BPO	Thorium, Dissolved	Pass-1
9/6/2022	E321351	FS_BPO	Tin, Dissolved	Pass-1
9/6/2022	E321351	FS_BPO	Tin, Total	Pass-1
9/6/2022	E321351	FS_BPO	Titanium, Dissolved	Pass-1
9/6/2022	E321351	FS_BPO	Titanium, Total	Pass-1
9/6/2022	E321351	FS_BPO	Tungsten, Dissolved	Pass-1
9/6/2022	E321351	FS_BPO	Turbidity, lab	Pass-2
9/6/2022	E321351	FS_BPO	Vanadium, Dissolved	Pass-1
9/6/2022	E321351	FS_BPO	Vanadium, Total	Pass-1
9/6/2022	E321351	FS_BPO	Zinc, Dissolved	Pass-1
9/6/2022	E321351	FS_BPO	Zinc, Total	Pass-1
9/6/2022	E321351	FS_BPO	Zirconium, Dissolved	Pass-1
9/7/2022	E321351	FS_BPO	Turbidity, lab	Fail
9/8/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Pass-2
9/8/2022	E321351	FS_BPO	Turbidity, lab	Fail
9/9/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Fail
9/9/2022	E321351	FS_BPO	Turbidity, lab	Pass-2
9/11/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Fail
9/12/2022	E321351	FS_BPO	Nitrate Nitrogen (NO3), as N	Fail
9/12/2022	E321351	FS_BPO	Turbidity, lab	Pass-2
9/13/2022	E321351	FS_BPO	Aluminum, Dissolved	Pass-1
9/13/2022	E321351	FS_BPO	Antimony, Dissolved	Pass-1
9/13/2022	E321351	FS_BPO	Arsenic, Dissolved	Pass-1
9/13/2022	E321351	FS_BPO	Beryllium, Dissolved	Pass-1
9/13/2022	E321351	FS_BPO	Beryllium, Total	Pass-1
9/13/2022	E321351	FS_BPO	Bismuth, Dissolved	Pass-1
9/13/2022	E321351	FS_BPO	Bismuth, Total	Pass-1
9/13/2022	E321351	FS_BPO	Chromium, Dissolved	Pass-1
9/13/2022	E321351	FS_BPO	Copper, Dissolved	Pass-1
9/13/2022	E321351	FS_BPO	Copper, Total	Pass-1

Date	EMS ID	Location Code	Parameters	Reason
9/13/2022	E321351	FS_BPO	Iron, Dissolved	Pass-1
9/13/2022	E321351	FS_BPO	Lead, Dissolved	Pass-1
9/13/2022	E321351	FS_BPO	Lead, Total	Pass-1
9/13/2022	E321351	FS_BPO	Phosphorus, Dissolved	Pass-1
9/13/2022	E321351	FS_BPO	Silver, Dissolved	Pass-1
9/13/2022	E321351	FS_BPO	Silver, Total	Pass-1
9/13/2022	E321351	FS_BPO	Sulphur, Dissolved	Pass-2
9/13/2022	E321351	FS_BPO	Tellurium, Dissolved	Pass-1
9/13/2022	E321351	FS_BPO	Thallium, Dissolved	Pass-1
9/13/2022	E321351	FS_BPO	Thallium, Total	Pass-1
9/13/2022	E321351	FS_BPO	Thorium, Dissolved	Pass-1
9/13/2022	E321351	FS_BPO	Tin, Dissolved	Pass-1
9/13/2022	E321351	FS_BPO	Tin, Total	Pass-1
9/13/2022	E321351	FS_BPO	Titanium, Dissolved	Pass-1
9/13/2022	E321351	FS_BPO	Titanium, Total	Pass-1
9/13/2022	E321351	FS_BPO	Tungsten, Dissolved	Pass-1
9/13/2022	E321351	FS_BPO	Turbidity, lab	Fail
9/13/2022	E321351	FS_BPO	Vanadium, Dissolved	Pass-1
9/13/2022	E321351	FS_BPO	Vanadium, Total	Pass-1
9/13/2022	E321351	FS_BPO	Zinc, Dissolved	Pass-1
9/13/2022	E321351	FS_BPO	Zinc, Total	Pass-1
9/13/2022	E321351	FS_BPO	Zirconium, Dissolved	Pass-1
9/14/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Pass-1
9/16/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Pass-1
9/18/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Pass-1
9/19/2022	E321351	FS_BPO	Cation - Anion Balance, (Dissolved)	Pass-2
9/19/2022	E321351	FS_BPO	Nitrate Nitrogen (NO3), as N	Fail
9/19/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Pass-1
9/20/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Pass-1
9/20/2022	E321351	FS_BPO	Turbidity, lab	Pass-2
9/23/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Pass-1
9/25/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Pass-1
9/26/2022	E321351	FS_BPO	Nitrate Nitrogen (NO3), as N	Fail

Date	EMS ID	Location Code	Parameters	Reason
9/26/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Fail
9/27/2022	E321351	FS_BPO	Aluminum, Dissolved	Pass-1
9/27/2022	E321351	FS_BPO	Antimony, Total	Pass-1
9/27/2022	E321351	FS_BPO	Arsenic, Dissolved	Pass-1
9/27/2022	E321351	FS_BPO	Beryllium, Dissolved	Pass-1
9/27/2022	E321351	FS_BPO	Bismuth, Dissolved	Pass-1
9/27/2022	E321351	FS_BPO	Boron, Total	Pass-1
9/27/2022	E321351	FS_BPO	Cadmium, Dissolved	Fail
9/27/2022	E321351	FS_BPO	Cadmium, Total	Pass-1
9/27/2022	E321351	FS_BPO	Copper, Dissolved	Pass-1
9/27/2022	E321351	FS_BPO	Iron, Dissolved	Pass-1
9/27/2022	E321351	FS_BPO	Lead, Dissolved	Pass-1
9/27/2022	E321351	FS_BPO	Phosphorus, Dissolved	Pass-1
9/27/2022	E321351	FS_BPO	RUBIDIUM, D	Pass-2
9/27/2022	E321351	FS_BPO	Silver, Dissolved	Pass-1
9/27/2022	E321351	FS_BPO	Sulphur, Total	Pass-2
9/27/2022	E321351	FS_BPO	Tellurium, Dissolved	Pass-1
9/27/2022	E321351	FS_BPO	Thallium, Dissolved	Pass-1
9/27/2022	E321351	FS_BPO	Thorium, Dissolved	Pass-1
9/27/2022	E321351	FS_BPO	Tin, Dissolved	Pass-1
9/27/2022	E321351	FS_BPO	Titanium, Dissolved	Pass-1
9/27/2022	E321351	FS_BPO	Tungsten, Dissolved	Pass-1
9/27/2022	E321351	FS_BPO	Vanadium, Dissolved	Pass-1
9/27/2022	E321351	FS_BPO	Zinc, Dissolved	Pass-1
9/27/2022	E321351	FS_BPO	Zirconium, Dissolved	Pass-1
9/28/2022	E321351	FS_BPO	Turbidity, lab	Pass-2
9/29/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Pass-1
10/2/2022	E321351	FS_BPO	Total Dissolved Solids (Residue,	Fail
10/2/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Pass-1
10/2/2022	E321351	FS_BPO	Turbidity, lab	Fail
10/3/2022	E321351	FS_BPO	Cation - Anion Balance, (Dissolved)	Fail
10/3/2022	E321351	FS_BPO	Nitrate Nitrogen (NO3), as N	Fail
10/3/2022	E321351	FS_BPO	Total Kjeldahl Nitrogen	Fail

Date	EMS ID	Location Code	Parameters	Reason
10/4/2022	E321351	FS_BPO	Beryllium, Total	Fail
10/4/2022	E321351	FS_BPO	Cadmium, Dissolved	Pass-1
10/4/2022	E321351	FS_BPO	Cadmium, Total	Fail
10/4/2022	E321351	FS_BPO	Chromium, Total	Pass-1
10/4/2022	E321351	FS_BPO	Cobalt, Total	Fail
10/4/2022	E321351	FS_BPO	Phosphorus, Dissolved	Pass-1
10/5/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Pass-1
10/6/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Pass-2
10/6/2022	E321351	FS_BPO	Turbidity, lab	Pass-2
10/7/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Fail
10/7/2022	E321351	FS_BPO	Turbidity, lab	Fail
10/10/2022	E321351	FS_BPO	Nitrate Nitrogen (NO3), as N	Fail
10/10/2022	E321351	FS_BPO	Turbidity, lab	Pass-2
10/11/2022	E321351	FS_BPO	Beryllium, Total	Fail
10/11/2022	E321351	FS_BPO	Cadmium, Total	Fail
10/11/2022	E321351	FS_BPO	Cobalt, Total	Fail
10/11/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Pass-1
10/12/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Pass-1
10/12/2022	E321351	FS_BPO	Turbidity, lab	Fail
10/13/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Pass-1
10/13/2022	E321351	FS_BPO	Turbidity, lab	Fail
10/14/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Fail
10/17/2022	E321351	FS_BPO	Cation - Anion Balance, (Dissolved)	Fail
10/17/2022	E321351	FS_BPO	Nitrate Nitrogen (NO3), as N	Fail
10/19/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Pass-1
10/20/2022	E321351	FS_BPO	Turbidity, lab	Fail
10/24/2022	E321351	FS_BPO	Nitrate Nitrogen (NO3), as N	Fail
10/24/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Pass-1
10/25/2022	E321351	FS_BPO	Aluminum, Dissolved	Pass-1
10/25/2022	E321351	FS_BPO	Arsenic, Dissolved	Pass-1
10/25/2022	E321351	FS_BPO	Beryllium, Dissolved	Pass-1
10/25/2022	E321351	FS_BPO	Beryllium, Total	Fail
10/25/2022	E321351	FS_BPO	Bismuth, Dissolved	Pass-1

Date	EMS ID	Location Code	Parameters	Reason
10/25/2022	E321351	FS_BPO	Cadmium, Dissolved	Pass-1
10/25/2022	E321351	FS_BPO	Cadmium, Total	Fail
10/25/2022	E321351	FS_BPO	Chromium, Dissolved	Pass-1
10/25/2022	E321351	FS_BPO	Cobalt, Dissolved	Pass-1
10/25/2022	E321351	FS_BPO	Cobalt, Total	Fail
10/25/2022	E321351	FS_BPO	Copper, Dissolved	Pass-1
10/25/2022	E321351	FS_BPO	Iron, Dissolved	Pass-1
10/25/2022	E321351	FS_BPO	Lead, Dissolved	Pass-1
10/25/2022	E321351	FS_BPO	Lithium, Dissolved	Pass-2
10/25/2022	E321351	FS_BPO	Silver, Dissolved	Pass-1
10/25/2022	E321351	FS_BPO	Tellurium, Dissolved	Pass-1
10/25/2022	E321351	FS_BPO	Thallium, Dissolved	Pass-1
10/25/2022	E321351	FS_BPO	Thorium, Dissolved	Pass-1
10/25/2022	E321351	FS_BPO	Tin, Dissolved	Pass-1
10/25/2022	E321351	FS_BPO	Titanium, Dissolved	Pass-1
10/25/2022	E321351	FS_BPO	Tungsten, Dissolved	Pass-1
10/25/2022	E321351	FS_BPO	Vanadium, Dissolved	Pass-1
10/25/2022	E321351	FS_BPO	Zinc, Dissolved	Pass-1
10/25/2022	E321351	FS_BPO	Zirconium, Dissolved	Pass-1
10/26/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Fail
10/26/2022	E321351	FS_BPO	Turbidity, lab	Fail
10/27/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Pass-1
10/28/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Pass-1
10/30/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Fail
10/30/2022	E321351	FS_BPO	Turbidity, lab	Pass-2
10/31/2022	E321351	FS_BPO	Nitrate Nitrogen (NO3), as N	Fail
10/31/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Pass-1
10/31/2022	E321351	FS_BPO	Turbidity, lab	Fail
11/2/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Pass-1
11/2/2022	E321351	FS_BPO	Turbidity, lab	Pass-2
11/3/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Pass-1
11/4/2022	E321351	FS_BPO	Turbidity, lab	Fail
11/7/2022	E321351	FS_BPO	Nitrate Nitrogen (NO3), as N	Fail

Date	EMS ID	Location Code	Parameters	Reason
11/7/2022	E321351	FS_BPO	Nitrate Nitrogen (NO3), as N	Fail
11/7/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Pass-1
11/8/2022	E321351	FS_BPO	Aluminum, Dissolved	Pass-1
11/8/2022	E321351	FS_BPO	Antimony, Total	Pass-1
11/8/2022	E321351	FS_BPO	Beryllium, Total	Fail
11/8/2022	E321351	FS_BPO	Boron, Total	Pass-1
11/8/2022	E321351	FS_BPO	Cadmium, Total	Fail
11/8/2022	E321351	FS_BPO	Cobalt, Total	Fail
11/8/2022	E321351	FS_BPO	Iron, Dissolved	Pass-1
11/8/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Pass-1
11/10/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Pass-1
11/10/2022	E321351	FS_BPO	Turbidity, lab	Pass-2
11/14/2022	E321351	FS_BPO	Cadmium, Dissolved	Fail
11/14/2022	E321351	FS_BPO	Cobalt, Dissolved	Fail
11/14/2022	E321351	FS_BPO	Nitrate Nitrogen (NO3), as N	Fail
11/14/2022	E321351	FS_BPO	Nitrogen, Ammonia (as N)	Fail
11/14/2022	E321351	FS_BPO	Phosphorus, Total	Pass-2
11/14/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Pass-1
11/15/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Pass-1
11/15/2022	E321351	FS_BPO	Turbidity, lab	Pass-1
11/16/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Pass-2
11/16/2022	E321351	FS_BPO	Turbidity, lab	Pass-1
11/18/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Pass-2
11/21/2022	E321351	FS_BPO	Nitrate Nitrogen (NO3), as N	Fail
11/22/2022	E321351	FS_BPO	Beryllium, Total	Fail
11/22/2022	E321351	FS_BPO	Cadmium, Dissolved	Pass-1
11/22/2022	E321351	FS_BPO	Cadmium, Total	Fail
11/22/2022	E321351	FS_BPO	Cobalt, Total	Fail
11/22/2022	E321351	FS_BPO	Phosphorus, Dissolved	Pass-1
11/23/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Pass-1
11/24/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Pass-1
11/25/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Pass-1
11/25/2022	E321351	FS_BPO	Turbidity, lab	Fail

Date	EMS ID	Location Code	Parameters	Reason
11/27/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Pass-1
11/27/2022	E321351	FS_BPO	Turbidity, lab	Fail
11/28/2022	E321351	FS_BPO	Alkalinity, Carbonate (As CaCO3), Lab Measured	Pass-2
11/28/2022	E321351	FS_BPO	Bromate	Fail
11/28/2022	E321351	FS_BPO	Dissolved Organic Carbon	Pass-1
11/28/2022	E321351	FS_BPO	Carbonate (As CO3)	Pass-1
11/28/2022	E321351	FS_BPO	Cation - Anion Balance, (Dissolved)	Fail
11/28/2022	E321351	FS_BPO	Nitrate Nitrogen (NO3), as N	Fail
11/28/2022	E321351	FS_BPO	Nitrogen, Ammonia (as N)	Fail
11/28/2022	E321351	FS_BPO	Phosphorus, Total	Fail
11/28/2022	E321351	FS_BPO	Total Kjeldahl Nitrogen	Fail
11/28/2022	E321351	FS_BPO	Total Organic Carbon	Pass-1
11/28/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Pass-1
11/29/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Pass-1
11/30/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Fail
12/1/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Pass-1
12/1/2022	E321351	FS_BPO	Turbidity, lab	Pass-2
12/2/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Pass-1
12/4/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Pass-1
12/5/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Fail
12/6/2022	E321351	FS_BPO	Aluminum, Total	Pass-1
12/6/2022	E321351	FS_BPO	Beryllium, Total	Fail
12/6/2022	E321351	FS_BPO	Cadmium, Dissolved	Pass-1
12/6/2022	E321351	FS_BPO	Cadmium, Total	Fail
12/6/2022	E321351	FS_BPO	Cobalt, Total	Fail
12/6/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Pass-1
12/8/2022	E321351	FS_BPO	Turbidity, lab	Fail
12/9/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Pass-1
12/12/2022	E321351	FS_BPO	Alkalinity, Carbonate (As CaCO3), Lab Measured	Fail
12/12/2022	E321351	FS_BPO	Bromate	Pass-2
12/12/2022	E321351	FS_BPO	Carbonate (As CO3)	Fail
12/12/2022	E321351	FS_BPO	Nitrate Nitrogen (NO3), as N	Fail

Date	EMS ID	Location Code	Parameters	Reason
12/12/2022	E321351	FS_BPO	Nitrite Nitrogen (NO2), as N	Fail
12/12/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Pass-1
12/13/2022	E321351	FS_BPO	Cadmium, Dissolved	Pass-1
12/13/2022	E321351	FS_BPO	Cadmium, Total	Pass-1
12/13/2022	E321351	FS_BPO	Cobalt, Total	Pass-1
12/13/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Pass-1
12/14/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Pass-1
12/15/2022	E321351	FS_BPO	Turbidity, lab	Pass-2
12/16/2022	E321351	FS_BPO	Turbidity, lab	Pass-2
12/18/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Pass-1
12/18/2022	E321351	FS_BPO	Turbidity, lab	Pass-2
12/19/2022	E321351	FS_BPO	Nitrate Nitrogen (NO3), as N	Fail
12/19/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Pass-1
12/21/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Pass-1
12/22/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Fail
12/23/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Fail
12/23/2022	E321351	FS_BPO	Turbidity, lab	Pass-2
12/26/2022	E321351	FS_BPO	Nitrate Nitrogen (NO3), as N	Fail
12/26/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Pass-1
12/27/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Pass-1
12/28/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Fail
12/29/2022	E321351	FS_BPO	Total Suspended Solids, Lab	Pass-1

Table E-8. FRO-S AWTF 2022 Hold Time Exceedances

Date	EMS ID	Location Code	Parameters	Reason
1/27/2022	E321351	FS_BPO	Nitrate, Turbidity	EHTR
1/27/2022	E321411	FS_INF-S	Turbidity	EHTR
2/5/2022	E321351	FS_BPO	Nitrate, Turbidity	EHTR
2/5/2022	E321411	FS_INF-S	Turbidity	EHTR
2/7/2022	E321351	FS_BPO	Total Dissolved Solids	EHT

Date	EMS ID	Location Code	Parameters	Reason
	E321411	FS_INF-S		
2/17/2022	E321351	FS_BPO	Nitrate, Turbidity	EHTR
2/17/2022	E321411	FS_INF-S	Turbidity	EHTR
4/30/2022	E321351	FS_BPO	Nitrate, Turbidity	EHTL
4/30/2022	E321411	FS_INF-S	Turbidity	EHTL
5/28/2022	E321351 E321411 E321412	FS_BPO FS_INF-S FS_INF-K	Total Dissolved Solids, Total Suspended Solids	EHT
6/18/2022	E321351	FS_BPO	Nitrate	EHTL
6/18/2022	E321351	FS_BPO	Nitrate, Total Dissolved Solids, Total	EHT
6/18/2022	E321411	FS_INF-S	Total Dissolved Solids, Total	EHT
7/16/2022	E321351	FS_BPO	Total Suspended Solids, Turbidity	EHTR
9/24/2022	E321351	FS_BPO	Turbidity	EHTL
9/25/2022	E321351	FS_BPO	Turbidity	EHTR
10/18/2022	E321411 E321412	FS_INF-S FS_INF-K	Turbidity	EHT
11/7/2022	E321351	FS_BPO	Sulphide	EHT
11/10/2022	E321351	FS_BPO	Biochemical Oxygen Demand	EHT
11/19/2022	E321351 E321411 E321412	FS_BPO FS_INF-S FS_INF-K	Turbidity	EHTR
12/10/2022	E321351 E321411 E321412	FS_BPO FS_INF-S FS_INF-K	Turbidity	EHTL
12/16/2022	E321351 E321411 E321412	FS_BPO FS_INF-S FS_INF-K	Turbidity	EHTR
12/19/2022	E321351	FS_BPO	Sulphide	EHT
12/25/2022	E321351 E321411 E321412	FS_BPO FS_INF-S FS_INF-K	Turbidity	EHTL
12/26/2022	E321351	FS_BPO	Sulphide	EHT

Table E-9. FRO-S AWTF 2022 Blank Detects

Date	EMS ID	Location Code	Parameters	Reason
1/4/2022	E321351	FS_BPO	Calcium (D); Boron and Manganese (D/T)	Blank Detect
1/11/2022	E321351	FS_BPO	Selenite (D)	Blank Detect
1/13/2022	E321351	FS_BPO	Molybdenum (D)	Blank Detect
1/15/2022	E321351	FS_BPO	Selenium (T)	Blank Detect
1/18/2022	E321351	FS_BPO	Antimony (D/T), Manganese (D/T), Selenite (D)	Blank Detect
2/1/2022	E321351	FS_BPO	Antimony (D/T), Chromium (D/T), Manganese (D/T), Selenite (D)	Blank Detect
2/2/2022	E321351	FS_BPO	Turbidity, Total Dissolved Solids, Total Suspended Solids	Blank Detect
2/22/2022	E321351	FS_BPO	Selenite (D)	Blank Detect
2/25/2022	E321351	FS_BPO	Turbidity, Total Dissolved Solids, Total Suspended Solids	Blank Detect
2/27/2022	E321351	FS_BPO	Turbidity, Total Dissolved Solids, Total Suspended Solids	Blank Detect
3/1/2022	E321351	FS_BPO	Total Dissolved Solids, Total Suspended Solids, Antimony (D/T)	Blank Detect
3/8/2022	E321351	FS_BPO	Barium (Dissolved)	Blank Detect
4/5/2022	E321351	FS_BPO	Molybdenum (T), Silver (T)	Blank Detect
4/12/2022	E321351	FS_BPO	Calcium (T), Molybdenum (T), Strontium (D/T)	Blank Detect
4/19/2022	E321351	FS_BPO	Calcium (T), Magnesium (T)	Blank Detect
4/22/2022	E321351	FS_BPO	Total Dissolved Solids	Blank Detect
4/24/2022	E321351	FS_BPO	Selenium (T)	Blank Detect
4/26/2022	E321351	FS_BPO	Arsenic (D), Barium (D/T), Calcium (T), Copper (T), Hardness (D/T), Lead (D/T), Lithium (D/T), Magnesium (T), Potassium (T), Selenate (D), Selenium (D/T), Sodium (T), Strontium (D/T), Uranium (D/T)	Blank Detect
4/27/2022	E321351	FS_BPO	Turbidity	Blank Detect
4/29/2022	E321351	FS_BPO	Biochemical Oxygen Demand	Blank Detect
5/8/2022	E321351	FS_BPO	Total Dissolved Solids	Blank Detect
5/24/2022	E321351	FS_BPO	Selenite (D)	Blank Detect

Date	EMS ID	Location Code	Parameters	Reason
5/31/2022	E321351	FS_BPO	Selenite (D)	Blank Detect
6/7/2022	E321351	FS_BPO	Selenate (D), Unknown Selenium Species (D)	Blank Detect
6/12/2022	E321351	FS_BPO	Total Dissolved Solids, Total Suspended Solids	Blank Detect
6/14/2022	E321351	FS_BPO	Selenite (D), Vanadium (T)	Blank Detect
6/19/2022	E321351	FS_BPO	Selenium (T)	Blank Detect
6/21/2022	E321351	FS_BPO	Selenite (D)	Blank Detect
7/5/2022	E321351	FS_BPO	Boron (T), Molybdenum (T), Selenite (D)	Blank Detect
7/12/2022	E321351	FS_BPO	Total Dissolved Solids, Total Suspended Solids, Turbidity	Blank Detect
7/19/2022	E231351	FS_BPO	Magnesium (T)	Blank Detect
8/2/2022	E321351	FS_BPO	Molybdenum (T)	Blank Detect
8/8/2022	E321351	FS_BPO	Sulfide	Blank Detect
8/9/2022	E321351	FS_BPO	Cadmium (T)	Blank Detect
8/11/2022	E321351	FS_BPO	Selenium (T)	Blank Detect
8/16/2022	E321351	FS_BPO	Barium (D)	Blank Detect
8/22/2022	E321351	FS_BPO	Mercury (T)	Blank Detect
8/30/2022	E321351	FS_BPO	Selenite (D)	Blank Detect
9/2/2022	E321351	FS_BPO	Total Dissolved Solids, Total Suspended Solids, Turbidity	Blank Detect
9/5/2022	E321351	FS_BPO	Sulfide	Blank Detect
9/6/2022	E321351	FS_BPO	Aluminum (T), Barium (D/T), Magnesium (T)	Blank Detect
9/13/2022	E321351	FS_BPO	Barium (D)	Blank Detect
9/18/2022	E321351	FS_BPO	Selenium (T)	Blank Detect
9/27/2022	E321351	FS_BPO	Molybdenum (D), Strontium (D), Uranium (D)	Blank Detect
10/2/2022	E321351	FS_BPO	Total Dissolved Solids, Total Suspended Solids, Turbidity	Blank Detect
10/3/2022	E321351	FS_BPO	Conductivity	Blank Detect
10/4/2022	E321351	FS_BPO	Selenite (D)	Blank Detect
10/31/2022	E321351	FS_BPO	Phosphorus	Blank Detect

Date	EMS ID	Location Code	Parameters	Reason
11/8/2022	E321351	FS_BPO	Selenite (D)	Blank Detect
11/22/2022	E321351	FS_BPO	Aluminum (D)	Blank Detect
12/4/2022	E321351	FS_BPO	Selenium (T)	Blank Detect
12/6/2022	E321351	FS_BPO	Selenite (D), Selenate (D)	Blank Detect
12/11/2022	E321351	FS_BPO	Selenium (T)	Blank Detect
12/20/2022	E321351	FS_BPO	Unknown Selenium Species (D)	Blank Detect
12/29/2022	E321351	FS_BPO	Selenium (T)	Blank Detect